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§ T

LABORATORY TESTS / Prove di laboratorio

UNIT PRICES AND DETAILS FOR EACH SINGLE PERFORMED TEST, WITH DIFFERENT LEVELS IF APPLICABLE

Prezzi unitari e dettagli per ogni singola prova eseguita, con differenti livelli ove applicabile

2021.05.05 RFQ TR Testing FRONT PANELS

(id 1814) TR testing to be performed for OEM Volvo Truck

1 - Heat resistance, short term

(id 2441) A method for assessing shrinkage, deformation and changes in appearance of components made of plastics material, when exposed to heat (in a ventilated oven).

Test according to TR84199760 - 3.1.1.3.3

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1 [EUR]: 800.00

Limit #1: Applicable to any sample

2 - Resistance to ageing in heat

(id 2442) A method for assessing shrinkage, deformation, and changes in appearance of components made of plastics material, when exposed to heat (in a ventilated oven).

Test according to TR 84199760 - 3.1.1.3.4

Accredited [IEC17025]: NO

Execution time [day]: 42

Unit price #1 [EUR]: 4,500.00

Limit #1: Applicable to any sample

Unref. - Cold conditioning

(id 2443) A method for assessing shrinkage, deformation, and changes in appearance of components made of plastics material, when exposed to cold.

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1 [EUR]: 800.00

Limit #1: Applicable to any sample

49 CFR 393.67:2023

(id 1976) Transportation - Other Regulations Relating to Transportation

393.67 - e1 - Drop Test

(id 2706) Test for side-mounted liquid fuel tank.

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1 [EUR]: 400.00

Limit #1: Applicable to any sample

393.67 - e2 - Fill Pipe Test

(id 2707) Test for side-mounted liquid fuel tank.

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1 [EUR]: 400.00

Limit #1: Applicable to any sample

ABYC H-33:2005

(id 2041) These standards are guides for the design, choice of materials, construction, installation, repair, and maintenance of permanently installed diesel fuel systems.

33.17.5 - Overpressure

(id 2783) ---

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1 [EUR]: 2,200.00

Limit #1: Applicable to any sample

33.21.5 - Pressure Impulse Test

(id 2784) ---

Accredited [IEC17025]: NO

Execution time [day]: 4

Unit price #1 [EUR]: 4,000.00

Limit #1: Applicable to any sample



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33.21.6 - Slosch Test

(id 2785) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 23 |
| Unit price #1 [EUR]: 8,200.00 | Limit #1: Applicable to any sample |

33.20.7.4 - Leak Test

(id 2787) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Applicable to any sample |

API SPEC 6A 21ST ED (E1):2019

(id 1719) Specification for Wellhead and Tree Equipment, Twenty-First Edition; Errata, April 2019

Ann. F/F.1.11 - Pressure and Temperature Cycles

(id 2178) This test involves pressure/temperature cycles in order to check for any damages/leaks at the end of the test, caused by the deterioration of the material.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 5 |
| Unit price #1 [EUR]: 8,800.00 | Limit #1: <= 5 days |

API STD 607 (2016)

(id 1038) Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats, Seventh Edition

5 - Fire test

(id 1547) The purpose of this test is confirming the pressure-containing capability of a valve under pressure during and after the fire test.

| | |
|-------------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 2,000.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 2,800.00 | Limit #2: from 4" to 10" |
| Unit price #3 [EUR]: 4,500.00 | Limit #3: from 12" to 20" |

6.2 - Through-seat Leakage During Burn Period

(id 1548) ---

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 150.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 250.00 | Limit #2: from 4" to 10" |
| Unit price #3 [EUR]: 500.00 | Limit #3: from 12" to 20" |

6.3 - External Leakage During Burn and Cool-down Periods

(id 1549) ---

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 400.00 | Limit #2: from 4" to 10" |
| Unit price #3 [EUR]: 800.00 | Limit #3: from 12" to 20" |

6.4 - Low Pressure Test Through-seat Leakage after Cool-down

(id 1550) ---

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 150.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 250.00 | Limit #2: from 4" to 10" |
| Unit price #3 [EUR]: 500.00 | Limit #3: from 12" to 20" |

6.5 - Operability

(id 1551) ---

| | |
|-------------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 800.00 | Limit #2: from 4" to 10" |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: from 12" to 20" |



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6.6 - External Leakage Following Operational Test

(id 1552) ---

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 400.00 | Limit #2: from 4" to 10" |
| Unit price #3 [EUR]: 800.00 | Limit #3: from 12" to 20" |

API STD 622:2018

(id 1185) Type Testing of Process Valve Packing for Fugitive Emissions, Third Edition STANDARD by American Petroleum Institute, 10/01/2018

4.1.2/4.4.2 - Fugitive Emissions Test: Mechanical and thermal cycling

(id 1617) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

4.1.4 - Fugitive emissions test: Temperature Monitoring

(id 1618) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

4.4.3 - Fugitive emissions test: Leak Measurement

(id 1619) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

API STD 641:2016

(id 1186) Type Testing of Quarter-turn Valves for Fugitive Emissions, First Edition STANDARD by American Petroleum Institute, 10/01/2016

- Type testing of Quarter-turn valves for fugitive emissions

(id 1621) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

ASME B16:33

(id 1979) Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 175 psi (Sizes NPS 1/2 through NPS 2)

4.3.2 - Temperature Resistance - cold

(id 2717) A valve should be operable at temperature of -29°C without affecting the capability of the valve to control the flow of gas.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 500.00 | Limit #2: greater than 1" up to 3" |

4.3.3 - Temperature Resistance - heat

(id 2718) A valve should be operable at temperature of 66°C without affecting the capability of the valve to control the flow of gas.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 500.00 | Limit #2: greater than 1" up to 3" |

ASTM D5868 - 01

(id 1782) Standard Test Method for Lap Shear Adhesion for Fiber Reinforced Plastic (FRP) Bonding

8.4 - Lap Shear Adhesion for Fiber Reinforced Plastic (FRP) Bonding

(id 2356) This test method describes a lap shear test for use in measuring the bonding characteristics of adhesives for joining fiber reinforced plastics to themselves and to metals. The method is applicable to random and fiber oriented FRP. The specimen loading rate is 13 mm/min (0.0002166 m/s).

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Not relevant |



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ASTM D5894 ? 10

(id 1756) *Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/Condensation Cabinet)*

8.1 - Fluorescent UV-Condensation Exposure

(id 2292) *This practice covers basic principles and operating practice for cyclic corrosion/UV exposure of paints on metal, using alternating periods of exposure in two different cabinets: a cycling salt fog/dry cabinet, and a fluorescent UV/ condensation cabinet.*

Accredited [IEC17025]: NO Execution time [day]: 28
Unit price #1 [EUR]: 4,800.00 Limit #1: Applicable to any sample

8.2 - Cyclic Salt Fog/Dry Exposure

(id 2293) *This practice covers basic principles and operating practice for cyclic corrosion/UV exposure of paints on metal, using alternating periods of exposure in two different cabinets: a cycling salt fog/dry cabinet, and a fluorescent UV/ condensation cabinet.*

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

ASTM G85 ? 11

(id 836) *Standard Practice for Modified Salt Spray (Fog) Testing*

A.2 - Cyclic acidified salt fog testing

(id 1372) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,500.00 Limit #1: 1 weeks
Unit price #2 [EUR]: 3,000.00 Limit #2: 4 weeks
Unit price #3 [EUR]: 5,000.00 Limit #3: 8 weeks

8.1 - Intermediate evaluation: visual inspection and leakage test

(id 1373) *The salt spray testing requires a careful and immediate examination for the extent of corrosion and for any other failure as required by the specifications covering the material or product being tested or by agreement between the purchaser and the seller. In this case, a leakage test has been requested and a visual inspection is performed in order to verify the presence of bubbles when the sample is immersed in water and subject to the pressure required.*

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

A.3 - Acidified synthetic sea water (fog) testing

(id 2350) *This practice covers and sets forth conditions for five modifications in salt spray (fog) testing for specification purposes. A.3 refers to seawater acidified test, cyclic (SWAAT).*

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,600.00 Limit #1: Applicable to any sample - 96h

A.5 - Dilute electrolyte cyclic fog-dry test

(id 2780) *This test consists of cycles of 1-h dry-off and 1-h fog. The electrolyte is a solution of sodium chloride and ammonium sulfate, and is much more dilute than traditional salt fog. The fog is performed at room temperature, while the dry-off is at elevated temperature. In addition, the spray atomizing air is not saturated with water. This test is particularly applicable to paints on steel.*

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Aston Martin AM370

(id 1935) *Powertrain Cooling Systems Validation Requirements*

1.1 - Leak test

(id 2604) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample



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1.2 - Burst Pressure Test

(id 2605) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Automotive internal test

(id 404) Automotive internal test methods

AI 02 - Drop test on fuel and urea tanks

(id 1204) This test is performed in order to verify if tanks are capable to withstand a drop without leakages.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

AI 01 - Vacuum test on urea tanks

(id 1205) Test to be performed with the method described in IVECO Std. 18-3310.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

AI 04 - Fuel Resistance Test

(id 1206) Ageing of the materials used in a gasoline fuel / vapor line assembly due to exposure to liquid fuel or fuel vapors, internal and/or external.

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 1,000.00 Limit #1: up to 16 days
Unit price #2 [EUR]: 2,500.00 Limit #2: up to 44 days
Unit price #3 [EUR]: 4,000.00 Limit #3: up to 140 days

AI 05 - Breakaway valve nozzle functional test

(id 1266) Functional verification

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

AI 06 - Pipes disconnection test

(id 1305) The aim of this test is to verify the pipe disconnection when applying a pull force.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

AI 17 - RENAULT Standard D17-1058--L - Neutral salt spray test

(id 1382) This test is to be applied to compare the resistance to deterioration from salt mist of specimens of similar construction. It is useful for evaluating the quality and uniformity of protective coatings.

Accredited [IEC17025]: NO Execution time [day]: 25
Unit price #1 [EUR]: 4,800.00 Limit #1: 600 hours
Unit price #2 [EUR]: 2,200.00 Limit #2: 288 hours

AI 16 - Vacuum test

(id 1388) Additional test to Spec 9.02137/05 Automotive blowby piping endurance tests

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

AI 09 - Wet leakage current test

(id 1615) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant

AI 10 - Temperature cycles and immersion in fluorescent saline solution

(id 1633) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 4,000.00 Limit #1: Applicable to any sample

AI 11 - Special mixture preparation

(id 1677) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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AI 12 - OLD---CONVERTED IN Hutchinson FMS MSO CDC cba 05-2020 Date : 21/04/2020 5.2.2.8 Aging ---BMW Group - Aging time lap

(id 1855) OLD---CONVERTED IN Hutchinson FMS MSO CDC cba 05-2020 Date : 21/04/2020 5.2.2.8 Aging ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 4,000.00 Limit #1: 1000h
Unit price #2 [EUR]: 5,500.00 Limit #2: 2000h

AI 13 - Temperature tests on containers for batteries transportation

(id 1889) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,800.00 Limit #1: Not relevant

AI 14 - Damper performance test

(id 2084) Evaluation of the efficiency of a damper in damping the pressure of pulsations in fuel hoses.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: Not relevant

AI 19 - Resistance to fuel combined to temperature cycles (Renault 34-04-831)

(id 2205) The samples are subjected to the temperature cycles described in the specification Renault 34-04-831/--J annex 1, in number defined by the customer, when filled with requested fuel under uncontrolled static conditions. Every week the fuel inside the pieces is renewed.

Accredited [IEC17025]: NO Execution time [day]: 80
Unit price #1 [EUR]: 1,500.00 Limit #1: 4 cycles
Unit price #2 [EUR]: 10,000.00 Limit #2: 40 cycles

AI 07 - Sumiriko internal test: Fuel conditioning test

(id 2231) Moved to Sumiriko proprietary test methods on 31-Aug-2021

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

AI 08 - Sumiriko internal test: resistance to thermal cycles

(id 2232) Moved to Sumiriko proprietary test methods on 31-Aug-2021

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

AI 18 - Sumiriko internal specification named 80-80

(id 2233) Moved to Sumiriko proprietary test methods on 31-Aug-2021

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

AI 20 - Sumiriko internal test: Fuel exposure preconditioning (SAEJ2260)

(id 2234) Moved to Sumiriko proprietary test methods on 31-Aug-2021

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

AI 15 - Hutchinson internal method: BMW Ncar long aging study

(id 2235) Moved to Hutchinson proprietary test methods on 31-Aug-2021

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

AI 21 - Resistance to molten aluminum

(id 2355) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

AI 22 - High temperature shock with circulating media

(id 2373) High temperature thermal cycles with rapid thermal excursion on piping circuits with circulating medium at controlled temperature.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

AI 23 - Fuel soaking preconditioning

(id 2450) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample



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AI 24 - Rejection to flame on carbon canister

(id 2451) The sample is subjected to a flame obtained with an LPG burner to verify the possibility of explosive phenomena.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,000.00 Limit #1: Not relevant

AI 25 - Pressure pulsation test

(id 2479) This test is intended to verify the resistance of automotive samples under different pressures and temperatures.

Accredited [IEC17025]: NO Execution time [day]: 64
Unit price #1 [EUR]: 7,000.00 Limit #1: Air as medium

AI 26 - Pressure pulsation test up to 35 bar

(id 2501) This test is intended to verify the resistance of automotive samples under a fixed temperature (120°C) and different pressures (up to 35 bar).

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 3,800.00 Limit #1: Azoto as medium

AI 27 - Speed control at no load [Ferrari specific]

(id 2531) This test is intended to verify the rotation ability of a motor by alternately power the two motors for a short time.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

AI 28 - Nissan Cooling Test

(id 2588) ---

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1 [EUR]: 5,500.00 Limit #1: Applicable to any sample

AI 29 - SoLiSi - Sun simulation

(id 2596) Application of superficial heat to the bumper by infrared lamps (IR), simulating the solar radiation.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

AI 30 - Breaking point test at hot temperature

(id 2637) Evaluation of temperature and pressure at breaking point of pipes filled with the extinguishing fluid FK 5 1 12.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Up to 4 samples at the same time

AI 31 - DC-DC Burn-In Test [Ferrari specific]

(id 2644) Functional verification of the integrated DC/DC (3kW flow from HV to MV).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

AI 32 - Pressure Drop Test

(id 2650) Pressure drop test on pipes with a specified substance.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: single flow rate
Unit price #2 [EUR]: 600.00 Limit #2: up to 5 flow rates

AI 33 - Leak test [Ferrari specific]

(id 2665) Hydraulic seal test, which shall be done on two distinct volumes and with different parameters.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Laboratory temperature, Pmax=2bar
Unit price #2 [EUR]: 800.00 Limit #2: Non standard temperature (controlled in climatic chamber: -40 +100°C range)
Unit price #3 [EUR]: 1,200.00 Limit #3: Laboratory temperature, high pressure (>2 bar)

AI 34 - Thermal Dunk Test - Modified IPX8 as per Tesla Specification

(id 2684) This dunk test is similar to IPX8 with the exception that the sample shall be submerged in 1m depth salted water, using two tanks at two different temperatures (0°C and 85°C). The test is comprised of 20 cycles with each dunk lasting 10 minutes. The internal parts of the sample shall be sprayed with a water sensitive substance (e.g. WDP-217) in order to detect any penetration.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 3,200.00 Limit #1: Applicable to any sample



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AVL DVP Plan

(id 1969) Design and validation plan for e-AXLE testing

Unref. - Lubrication test

(id 2678) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Unref. - Leakage Test Verification

(id 2679) The unit must be checked for different combinations of speed, oil temperature, longitudinal and lateral slope.

Accredited [IEC17025]: NO Execution time [day]: 6
Unit price #1 [EUR]: 5,200.00 Limit #1: Applicable to any sample

Unref. - Leakage Check Verification

(id 2680) The breather, static seals and boxes, and running or dynamic seals must be checked during every other step of the procedure.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Unref. - Oil temperature rise and stabilization procedure

(id 2681) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,800.00 Limit #1: Applicable to any sample

Unref. - Drag Torque Test

(id 2682) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 7,500.00 Limit #1: Applicable to any sample

Unref. - Vibration Analysis

(id 2683) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,000.00 Limit #1: Applicable to any sample

AW101-SM-fQTP-2867 Iss.1 – 07-01-2019

(id 1244) Secondo Mona S.p.A. Formal qualification test procedure: Deploy/stow actuator

4.2 - Waterproofness

(id 1714) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

BMW Group specification 17.10.2018

(id 1638) Requirements Specification in progress provided by the customer - SAP Titel des Lastenheftes - SAP status/ in progress 17.10.2018

5.2.2.8 - Aging time lapse test - Transmission oil cooling pipes

(id 2139) ---

Accredited [IEC17025]: NO Execution time [day]: 130
Unit price #1 [EUR]: 4,000.00 Limit #1: 1000h
Unit price #2 [EUR]: 5,500.00 Limit #2: 2000h
Unit price #3 [EUR]: 7,000.00 Limit #3: 3000h

5.2.2.3 - Pressure threshold test - Transmission oil lines - Test step 1

(id 2140) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 3,000.00 Limit #1: Applicable to any sample



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5.2.2.3 - Pressure threshold test - Transmission oil lines - Test step 2

(id 2141) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 4,500.00 Limit #1: Applicable to any sample

5.1.2.1 - Leak test after the function check - Transmission oil lines

(id 2142) ---

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

5.2.2.6 - Pull-out strength test for the connections

(id 2143) The objective of this test is checking the connection quality of the plastic pipe with its coupling or connections of different material pairings.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.2.2.2 - Burst pressure test

(id 2144) The objective of this test is to ensure sufficient compressive strength of components and assemblies, particularly at high temperature (safeguarding transmission failure/emergency engine oil program)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

BMW Group 10957962-000-02 01.08.2018

(id 1633) Requirements specification Kuelmittleitungen FAAR WE

5.2.2.13 - 3000 hour endurance test

(id 2061) Objective: check leak-tightness and functionality of component under actual vehicle-specific loads; the vehicle service life is simulated by increased temperature requirements. No leaking may occur during the test.

Accredited [IEC17025]: NO Execution time [day]: 125
Unit price #1 [EUR]: 7,000.00 Limit #1: 3000h

BMW Group 11224613 000 02

(id 1880) Coolant pipe CLAR WE G7x G6x

5.1.2.1 - Leak test

(id 2510) This test is intended to check the leak-tightness of components and connection points.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.2.2.3 - Burst pressure test

(id 2511) This test is intended to evaluate the compressive load withstand capability of components and assemblies.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.2.2.10 - Media resistance test

(id 2512) Resistance to operating media as laid down in section 3.4 shall be assured throughout the entire product service life.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

BMW Group 11229184 - 000 - 03 08_04_2020

(id 1646) Medienleitung Oelkuehlung eFTC Getr.Gen4

5.2.2.8 - Aging - Transmission oil cooling pipes

(id 2095) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 4,000.00 Limit #1: 1000h (only visual inspection after ageing)
Unit price #2 [EUR]: 5,500.00 Limit #2: 2000h (only visual inspection after ageing)
Unit price #3 [EUR]: 7,000.00 Limit #3: 3000h (only visual inspection after ageing)



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BMW Group 11701376 - 000 - 01:2021

(id 1767) Requirements specification for Kuehlmittleitungen (coolant pipes) NCAR

5.2.2.13 - 3000 hour endurance test

(id 2339) Check leak-tightness and functionality of component under actual vehicle-specific loads; the vehicle service life is simulated by increased temperature requirements.

Accredited [IEC17025]: NO Execution time [day]: 125
Unit price #1 [EUR]: 7,000.00 Limit #1: Applicable to any sample

BMW Group 11759048-000-01:2022

(id 1904) BMW Group specification

5.2.2.13 - 3000 hour endurance test

(id 2557) 3000 hour endurance test for automotive pipes.

Accredited [IEC17025]: NO Execution time [day]: 125
Unit price #1 [EUR]: 7,000.00 Limit #1: Applicable to any sample

BMW GS 95024-3-1:2019

(id 1985) Electrical and Electronic Components in Motor Vehicles, Environmental Requirements Test Standard

M-02 - Stone Impact Test

(id 2722) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,400.00 Limit #1: Up to 3 locations (7x7cm)

K-12 - Thermal shock test with splash water

(id 2723) ---

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 4,000.00 Limit #1: Small sample (up to 40cm)
Unit price #2 [EUR]: 5,000.00 Limit #2: Medium sample (up to 80cm)
Unit price #3 [EUR]: 7,000.00 Limit #3: Big sample (up to 140cm)

K-18 - Corrosion test with flowing mixed gas

(id 2724) ---

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1 [EUR]: 3,200.00 Limit #1: 14 days
Unit price #2 [EUR]: 3,800.00 Limit #2: 21 days
Unit price #3 [EUR]: 6,000.00 Limit #3: huge size sample

K-06 - Salt spray test

(id 2725) ---

Accredited [IEC17025]: NO Execution time [day]: 6
Unit price #1 [EUR]: 3,600.00 Limit #1: Not connected and not powered sample (always II.b)

M-03 - Dust intrusion - IP 6XK

(id 2726) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

K-11 - High pressure steam-jet cleaning - IP X9K

(id 2727) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: small sample (automatic spraying)
Unit price #2 [EUR]: 3,000.00 Limit #2: big sample (manual spraying)



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BMW LH 11230536 – 000 – 02

(id 1713) Capitolato BMW LH 11230536 – 000 – 02

5.3.1.3.3 - Aging test

(id 2085) Long time aging is for testing tightness and function after aging.

| | |
|-------------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 125 |
| Unit price #1 [EUR]: 8,000.00 | Limit #1: duration 3000h |
| Unit price #2 [EUR]: 4,000.00 | Limit #2: duration 1500h |

BMW QV 16024 September 2019

(id 1683) Fuel lines with joining technology

4.2.8 - Fuel resistance including change in length

(id 2133) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 8 |
| Unit price #1 [EUR]: 2,200.00 | Limit #1: Not relevant |

BMW_PR_303.5_EN_2010-01-21

(id 1752) Alternating climate test
for trim parts

- Alternating climate test for trim parts

(id 2244) the test is intended to verify the resistance of vehicle trim parts to alternating climatic conditions.

Explanation of cycles code letters: A, B, C, D:

- Cycle part A applies to parts - in footwell, and below door strip, rocker panel cover;
- Cycle part B applies to parts - above door strip, rocker panel cover and below top shoulder area;
- Cycle part C applies to parts - not exposed to sun, above top shoulder;
- Cycle part D applies to parts - in exterior fittings area;

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 10 |
| Unit price #1 [EUR]: 2,400.00 | Limit #1: Applicable to any sample |

cap. 9.02138/10 ed. February 2019

(id 1452) Untitled

2.6.4.2 - Cicli termici - Thermal cycles

(id 1920) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 2,500.00 | Limit #1: Not relevant |

CEI EN 60068-2-14:2011

(id 174) Environmental testing - Part 2-14: Tests - Test N: Change of temperature

7 - Test Na: Rapid change of temperature with prescribed time of transfer

(id 1015) This test determines the ability of components, equipment or other articles to withstand rapid changes of ambient temperature. The exposure times adequate to accomplish this will depend upon the nature of the specimen. The specimen shall be either in the unpacked, switched-off, ready for use state, or as otherwise specified in the relevant specification. The specimen is exposed to rapid changes of temperature in air, or in a suitable inert gas, by alternate exposure to low temperature and to high temperature.

| | |
|--------------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 30 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: Single change of temperature (up to 48h) |
| Unit price #2 [EUR]: 8,200.00 | Limit #2: Multiple change of temperature (up to 30days) |
| Unit price #3 [EUR]: 12,000.00 | Limit #3: Multiple change of temperature (more than 30days) |



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8 - Test Nb: Change of temperature with specified rate of change

(id 1066) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

9 - Test Nc: Rapid change of temperature, two-fluid-bath method

(id 1067) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

CEI EN 60068-2-30:2006

(id 178) Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)

Db - Damp heat (12h+12h)

(id 1033) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: V < 20 [dm3]
Unit price #2 [EUR]: 800.00 Limit #2: 20 < V < 500 [dm3]
Unit price #3 [EUR]: 1,300.00 Limit #3: V > 500 [dm3]

CEI EN 60079-31:2015

(id 97) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

6.1.1.1 - Type tests for dust exclusion by enclosures

(id 117) Test sequence composed of thermal endurance to heat, thermal endurance to cold, impact test and drop test if applicable, as specified in IEC 60079-0, followed by:

- IEC 60079-31 § 6.1.1.2 Impact test for supplementary enclosures, if present
- IEC 60079-31 § 6.1.1.3 Pressure test
- IEC 60079-31 § 6.1.1.4 IP test.

Accredited [IEC17025]: YES Execution time [day]: 30
Unit price #1: ask to office Limit #1: not relevant

6.1.2 - Thermal tests

(id 118) These tests are carried out as described in IEC 60079-0 with specific requirements for 'ta'.

The maximum surface temperature shall be measured on the external surfaces of the enclosure and the surfaces of the internal components.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

6.1.1.3 - Pressure test

(id 119) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample
Unit price #2 [EUR]: 300.00 Limit #2: Applicable to any sample
Unit price #3 [EUR]: 300.00 Limit #3: Applicable to any sample

5 - Construction

(id 524) Evaluation of construction parameters and materials - Check of documentation

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

6.1.1.4 - IP test

(id 576) Degree of protection (IP) - IEC 60529

Accredited [IEC17025]: YES Execution time [day]: 30
Unit price #1 [EUR]: 300.00 Limit #1: IP5X or IP6X

6.1.1.2 - Impact test for supplementary enclosures

(id 888) The impact test shall be performed in accordance with §26.4.2. of IEC60079-0.

Accredited [IEC17025]: YES Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample



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CEI EN 62208:2012

(id 2001) Involucri vuoti per apparecchiature assiemate di protezione e di manovra per bassa tensione - Prescrizioni generali

9.10 - Tenuta dielettrica

(id 2768) Questa prova si applica agli involucri costruiti in materiale isolante, anche in combinazione con materiali non isolanti.

| | |
|-----------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Up to 5kV DC without preconditioning |
| Unit price #2 [EUR]: 600.00 | Limit #2: Up to 5kV DC with preconditioning |

CEMP specification:2022 Ed.1

(id 1815) Descrizione tecnica esecuzione test per certificazione RMRS

03.03 - Test for exposure to temperature changes

(id 2444) Test performed under RMRS 2-020101-156E - 10.5.4.3

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 6 |
| Unit price #1 [EUR]: 1,600.00 | Limit #1: Applicable to any sample |

03.05 - Tests for exposure to hoarfrost and dew

(id 2445) Test performed under RMRS 2-020101-156E - 10.5.4.5

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Applicable to any sample |

03.06 - Test for exposure to salt mist

(id 2446) Test performed under RMRS 2-020101-156E - 10.5.4.6

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 7 |
| Unit price #1 [EUR]: 2,500.00 | Limit #1: Applicable to any sample |

03.07 - Tests for exposure to solar radiation

(id 2447) Test performed under RMRS 2-020101-156E - 10.5.4.8

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 5 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

03.08 - Test of enclosure protection

(id 2448) Protection against penetration of hard objects. Test performed under RMRS 2-020101-156E - 10.5.5

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

Chrysler Group PF-8950:2010 Rev. B

(id 1888) FUEL TANK ASSEMBLIES – HIGH DENSITY POLYETHYLENE

5.14 - Contain Correct Fuel Volume

(id 2524) The fuel system shall be able to consistently meet the rated fuel capacity under all commercial refueling conditions and vehicle duty cycles for the intended useful life of the vehicle. The fuel tank assembly shall meet the Chrysler Global Refueling Specification when installed in the vehicle system.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Applicable to any sample |

5.15 - Measure Fuel in Tank

(id 2525) The fuel gauge shall accurately represent the amount of fuel in the fuel tank under all vehicle duty cycles including all driving and parking conditions.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 8 |
| Unit price #1 [EUR]: 850.00 | Limit #1: Applicable to any sample |



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CNH ENS0310 82036374 Rev.J

(id 1409) Fiat Industrial CNH Engineering Specifications Environmental Test Specification - Electronic Components

9.1.4 - Temperature Shock test under CNH ENS0310 82036374 Rev.J

(id 1869) The Temperature Shock test confirms the ability of the unit under test to withstand sudden changes in temperature of the surrounding atmosphere that could occur during storage or transportation.

Exposure to rapid temperature changes can permanently affect operation of the unit. Examples of symptoms are:

- Shattering of glass or plastics.
- Permanent changes in electronic component performance.
- Failure of seals.
- Slackening of fixings.

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 5,600.00 Limit #1: Not relevant

CNH ENS0310 82036374 Rev.M

(id 1408) CNH Industrial Engineering Specifications - Environmental Test Specification - Electronic Components

10.1.3 - Temperature Cycle Test (Slow Changes, Operational)

(id 1867) The Temperature Cycle test determines the ability of the unit under test to start-up and to operate throughout the operating temperature range encountered in service.

Temperature cycling can cause temporary or permanent deterioration in performance of the unit, or failure of structural parts. Examples of symptoms are:

- Failure of unit to start or operate due to changes in electronic components (resistors, capacitors, etc.).
- Binding of moving parts due to differential expansion.
- Cracking, crazing or embrittlement of materials.
- Failure of seals and adhesive bonds.

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 2,400.00 Limit #1: Not relevant

10.1.4.4 - Temperature Shock Test (Sudden Temperature Changes) - Procedure 1 (Sudden Changes in Temperature)

(id 1868) The Temperature Shock test confirms the ability of the unit under test to withstand sudden changes in temperature of the surrounding atmosphere.

The shipping and storage temperature test is mandatory for all electrical/electronic components subjected to following conditions:

- If the component is designed to operate normally over 95°C then Method Cold-Only shall apply to the components. For all other applications, the component shall comply with the Method Hot-and-Cold.

- The component shall be unpowered during the test, simulating the shipping/storage condition.

Exposure to rapid temperature changes can permanently affect operation of the unit. Examples of symptoms are:

- Shattering of glass or plastics.
- Permanent changes in electronic component performance.
- Failure of seals.
- Slackening of fixings.

Accredited [IEC17025]: NO Execution time [day]: 25
Unit price #1 [EUR]: 8,000.00 Limit #1: Not relevant

10.3.2 - Dust Ingress Test IP5K-6K

(id 1870) The dust ingress test checks for the effects of dust laden environments generated by soil working operations in dry conditions.

Dust can penetrate joints or bearing surfaces of moving parts. Examples of symptoms are:

- Penetration of seals,
- Abrasion or seizing, or disturbance in motion of bearings, axles, shafts and other moving parts,
- Change in performance of electrical circuits due to buildup of dust,
- Overheating caused by buildup of dust on heat sink surfaces or ducts.

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 800.00 Limit #1: sample movable by one operator
Unit price #2 [EUR]: 1,100.00 Limit #2: sample movable by two operator
Unit price #3 [EUR]: 1,800.00 Limit #3: huge size samples

10.4.2.6 - Fast Icing Cycle Sealant (Procedure 2) - 1) COLD

(id 2018) This test is part of the verifications of compatibility and performance of the silicon sealant versus housing material and temperature/ice cycles. This test applies to all modules using a form-in-place sealant technology (i.e. IP67 and above) and with a vent valve.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1: ask to office Limit #1: Not relevant



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10.4.2.6 - Fast Icing Cycle Sealant (Procedure 2) - 2) WATER/ICE CYCLES

(id 2019) This test is part of the verifications of compatibility and performance of the silicon sealant versus housing material and temperature/ice cycles. This test applies to all modules using a form-in-place sealant technology (i.e. IP67 and above) and with a vent valve.

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1: ask to office Limit #1: Not relevant

10.4.2.6 - Fast Icing Cycle Sealant (Procedure 2) - 3) HIGH TEMPERATURE SOAK

(id 2020) This test is part of the verifications of compatibility and performance of the silicon sealant versus housing material and temperature/ice cycles. This test applies to all modules using a form-in-place sealant technology (i.e. IP67 and above) and with a vent valve.

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1: ask to office Limit #1: Not relevant

10.4.2.6 - Fast Icing Cycle Sealant (Procedure 2) - 4) CHEMICAL RESISTANCE

(id 2021) This test is part of the verifications of compatibility and performance of the silicon sealant versus housing material and temperature/ice cycles. This test applies to all modules using a form-in-place sealant technology (i.e. IP67 and above) and with a vent valve.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.3.3.5 - Water Ingress Test - High pressure jet washing IPX9K

(id 2223) Water during high-pressure/steam-jet cleaning

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: sample movable by one operator
Unit price #2 [EUR]: 1,200.00 Limit #2: sample movable by two operator
Unit price #3 [EUR]: 1,800.00 Limit #3: huge size sample

10.3.1.5 - Altitude test - Procedure 2 (Operational)

(id 2364) Altitude tests are low pressure tests to ensure that the unit can withstand the low pressures involved in air transport, and can operate in high altitudes.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,000.00 Limit #1: Not relevant

10.3.3.4 - Water ingress test - Procedure 1 (Hose Washing)

(id 2365) Water Ingress Test checks for resistance to water from the normal working environment.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: IPX6
Unit price #2 [EUR]: 300.00 Limit #2: IPX5

10.3.3.6 - Water ingress test - Procedure 3 (Heavy rain)

(id 2366) Water Ingress Test checks for resistance to water from the normal working environment.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Up to 2 hours, no rotation.

10.3.3.7 - Water ingress test - Procedure 4 (Rain and Shine)

(id 2367) Water Ingress Test checks for resistance to water from the normal working environment.

Accredited [IEC17025]: NO Execution time [day]: 9
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

10.4.4.4 - Salt Spray Test - Procedure 1 (Corrosion)

(id 2368) Salt spray is an established empirical test to assess resistance to general corrosion. It is useful for evaluating the quality and uniformity of protective coatings.

Accredited [IEC17025]: NO Execution time [day]: 19
Unit price #1 [EUR]: 1,500.00 Limit #1: 1 cycle
Unit price #2 [EUR]: 3,500.00 Limit #2: 4 cycles

10.4.5 - Kesternich - Resistance to industrial atmosphere (T and B only)

(id 2369) This test verifies, within a sufficiently short time, the component/system capacity to stand or operate in corrosive environments, submitting device, equipped with its connectors and guards, to test in industrial atmosphere. This test applies to metallic materials with inorganic and electrolytic finishes.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

10.4.6.6 - Chemical Resistance Tests - Procedure 3 (Resistance to fluids)

(id 2370) Chemical resistance testing checks for the ability to withstand chemicals encountered in the normal working agricultural and construction environments.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Up to 1 hour and 1 fluid



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10.4.6.7 - Chemical Resistance Tests - Procedure 4 (Resistance to flushing hydrocarbon mixtures)

(id 2371) Chemical resistance testing checks for the ability to withstand chemicals encountered in the normal working agricultural and construction environments.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

10.5.1 - Material Flammability test

(id 2372) This test applies to plastic material exposed to fire. It also applies to parts mounted inside and outside of cabs. If the compliance for the used material is fully documented then this test may not be necessary.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.3.1.4 - Altitude Test Procedure 1 (Not operational, Transport)

(id 2377) Altitude tests are low pressure tests to ensure that the unit can withstand the low pressures involved in air transport, and can operate in high altitudes.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,600.00 Limit #1: Not relevant

10.4.3.3 - Moisture resistance - Procedure 2 (All locations except 3A and 6)

(id 2378) The aim of this test is to verify the capability of components, equipped with connectors and any guards, to withstand in moisture environments.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

10.5.2 - Explosive environments

(id 2379) This section applies to those components to be installed on vehicles carrying dangerous goods.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

10.4.7 - Pre-Paint Wash Test

(id 2381) Pre-paint wash is an integral part of the overall Ag/CE paint process. This test assesses resistance to general corrosion. It is useful for evaluating the quality and uniformity of protective coatings. It also ensures that supplied parts meet CNH Material Specification MAT0103.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

10.4.6.4 - Chemical Resistance Tests Procedure 1 (Resistance to Chemicals)

(id 2627) ---

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

CNH ENS0310 REV.K 12-Dec-2013

(id 1158) FIAT INDUSTRIAL Engineering Specifications CNH ENS0310

10.4.4 - Salt Spray Test according to CNH ENS0310 specification

(id 1582) Salt spray is an established empirical test to assess resistance to general corrosion. It is useful for evaluating the quality and uniformity of protective coatings.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 4,500.00 Limit #1: Not relevant

Commission Delegated Regulation EU No 134/2014

(id 1975) This supplements Regulation (EU) No 168/2013 of the European Parliament and of the Council with regard to environmental and propulsion unit performance requirements and amending Annex V thereof.

Appendix 2 - 3 - Preconditioning fuel soak for the fuel tank permeation test

(id 2701) ---

Accredited [IEC17025]: NO Execution time [day]: 140
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Appendix 2 - 4 - Fuel tank permeation test procedure

(id 2702) Measure permeation emissions by weighing a sealed fuel tank before and after a temperature-controlled soak.

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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Appendix 2 - 6.1.1 - Pressure cycling

(id 2703) A separate durability demonstration for each substantially different combination of treatment approaches and non-metallic tank materials shall be performed by taking a series of steps.

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Appendix 2 - 6.1.2 - UV exposure

(id 2704) A separate durability demonstration for each substantially different combination of treatment approaches and non-metallic tank materials shall be performed by taking a series of steps.

Accredited [IEC17025]: NO Execution time [day]: 19
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Appendix 2 - 6.1.3 - Slosh testing

(id 2705) A separate durability demonstration for each substantially different combination of treatment approaches and non-metallic tank materials shall be performed by taking a series of steps.

Accredited [IEC17025]: NO Execution time [day]: 46
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

CSA 3.16.21

(id 1980) New external document

5.4.1 - Temperature Resistance - heat

(id 2719) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: up to 1"
Unit price #2 [EUR]: 500.00 Limit #2: greater than 1" up to 3"

5.4.2 - Temperature Resistance - cold

(id 2720) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: up to 1"
Unit price #2 [EUR]: 500.00 Limit #2: greater than 1" up to 3"

CSA 9.4:21

(id 1978) Standard for manually operated metallic gas valves for use on piping systems up to 5 psig

5.6.2 - Minimum temperature test

(id 2715) A valve shall be operable at ambient temperatures of 0°C or -40°C as applicable, whichever is lower without affecting the capability of valve to control the flow of gas when tested in accordance to 5.6.2.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: up to 1"
Unit price #2 [EUR]: 500.00 Limit #2: greater than 1" up to 3"

5.6.3 - Maximum temperature test

(id 2716) A valve shall be operable at ambient temperatures of 52°C or 82°C as applicable, whichever is lower without affecting the capability of valve to control the flow of gas when tested in accordance to 5.6.2.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: up to 1"
Unit price #2 [EUR]: 500.00 Limit #2: greater than 1" up to 3"

CSA/ANSI Z21.15:2021

(id 1891) Manually operated gas valves for appliances, appliance connector valves and hose-end valves.

5.2 - Leakage

(id 2548) A manual valve shall not leak under any test condition in excess of 20cm³/h of air corrected to 30 in Hg column (101.3 kPa) pressure at 15.5°C.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: up to 1"
Unit price #2 [EUR]: 250.00 Limit #2: greater than 1" up to 3"



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5.4.1 - Continued Operation Test

(id 2549) The valve, as received and at the end of this test, shall comply with Clause 5.2 and shall completely open and close on application of a torque or force not to exceed that specified in Table 11.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 3 |
| Unit price #1 [EUR]: 300.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 500.00 | Limit #2: greater than 1" up to 3" |

5.5 - Low-temperature Operation

(id 2550) The valve shall comply with clause 5.5.2 at either 0°C, or lower temperature, as specified by the manufacturer.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 400.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 600.00 | Limit #2: greater than 1" up to 3" |

D.M. 22 gennaio 2008 n. 37

(id 1023) Regolamento concernente l'attuazione dell'articolo 11-quaterdecies, comma 13, lettera a) della legge n. 248 del 2 dicembre 2005, recante riordino delle disposizioni in materia di attività di installazione degli impianti all'interno degli edifici

5-6 - Impianti elettrici bassa tensione (> 6 kw)

(id 1535) Progettazione, realizzazione, installazione impianti per tutte le utenze condominiali e per utenze domestiche di singole unità abitative aventi potenza impegnata superiore a 6 kw o per utenze domestiche di singole unità abitative di superficie superiore a 400 mq

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

5-6 - Impianti elettrici media tensione (> 6 kw)

(id 1536) Progettazione, realizzazione, installazione impianti relativi agli immobili adibiti ad attività produttive, al commercio, al terziario e ad altri usi, quando le utenze sono alimentate a tensione superiore a 1000 V, inclusa la parte in bassa tensione, o quando le utenze sono alimentate in bassa tensione aventi potenza impegnata superiore a 6 kw o qualora la superficie superi i 200 mq

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1: ask to office | Limit #1: Not relevant |

7 - Verifiche di legge e rilascio della dichiarazione di conformità degli impianti

(id 1537) Al termine dei lavori, previa effettuazione delle verifiche previste dalla normativa vigente, comprese quelle di funzionalità dell'impianto, l'impresa installatrice rilascia al committente la dichiarazione di conformità degli impianti realizzati nel rispetto delle norme di cui all'articolo 6. Di tale dichiarazione, resa sulla base del modello di cui all'allegato I, fanno parte integrante la relazione contenente la tipologia dei materiali impiegati, nonché il progetto di cui all'articolo 5.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

DIN 53530:1981

(id 1939) Separation test on fabric plies bonded together

Unref. - Initial Separation Resistance Test

(id 2607) The separation test is used to determine the adhesion strength of fabric plies bonded together with elastomers or other layers of material.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Applicable to any sample |

Unref. - Final Separation Resistance Test

(id 2608) The separation test is used to determine the adhesion strength of fabric plies bonded together with elastomers or other layers of material.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Applicable to any sample |

DIN 73411-1:1996

(id 1934) Cooling pipes in motor vehicles - Hoses and compounds - Part 1: Dimensions, materials, types

3.12.2 - Long Term Cycle Test

(id 2601) The test specimens shall be subjected to pressure cycles and mechanical oscillation.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 37 |
| Unit price #1 [EUR]: 6,000.00 | Limit #1: Applicable to any sample |



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3.12.3 - Short Term Cycle Test

(id 2602) The test specimens shall be subjected to pressure cycles.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 2,000.00 Limit #1: Applicable to any sample

3.13.2 - Build-up Test

(id 2603) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

DIN EN 62093 (VDE 0126-20):2018-02

(id 1271) Photovoltaic system power conversion equipment - Design qualification testing

6.1 - Visual inspection

(id 1763) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2 - Functionality test

(id 1764) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.3 - Insulation test

(id 1765) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4 - Thermal cycling test

(id 1766) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,600.00 Limit #1: Not relevant

6.5 - Dry heat test

(id 1767) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,400.00 Limit #1: Not relevant

6.6 - Damp heat test

(id 1768) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Not relevant

6.7 - Humidity freeze test

(id 1769) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,500.00 Limit #1: Not relevant

6.8 - Rain intrusion test

(id 1770) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.9 - Wind driven rain test

(id 1771) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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7.1 - Shipping vibration test

(id 1772) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2 - Shock test

(id 1773) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.3 - Salt mist test

(id 1774) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.4 - Dust and sand test

(id 1775) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.5 - Mixed gas corrosion test

(id 1776) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.6 - Ammonia corrosion test

(id 1777) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

DT.M.42:2009

(id 1813) TUBI FLESSIBILI PER CONDUZIONE ARIA IN MATERIALE PLASTICO E/O ELASTOMERI TERMOPLASTICI

8.9 - Pressione pulsata

(id 2437) ---

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 5,500.00 Limit #1: Applicable to any sample

8.7 - Dilatazione diametrale

(id 2438) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

8.8 - Pressione di scoppio

(id 2439) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: One temperature only (destructive testing)

Ducati Standard DMH00-04.011

(id 1610) Prove di Resistenza agli Agenti Chimici PROVA della GOCCIA

unref - Spotting test with Brake Fluid (DOT 4)

(id 2042) The aim of this test is to investigate on the resistance to chemical agents of materials or surface finishing treatments.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant



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unref - Spotting test: variation of the test fluid

(id 2043) The aim of this test is to investigate on the resistance to chemical agents of materials or surface finishing treatments.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

Ducati Standard DMH00-04.013

(id 1608) Prove di Resistenza agli Agenti Chimici PROVA di STROFINAMENTO

unref - Rubbing test with denatured Ethyl Alcohol

(id 2039) The aim of this test is to investigate on the resistance to chemical agents of materials or surface finishing treatments.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

unref - Rubbing test with Unleaded Petrol 95 RON

(id 2040) The aim of this test is to investigate on the resistance to chemical agents of materials or surface finishing treatments.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

unref - Rubbing test with Brake Fluid (DOT 4)

(id 2041) The aim of this test is to investigate on the resistance to chemical agents of materials or surface finishing treatments.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

DVP 02 06 2015

(id 1247) DVP 02 06 2015

1.16 - Line system lifespan tightness

(id 1718) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.8 - Overheating protection of pipe heating

(id 1719) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.9 - Heating duration switch at cold storage, Part C

(id 1720) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.11 - Defreezing test

(id 1721) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11 - Fordability

(id 1722) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

13 - Relative movements

(id 1723) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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DVP DAIMLER

(id 1224) Hutchinson S.r.l. validation plan (24/01/2019)

3.1.4 - Temperature changes (Life test)

(id 1637) ---

Accredited [IEC17025]: NO Execution time [day]: 54
Unit price #1 [EUR]: 12,000.00 Limit #1: Applicable to any sample

3.1.18 - Heating continuous operation

(id 1638) ---

Accredited [IEC17025]: NO Execution time [day]: 52
Unit price #1 [EUR]: 3,000.00 Limit #1: Up to 240h
Unit price #2 [EUR]: 7,000.00 Limit #2: 1250h

unref - Temperature resistance

(id 1737) Resistance of DUT at high temperatures and internal pressurized fluid

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1 [EUR]: 5,500.00 Limit #1: duration 1000h
Unit price #2 [EUR]: 8,000.00 Limit #2: duration 1500h

ECE R-100:2015/505

(id 1987) Regulation No 100 of the Economic Commission for Europe of the United Nations (UNECE) — Uniform provisions concerning the approval of vehicles with regard to specific requirements for the electric power train [2015/505]

8A - Vibration test

(id 2731) The purpose of this test is to verify the safety performance of the REESS under a vibration environment which the REESS will likely experience during the normal operation of the vehicle.

Accredited [IEC17025]: NO Execution time [day]: 1 Subcontract: BPS srl
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8B - Thermal shock and cycling test

(id 2732) The purpose of this test is to verify the resistance of the REESS to sudden changes in temperature. The REESS shall undergo a specified number of temperature cycles, which start at ambient temperature followed by high and low temperature cycling. It simulates a rapid environmental temperature change which a REESS would likely experience during its life.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Annex 8 - Appendix - Procedure for conducting a standard cycle

(id 2733) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8C - Mechanical shock

(id 2734) The purpose of this test is to verify the safety performance of the REESS under inertial loads which may occur during a vehicle crash.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8D - Mechanical integrity

(id 2735) The purpose of this test is to verify the safety performance of the REESS under contact loads which may occur during vehicle crash situation.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8E - Fire resistance

(id 2736) The purpose of this test is to verify the resistance of the REESS, against exposure to fire from outside of the vehicle due to e.g. a fuel spill from a vehicle (either the vehicle itself or a nearby vehicle). This situation should leave the driver and passengers with enough time to evacuate.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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8F - External short circuit protection

(id 2737) The purpose of this test is to verify the performance of the short circuit protection. This functionality, if implemented, shall interrupt or limit the short circuit current to prevent the REESS from any further related severe events caused by short circuit current.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8G - Overcharge protection

(id 2738) The purpose of this test is to verify the performance of the overcharge protection.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8H - Over-discharge protection

(id 2739) The purpose of this test is to verify the performance of the over-discharge protection. This functionality, if implemented, shall interrupt or limit the discharge current to prevent the REESS from any severe events caused by a too low SOC as specified by the manufacturer.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8I - Over-temperature protection

(id 2740) The purpose of this test is to verify the performance of the protection measures of the REESS against internal overheating during the operation, even under the failure of the cooling function if applicable. In the case that no specific protection measures are necessary to prevent the REESS from reaching an unsafe state due to internal over-temperature, this safe operation must be demonstrated.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

EN 12101-3:2015

(id 209) Smoke and heat control systems - Part 3: Specification for powered smoke and heat exhaust ventilators

Annex C - Electrical cabinets - Test method for the determination of fire resistance of powered smoke and heat control ventilators (fans)

(id 2022) This test method is an adaptation to electrical cabinets of the test method for the determination of fire resistance of powered smoke and heat control ventilators (fans) described in Annex C of EN 12101-3:2015.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 3,600.00 Limit #1: not relevant

Annex C - Test method for the determination of fire resistance of powered smoke and heat control ventilators (fans)

(id 2023) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 4,200.00 Limit #1: Diameter more equal 1000mm

Annex D - 2.4.3 - High temperature test

(id 2204) Test method for resistance to temperature of electric motors

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 700.00 Limit #1: Small size

EN 12259-5:2002

(id 1630) Fixed firefighting systems - Components for sprinkler and water spray systems - Part 5: Water flow detectors

F.2.1 - Contact resistance test

(id 2055) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

EN 12806:2003

(id 664) Automotive liquefied petroleum gas components other than containers

unref - Vehicle connection

(id 1265) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant



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EN 12941:1998/A2:2008

(id 1789) Respiratory protective devices - Powered filtering devices incorporating a helmet or a hood - Requirements, testing, marking

7.1.2 - Complete Device

(id 2376) Humidity and temperature cycle on respiratory protective devices.

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

EN 12975-1:2006+A1:2010

(id 54) Thermal solar system and components. Solar collectors. General requirements.

- General requirements checklist

(id 851) Verification of general requirements satisfaction

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: --

EN 13012:2012

(id 117) Petrol filling stations - Construction and performance of automatic nozzles for use on fuel dispensers

B.1 - Electrical resistance test

(id 952) The aim of this test is to determine the electrical resistance through the body of the nozzle. The electrical resistance is measured between the nozzle input and the spout and on four other points on the spout.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

B.2 - Pressure test

(id 953) The aim of this test is to confirm that the pressurized compartments of the nozzle body withstand a pressure of 14 bar, applied to the nozzle body, up to the valve seat.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

B.3 - Drop test

(id 954) The aim of this test is to confirm that the nozzle withstands the impact of being dropped by a user

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

B.4 - Tightness test

(id 955) The aim of this test is to confirm that the nozzle does not leak

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

A.2 - Bending moment preconditioning

(id 956) Preconditioning of the nozzle applying a bending moment representative of those expected to be applied during normal use

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

A.3 - Fuel compatibility preconditioning

(id 957) The test is performed with the test liquid for grade 1 tanks according to EN 976-1: 1997 §6.9.2, with the following composition:

41.5% Toluene
41.5% Isooctane
15% Methanol
2% Isobutanol

Accredited [IEC17025]: NO Execution time [day]: 8
Unit price #1: ask to office Limit #1: Applicable to any sample



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B.5 - Automatic shut-off device test 1

(id 958) The aim of this test is to confirm that the automatic shut-off device stops fluid flow when spout is immersed in fluid

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample

B.6 - Drain test

(id 959) This test aims to confirm that draining of the hose through the nozzle is restricted

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample

B.7 - Attitude device test 1

(id 960) This test aims to confirm that the attitude device prevents flow of fluid when the spout axis is pointing at or above the spout axis angle

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample

B.8 - Attitude device test 2

(id 961) The aim of this test is to measure the fluid emission when the attitude device operates under defined conditions

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

B.9 - Automatic de-activating mechanism test

(id 962) This test aims to confirm that nozzles with an automatic de-activating mechanism entirely within the nozzle can not deliver fuel after flow has been stopped until the nozzle has been manually re-opened

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample

B.10 - Line shock generated test

(id 963) This test aims to confirm that the nozzle does not generate potentially destructive pressure during operation

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample

EN 13274-7:2019

(id 1536) Respiratory protective devices - Methods of test - Part 7: Determination of particle filter penetration

6 - Particle filter penetration: sodium chloride test method

(id 2008) An aerosol of sodium chloride particles is generated by atomizing an aqueous solution of the salt and evaporating the water. The concentration of this aerosol is measured before and after the filter under test by means of flame photometry.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: Medical type mask
Unit price #2 [EUR]: 900.00 Limit #2: Pre-formed type mask

EN 136:1998

(id 811) Respiratory protective devices - Full face masks - Requirements, testing, marking

8.2 - Endurance

(id 1347) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,200.00 Limit #1: Not relevant

EN 13760:2003

(id 26) Automotive LPG filling system for light and heavy vehicles - Nozzle, test requirements and dimensions

5.2 - Overpressure

(id 510) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample



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5.3 - External leak tests at -20°C or -40°C

(id 511) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.4 - Endurance

(id 512) ---

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

5.5 - LPG compatibility (for rubber materials)

(id 513) ---

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.6 - Corrosion resistance

(id 514) ---

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

5.7 - Resistance to dry heat

(id 515) ---

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.8 - Ozone ageing

(id 516) ---

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

5.9 - Temperature cycle

(id 517) ---

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.10 - Drop test

(id 518) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.11 - Electrical continuity test of the filling nozzle

(id 519) ---

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

5.12 - Freezing

(id 520) ---

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.3 - External leak tests at 65°C

(id 1564) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

5.3 - External leak tests at 20°C

(id 1565) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample



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EN 140:1998

(id 1864) Respiratory protective devices - Half masks and quarter masks - Requirements, testing, marking

Unref. - Conditioning

(id 2480) This test is intended to condition a PPE sample with a thermal cycle of 48 hours.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

EN 144-1:2018

(id 1739) Respiratory protective devices - Gas cylinder valves - Part 1: Inlet connections

5 - Impact resistance

(id 2202) This test method is based on a verification of the impact resistance of inlet connections for connecting cylinder valves to gas cylinders for respiratory protective devices (RPD).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

EN 14678-1:2013

(id 51) LPG equipment and accessories. Construction and performance of LPG equipment for automotive filling stations. Dispensers

- LPG equipment and accessories – construction and performance of LPG equipment for automotive filling stations

(id 845) ---

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample

EN 14683:2019

(id 1516) Medical face masks - Requirements and test methods

5.1 - General: materials and construction, design

(id 1983) Evaluation of the construction, design, and face fit of a face mask.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

5.2.2 - Filtration efficiency - internally modified test

(id 1985) Test not performed in accordance with § 5.2.2 of EN14683, but following some details of EN149, and internal variations: the test is not performed with the Staphylococcus aureus required by the standard but with NaCl. Instead of control plates of bacterial culture, a Flame Photometer is used, as per 8.5.2.2.3 of EN 149. The mechanical setup is similar to Figure B.3 of EN14683.

When a mask consists of two or more areas with different characteristics or different layer-composition, each area shall be tested individually. The lowest performing panel or area shall determine the Filtration Efficiency value of the complete mask.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: Qualification in package
Unit price #2 [EUR]: 600.00 Limit #2: Single measurement

5.2.3 - Breathability (differential pressure)

(id 1986) The differential pressure generated by a constant air flow (8 l / min) through a known section (4.9 cm²) of filtering material is used to determine the breathability of the sample under test.

At least 5 areas are tested for each sample, or more if the sample is made up of different areas of materials (at least 2 measurements for each material).

For each tested sample an average ?P (mbar) is calculated.

The maximum ?P (mbar) obtained is divided by the known sampling area (4.9 cm²) obtaining the breathability value in mbar / cm².

This value must be suitable for the class chosen for the mask under test according to the data acceptance criteria in Table 1 of EN 14683: 2019

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Qualification in package
Unit price #2 [EUR]: 200.00 Limit #2: Single measurement



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5.2.5 - Microbial cleanliness (Bioburden)

(id 1988) Test subcontracted to other laboratory

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,100.00

Execution time [day]: 7
Limit #1: Not relevant

Subcontract: MICRONA Laboratorio

EN 14797:2006

(id 696) Explosion venting devices

7.3.2 - Explosion testing for function and mechanical integrity

(id 1370) Mechanical strength and venting efficiency of explosion venting devices shall be determined.

| | |
|-------------------------------|---------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Only documentation analysis |
| Unit price #2 [EUR]: 3,000.00 | Limit #2: Surface < = 0.5 m2 |
| Unit price #3 [EUR]: 6,000.00 | Limit #3: Surface > = 0.5 m2 |

7.2.3 - Static activation pressure - Mechanical test method

(id 1371) All explosion venting devices shall be tested for static activation pressure. The static activation pressure is observed:

- when discharge begins;
- when the venting element releases from the retaining element.

| | |
|-------------------------------|------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Surface < = 0.5 m2 |
| Unit price #2 [EUR]: 2,000.00 | Limit #2: Surface > 0.5 m2 |

7.2.2 - Static activation pressure - Pressure test method

(id 2464) All explosion venting devices shall be tested for static activation pressure. The static activation pressure is observed:

- when discharge begins;
- when the venting element releases from the retaining element.

| | |
|-------------------------------|------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Surface < = 0.5 m2 |
| Unit price #2 [EUR]: 2,000.00 | Limit #2: Surface > 0.5 m2 |

EN 149:2003+A1:2009

(id 1518) Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking

8.3.1 - Trattamento di indossamento simulato

(id 1990) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

8.3.2 - Condizionamento a temperatura

(id 1991) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

7.9.2 - Penetration of filter material

(id 2009) The test is intended to evaluate the maximum percentage of penetration through the face mask material.

It's performed as described in EN13274-7, using a water aerosol with NaCl as a tracking substance, monitored using a flame photometer.

The mechanical setup depends on the mask shape.

When the mask consists of two or more areas with different characteristics or different layer-composition, each area is tested individually. The lowest-performing panel or area shall determine the Penetration value of the complete mask.

| | |
|-----------------------------|------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Single measurement |

EN 15089:2009

(id 700) Explosion isolation systems

7.2.2 - Module A: Explosion resistance testing

(id 1977) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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7.2.3 a) - Module B: Flame transmission test (high pressure conditions)

(id 1978) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.4.2 - Module C: Functional testing: passive explosion protection valves

(id 1979) The main objective of the functional testing is the determination/verification of the minimum/maximum installation distance of the isolation device dependent on the method of the detection and to assess the efficacy of the device/system as an explosion isolation device/system according to the intended use as specified by the manufacturer. The test will assess the efficacy of the device and the minimum and maximum installation distance. This shall be determined by varying the location of the ignition source in the test enclosure and other influencing parameters e.g., enclosure volume, maximum explosion overpressure in the enclosure according to the intended use.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.4.3 - Module C: Functional testing: active isolation valves

(id 1980) The main objective of the functional testing is the determination/verification of the minimum/maximum installation distance of the isolation device dependent on the method of the detection and to assess the efficacy of the device/system as an explosion isolation device/system according to the intended use as specified by the manufacturer. The test will assess the efficacy of the device and the minimum and maximum installation distance. This shall be determined by varying the location of the ignition source in the test enclosure and other influencing parameters e.g., enclosure volume, maximum reduced explosion overpressure in the enclosure, type of detector or sensor used or combinations of detectors and sensors, activation pressure, sensitivity of flame detector, all according to the intended use.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.3 b) - Module B: Flame transmission test (low pressure conditions)

(id 1981) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

EN 15276-1:2019

(id 1788) Fixed firefighting systems - Condensed aerosol extinguishing systems - Part 1: Requirements and test methods for components

7.7 - Accelerated ageing test

(id 2374) The objective of the test is to demonstrate the ability of the condensed aerosol generators to function correctly during the service life period of 15 years when stored in a dry, non-corrosive environment.

Accredited [IEC17025]: NO Execution time [day]: 17
Unit price #1 [EUR]: 4,000.00 Limit #1: Applicable to any sample

Unref. - Characterization

(id 2375) This test represents all the phases needed as acceptance criteria for Accelerated ageing test (§7.7).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

EN 16314:2013

(id 1456) Gas meters - Additional functionalities

7.13.4.5 - Valve closing

(id 1924) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 350.00 Limit #1: Not relevant

EN 175301-803:2006

(id 1180) Detail Specification: Rectangular connectors - Flat contacts, 0,8 mm thickness, locking screw not detachable

CP2 - Retreatment Cleaning of specimen by washing briefly in light petrol

(id 1778) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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EN 1775:2007

(id 42) Gas supply - Gas pipework for buildings - Maximum operating pressure less than or equal to 5 bar - Functional recommendations

Annex A - (informative) Resistance to high temperatures

(id 720) Test method for resistance to temperature for Gas supply - Gas pipework for buildings

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 400.00 Limit #1: cad for type

EN 1809:2014+A1:2016

(id 1159) Diving equipment - Buoyancy compensators - Functional and safety requirements, test methods

5.3.3 - Wearing and environmental resistance tests - low temperatures

(id 1583) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.3.2 - Wearing and environmental resistance tests - high temperatures

(id 1584) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

EN 1834-1:2000

(id 50) Reciprocating Internal Combustion Engines - Safety Requirements for Design and Construction of Engines for Use in Potentially Explosive Atmospheres - Part 1: Group II Engines for Use in Flammable Gas and Vapour Atmospheres

6.4.2 - Spark arrester visual test

(id 846) The test is performed in dark room conditions.

For the test fresh grounded wood charcoal is used.

Before starting the test, the charcoal is sifted, in order to use only a fraction between 0.5 and 1 mm, and then weighed.

• Charcoal rate [g/s]: $L/4$, where L = engine swept volume in litres

The test shall be conducted at the following engine conditions or simulating them:

- 1) at maximum power;
- 2) at no load high idle speed;
- 3) accelerating from low idle to high idle over the period of 30 s but with no load.

A LPG burner and air system is usually employed for the test.

Each test is performed applying different LPG pressure and flow:

- 1: with high flow and maximum pressure for the burner employed;
- 2: with low flow and minimum pressure for the burner employed;
- 3: gradually increasing pressure and flow in order to simulate acceleration.

A different number of burners and different LPG pressures may be employed in order to simulate different engines and engine conditions/exhaust flow rate:

- Exhaust gas /LPG ratio: 10/1
- Exhaust gas flow rate = LPG flow rate * Nr of Burners *10
- For each burner used:
 - 0.4 bar corresponds with a LPG flow rate of 40 Kg/h,
 - 1.5 bar corresponds with a LPG flow rate of 200 Kg/h

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 2,200.00 Limit #1: small size up to 2 inches
Unit price #2 [EUR]: 2,800.00 Limit #2: medium size up to 4 inches
Unit price #3 [EUR]: 3,500.00 Limit #3: big size over 4 inches



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6.2.1 - Determination of the maximum explosion pressure

(id 896) The purpose of these tests is to produce and measure the most severe explosion that is expected to occur in a flameproof enclosure (e.g. in an inlet or exhaust system). The explosion test is conducted with the maximum gap of the flameproof enclosure defined by the manufacturer

| | |
|-------------------------------|-------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 4 |
| Unit price #1 [EUR]: 1,800.00 | Limit #1: No precompression |
| Unit price #2 [EUR]: 2,500.00 | Limit #2: With precompression |

6.2.3 - Non transmission test

(id 897) The purpose of these tests is to produce the most severe explosion that is expected to occur in an inlet or exhaust system, and to verify that, under these conditions the explosion is contained within the flameproof enclosure and not transmitted to the surrounding atmosphere by assemblies and/or flame arresters. The non transmission test shall be conducted with the maximum gap of the flame proof enclosure defined by the manufacturer.

The non transmission test shall be performed with the gas mixture at atmospheric pressure for atmospheric systems and non pressurised parts of the air inlet boosting device and at atmospheric pressure times pressure ratio for pressurised parts of the air inlet boosting device.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 4 |
| Unit price #1 [EUR]: 2,000.00 | Limit #1: No precompression |
| Unit price #2 [EUR]: 2,800.00 | Limit #2: With precompression (turbo charged) |
| Unit price #3 [EUR]: 3,500.00 | Limit #3: Precompression with high temperature |

6.2.2 - Overpressure test

(id 898) The purpose of this test is to apply a controlled pressure in excess of the greatest pressure that will be experienced under the most severe explosion and to show that under these circumstances the flameproof enclosure retains its integrity

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Any engine |

unref - Not ignition of hot insulated parts into explosive atmosphere

(id 904) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 2,000.00 | Limit #1: Applicable to any sample |

unref - Vibration test

(id 946) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 10 |
| Unit price #1 [EUR]: 2,500.00 | Limit #1: Applicable to any sample |

unref - Impact test

(id 947) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Applicable to any sample |

EN 1834-2:2000

(id 226) Reciprocating internal combustion engines - Safety requirements for design and construction of engines for use in potentially explosive atmospheres - Part 2: Group I engines for use in underground workings susceptible to firedamp and/or combustible dust

6.3.2 - Determination of the maximum explosion pressure

(id 1045) The purpose of these tests is to produce and measure the most severe explosion that is expected to occur in a flameproof enclosure (e.g. in an inlet or exhaust system). The explosion test is conducted with the maximum gap of the flameproof enclosure defined by the manufacturer

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: No precompression |
| Unit price #2 [EUR]: 2,200.00 | Limit #2: With precompression (turbo charged or low temperature) |

6.3.3 - Overpressure test

(id 1046) The purpose of this test is to apply a controlled pressure in excess of the greatest pressure that will be experienced under the most severe explosion and to show that under these circumstances the flameproof enclosure retains its integrity

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Any engine |

6.3.4 - Non transmission tests

(id 1047) The purpose of these tests is to produce the most severe explosion that is expected to occur in an inlet or exhaust system, and to verify that, under these conditions the explosion is contained within the flameproof enclosure and not transmitted to the surrounding atmosphere by assemblies and/or flame arresters.

The non transmission test shall be conducted with the maximum gap of the flame proof enclosure defined by the manufacturer. The non transmission test shall be performed with the gas mixture at atmospheric pressure for atmospheric systems and non pressurised parts of the air inlet boosting device and at atmospheric pressure times pressure ratio for pressurised parts of the air inlet boosting device.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 2,000.00 | Limit #1: No precompression |
| Unit price #2 [EUR]: 2,800.00 | Limit #2: With precompression (turbo charged or low temperature) |



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6.4.2 - Spark arrester visual test

(id 1048) The test is performed in dark room conditions.

Before starting the test, the charcoal is sifted, in order to use only a fraction between 0.5 and 1 mm, and weighed.

The test shall be conducted at the following engine conditions:

- 1) at maximum power;
- 2) at no load high idle speed;
- 3) accelerating from low idle to high idle over the period of 30 s but with no load.

So, each test is performed by applying different LPG pressure:

- 1: 1.5 bar, the maximum pressure for the burner employed;
- 2: 0.4 bar, the minimum pressure for the burner employed;
- 3: a gradually increasing pressure in order to simulate acceleration.

A different number of burners may be employed in order to simulate different engine conditions.

- Exhaust gas /LPG ratio: 10/1
- Exhaust gas flow rate = LPG flow rate * Nr of Burners *10
- For each burner: 0.4 bar corresponds with a LPG flow rate of 40 Kg/h, 1.5 bar corresponds with a LPG flow rate of 200 Kg/h
- Charcoal rate [g/s]: L/4, where L= engine swept volume in litres

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 5 |
| Unit price #1 [EUR]: 2,200.00 | Limit #1: Up to 2 inches |
| Unit price #2 [EUR]: 3,000.00 | Limit #2: From 2 inches up to 4 inches |
| Unit price #3 [EUR]: 3,800.00 | Limit #3: Over 4 inches |

EN 1834-3:2000

(id 227) Reciprocating internal combustion engines - Safety requirements for design and construction of engines for use in potentially explosive atmospheres - Part 3: Group II engines for use in flammable dust atmospheres

6.3.2 - Spark arrester visual test

(id 1049) The test is performed in dark room conditions. Before starting the test, the charcoal is sifted, in order to use only a fraction between 0.5 and 1 mm, and weighed. The test shall be conducted at the following engine conditions: 1) at maximum power; 2) at no load high idle speed; 3) accelerating from low idle to high idle over the period of 30 s but with no load. So, each test is performed by applying different LPG pressure: 1: 1.5 bar, the maximum pressure for the burner employed; 2: 0.4 bar, the minimum pressure for the burner employed; 3: a gradually increasing pressure in order to simulate acceleration. A different number of burners may be employed in order to simulate different engine conditions. • Exhaust gas /LPG ratio: 10/1 • Exhaust gas flow rate = LPG flow rate * Nr of Burners *10 • For each burner: 0.4 bar corresponds with a LPG flow rate of 40 Kg/h, 1.5 bar corresponds with a LPG flow rate of 200 Kg/h • Charcoal rate [g/s]: L/4, where L= engine swept volume in litres

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 5 |
| Unit price #1 [EUR]: 3,800.00 | Limit #1: over 4 inches |
| Unit price #2 [EUR]: 2,200.00 | Limit #2: up to 2 inches |

EN 250:2014

(id 1737) Respiratory equipment - Open-circuit self-contained compressed air diving apparatus - Requirements, testing and marking

6.12.1 - Resistance to specific temperature: testing after storage at 70C

(id 2198) The temperature resistance tests are performed prior to conducting any other test on components or sub-assemblies of the respiratory equipment apparatus.

| | |
|-----------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Conditioning only |
| Unit price #2 [EUR]: 550.00 | Limit #2: Conditioning and pressure test |

6.12.2 - Resistance to specific temperature: testing after storage at -30C

(id 2199) The temperature resistance tests are performed prior to conducting any other test on components or sub-assemblies of the respiratory equipment apparatus.

| | |
|-----------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Conditioning only |
| Unit price #2 [EUR]: 550.00 | Limit #2: Conditioning and pressure test |

6.12.3 - Resistance to specific temperature: testing at 55C

(id 2200) The temperature resistance tests are performed prior to conducting any other test on components or sub-assemblies of the respiratory equipment apparatus.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 550.00 | Limit #1: Applicable to any sample |



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6.12.4 - Resistance to specific temperature: testing at -20C

(id 2201) The temperature resistance tests are performed prior to conducting any other test on components or sub-assemblies of the respiratory equipment apparatus.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 550.00 | Limit #1: Applicable to any sample |

EN 2591-315:2015

(id 1286) Aerospace series - Elements of electrical and optical connection - Test methods - Part 315: Fluid resistance

- Fluid resistance

(id 1798) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

EN 331:2015

(id 1974) Manually operated ball valves and closed bottom taper plug valves for gas installations for buildings

5.2 - Internal pressure and leak-tightness

(id 2689) A valve is leak-tight when the measured leakage rate does not exceed the values of Table 5, when tested as indicated in 5.2.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 250.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 300.00 | Limit #3: greater than 3" |

5.7 - Angular seal

(id 2690) This test is intended to measure the angle of rotation of the actuator.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 150.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 200.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 250.00 | Limit #3: greater than 3" |

5.3 - Rated flow rate

(id 2691) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 250.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 300.00 | Limit #3: greater than 3" |

5.5.2.1.1 - Torque MT1

(id 2692) The stresses MT1 (torque) and MF1 (bending moment) represent the installation stresses.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 150.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 200.00 | Limit #3: greater than 3" |

5.4 - Operating torque

(id 2693) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 200.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 250.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 300.00 | Limit #3: greater than 3" |

5.8 - Safeguard against overloading of the handle – Stop resistance

(id 2694) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 150.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 200.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 250.00 | Limit #3: greater than 3" |



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5.6.1 - Endurance test

(id 2695) The manual actuator of the valve shall withstand, at ambient temperature, a series of operating cycles (see Table 9).

After the endurance test the valve shall conform to the requirements for external and internal leaktightness at ambient temperature and at $(60 \pm 5) ^\circ\text{C}$ in accordance with 4.4. It shall comply with the requirements for operating torque in accordance with 4.7.1.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 500.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 700.00 | Limit #3: greater than 3" |

5.6.2 - Resistance to low temperature

(id 2696) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 400.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 600.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 800.00 | Limit #3: greater than 3" |

5.6.3 - Salt spray resistance

(id 2697) This test shall be carried out on device N° 3 according to Table 10 following the requirements of EN ISO 9227, for a neutral salt spray (NSS).

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 4 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: Applicable to any sample |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: Applicable to any sample |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: Applicable to any sample |

5.5.2.1.2 - Torque MT2

(id 2698) The stresses MT2 and MF2 represent the stresses to which the valve may be submitted during service.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 150.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 200.00 | Limit #3: greater than 3" |

5.5.2.2.1 - Bending moment MF1 at the axis of the obturator

(id 2699) The stresses MT1 (torque) and MF1 (bending moment) represent the installation stresses.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 150.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 300.00 | Limit #3: greater than 3" |

5.5.2.2.2 - Bending moment MF2 at axis of the obturator

(id 2700) The stresses MT2 and MF2 represent the stresses to which the valve may be submitted during service.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: up to 1" |
| Unit price #2 [EUR]: 150.00 | Limit #2: greater than 1" up to 3" |
| Unit price #3 [EUR]: 200.00 | Limit #3: greater than 3" |

EN 403:2004

(id 797) Respiratory protective devices for self-rescue - Filtering devices with hood for escape from fire - Requirements, testing, marking

7.4.5 - Temperature

(id 1333) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 7 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: Not relevant |

7.4.6 - Pressure changes

(id 1334) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,800.00 | Limit #1: Applicable to any sample |



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EN 417:2012

(id 2010) *Non-refillable metallic gas cartridges for liquefied petroleum gases, with or without a valve, for use with portable appliance — Construction, inspection, testing and marking*

6.5 - Gas tightness of cartridges

(id 2771) *The conformity of a gas cartridge design type with the applicable provisions and this standard shall be assessed in accordance with the conformity assessments procedures of ADR and RID for non-UN pressure receptacles, or for gas cartridges.*

The test specified in 6.5 shall be performed on samples taken from 100 cartridges selected at random from a batch of filled cartridges produced in 1 h.

The test is intended to verify the gas tightness of the cartridges after being subjected to different temperatures.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 800.00

Execution time [day]: 1
Limit #1: Applicable to any sample

6.6 - Gas tightness of valves

(id 2772) *The conformity of a gas cartridge design type with the applicable provisions and this standard shall be assessed in accordance with the conformity assessments procedures of ADR and RID for non-UN pressure receptacles, or for gas cartridges. The test specified in 6.6 shall be performed on samples taken from 100 cartridges selected at random from a batch of filled cartridges produced in 1 h. The test is intended to verify the gas tightness of the cartridges after 50 manual operations of the valve.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 500.00

Execution time [day]: 1
Limit #1: Applicable to any sample

EN 50050-2:2013

(id 368) *Electrostatic hand-held spraying equipment - Safety requirements Part 2: Hand-held spraying equipment for ignitable coating powder*

5.2.1 - Test of earth connections

(id 1236) *This test verifies that hand-held spraying equipment has an earth connection complying with § 4.1.7, 4.1.9 and 4.3.2 of EN 50050-2:2013.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 200.00

Execution time [day]: 0
Limit #1: Applicable to any sample

5.2.2 - Resistance to earth test

(id 1237) *See § 4.1.2, 4.1.5, 4.1.7, 4.3.2 and 4.3.5 of EN 50050-2:2013.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 300.00

Execution time [day]: 0
Limit #1: Apply to any sample

5.2.3 - Test of contact surface area

(id 1238) *The size of the contact surface area shall be proven by measurement, see § 4.1.5*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 100.00

Execution time [day]: 0
Limit #1: Not relevant

5.2.4 - Test of OFF-position

(id 1239) *The function of the OFF-position shall be proven by measurement, see § 4.1.6.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 200.00

Execution time [day]: 0
Limit #1: Not relevant

5.3.1 - Cable pull test

(id 1240) *Each cable of the applicator, except for cables connecting intrinsically safe circuits among each other, shall be submitted to a cable pull test.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 200.00

Execution time [day]: 0
Limit #1: Not relevant

5.3.2 - Impact test

(id 1241) *This test is not applicable to triboelectrical applicators*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 200.00

Execution time [day]: 0
Limit #1: Not relevant

5.3.3 - Drop test

(id 1242) *This test is not applicable to triboelectrical applicators*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 100.00

Execution time [day]: 0
Limit #1: Not relevant



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5.4.1.1 - Measurement of maximum output high voltage

(id 1243) The measurement of maximum output high voltage is carried out without load at the end of the high voltage electrode at the spraying device of the applicator. This test is not applicable to triboelectrical applicators.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: up to 1000 V

5.4.1.2 - Measurement of maximum spraying current

(id 1244) This test is not applicable to triboelectrical applicators.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

5.4.1.3 - Measurement of maximum short-circuit current

(id 1245) Measurement of the maximum short-circuit current, see § 4.2.1. This test is not applicable to triboelectrical applicators.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

5.4.2.1 - Test of parts at high voltage

(id 1246) The parts at high voltage of the applicator, which produce hazard of incendive discharges inside the applicator, are tested at Umax. All parts of the applicator which are at earth potential for operational reasons are earthed during the test. This test is not applicable to triboelectrical applicators.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,800.00 Limit #1: Not relevant

5.4.2.2 - Test of the high voltage cable

(id 1247) This test is not applicable to triboelectrical applicators.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,800.00 Limit #1: Not relevant

5.4.3 - Test of the degree of protection of applicators

(id 1248) Compliance with degree of protection IP 64 to be tested according to EN 60529. This test is not applicable to triboelectrical applicators.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Not relevant

5.5.1.2 - Ignition test of applicators with high voltage supply: test within the gas mixture

(id 1250) Test for observance of the limit value for maximum discharge energy of single sparks (2 mJ) according to Annex B.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.5.2 - Ignition test for triboelectrical applicators

(id 1251) Test for observance of the limit value for maximum transferred charge of single sparks (200 nC) by measurement according to Annex A.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.6.1 - Test of the accessories: the degree of protection

(id 1252) Compliance with degree of protection IP54 according to EN 60529 shall be tested on samples of equipment category 3D.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Not relevant

EN 50155:2017

(id 1424) Railway applications - Rolling stock - Electronic equipment

13.4.4 - Low temperature start-up test

(id 1901) This test is carried out in accordance with EN 60068-2-1 (test Ad), using natural ventilation.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: up to 24h small sample
Unit price #2 [EUR]: 800.00 Limit #2: Big size sample

13.4.5.3 - Dry heat thermal test: cycle B

(id 1902) This test is carried out in accordance with EN 60068-2-2 (test Be), using natural ventilation unless a different type of cooling is normally used or provided to the equipment.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: up to 24 hrs



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13.4.6 - Low temperature storage test

(id 1903) This test is carried out in accordance with EN 60068-2-1 (test Ab)

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 24 hrs |

13.4.7 - Cyclic damp heat test

(id 1904) This test is carried out in accordance with EN 60068-2-30, test Db, Variant 2.

| | |
|-------------------------------|---------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 800.00 | Limit #1: 2 cycles small sample |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 2 cycles big sample |

13.4.9 - Insulation test

(id 1919) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

13.4.5.2 - Dry heat thermal test cycle A EN 50155

(id 1976) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

EN 50381:2004+AC:2005

(id 717) Transportable ventilated rooms with or without an internal source of release

14.3 - Overpressure test

(id 1539) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Typical sample on field |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: Performed at Laboratory |
| Unit price #3 [EUR]: 600.00 | Limit #3: Huge sample on field |

14.4/14.4.1.1 - Purging test for Type of protection vM2

(id 1540) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,800.00 | Limit #1: Typical sample on field |
| Unit price #2 [EUR]: 3,500.00 | Limit #2: Performed at Laboratory |
| Unit price #3 [EUR]: 4,200.00 | Limit #3: Huge sample on field |

14.4/14.4.1.2 - Purging test for type of protection v2, v3 and v4

(id 1541) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,800.00 | Limit #1: Typical sample on field |
| Unit price #2 [EUR]: 3,500.00 | Limit #2: Performed at Laboratory |
| Unit price #3 [EUR]: 5,000.00 | Limit #3: Huge sample on field |

14.5 - Verification of minimum pressure differential

(id 1542) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Typical sample on field |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: Performed at Laboratory |
| Unit price #3 [EUR]: 600.00 | Limit #3: Huge sample on field |

14.6 - Ventilation flow rate tests for TVR s with an internal source of release

(id 1543) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Typical sample on field |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: Performed at Laboratory |
| Unit price #3 [EUR]: 800.00 | Limit #3: Huge sample on field |



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14.7 - Overpressure test for containment systems with limited release

(id 1544) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Typical sample on field |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: Performed at Laboratory |
| Unit price #3 [EUR]: 600.00 | Limit #3: Huge sample on field |

14.8 - Verification of sequence of operation of the safety devices

(id 1545) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Typical sample on field |
| Unit price #2 [EUR]: 300.00 | Limit #2: Performed at Laboratory |
| Unit price #3 [EUR]: 1,000.00 | Limit #3: Huge sample on field |

14.2 - Thermal tests

(id 1546) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Typical sample on field |
| Unit price #2 [EUR]: 1,600.00 | Limit #2: Performed at Laboratory |
| Unit price #3 [EUR]: 2,200.00 | Limit #3: Huge sample on field |

EN 50521:2008

(id 768) Connectors for photovoltaic systems - Safety requirements and tests

6.2 - Preparation of specimens

(id 1318) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.3.2 - Durability of marking

(id 1319) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.3.3 - Protection against electric shock

(id 1320) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.3.4 - Temperature rise

(id 1321) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.3.5 - Mechanical operation

(id 1322) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.3.6 - Bending (flexing) test

(id 1323) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.3.7 - Measurement of clearances and creepage distances

(id 1324) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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6.3.8 - Dielectric strength

(id 1325) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

6.3.9 - Corrosion test

(id 1326) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

6.3.10 - Mechanical strength at lower temperatures

(id 1327) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

6.3.11 - Thermal cycle test (EN 60068-2-14 test Nb)

(id 1328) ---

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1: ask to office Limit #1: Not relevant

6.3.12 - Damp heat test

(id 1329) ---

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1: ask to office Limit #1: Not relevant

6.3.13 - Insertion and withdrawal force

(id 1330) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.3.14 - Effectiveness of connector coupling device

(id 1331) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4 - Test schedule (routine test) for non-rewirable free connectors

(id 1332) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

EN 50545-1:2011+A1:2016

(id 1287) *Electrical apparatus for the detection and measurement of toxic and combustible gases in car parks and tunnels - Part 1: General performance requirements and test methods for the detection and measurement of carbon monoxide and nitrogen oxides*

6.2 - Unpowered storage

(id 1799) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.3 - Linearity

(id 1800) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4 - Alarm set points and outputs (car parks only)

(id 1801) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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6.5 - Repeatability

(id 1802) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.6 - Temperature

(id 1803) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.7 - Humidity

(id 1804) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.10 - Interfering gases

(id 1805) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.11 - Recovery from high gas concentrations

(id 1806) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.12 - Mechanical strength

(id 1807) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.13 - Warm-up time

(id 1808) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.14 - Response time

(id 1809) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.15 - Power supply variations

(id 1810) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.16 - Long-term stability

(id 1811) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

EN 60068-2-11:1999

(id 1727) Environmental testing - Part2: Tests. Test Ka: Salt mist

- Test Ka: salt mist

(id 2351) This test method is intended for assessing the corrosion resistance of electrotechnical products components, equipment and materials in a salt mist environment. Its objective is to verify that the comparative quality of a metallic material, with or without corrosion protection, is maintained when exposed to salt mist. This test method is useful for evaluating the quality and the uniformity of coatings applied to protect metals against corrosion. It is particularly useful for detecting discontinuities, such as pores and other defects, in certain metallic, organic, anodic oxide and conversion coatings.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 8 |
| Unit price #1 [EUR]: 800.00 | Limit #1: 24 hours |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 48 hours |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: 96 hours |



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EN 60068-2-21:2006

(id 1726) Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices

3 - Test Ua1: Tensile

(id 1056) This test is applicable to all types of terminations and its purpose is to verify that the terminations and attachment of the terminations to the body of the component will withstand such axial stresses as are likely to be applied during normal assembly or handling operations.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

4 - Test Ua2: Thrust

(id 1057) The purpose of this test is to verify that the terminations and attachment of the terminations to the body of the component will withstand such thrusts as are likely to be applied during normal assembly or handling operations. This test applies only to specimens of small dimensions and of low mass, to the exclusion of equipment and assemblies.

NOTE This test does not apply to flexible terminations.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

5 - Test Ub: bending

(id 1058) The purpose of this test is to verify that pliable terminations and attachment of such terminations to the body of the component shall withstand such bending loads as are likely to be applied during normal assembly or handling operations. This test is applicable to pliable terminations only.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

6 - Test Uc: torsion

(id 1059) The purpose of this test is to verify that the terminations and attachment of the terminations to the body of the component will withstand torsional forces such as are likely to be applied during normal assembly or dismantling operations.

Accredited [IEC17025]: YES Execution time [day]: -1
Unit price #1: ask to office Limit #1: Not relevant

7 - Test Ud: Torque

(id 1060) The purpose of this test is to verify that the terminations, the attachment of the terminations to the body of the component and integral mounting means shall withstand torque forces such as are likely to be applied during normal assembly or handling operations.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

8 - Test Ue: Robustness of termination for SMD in the mounted state

(id 1061) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

EN 60079-11:2012

(id 81) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

10.1 - Spark ignition test

(id 122) Investigation on effect of opening and closing circuit in explosive atmosphere

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Up to n. 10 test points with same sample configurations and same gas mixture
Unit price #2 [EUR]: 900.00 Limit #2: Up to n. 10 test points with different sample configurations and same gas mixture
Unit price #3 [EUR]: 1,500.00 Limit #3: Up to n. 20 test points with different sample configurations and same gas mixture

10.2 - Temperature tests

(id 123) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

10.3 - Dielectric strength tests

(id 124) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Up to 5 kV dc
Unit price #2 [EUR]: 1,200.00 Limit #2: From 5 to 10kV ac/dc
Unit price #3 [EUR]: 2,400.00 Limit #3: From 10 to 60kV dc only



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10.6.1 - Casting compound

(id 125) Mechanical tests

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

10.9 - Cable pull test

(id 126) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

10.5.3 - Spark ignition and surface temperature of cells and batteries

(id 275) Determination of sparking short circuit current and temperature rise for cells and batteries.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: up to 4 Ah
Unit price #2 [EUR]: 800.00 Limit #2: from 4 to 25 Ah
Unit price #3 [EUR]: 1,200.00 Limit #3: more than 25 Ah

10.4 - Determination of parameters of loosely specified components

(id 423) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Single measurement
Unit price #2 [EUR]: 500.00 Limit #2: Up to 5 measurements on the same sample
Unit price #3 [EUR]: 800.00 Limit #3: Up to 10 measurements on the same sample

10.5.1 - General (tests for cells and batteries)

(id 424) The rechargeable battery is fully charged and then discharged twice in order to verify if its capacity is within the manufacturer's specification.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Only visual inspection and voltage measurements (usually primary batteries)
Unit price #2 [EUR]: 300.00 Limit #2: Visual inspection, voltage measurements and charge-discharge cycles (secondary batteries)

10.7 - Tests for apparatus containing piezoelectric devices

(id 425) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

10.8 - Type tests for diode safety barriers and safety shunts

(id 426) These tests are used to demonstrate that the safety barrier or safety shunt can withstand the effects of transients.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Max V=39V Ip=10A

10.10 - Transformer tests

(id 427) Verification of the insulation and measurement of the temperature of the object with particular attention to the temperature developed by the windings of the transformer.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Small size
Unit price #2 [EUR]: 1,200.00 Limit #2: Medium size
Unit price #3 [EUR]: 1,600.00 Limit #3: Big size

Annex H - Ignition testing of semi-conductors limiting power supply circuits

(id 428) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

10.12 - Current carrying capacity of infallible printed circuit board connections

(id 612) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

10.6.2 - Determination of the acceptability of fuses requiring encapsulation

(id 613) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample



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10.6.3 - Partitions

(id 619) Mechanical tests

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

10.11.2.4.1 - Optical isolators - Carbonisation test on receiver side

(id 620) A carbonisation test shall be conducted to check the formation of an internal creepage path caused by the heated plastic material (carbonisation).

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

10.11.3.2 - Optical isolators - Pre-test dielectric

(id 628) Prior to the short-circuit current tests, the samples of the optical isolator shall be capable of withstanding a dielectric strength test without breakdown.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

10.5.4 - Battery container pressure test

(id 891) Determination of venting pressure of battery container

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: up to 4 Ah
Unit price #2 [EUR]: 500.00 Limit #2: from 4 to 25 Ah
Unit price #3 [EUR]: 800.00 Limit #3: more than 25 Ah

7.4 - Battery construction

(id 915) Verification of constructional requirements and basic specification

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample
Unit price #2 [EUR]: 200.00 Limit #2: Applicable to any sample

10.5.2 - Electrolyte leakage test for cells and batteries

(id 916) Ten test samples shall be subjected to the most onerous test condition but with no use of an external charging circuit which exceeds the charging rates recommended by the manufacturer of the cell or battery.

The samples shall be placed with any case discontinuities, for example seals, facing downward or in the orientation specified by the manufacturer of the device, over a piece of blotting paper for a period of at least 12 h after the test then subjected to a visual inspection.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: up to 4 Ah
Unit price #2 [EUR]: 400.00 Limit #2: from 4 to 25 Ah
Unit price #3 [EUR]: 800.00 Limit #3: more than 25 Ah

10.11.2.1 - Overload test at the receiver side

(id 1725) This test is intended to define the maximum temperature at the receiver side when the device experiences an overload.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

10.11.2.2 - Overload test at the transmitter side

(id 1726) This test is intended to define the maximum temperature at the transmitter side when the device experiences an overload.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

10.11.2.3 - Thermal conditioning and dielectric strength test

(id 1727) After overloading, the devices shall be subjected to thermal conditioning and dielectric strength tests.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

10.11.2.4.2 - Optical isolators - Carbonisation test on transmitter side

(id 2343) A carbonisation test shall be conducted to check the formation of an internal creepage path caused by the heated plastic material (carbonisation).

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

10.11.3.3 - Optical isolators - Short-circuit current test

(id 2344) A test circuit shall be connected to the optical isolator so that the test current flows through the non-intrinsically safe side of the optical isolator. Protective components or assemblies that form part of the circuit are permitted to remain connected for the test.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample



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10.11.3.4 - Optical isolators - Current limited short-circuit current test

(id 2345) This test applies when the optical isolators have protective series fuses or current-limiting resistors.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.11.3.5 - Optical isolators - Dielectric strength test

(id 2346) The optical isolators shall withstand a dielectric strength test without breakdown.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

7.3 - Cold resistance test for fuses

(id 2465) The cold resistance of the fuse at the minimum specified ambient temperature may be taken as an infallible resistance complying with 8.5 for current limiting purposes.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Only one parameter

EN 60079-15:2010

(id 84) Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

22.3.1.1 - Thermal endurance to heat

(id 152) Tests for enclosures on which the type of protection depends. Thermal endurance tests

Accredited [IEC17025]: YES Execution time [day]: 30
Unit price #1 [EUR]: 1,600.00 Limit #1: Applicable to any sample

6.4 - Clearances, creepage distances and separations

(id 153) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

22.4.3.2 - Tests for enclosed break devices

(id 429) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to standard relays
Unit price #2 [EUR]: 1,200.00 Limit #2: Applicable to standard equipment

22.5.2 - Voltage test for sealed devices

(id 430) Tests for sealed devices

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

22.5.3 - Tests on devices with free space

(id 431) Tests for sealed devices

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

22.5.4 - Test for sealed devices for luminaires

(id 432) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

22.6.2.1/22.6.2.2/22.6.2.3 - Type test requirements for restricted breathing enclosures

(id 433) Equipment where the nominal volume does not change due to pressure

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

22.7 - Test for screw lampholders

(id 434) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample



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22.8 - Test for starter holders for luminaires

(id 435) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

22.9.2 - Moisture resistance, insulation and electric strength

(id 436) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

22.9.3 - Cut-out device test

(id 437) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

22.9.4 - Life test

(id 438) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

22.10 - Test for wiring of luminaires subject to high-voltage impulses from ignitors

(id 439) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

22.11 - Mechanical shock test for batteries

(id 440) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

22.12 - Insulation resistance test for batteries

(id 441) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Test voltage: 1000 V

22.13 - Additional ignition tests for large or high-voltage machines

(id 442) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 2,000.00 Limit #1: Applicable to any sample

6.5 - Electric strength

(id 614) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

22.5.1 - Conditioning for tests for sealed devices

(id 615) Tests for sealed devices

Accredited [IEC17025]: YES Execution time [day]: 10
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

22.3.1.2 - Drop test for hand-held equipment

(id 617) Clause 26.4.3 of IEC 60079-0 applies.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample

22.6.3 - Alternative type test for equipment where the nominal volume of the enclosure changes due to pressure

(id 919) Type tests for nR restricted breathing enclosures.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample



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22.4.3.3 - Tests for enclosed non-incendive components

(id 1256) ---

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: Up to 2kW resistive load |
| Unit price #2 [EUR]: 1,500.00 | Limit #2: Up to 2kW inductive load (motor) |

11.2 - Construction requirements verification

(id 1377) ---

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Not relevant |

EN 60079-26:2015

(id 93) Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

5.2 - Separation elements

(id 1080) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

5.3 - Temperature evaluation

(id 1081) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

EN 60512-11-9:2002

(id 1284) Connectors for electronic equipment - Tests and measurements - Part 11-9: Climatic tests - Test 11i: Dry heat

unref - Test 11i: Dry heat

(id 1796) This test is carried out in accordance with IEC 60068-2-2.

– Test Ba: Dry heat for non-heat-dissipating specimens with sudden change of temperature when no measurement is required during the test;
– Test Bb: Dry heat for non-heat-dissipating specimens with gradual change of temperature when measurements are required during the test;
using the degree of severity specified in the detail specification.

| | |
|-----------------------------|-----------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 250.00 | Limit #1: Up to 96 h (small oven) |

EN 60512-12-2:2006

(id 1279) Connectors for electronic equipment - Tests and measurements Part 12-2: Soldering tests - Test 12b: Solderability, wetting, soldering iron method

unref - Test 12b: Solderability, wetting, soldering iron method

(id 1789) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

EN 60512-13-2:2006

(id 1282) Connectors for electronic equipment - Tests and measurements Part 13-2: Mechanical operation tests - Test 13b: Insertion and withdrawal forces

unref - Test 13b: Insertion and withdrawal forces

(id 1793) The object of this test is to measure the insertion and withdrawal forces of mating connectors, or of a connector with the mating insertion and/or withdrawal gauge(s) specified in the connector detail specification, without the effect of any locking, latching, sealing, engaging, separating or similar device.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 50.00 | Limit #1: 1 cycle |
| Unit price #2 [EUR]: 150.00 | Limit #2: 5 cycles |



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EN 60512-13-5:2006

(id 1274) Connectors for electronic equipment - Tests and measurements Part 13-5: Mechanical operation tests - Test 13e: Polarizing and keying method

unref - Test 13e: Polarizing and keying method

(id 1784) ---

Accredited [IEC17025]: NO
Unit price #1: ask to office

Execution time [day]: 0
Limit #1: Not relevant

EN 60512-2-2:2003

(id 1275) Connectors for electronic equipment - Tests and measurements - Part 2-2: Electrical continuity and contact resistance tests - Test 2b: Contact resistance - Specified test current method

unref - Test 2b: Contact resistance - Specified test current method

(id 1785) The object of this test is to measure the electrical resistance across a pair of mated contacts or a contact with a measuring gauge.

The contact resistance is calculated as follows:

$$R = (|V_{mf} - V_{mr}|) / (|I_f| + |I_r|),$$

where R is the resistance;

V_{mf} is the measured forward voltage;

V_{mr} is the measured reverse voltage;

I_f is the forward current;

I_r is the reverse current.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 150.00

Execution time [day]: 0
Limit #1: Up to 3 contacts

EN 60512-3-1:2002

(id 1276) Connectors for electronic equipment Tests and measurements - Part 3-1: Insulation tests Test 3a: Insulation resistance

unref - Test 3a: Insulation resistance of electromechanical components

(id 1786) The object of this test is to assess the insulation resistance of electromechanical components.

The insulation resistance is measured on specimens using the specified test voltage applied in turn between each termination being tested and all others connected together and to the housing and/or the mounting plate.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 150.00

Execution time [day]: 0
Limit #1: Applicable to any sample

EN 60512-4-1:2003

(id 1277) Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof

unref - Test 4a: Voltage proof - Method A

(id 1787) The object of this test is to determine the ability of a component to withstand specified test voltages applied in a specified manner.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 150.00

Execution time [day]: 0
Limit #1: Applicable to any sample

EN 60512-7-2:2012

(id 1285) Connectors for electronic equipment - Tests and measurements - Part 7-2: Impact tests (free connectors) - Test 7b: Mechanical strength impact

unref - Test 7b: Mechanical strength impact

(id 1797) The object of this test is to assess the ability of a free connector on the end of a cable or wire bundle to withstand impacts it could receive when dropped onto a hard surface.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 150.00

Execution time [day]: 0
Limit #1: Up to 8 cycles



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EN 60512-9-1:2010

(id 1278) Connectors for electronic equipment - Tests and measurements - Part 9-1: Endurance tests - Test 9a: Mechanical operation

unref - Test 9a: Mechanical operation

(id 1788) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

EN 60999-1:2000

(id 1280) Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0, 2 mm² up to 35 mm² (included)

- Screw terminal

(id 1791) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

EN 61701:2012

(id 1582) Salt mist corrosion testing of photovoltaic (PV) modules

unref - Salt Mist (crystalline PV) - Severity 3 to 6

(id 245) Determination of the resistance of the module to cyclic corrosion from salt mist. This test is useful for evaluating the compatibility of materials, and the quality and uniformity of protective coatings.

Severities 3 to 6 are defined as follows:

- Severity (3): one test cycle consisting of: four spray periods, each of 2h, with a humidity storage period between 20h and 22h after each; afterwards one storage period of three days under a standard atmosphere for testing at 23°C ± 2°C and 45% to 55% humidity;
- Severity (4): two test cycles as specified in Severity (3);
- Severity (5): four test cycles as specified in Severity (3);
- Severity (6): eight test cycles as specified in Severity (3).

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 32 |
| Unit price #1 [EUR]: 4,500.00 | Limit #1: Severity 4 |
| Unit price #2 [EUR]: 6,000.00 | Limit #2: Severity 5 |
| Unit price #3 [EUR]: 8,000.00 | Limit #3: Severity 6 |

unref - Salt Mist (thin-film PV)

(id 402) Determination of the resistance of the module to cyclic corrosion from salt mist. This test is useful for evaluating the compatibility of materials, and the quality and uniformity of protective coatings

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 70 |
| Unit price #1 [EUR]: 8,000.00 | Limit #1: Severity 1 |

unref - Salt Mist (crystalline PV) - Severity 1

(id 1096) Determination of the resistance of the module to cyclic corrosion from salt mist. This test is useful for evaluating the compatibility of materials, and the quality and uniformity of protective coatings

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 7 |
| Unit price #1 [EUR]: 5,000.00 | Limit #1: Severity 1 |
| Unit price #2 [EUR]: 2,500.00 | Limit #2: Severity 2 |

4.2 - Bypass diode functionality test

(id 1099) The purpose of this test is to verify that the bypass diode(s) of the test

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Not relevant |



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EN 81-71:2018+AC:2019

(id 1710) Safety rules for the construction and installation of lifts - Particular applications to passenger lifts and goods passenger lifts - Part 71: Vandal resistant lifts

Annex B - Impact test

(id 2153) Impact test with a pointed impactor with a mass of 1 Kg and 10 mm radius point.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

Annex F - Fire tests

(id 2154) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Applicable to any sample |

EN ISO 10497:2010

(id 1040) Testing of valves - Fire type-testing requirements

5 - Fire test

(id 1908) The purpose of this test is confirming the pressure-containing capability of a valve under pressure during and after the fire test.

| | |
|-------------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 2,500.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 4,000.00 | Limit #2: From 4" to 10" |
| Unit price #3 [EUR]: 6,500.00 | Limit #3: From 12" to 20" |

6.2 - Through seat leakage during burn period

(id 1909) ---

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 150.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 250.00 | Limit #2: From 4" to 10" |
| Unit price #3 [EUR]: 500.00 | Limit #3: From 12" to 20" |

6.3 - External leakage during burn and cool-down periods

(id 1910) ---

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 400.00 | Limit #2: From 4" to 10" |
| Unit price #3 [EUR]: 800.00 | Limit #3: From 12" to 20" |

6.4 - Low Pressure Test Through-seat Leakage after Cool-down

(id 1911) ---

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 150.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 250.00 | Limit #2: From 4" to 10 " |
| Unit price #3 [EUR]: 500.00 | Limit #3: From 12 to 20 " |

6.5 - Operability

(id 1912) ---

| | |
|-------------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 800.00 | Limit #2: From 4" to 10" |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: From 12" to 20" |

6.6 - External Leakage Following Operational Test

(id 1913) ---

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Up to 3" |
| Unit price #2 [EUR]: 400.00 | Limit #2: From 4" to 10" |
| Unit price #3 [EUR]: 800.00 | Limit #3: From 12" to 20" |



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EN ISO 11117:2019

(id 1839) Gas cylinders - Valve protection caps and guards - Design, construction and tests

7.7 - Drop test

(id 2467) The valve protection device shall be tested to prove that it functions in such a way that it protects the valve. The test valve shall maintain its operability.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

EN ISO 9806:2013

(id 55) Solar energy - Solar thermal collectors - Test methods

7 - Leakage test

(id 853) Closed loop air heating collectors only

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: --

8 - Rupture or collapse test

(id 854) Air heating collectors only

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: --

9 - High-temperature resistance test

(id 855) Capability of the collector to withstand high irradiance levels without failures.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

10 - Standard stagnation temperature of liquid heating collectors

(id 856) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: --

11 - Exposure and pre-exposure test

(id 857) Low-cost reliability test sequence

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

12 - External thermal shock test

(id 858) Collectors may from time to time be exposed to sudden rainstorms on hot sunny days, causing a severe external thermal shock. This test is intended to assess the capability of a collector to withstand such thermal shocks without a failure.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

13 - Internal thermal shock test

(id 859) Collectors may be exposed to a sudden intake of cold fluid on hot sunny days, causing an internal thermal shock after a period of shutdown, when the installation is brought back into operation while the collector is at its stagnation temperature. This test is to assess the capability of a collector to withstand such shocks without failure.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

14 - Rain penetration test

(id 860) This test is applicable only for glazed collectors and is intended to assess the extent to which glazed collectors are substantially resistant to rain penetration.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

15 - Freeze resistance test

(id 861) This test is intended to assess the extent to which water heating collectors which are claimed to be freeze resistant can withstand freezing, and freeze/thaw cycling. This test is not intended for use with collectors for which it is clearly stated in the installation manual that they may only be used with an antifreeze fluid.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample



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16 - Mechanical load test with positive or negative pressure

(id 862) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: --

17 - Impact resistance test

(id 863) Verification that the sample is capable of withstanding the impact of hailstones

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

18 - Solar collectors final visual inspection

(id 864) Final checklist for collectors examination after all the tests.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: --

20.28 - Performance testing of fluid heating collectors

(id 865) ---

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 2,500.00 Limit #1: --

6 - Internal pressure tests for fluid channels

(id 870) Capability of the collector to be pressurized to nominal value.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

EPA 40 CFR 1051.515:2023

(id 1993) Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter U —Air Pollution Controls

Part 1051 —Control of Emissions from Recreational Engines and Vehicles

Subpart F —Test Procedures

a - Preconditioning fuel soak

(id 2753) ---

Accredited [IEC17025]: NO Execution time [day]: 70
Unit price #1 [EUR]: 1,800.00 Limit #1: final preconditioning at 43 ±5 °C (after durability tests)
Unit price #2 [EUR]: 3,600.00 Limit #2: 10 weeks preconditioning at 43 ±5 °C
Unit price #3 [EUR]: 8,000.00 Limit #3: 20 weeks preconditioning at 28 ±5 °C

b - Permeation test run

(id 2754) ---

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

d1 - Pressure cycling

(id 2755) ---

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

d2 - UV exposure

(id 2756) ---

Accredited [IEC17025]: NO Execution time [day]: 19
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

d3 - Slosh testing

(id 2757) ---

Accredited [IEC17025]: NO Execution time [day]: 46
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample



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EU Regulation 2018/1832

(id 1977) Commission Regulation (EU) 2018/1832 of 5 November 2018 amending Directive 2007/46/EC of the European Parliament and of the Council, Commission Regulation (EC) No 692/2008 and Commission Regulation (EU) 2017/1151 for the purpose of improving the emission type approval tests and procedures for light passenger and commercial vehicles, including those for in-service conformity and real-driving emissions and introducing devices for monitoring the consumption of fuel and electric energy.

Annex VI - 5.1.1 - Ageing through exposure to temperature cycling

(id 2710) ---

Accredited [IEC17025]: NO Execution time [day]: 8
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

Annex VI - 5.1.2 - Ageing through exposure to vibration

(id 2711) ---

Accredited [IEC17025]: NO Execution time [day]: 1 Subcontract: BPS srl
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

Annex VI - 5.1.3 - Ageing through exposure to fuel vapour and determining BWC300

(id 2712) Ageing shall consist of repeatedly loading with fuel vapour and purging with laboratory air.

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 3,500.00 Limit #1: Applicable to any sample

EVS EN 15267-3:2008

(id 1753) Air quality - Certification of automated measuring systems - Part 3: Performance specifications and test procedures for automated measuring systems for monitoring emissions from stationary sources

10.3 - Security

(id 2265) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.4 - Output ranges and zero point

(id 2266) The test laboratory shall check whether the output ranges on the AMS can be adjusted and whether such ranges are appropriate for the intended applications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.5 - Additional data outputs

(id 2267) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.6 - Display of operational status signals

(id 2268) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.7 - Prevention or compensation for optical contamination

(id 2269) For optical techniques, the test laboratory shall assess whether contamination of the optical boundary surfaces interferes with the measuring technique.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.8 - Degrees of protection provided by enclosures

(id 2270) The effect of liquid water on the AMS shall be assessed by inspection in relation to EN 60529.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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10.9 - Response time

(id 2271) The test laboratory shall determine the AMS response time using zero and span reference materials.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.10 - Repeatability standard deviation at zero point

(id 2272) The repeatability standard deviation at zero point shall be determined by application of a reference material at the zero point.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.11 - Repeatability standard deviation at span point

(id 2273) The repeatability standard deviation at span point shall be determined by application of a reference material at the span point.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.12 - Lack of fit

(id 2274) The test laboratory shall perform the lack of fit test according to Annex C. The linearity of the response of the AMS shall be checked using at least seven different reference materials, including a zero concentration.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.14 - Influence of ambient temperature

(id 2275) The test laboratory shall determine how the zero and span values of the AMS are influenced by changes in ambient temperature by using a climatic chamber, which can control ambient temperature from -20 °C to +50 °C, within limits of $\pm 1,0$ K.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.15 - Influence of sample gas pressure

(id 2276) The test laboratory shall determine the influence of variations in sample gas pressure on the response of the AMS.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.16 - Influence of the sample gas flow for extractive AMS

(id 2277) The AMS shall initially be operated with the flow rate prescribed by the manufacturer. This flow rate shall then be changed to the lowest flow rate specified by the manufacturer.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.17 - Influence of voltage variations

(id 2278) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.18 - Influence of vibration

(id 2279) ---

Accredited [IEC17025]: NO Execution time [day]: 1 Subcontract: GESTLABS S.R.L.
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.19 - Cross-sensitivity

(id 2280) The influence of potentially interfering substances also present in the waste gas shall be determined by admitting test gas mixtures to the input of the complete AMS.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.20 - Excursion of measurement beam of cross-stack in-situ AMS

(id 2281) The test laboratory shall gradually and precisely deflect the transmitter and receiver assemblies of the AMS in the horizontal and vertical planes, and then record the measured signals using reference materials.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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10.22 - Response factors

(id 2282) The response factors (weighting factors) for total organic carbon measuring AMS shall be evaluated using defined test gas concentrations admitted to the AMS from test gas containers or by evaporating produced mixtures.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.1 - Calibration function (Field test)

(id 2283) The test laboratory shall determine the calibration function for the individual measured components of the AMS during the field test, by performing parallel measurements with the SRM.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.2 - Response time (Field tests)

(id 2284) The response time shall be evaluated by admitting reference material at the zero and span points to the input of the complete AMS.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.3 - Lack of fit (Field test)

(id 2285) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.4 - Maintenance interval (Field test)

(id 2286) The test laboratory shall determine the maintenance work that is necessary for the AMS to work properly as well as the intervals at which such maintenance work shall be performed.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.5 - Zero and span drift (Field test)

(id 2287) The test shall be performed using two AMS of identical design as part of the field test in the form of paired measurements in the smallest measuring range tested.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.6 - Availability (Field test)

(id 2288) The test laboratory shall determine the availability of the AMS by recording the duration of the field test and all interruptions to the normal monitoring functionality of the AMS.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.7 - Reproducibility (Field tests)

(id 2289) Reproducibility shall be determined during the three month field test from simultaneous, continuous measurements by means of two identical AMS at the same measurement point (paired measurements) and an electronic data recording system with a memory capacity of at least four weeks and a sampling rate of at least four times during the AMS averaging period.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.8 - Contamination check of in-situ systems

(id 2290) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

EVS EN 15267-4:2017

(id 1754) Air quality - Certification of automated measuring systems - Part 4: Performance criteria and test procedures for automated measuring systems for periodic measurements of emissions from stationary sources

10.3 - Output ranges and zero point

(id 2246) The test laboratory shall check whether the output ranges on the P-AMS can be adjusted and whether such ranges are appropriate for the intended applications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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10.4 - Display of operational status signals

(id 2247) The test laboratory shall assess whether the P-AMS has a means of displaying and provide data for recording the relevant operational status (e.g. standby, service, malfunction).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.5 - Degrees of protection provided by enclosures

(id 2248) The effect of liquid water on the P-AMS shall be assessed by inspection in relation to EN 60529.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.6 - Response time

(id 2249) The test laboratory shall determine the P-AMS response time using zero and span reference materials.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.7 - Repeatability standard deviation at zero point

(id 2250) The repeatability standard deviation at zero point shall be determined by application of a reference material at the zero point.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.8 - Repeatability standard deviation at span point

(id 2251) The repeatability standard deviation at span point shall be determined by application of a reference material at the span point.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.9 - Lack of fit

(id 2252) The test laboratory shall perform the lack of fit test according to Annex C at the beginning of the laboratory test. The linearity of the response of the P-AMS shall be checked using at least seven different reference materials, including a zero concentration.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.10 - Short-term zero and span drift

(id 2253) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.11 - Set-up time after transportation and influence of ambient temperature

(id 2254) The test of setting the P-AMS into operation and the test of the influence of a slow change in ambient temperature shall be carried out with the P-AMS placed in a climatic chamber. Only one test cycle is necessary.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.12 - Influence of voltage variations

(id 2255) The supply voltage to the P-AMS shall be varied, using an isolating transformer, in steps of 5 % from the nominal supply voltage to at least the upper and the lower limits specified in Clause 8.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.13 - Influence of vibration

(id 2256) The P-AMS shall be examined in the laboratory and in the field in respect to whether normal vibrations and transportation affect the performance of the P-AMS.

Accredited [IEC17025]: NO Execution time [day]: 1 Subcontract: GESTLABS S.R.L.
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.14 - Influence of sample gas pressure

(id 2257) The test laboratory shall determine the influence of variations in sample gas pressure on the response of the P-AMS.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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10.15 - Influence of the sample gas flow for extractive P-AMS

(id 2258) The P-AMS shall initially be operated with the flow rate prescribed by the manufacturer. This flow rate shall then be changed to the lowest flow rate specified by the manufacturer.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.16 - Cross-sensitivity

(id 2259) The influence of potentially interfering substances also present in the stack gas shall be determined by admitting test gas mixtures to the input of the complete P-AMS.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

10.18 - Response factors

(id 2260) The response factors (weighting factors) for total organic carbon measuring P-AMS shall be evaluated using defined test gas concentrations admitted to the P-AMS from test gas containers or by evaporating produced mixtures.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.1 - Response time (Field tests)

(id 2261) The response time shall be evaluated by admitting reference material at the zero and span points to the input of the complete P-AMS.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.2 - Short-term zero and span drift (Field tests)

(id 2262) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

12.3 - Reproducibility (Field tests)

(id 2263) Reproducibility shall be determined during field tests from simultaneous measurements by means of two identical P-AMS at the same measurement point (paired measurements).

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

FCA 9.02135/03 10-MAR-2006

(id 995) Vacuum brake piping: Carryover/Frozen

2.4.10 - Prolonged thermal ageing

(id 1526) ---

Accredited [IEC17025]: NO Execution time [day]: 8
Unit price #1 [EUR]: 700.00 Limit #1: Not relevant

2.4.14.1 - Resistance to hot vacuum

(id 1527) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

2.4.6 - Cold impact strength

(id 1528) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Standard temperature (-40°C)

FCA 9.02136/03 12-APR-2016

(id 944) Plastic pipes for engine coolant lines

2.5.1 - Extended thermal ageing in coolant

(id 1385) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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2.5.2 - Thermal cycle resistance

(id 1386) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 2,500.00 Limit #1: Not relevant

2.5.8 - Pulsating pressure

(id 1387) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,500.00 Limit #1: Not relevant

FCA 9.02159/01:2014 Rev. B

(id 1889) Plastic fuel tanks (1D) - FROZEN

2.8.5 - Verifica dei volumi e della capacità

(id 2526) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

2.8.7 - Verifica curva di livello

(id 2527) Check that the measured level of fluid inside the tank corresponds to that indicated by technical drawings when the tank is positioned at 0° on level ground.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

2.7 - Determinazione della quantità e delle dimensioni degli sfondi interni

(id 2536) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

2.8.1 - Helium test

(id 2537) Il complessivo serbatoio carburante deve superare la prova di tenuta in Elio utilizzando un sistema hard-vacuum. Il valore di perdita minima ammessa per il complessivo serbatoio carburante deve essere correlato con un valore di minima perdita ammessa che ne assicuri la conformità per i valori di emissione e non comprometta la prestazione di permeazione.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

2.8.3 - Tenuta a depressione

(id 2538) Suction test at -20mbar on tanks.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

2.10.1 - Resistenza alla sovrappressione

(id 2558) This test is intended to verify the overpressure resistance of a tank.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

2.8.2 - Prova di tenuta pneumatica in vasca d'acqua

(id 2595) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

FCA CS.00056 10-DEC-2018

(id 1489) FCA Environmental specification for electrical/Electronic (E/E) components

5.5.1 - Dust intrusion

(id 1941) The dust intrusion shall apply to electronic components when the dust intrusion during vehicle operation can degrade the component or its function

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample



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5.5.3 - Water or steam intrusion - IP X5

(id 1942) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: sample movable by one operator

5.5.5 - Salt fog

(id 1943) ---

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 1,400.00 Limit #1: 96h

5.6.2 - Chemical exposure

(id 1944) *The fluids selected for the test shall be fluids that the component may encounter during the vehicle service life.*

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

5.3.8 - Solar radiation soak according to DIN 75220:2012

(id 1945) ---

Accredited [IEC17025]: NO Execution time [day]: 50
Unit price #1 [EUR]: 1,800.00 Limit #1: 7 days

5.3.4 - Power thermal cycle endurance (PTCE)

(id 1946) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 8,000.00 Limit #1: Applicable to any sample

5.1.3.7 - Functional checks - Before and after test

(id 1948) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.6.1 - Mixed Flowing Gas

(id 2516) *This is an accelerated test to simulate the effects of atmospheric pollutants, corrosive gases on electronics. To accelerate the test, the gases are much more concentrated than seen in field conditions.*

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 3,200.00 Limit #1: Applicable to any sample

5.5.2 - Mud Resistance

(id 2647) *This test is to verify that the component ability to dissipate heat is not affected so much that it impairs the functionality when covered by mud. This test will verify that the component can still function and dissipate heat while covered by mud.*

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 3,300.00 Limit #1: Not relevant

FCA MS.90089 08-Apr-2015

(id 1415) *Requisiti prestazionali rivestimenti per componenti sotto-cofano e telaio verniciati*

Tabella 6 - Spessore ED - Pannello DV/PV - Particolare

(id 1876) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Tabella 6 - Adesione iniziale Quadrettatore (Cross Hatch)

(id 1877) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

Tabella 6 - DI Immersione in acqua

(id 1878) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant



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Tabella 6 - Adesione all'umido

(id 1879) ---

Accredited [IEC17025]: NO Execution time [day]: 25
Unit price #1 [EUR]: 1,300.00 Limit #1: Not relevant

Tabella 6 - Resistenza alla ghiaia dopo esposizione all'umidità

(id 1880) ---

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 5,500.00 Limit #1: Not relevant

FCA PF.90064 09-MAY-2018

(id 1492) Liquid vapor separator drain valve-fuel

6.2.4 - Port strength

(id 1950) The LVSDV (Liquid Vapor Separator Drain Valve) port, along with the ports located on the valve to tank internal attachment, shall be capable of withstanding all assembly forces, durability, and FMVSS impact forces, while remaining leak free through the useful life of the vehicle. Adequate port strength is required to ensure the port/connection integrity during manufacturing, shipping, assembly, and in use durability performance of the design. A port strength load test confirms the strength of the port when subjected to external forces.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.2 - Resistance to fluids/Vapors

(id 1951) This test demonstrates the performance of the LVSDV (Liquid Vapor Separator Drain Valve) when exposed to expected fuels. The LVSDV must withstand exposure to fluids present in the operating environment of the fuel tank for the useful life of the vehicle, 15 years/150.000 miles.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.5 - Drop impact test

(id 1952) The LVSDV (Liquid Vapor Separator Drain Valve) must be capable of functioning properly after a drop impact from a specified height to insure the robustness of the design to normal handling conditions. Prior to the start of the test, all orientations that will be subject to the drop impact test must be approved by Fuel Systems Engineering. This test confirms if the LVSDV is obviously damaged during handling, or if not obviously damaged, will still function when handled manually during assembly facilities or during fuel system servicing situations at dealership locations.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.7 - Low speed impact test

(id 1953) The LVSDV (Liquid vapor separator drain valve-fuel) assembly internal components to the fuel tank assembly shall meet functional requirements following low speed internal load conditions without damage, disassembly, or loss of function. A low speed impact test confirms the internal components of the LVSDV maintain the ability to function after a low speed internal load condition.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.10 - Valve to Upper housing Pull Out Force Test

(id 1954) The retention between the upper housing and lower housing shall withstand a high force load condition tested to failure.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.1 - Flow

(id 1955) The LVSDV (Liquid Vapor Separator Drain Valve) must meet flow requirements to prevent vapor pressure build-up in the fuel tank. The LVSDV must provide sufficient refueling vapor flow such that the fuel system tank pressure is minimized to avoid premature shut off, well back, and/or spit back during a refueling scenario.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 700.00 Limit #1: Applicable to any sample

FCA PF.90068:2020

(id 1768) DIESEL EXHAUST FLUID - HEATED
SUPPLY LINES

5.5.2 - Calcium Chloride Resistance

(id 2340) ---



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Accredited [IEC17025]: NO Execution time [day]: 9
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

5.5.3 - Zinc Chloride Resistance

(id 2341) ---

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

5.7.1 - Thermal cycle

(id 2779) ---

Accredited [IEC17025]: NO Execution time [day]: 65
Unit price #1 [EUR]: 18,500.00 Limit #1: Applicable to any sample

FCA PF.90083:2020 Change level B

(id 1703) Fuel Tank assembly - Plastic

8.2.1.1 - Preconditioning for Approved Tank Constructions

(id 2145) ---

Accredited [IEC17025]: NO Execution time [day]: 140
Unit price #1 [EUR]: 3,200.00 Limit #1: Applicable to any sample

8.2.1.2 - Preconditioning New Tank Constructions

(id 2146) ---

Accredited [IEC17025]: NO Execution time [day]: 140
Unit price #1 [EUR]: 8,000.00 Limit #1: Applicable to any sample

9.5 - Slosh Test

(id 2462) The objective of the Slosh Durability test is to prove the robustness of the fuel tank assembly and components when subjected to sloshing events that can occur within the life of a vehicle. This test intended to test all internal components including slosh baffle attachments and unique internal design features.

Accredited [IEC17025]: NO Execution time [day]: 70
Unit price #1 [EUR]: 15,000.00 Limit #1: Applicable to any sample

6.3.8 - Vacuum Strength

(id 2520) The purpose of this test is to determine the ability of the Fuel Tank Assembly to withstand excessive vacuum.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

6.3.6 - Tank Shell Burst

(id 2521) The fuel tank shell must resist burst during dynamic pressure loading, for the intended useful life of the vehicle.

The purpose of this test is to verify the structural integrity of the fuel tank shell when exposed to high pressure. The burst test is to be conducted on the fuel tank as molded.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

6.3.7 - Tank Assembly Burst

(id 2522) The purpose of this test is to verify the structural integrity of the Fuel Tank Assembly when exposed to high internal pressure.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

7.5.1 - Fuel level Sensor Accuracy

(id 2551) The Fuel Delivery Module, mounted in the fuel tank, must provide the correct level sensor output at key points (i.e. LFW, ¼, ½, ¾, and full) in different static conditions that occur in vehicle use.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

7.12.1 - Fuel Measurement Test

(id 2552) The fuel gauge shall accurately represent the amount of fuel in the fuel tank under all vehicle duty cycles including all driving and parking conditions.

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 850.00 Limit #1: Applicable to any sample



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7.11 - Fuel Tank Volumes and Capacity

(id 2553) The fuel system, including the fuel tank assembly, shall meet all the volume characteristics of the fuel system including total volume, active and passive vapor domes, Rated Capacity, and partial refueling.

The Fuel Tank Assembly shall meet the vehicle requirements for Rated Capacity, vapor venting, and dynamic unusable fuel capacity when the tank is installed in the vehicle environment.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,600.00 Limit #1: Applicable to any sample

6.3.10 - Fuel Tank Hose and Line Pull-Off

(id 2788) Determine the loads to separate the hoses and lines from the Fuel Tank Assembly.

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to gasoline components

FCA PF.90098:2018

(id 1766) This standard covers the environmental, physical, electrical, mechanical, functional, regulatory, and durability requirements for the Inlet Check Valve (ICV).

5.2 - Resistance to Fluids - Vapors and Preconditioning Test for Subsequent Testing

(id 2338) This test demonstrates the performance of the ICV when exposed to expected fuels. The ICV must withstand exposure to fluids present in the operating environment of the fuel tank for the useful life of the vehicle, 15 years / 150,000 miles.

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

FCA PF.90141 20/02/2017

(id 1647) Return hose assembly – hydraulic steering

7.3 - Burst test

(id 2096) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: One temperature only (destructive testing)

FCA PF.90197 15-JUN-2018

(id 1330) Fuel bundle and fuel system Jumpers - Plastic, rubber and metallic

6.3.5 - Internal fuel resistance test

(id 1960) ---

Accredited [IEC17025]: NO Execution time [day]: 44
Unit price #1 [EUR]: 3,500.00 Limit #1: Single pipe
Unit price #2 [EUR]: 4,500.00 Limit #2: Assembly of multiple pipes

9.5 - Pulsating pressure

(id 1961) The fuel/vapor line assembly must withstand internal pressure and pressure pulsations for the useful life of the vehicle.

The assembled components are subjected to 300000 pressure cycles for traditional Stop & Start systems, 600000 cycles for Stop & start systems with Freewheels.

Pressure cycle is described in Tab.10 of FCA PF.90197 ed.2018.

Test pressures depends on the class of the components that determines the working pressures of the line assembly, in any case the minimum pressure applied during pulsating pressure is P min indicated in Tab. 9 of FCA PF.90197 ed.2018, and the maximum one is 2 times Ps.

Chamber temperature cycle is described in Fig.4 - Time/Temperature of FCA PF.90197 ed.2018.

Accredited [IEC17025]: NO Execution time [day]: 25
Unit price #1 [EUR]: 5,500.00 Limit #1: 300000 cycles
Unit price #2 [EUR]: 8,000.00 Limit #2: 600000 cycles

9.3 - Life cycle test

(id 1962) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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7.4 - Burst test

(id 1963) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: One temperature only (destructive testing)

8.2 - Assembly Hydrocarbon loss (MiniSHED) Test - NON NAFTA

(id 1971) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 6,000.00 Limit #1: Applicable to any sample

9.4 - Vibration cycle test

(id 1972) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2 - Leak Resistance

(id 1973) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.3.4 - Fitting Pull-Off test

(id 1974) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.1 - Appearance requirements

(id 1975) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.3 - Pressure drop/Flow resistance test

(id 1982) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

FCA PF.90197:2021

(id 1743) Fuel bundle and fuel system jumpers - plastic, rubber and metallic

6.3.5 - Internal fuel resistance test

(id 2222) The materials used in a gasoline fuel / vapor line assembly must function with continuous exposure to liquid fuel and fuel vapors, including alcohol blends.

Accredited [IEC17025]: NO Execution time [day]: 44
Unit price #1 [EUR]: 3,800.00 Limit #1: Single pipe
Unit price #2 [EUR]: 4,800.00 Limit #2: Assembly of multiple pipes

7.2 - Leak resistance

(id 2225) Checking the tightness without leaks of the fuel / vapor line assembly

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

6.3.4 - Fitting Pull-Off Test

(id 2228) Testing the robustness of the connections between the fuel / vapor line and the fuel / vapor connectors.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

7.4 - Burst Test

(id 2229) Verification of the ability of the fuel / vapor line assembly to withstand internal pressure.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: One temperature only (destructive testing)



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FCA PF.90254:2015

(id 1959) CAPLESS REFUELING MODULE

5.6.2 - Soak Test for Subsequent Testing

(id 2648) The Capless Refueling Module must withstand exposure to any fluids present in the operating environment of the fuel filler pipe for the useful life of the vehicle.

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1 [EUR]: 1,400.00 Limit #1: Applicable to any sample

5.4 - Dust Ingestion

(id 2649) The Capless Refueling Module must not allow foreign environmental material to enter into the fuel tank assembly.

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

FCA PF.90258 (S,E,D) 8-JAN-2019

(id 1197) FCA technical specification - Fuel tank assembly - Metallic

5.7.1 - Soak Test - Fuel Compatibility

(id 1623) ---

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1 [EUR]: 8,000.00 Limit #1: With cold roll as acceptance criteria
Unit price #2 [EUR]: 5,000.00 Limit #2: Only aging without cold roll test

5.4.1 - Corrosion: Functional requirement

(id 1819) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 9,000.00 Limit #1: Not relevant

5.4.2 - Corrosion: Cosmetic requirement

(id 1820) ---

Accredited [IEC17025]: NO Execution time [day]: 40
Unit price #1 [EUR]: 6,500.00 Limit #1: Not relevant

5.6.1 - Chemical Exposure Test

(id 1821) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.1 - Physical Requirements: Fuel Tank Shell Mass

(id 1822) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.3 - Physical Requirements: Internal Cleanliness

(id 1823) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.5 - Physical Requirements: Material Treatment Requirements

(id 1824) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.6 - Physical Requirements: Dimensional Requirements

(id 1825) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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6.2.8.2.1 - Welded Components - Roller Welding - Micrographic check test

(id 1826) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.8.2.2 - Welded Components - Roller Welding - Peel check

(id 1827) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.8.3.1 - Brazing Welding - Visual test

(id 1828) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.8.3.3 - Brazing Welding - Peel check

(id 1829) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.8.4 - Welded spots

(id 1830) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.9 - Non-hermetic Internal Component Retention

(id 1831) Non-hermetic internal components, such Grade Vent Valve, Control Valve, brackets, etc. that are attached to the internal surface of fuel tank but not welded, must meet a pull off force that exceeds the supported component loading seen in the vehicle environment.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 2,500.00 Limit #1: No soaking - up to 10 points
Unit price #2 [EUR]: 3,500.00 Limit #2: With soaking - up to 10 points

6.2.11 - Cold Roll Test

(id 1832) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Acceptance criteria after fuel compatibility test
Unit price #2 [EUR]: 3,000.00 Limit #2: Single measurement
Unit price #3 [EUR]: 1,500.00 Limit #3: Repetition with set up ready

6.3.5 - Mechanical Requirements: Stability Slow Speed and High Speed Sled Impact Test

(id 1833) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.3.6 - Mechanical Requirements: Tank Assembly Burst

(id 1834) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

6.3.7 - Mechanical Requirements: Vacuum Strength

(id 1835) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 570.00 Limit #1: Not relevant

6.3.8 - Mechanical Requirements: Tank Assembly Handling Impact

(id 1836) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

6.3.9 - Mechanical Requirements: Fuel Tank Hose and Line Pull-Off

(id 1837) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,500.00 Limit #1: Fuel assembly
Unit price #2 [EUR]: 4,500.00 Limit #2: Diesel assembly



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6.4.6.1 - Electrical Requirements: Sensor Function and Continuity Verification

(id 1838) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2 - Customer Refueling Fill Quality

(id 1839) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.6.2 - Tip Angle Venting – Static and Dynamic Liquid Carryover

(id 1840) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.7.1 - Fuel Level Sensor Accuracy

(id 1841) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.7.2 - Fuel System Priming/Unpriming Checks on Test Bench

(id 1842) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.9 - Vacuum Leakage

(id 1843) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 240.00 Limit #1: Not relevant

7.10 .1 - External Leakage - Static Leak Integrity S,E - Fuel Tank Leak Test S,E

(id 1844) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 4,000.00 Limit #1: Not relevant

7.12 - Fuel Tank Volumes and Capacity <D>

(id 1845) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.13.1 - Fuel Measurement Test

(id 1846) The fuel gauge shall accurately represent the amount of fuel in the fuel tank under all vehicle duty cycles including all driving and parking conditions.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: With one fuel

8.1 - ORVR SHED Refueling <E>

(id 1847) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.2.1.1 - Preconditioning for NAFTA permeation test

(id 1848) ---

Accredited [IEC17025]: NO Execution time [day]: 70
Unit price #1 [EUR]: 4,000.00 Limit #1: Applicable to any sample

8.3.1.x - Preconditioning for Non-NAFTA permeation test

(id 1849) ---

Accredited [IEC17025]: NO Execution time [day]: 140
Unit price #1 [EUR]: 4,000.00 Limit #1: Up to 10 weeks
Unit price #2 [EUR]: 8,000.00 Limit #2: Up to 20 weeks



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8.6.1 - Hydraulic Test

(id 1850) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.6.2 - Ambient Roll Test (Overturning Test)

(id 1851) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

9.6 - Assembly Shake/Vibration

(id 1852) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4.7 - Electrostatic Discharge (ESD)

(id 1917) See SAE J1645 REV. AUG2006

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.4.3 - Internal corrosion

(id 1940) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Up to 48 h

8.2.1 - Permeation test for NAFTA

(id 2037) ---

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 2,000.00 Limit #1: Not relevant

8.3.1 - Permeation test for Non-NAFTA

(id 2038) ---

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 2,000.00 Limit #1: Not relevant

Amendment - Soak Test - Fuel Compatibility (2016h)

(id 2215) ---

Accredited [IEC17025]: NO Execution time [day]: 84
Unit price #1 [EUR]: 12,500.00 Limit #1: With cold roll as acceptance criteria
Unit price #2 [EUR]: 9,500.00 Limit #2: Only aging without cold roll test

FCA PF90177:2018

(id 1190) FCA Performance Specification. CANISTER - EVAPORATIVE EMISSIONS 28-MAR-2018

8.7.2 - Wall Permeation: canister pre-conditioning

(id 1616) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 2,600.00 Limit #1: Not relevant

9.3 - Pressure Cycling

(id 1884) This test will verify structural durability of the canister housing, cover and welded interface. The volume compensation ability of the canister under pressure will also be verified.

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 2,000.00 Limit #1: Not relevant

8.7.3 - Permeation test

(id 2056) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample



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Fiat 9.02136-01

(id 1812) Tubi e manicotti in gomma per conduzione liquido di raffreddamento

2.5.5 - Dilatazione diametrale

(id 2434) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

2.5.6 - Pressione di scoppio

(id 2435) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

2.5.11 - Pressione pulsante

(id 2436) ---

Accredited [IEC17025]: NO Execution time [day]: 9
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Fiat Auto 50473:2000

(id 2043) Determinazione della resistenza alla benzina delle vernici, degli smalti, ecc.

2.3 - Metodo B (strofinamento)

(id 2789) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Fiat Auto 9.02144/01:2002 Ed. 6

(id 1890) Bocchettoni introduzione combustibile in materiale plastico

2.9.3 - Low temperature impact resistance

(id 2523) Resistenza all'urto a bassa temperatura su bocchettoni.

Accredited [IEC17025]: NO Execution time [day]: 8
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

2.6 - Determination of the quantity and size of internal scraps

(id 2534) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

2.7.3 - Check of volumes and capacities

(id 2535) Verification of the filling neck volume compared to the rated volume.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

2.9.1 - Burst resistance

(id 2581) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 250.00 Limit #1: Applicable to any sample

2.7.1 - High and low pressure tightness

(id 2582) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample



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2.7.2 - Suction tightness

(id 2583) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

Fiat Group Automobiles 55250/03:2013

(id 1885) MULTISTRATO HDPE – EVOH PER SERBATOI COMBUSTIBILE PRODOTTI CON TECNOLOGIA DI ESTRUSIONE / SOFFIAGGIO.

5 - Resilienza IZOD

(id 2528) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

5 - Impact resistance from falling dart

(id 2529) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

5 - Layer of Regrind HDPE Material SEM Analysis

(id 2530) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

Fiat Group Automobiles 9.02137/01:2012

(id 1991) TUBAZIONI PLASTICHE CON TERMINALI PER CONDUZIONE COMBUSTIBILE

2.7.17 - Funzionamento simulato

(id 2751) ---

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1 [EUR]: 4,000.00 Limit #1: Applicable to any sample

Fiat Group Automobiles 9.02137/05:2010

(id 386) Automotive blowby piping endurance tests

2.7.3 - Thermal aging for blow-by circulation systems

(id 1195) ---

Accredited [IEC17025]: NO Execution time [day]: 9
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

2.7.5 - Long thermal aging in exhausted oil for blow-by circulation systems

(id 1196) The pipe is filled at 50% with exhaust oil supplied by the customer

Accredited [IEC17025]: NO Execution time [day]: 22
Unit price #1 [EUR]: 1,800.00 Limit #1: Not relevant

2.7.7 - Pulsing pressure for blow-by circulation systems

(id 1197) Pulsing pressure obtained with compressed air mixed with 1 drop-per-cycle exhaust motor oil, supplied by the customer

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,500.00 Limit #1: Not relevant

2.7.4 - Resistance to thermal cycles for blow-by circulation systems

(id 1202) Thermal cycle repeated as requested

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 1,200.00 Limit #1: 5 cycles
Unit price #2 [EUR]: 2,000.00 Limit #2: 10 cycles



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2.7.6 - Burst resistance for blow-by circulation systems

(id 1383) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

FORD ES-FU-5A-9J279-AA Rev.2013-09-25

(id 1493) Ford engineering specification- Tube Assy. - Fuel Supply, Return and Vapor

4.3 - point 2) - Key life tests for generic features of assemblies (Preconditioning only)

(id 1949) The key life test is required to qualify generic component designs, materials, manufacturing processes, and manufacturers of pressurized fuel tube or vapor assemblies.

However, for this specific case, only the preconditioning part indicated at point 2) of §4.3 is performed with test fluid CM15, and only point 1) of the acceptance criteria is considered, as requested by the customer.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,800.00 Limit #1: Applicable to any sample

FORD ESDS7H-19B591-AA

(id 1749) Engineering Specification - External corrosion resistance - Test Method ASTM B 117

3A.9 - External Corrosion Resistance

(id 2237) This test method is intended for assessing the corrosion resistance of the external parts of components exposed to a continuous salt mist environment.

Accredited [IEC17025]: NO Execution time [day]: 20
Unit price #1 [EUR]: 2,600.00 Limit #1: Applicable to any sample

FORD ESDS7H-19E777-AA/K

(id 945) Engineering Specification - APGE - Ford Laboratory Test Method BI 123-01

2 - APGE (Ford Laboratory Test Method BI 123-01)

(id 1451) Objective of this test: To simulate Arizona Proving Ground Accelerated Corrosion Test in a Laboratory

Accredited [IEC17025]: NO Execution time [day]: 56
Unit price #1 [EUR]: 2,700.00 Limit #1: Not relevant

3A.9 - External Corrosion Resistance

(id 2216) ---

Accredited [IEC17025]: NO Execution time [day]: 20
Unit price #1 [EUR]: 2,600.00 Limit #1: Applicable to any sample

FORD WSK-M98P4-A (2 July 1990)

(id 1495) FUEL LINE, POLYAMIDE (PA) 11/12

3.4.6 - Cold Impact Resistance

(id 1956) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

3.4.7 - Resistance to Fuels

(id 1957) ---

Accredited [IEC17025]: NO Execution time [day]: 31
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

3.4.4 - Flexibility of the sample

(id 1958) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample



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FPI9.EMS011 (Issue 1, 05/11/2015)

(id 1640) FPT Normalized Specification for Engine Control System
Components Validation

8.3.2 - Dust Ingress Test

(id 2086) The dust ingress test checks for the effects of dust laden environments generated by soil working operations in dry conditions. The Dust Ingress procedure results can be affected by prior Heat (see section 8.1), Mechanical (see section 8.2) and Altitude (see section 8.3.1) tests, and so is normally conducted subsequent to these. This test is to be performed with dust environment with a suspended Arizona dust (ISO 12103) using the method outlined in EN60529 (BS).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.3.3.4 - Hose Washing - Test severity level IP X7

(id 2087) Water Ingress Test checks for resistance to water from the normal working environment (including leakage). The Water Ingress procedure results can be affected by prior Heat (see section 8.1), Mechanical (see section 8.2) and Altitude (see section 8.3.1) tests, and so is normally conducted subsequent to these. The test is performed using the method outlined in EN60529 (BS).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.3.3.5 - Pressure Wash/Steam Procedure (High Pressure Jet Washing)

(id 2088) Water Ingress Test checks for resistance to water from the normal working environment (including leakage). The Water Ingress procedure results can be affected by prior Heat (see section 8.1), Mechanical (see section 8.2) and Altitude (see section 8.3.1) tests, and so is normally conducted subsequent to these.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.4.2.4 - Corrosion

(id 2089) The test shall be performed in according to IEC 60068-2-52

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.4.2.5 - Leakage and Function

(id 2090) Salt spray (mist) test as outlined in IEC 60068-2-11 Test 2 Procedure Ka, method of salt spray (fog) testing.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

GB 18296 -2001

(id 1326) NATIONAL STANDARD OF PEOPLE'S REPUBLIC OF CHINA - Safety property requirements and test methods for automobile fuel tank

4.2 - Test for the opening pressure of safety venting system

(id 1816) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

4.3 - Test for the vibration enduring performance

(id 1817) ---

Accredited [IEC17025]: NO Execution time [day]: 2 Subcontract: GESTLABS S.R.L.
Unit price #1 [EUR]: 2,000.00 Limit #1: Sample up to 50 cm length
Unit price #2 [EUR]: 3,800.00 Limit #2: Sample up to 200 cm length

4.4 - Test for pressure resistance of metal fuel tank

(id 1818) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant



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GB 18296:2019

(id 1905) Safety property requirements and test methods for automobile fuel tank and its installation

5.2 - Overturn test

(id 2559) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.3 - Low temperature shock resistance test of plastic fuel tank

(id 2560) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

5.4 - Mechanical strength test of plastic fuel tank

(id 2561) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

5.5 - Fuel permeability test of plastic fuel tank

(id 2562) ---

Accredited [IEC17025]: NO Execution time [day]: 84
Unit price #1 [EUR]: 5,500.00 Limit #1: Applicable to any sample

5.6 - Fuel resistance test of plastic fuel tank

(id 2563) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.7 - Fire resistance test of plastic fuel tank

(id 2564) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 4,200.00 Limit #1: Applicable to any sample

5.8 - High temperature resistance test of plastic fuel tank

(id 2565) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.1 - Pressure resistance test of metal fuel tank

(id 2782) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

GB 20800.1:2006

(id 1047) General rules of explosion-protect techniques of reciprocating internal combustion engines for explosive atmospheres - Part 1: Group II engines for use in flammable gas and vapor atmospheres

5.2.2 - Determination of maximum explosion pressures

(id 1561) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: not relevant

5.2.4 - Non transmission tests

(id 1562) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant



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5.2.3 - Overpressure test

(id 1563) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

GMW14638:2019

(id 1708) GM material specification: Thermoplastic Fuel Tubing

3.15 - Resistance to stone impact

(id 2150) The Stone Impact Test Procedure is as per GMW14700, Method B for ten (10) cycles at -40 °C test temperature.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

3.6 - Burst Test

(id 2151) Evaluation of bursting pressure, using air at room temperature.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

3.22 - Fuel Resistance 5040h Recirculation Test

(id 2152) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 15,000.00 Limit #1: Applicable to any sample

3.23 - Sour Gasoline 1008h Recirculation Test

(id 2155) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 5,000.00 Limit #1: Applicable to any sample

3.22.3.1 - Length change after Fuel Resistance

(id 2209) Simple measurement of the length of the tube, performed before and after the aging

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample

3.22.3.2 - Leak test after Fuel Resistance

(id 2210) Simple bubble test

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

3.9 - Cold Temperature Flexibility Test

(id 2211) Bending on a mandrel at -40°C

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

3.10 - Surface Resistivity

(id 2213) Simple resistivity measurement, using a megohmmeter and copper pins inserted in the tube

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

3.16 - Layer Adhesion Test

(id 2214) The tube is cut in helical coil, then it's measured the force to separate the layers at 50mm/min

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample



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GMW14872:2013

(id 1545) Cycling Corrosion Laboratory test

unref - Corrosion testing

(id 2005) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 8 |
| Unit price #1 [EUR]: 800.00 | Limit #1: 24 hours |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 48 hours |
| Unit price #3 [EUR]: 1,400.00 | Limit #3: 96 hours |

Honda specification

(id 1651) Fuel lines components

6.1.b - Sealing property (filled tube, static+dynamic)

(id 2102) ---

| | |
|-----------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Liquid line (positive pressure) |
| Unit price #2 [EUR]: 400.00 | Limit #2: Vapour line (positive+negative pressure) |

6.2.a - Bursting pressure (untreated state)

(id 2103) ---

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Not relevant |

6.3 - Tube deformation of negative pressure

(id 2104) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.5 - Thermo-cycle test

(id 2105) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 3,600.00 | Limit #1: Not relevant |

6.6 - Vibration durability of fuel circulation

(id 2106) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 4,200.00 | Limit #1: Applicable to any sample |

6.8 - Low temperature impact property

(id 2107) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 2,800.00 | Limit #1: Not relevant |

6.9 - Bending test at low temperature

(id 2108) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.10 - Calcium Chloride resistance

(id 2109) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Applicable to any sample |

6.11 - Pipe insertion property

(id 2110) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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6.12 - Pipe insertion durability

(id 2111) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

6.13 - Mating pipe, tube, joint pulling-out load

(id 2112) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.14 - Tensile resistance

(id 2113) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

6.15 - Sealing performance after rotating joint of pipe and tube

(id 2114) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

6.16 - Weatherability

(id 2115) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 4,500.00 Limit #1: Applicable to any sample

6.17 - Adhesiveness

(id 2116) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

6.18/P - Fuel permeability: preconditioning

(id 2117) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 8,500.00 Limit #1: Applicable to any sample

6.19 - Conductivity

(id 2118) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4 - Dimensional stability

(id 2119) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.21 - Positive and negative pressure durability test

(id 2120) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

6.7 - Vibration durability

(id 2121) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 3,000.00 Limit #1: Applicable to any sample

6.20 - Chipping resistance

(id 2122) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample



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6.1.a - Sealing property (untreated state, static+dynamic)

(id 2123) ---

| | |
|-----------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Liquid line (positive pressure) |
| Unit price #2 [EUR]: 400.00 | Limit #2: Vapour line (positive+negative pressure) |

6.18/S - Fuel permeability: SHED test

(id 2124) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 2,200.00 | Limit #1: Not relevant |

6.1.pre - Pretreatment before sealing

(id 2126) ---

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Not relevant |

Hutchinson proprietary test methods

(id 1691) Circolazione BMW Cooling Progetto i20/G26/48V - Validazione QC - Metodo Interno HUT

unref - 5.2.2.8 Aging according CDC 11229184 – 000 – 02 (07/2019)

(id 2057) ---

| | |
|-------------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 125 |
| Unit price #1 [EUR]: 4,000.00 | Limit #1: 1000h (only visual inspection after ageing) |
| Unit price #2 [EUR]: 5,500.00 | Limit #2: 2000h (only visual inspection after ageing) |
| Unit price #3 [EUR]: 7,000.00 | Limit #3: 3000h (only visual inspection after ageing) |

unref - Circulation test

(id 2135) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 2,300.00 | Limit #1: Not relevant |

01759_21_00390 §4.7.3.2.2 - Slow ageing test

(id 2173) ---

| | |
|-------------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 42 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Lot of small sample (up to 200mm) |

unref - Hutchinson internal method: BMW Ncar long aging study

(id 2182) ---

| | |
|-------------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 210 |
| Unit price #1 [EUR]: 3,800.00 | Limit #1: Large group of scalar samples |

IEC 60034-5:2020

(id 1601) Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - Classification

9 - Test for first characteristic numeral 1

(id 2062) Machine protected against solid objects greater than 50 mm

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

9 - Test for first characteristic numeral 2

(id 2063) Machine protected against solid objects greater than 12 mm

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Not relevant |

9 - Test for first characteristic numeral 3

(id 2064) Machine protected against solid objects greater than 2,5 mm

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Not relevant |



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9 - Test for first characteristic numeral 4

(id 2065) Machine protected against solid objects greater than 1 mm

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

9 - Test for first characteristic numeral 5 and 6

(id 2066) IP 5X: Contact with or approach to live or moving parts inside the enclosure Ingress of dust is not totally prevented but dust does not enter in sufficient quantity to interfere with satisfactory operation of the machine;
IP 6X: Ingress of dust totally prevented

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: up to 30 Kg
Unit price #2 [EUR]: 1,100.00 Limit #2: from 31 to 100 Kg
Unit price #3 [EUR]: 1,300.00 Limit #3: over 100 Kg

10 - Test for second characteristic numeral 1

(id 2067) Machine protected against dripping water

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10 - Test for second characteristic numeral 2

(id 2068) Machine protected against dripping water when tilted up to 15°

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10 - Test for second characteristic numeral 3

(id 2069) Water falling as a spray at an angle up to 60° from the vertical shall have no harmful effect

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

10 - Test for second characteristic numeral 4 (hand-held spray nozzle)

(id 2070) Machine protected against splashing water.

Test performed to evaluate the protection of the equipment against the access of water in the presence of a spray nozzle with a water delivery rate of 10 l/min + or - 5%.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Up to 30kg
Unit price #2 [EUR]: 1,100.00 Limit #2: From 31kg to 100kg
Unit price #3 [EUR]: 1,300.00 Limit #3: Over 100kg

10 - Test for second characteristic numeral 5

(id 2071) Machine protected against water jets

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: up to 30 kg
Unit price #2 [EUR]: 1,100.00 Limit #2: over 30 kg
Unit price #3 [EUR]: 1,300.00 Limit #3: over 100 kg

10 - Test for second characteristic numeral 6

(id 2072) Machine protected against heavy seas

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: up to 30 Kg
Unit price #2 [EUR]: 1,000.00 Limit #2: from 31 to 100 Kg
Unit price #3 [EUR]: 1,200.00 Limit #3: over 100 Kg

10 - Test for second characteristic numeral 7

(id 2073) Machine protected against the effects of immersion

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: up to 10 Kg
Unit price #2 [EUR]: 100.00 Limit #2: over 10 Kg

10 - Test for second characteristic numeral 8

(id 2074) Machine protected against the effects of continuous submersion

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Up to 10 Kg
Unit price #2 [EUR]: 1,500.00 Limit #2: Over 10 Kg



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10 - Test for second characteristic numeral 9

(id 2075) Machine protected against high pressure and high temperature water jets

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10 - OBSOLETE - Test for second characteristic numeral 4 (oscillating tube)

(id 2134) OBSOLETE - Machine protected against splashing water.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

IEC 60068-2-11:2021

(id 1736) Basic environmental testing procedures - Part 2-11: Tests - Test Ka: Salt mist

- Test Ka: salt mist

(id 894) This test method is intended for assessing the corrosion resistance of electrotechnical products components, equipment and materials in a salt mist environment. Its objective is to verify that the comparative quality of a metallic material, with or without corrosion protection, is maintained when exposed to salt mist. This test method is useful for evaluating the quality and the uniformity of coatings applied to protect metals against corrosion. It is particularly useful for detecting discontinuities, such as pores and other defects, in certain metallic, organic, anodic oxide and conversion coatings.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 600.00 Limit #1: 24 hours
Unit price #2 [EUR]: 800.00 Limit #2: 48 hours
Unit price #3 [EUR]: 2,500.00 Limit #3: 192 hours

IEC 60068-2-1:2007

(id 52) Environmental testing - Part 2-1: Tests - Test A: Cold

5.2 - Test Ab: Cold for non heat-dissipating specimens with gradual change of temperature

(id 936) Cold tests for non heat-dissipating specimens

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: up to 24 hours (medium/big size sample)
Unit price #2 [EUR]: 1,500.00 Limit #2: 96h (medium/big size sample)

5.3 - Test Ad: Cold for heat-dissipating specimens with gradual change of temperature that are powered after initial temperature stabilization

(id 1062) Cold tests for heat-dissipating specimens

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: up to 24 h (medium/big size sample)
Unit price #2 [EUR]: 1,500.00 Limit #2: from 1 day to 3 days (medium/big size sample)

5.4 - Test Ae: Cold for heat-dissipating specimens with gradual change of temperature that are required to be powered throughout the test

(id 1063) Cold test for heat-dissipating specimens

Accredited [IEC17025]: YES Execution time [day]: 45
Unit price #1 [EUR]: 800.00 Limit #1: Up to 24 h (medium/big size sample)
Unit price #2 [EUR]: 1,500.00 Limit #2: from 1 day to 5 days (medium/big size sample)
Unit price #3 [EUR]: 4,000.00 Limit #3: long duration

IEC 60068-2-21:2021

(id 1133) Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices

4 - Tests Ua: Robustness of terminals against axial stresses

(id 2333) The purpose of these tests is to verify that the terminations and their attachments to the body of the component will withstand such axial stresses as are likely to be applied during normal assembly or handling operations.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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5 - Tests Ub: Robustness of terminals against bending stresses

(id 2334) The purpose of this test is to verify that pliable and rigid terminations and attachment of such terminations to the body of the component shall withstand such bending loads as are likely to be applied during normal assembly or handling operations.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

6 - Test Uc: Torsion

(id 2335) The purpose of this test is to verify that the terminations and attachment of the terminations to the body of the component will withstand torsional forces that are likely to be applied during normal assembly or dismantling operations.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

7 - Test Ud: Torque

(id 2336) The purpose of this test is to verify that the terminations, the attachment of the terminations to the body of the component and integral mounting means shall withstand torque forces that are likely to be applied during normal assembly or handling operations.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

IEC 60068-2-2:2007

(id 171) Environmental testing - Part 2-2: Tests - Test B: Dry heat

5.2 - Test Bb: Dry heat for non heat-dissipating specimens with gradual change of temperature

(id 1020) Dry heat test for non heat-dissipating specimens

Accredited [IEC17025]: YES Execution time [day]: 42
Unit price #1 [EUR]: 800.00 Limit #1: up to 24 h
Unit price #2 [EUR]: 1,200.00 Limit #2: 96h
Unit price #3 [EUR]: 2,800.00 Limit #3: 1000h

5.3 - Test Bd: Dry heat for heat-dissipating specimens with gradual change of temperature that are not powered during the condition

(id 1064) Dry heat for heat-dissipating specimens

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: up to 24 h
Unit price #2 [EUR]: 1,200.00 Limit #2: from 1 day to 3 days

5.4 - Test Be: Dry heat for heat-dissipating specimens with gradual change of temperature that are required to be powered throughout

(id 1065) Dry heat for heat-dissipating specimens

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Up to 24 h
Unit price #2 [EUR]: 1,200.00 Limit #2: From 1 day to 3 days
Unit price #3 [EUR]: 1,800.00 Limit #3: Big sample

IEC 60068-2-30:2005

(id 177) Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)

Db - Damp heat cyclic (12h +12h cycle)

(id 1037) This test comprises one or more temperature cycles in which the relative humidity is maintained at a high level, in order to determine the suitability of components, equipment or other articles for use, transportation and storage under conditions of high humidity – combined with cyclic temperature changes and, in general, producing condensation on the surface of the specimen.

The severity shall be chosen from the following:

- a) upper temperature: 40 °C, number of cycles: 2, 6, 12, 21, 56;
- b) upper temperature: 55 °C, number of cycles: 1, 2, 6.

After stabilization, the temperature of the chamber is raised to the appropriate upper temperature prescribed by the relevant specification. The upper temperature is achieved in a period of 3 h ± 30 min.

During this period, the relative humidity is less than 95 % RH. During the last 15 min it is less than 90 % RH.

The temperature is then be maintained within the prescribed limits for the upper temperature (±2 K) until 12 h ± 30 min from the start of the cycle.

During this period, the relative humidity is 93 % RH ± 3 %RH. During the first and last 15 min it is between 90 % RH and 100 % RH. The temperature is then lowered in accordance with one of the two variants given below:

Variant 1: the temperature is lowered to 25 °C ± 3 K within 3 h to 6 h. The rate of fall for the first one and one half hours is such that it would result in a temperature of 25 °C ± 3 K being attained in 3 h ± 15 min. The relative humidity is not less than 95 % RH. During the first 15 min it is not less than 90 % RH.

Variant 2: the temperature shall be lowered to 25 °C ± 3 K within 3 h to 6 h, but without the additional requirement for the first hour and one half as in variant 1. The relative humidity is not less than 80 % RH.

The temperature is then be maintained at 25 °C ± 3 K with a relative humidity of not less than 95 % RH until the 24 h cycle is completed.



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| Accredited [IEC17025]: YES | Execution time [day]: 6 |
| Unit price #1 [EUR]: 500.00 | Limit #1: 1 cycle |
| Unit price #2 [EUR]: 700.00 | Limit #2: 2 cycles |
| Unit price #3 [EUR]: 1,000.00 | Limit #3: 6 cycles |

IEC 60068-2-38:2021

(id 1995) Environmental testing - Part 2-38: Tests - Test Z/AD: Composite temperature/humidity cyclic test

7.4 - Composite temperature, Humidity cyclic test

(id 2760) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 9 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

IEC 60068-2-52:2017

(id 819) Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)

7 - Initial measurement in addition to visual

(id 1354) The test specimen(s) is visually inspected and, if necessary, electrically and mechanically checked as required by the relevant specification.

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

9.4.2 - Test method 1

(id 1356) Test method 1 should be used to test products which are exposed to a marine environment (or which are used in close proximity to the sea) for much of their operational life (e.g. ship radar, deck equipment).

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 28 |
| Unit price #1 [EUR]: 6,000.00 | Limit #1: Applicable to any sample |

9.4.3 - Test method 2

(id 1357) Test method 2 should be used to test products which may be exposed to the marine environment (or which are used in close proximity to the sea) from time to time but will normally be protected by an enclosure (e.g. navigational equipment which will normally be used on the bridge or in a control room).

| | |
|-------------------------------|-------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 3 |
| Unit price #1 [EUR]: 2,000.00 | Limit #1: Small salt chamber |
| Unit price #2 [EUR]: 2,600.00 | Limit #2: Medium salt chamber |
| Unit price #3 [EUR]: 3,600.00 | Limit #3: Big salt chamber |

9.4.4 - Test method 3

(id 1358) Test method 3 can be used for products where, under normal use, there is a frequent change between salt-laden and dry atmosphere, for example automobiles and their parts.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 7 |
| Unit price #1 [EUR]: 3,000.00 | Limit #1: Not relevant |

9.4.5 - Test method 4

(id 1359) Test method 4 can be used for products where, under normal use, there is a frequent change between salt-laden and dry atmosphere, for example automobiles and their parts.

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 14 |
| Unit price #1 [EUR]: 4,500.00 | Limit #1: Not relevant |

9.4.6 - Test method 5

(id 1360) Test method 5 can be used for products where, under normal use, there is a frequent change between salt-laden and dry atmosphere, for example automobiles and their parts.

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 28 |
| Unit price #1 [EUR]: 6,000.00 | Limit #1: Not relevant |

9.4.7 - Test method 6

(id 1361) Test method 6 can be used for products where, under normal use, there is a frequent change between salt-laden and dry atmosphere, for example automobiles and their parts.

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 56 |
| Unit price #1 [EUR]: 8,000.00 | Limit #1: Not relevant |



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9.4.8 - Test method 7

(id 1362) Test method 7 defines a specific number of test cycles that include the spraying of a neutral salt solution, followed by dry conditions and humid conditions. The process can be used as a general corrosion test for many materials including automobiles and their parts.

| | |
|-------------------------------|------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 20 |
| Unit price #1 [EUR]: 3,000.00 | Limit #1: from 1 to 10 days |
| Unit price #2 [EUR]: 4,000.00 | Limit #2: from 15 to 30 days |
| Unit price #3 [EUR]: 5,000.00 | Limit #3: from 50 to 60 days |

9.4.9 - Test method 8

(id 1363) Test method 8 defines a specific number of test cycles that include the spraying of an acidified salt solution, followed by dry conditions and humid conditions. The process can be used to induce a corrosion that occurs in acidified salt environment.

| | |
|------------------------------|-----------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: from 1 to xx days |

10 - Final recovery (washing and drying)

(id 1364) As specified by the relevant specification

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

11 - Final measurements in addition to visual

(id 1365) The test specimen(s) is visually inspected and, if necessary, electrically and mechanically checked as required by the relevant specification.

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

IEC 60068-2-60:2015

(id 198) Environmental testing - Part 2-60: Tests - Test Ke: Flowing mixed gas corrosion test

Ke - Flowing mixed gas corrosion test - Method 4

(id 1025) Flowing mixed gas corrosion test - Method 4

This test determines the corrosive influence of operating and storage indoor environments on electrotechnical products components, equipment and materials, particularly contacts and connections, considered separately, integrated into a subassembly or assembled as a complete equipment.

| | |
|-------------------------------|----------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 14 |
| Unit price #1 [EUR]: 3,200.00 | Limit #1: 14 days |
| Unit price #2 [EUR]: 3,800.00 | Limit #2: 21 days |
| Unit price #3 [EUR]: 6,000.00 | Limit #3: huge size sample |

IEC 60068-2-68:1994

(id 22) Environmental testing - Part 2: Tests - Test L: Dust and sand

Lc - Test L: Dust and sand - Method Lc1: recirculating chamber

(id 279) This test is performed in order to determine the resistance of equipment to corrosion from dust and sand. It is performed by reproducing simulated environmental conditions of a 'desert storm'.

Where the air pressure within the specimen differs from the atmospheric air pressure, the specimen is Category 1. In this case, a pressure reduction as stated in the relevant standard is applied during the test. Otherwise, if the air pressure in the specimen is that of the ambient air pressure, the sample category is 2 and no pressure reduction is applied.

The particle size distribution of the sand used is:

Smaller than 150 micron: 4% by weight
Smaller than 125 micron: 10.3% by weight
Smaller than 300 micron: 21.63% by weight
Smaller than 425 micron: 45.13% by weight
Smaller than 600 micron: 78.46% by weight
Smaller than 850 micron: 95.29% by weight
Bigger than 850 micron: 4.67% by weight

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 5 |
| Unit price #1 [EUR]: 3,000.00 | Limit #1: 2hours - Relative humidity <25% - Wind speed 20~25m/s - Sand Concentration 5 g / - Sand type: quartz |
| Unit price #2 [EUR]: 4,500.00 | Limit #2: 4hours - Relative humidity <25% - Wind speed 20~25m/s - Sand Concentration 5 g / - Sand type: quartz |
| Unit price #3 [EUR]: 8,000.00 | Limit #3: 24hours - Relative humidity <25% - Wind speed 20~25m/s - Sand Concentration 5 g / m ³ - Sand type: quartz |



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unref - Test L: Dust and sand - Method Lc1 (reduced)

(id 1346) (*) This test is a variation of the test method Lc1 performed in order to prepare the sample to temperature tests. The sand is not recirculating into the chamber but it is just deposited onto the sample in order to form a sand layer.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: 3h - Sand type: quartz

IEC 60068-2-6:2007

(id 934) Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)

unref - Test Fc: Vibration (sinusoidal)

(id 1568) ---

Accredited [IEC17025]: NO Execution time [day]: 0 Subcontract: GESTLABS S.R.L.
Unit price #1 [EUR]: 1,500.00 Limit #1: Not relevant

IEC 60068-2-75:2014

(id 32) Environmental testing - Part 2: Tests - Test Eh: Hammer tests

5 - Test Eha - Pendulum hammer

(id 668) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Up to 5 points
Unit price #2 [EUR]: 600.00 Limit #2: from 6 to 10 points
Unit price #3 [EUR]: 800.00 Limit #3: special condition

7 - Test Ehc - Vertical hammer

(id 692) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Up to 5 points
Unit price #2 [EUR]: 600.00 Limit #2: from 6 to 10 points
Unit price #3 [EUR]: 800.00 Limit #3: special condition

IEC 60068-2-78:2012

(id 182) Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state

4.4 - Damp heat, steady state

(id 1024) The object of this standard is to investigate the effect of high humidity at constant temperature without condensation on the specimen over a prescribed period.

Accredited [IEC17025]: YES Execution time [day]: 42
Unit price #1 [EUR]: 600.00 Limit #1: Up to 2 days
Unit price #2 [EUR]: 1,000.00 Limit #2: Up to 10 days
Unit price #3 [EUR]: 1,500.00 Limit #3: Up to 20 days

4.4 - Damp heat, steady state (big samples)

(id 1574) The object of this standard is to investigate the effect of high humidity at constant temperature without condensation on the specimen over a prescribed period.

Accredited [IEC17025]: YES Execution time [day]: 4
Unit price #1 [EUR]: 1,500.00 Limit #1: Up to 48 hours
Unit price #2 [EUR]: 2,200.00 Limit #2: Up to 96 hours

IEC 60077-2:2017

(id 1746) Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules

9.3.3.2 - Operating Limits

(id 2236) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 120.00 Limit #1: Applicable to any sample



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IEC 60079-0:2017+COR1:2020

(id 1605) Explosive atmospheres - Part 0: Equipment - General requirements

26.4.2 - Resistance to impact

(id 1421) Evaluation of the resistance to impact of equipment intended for use in explosive gas atmosphere.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Applicable to any sample |
| Unit price #2 [EUR]: 200.00 | Limit #2: Applicable to any sample |
| Unit price #3 [EUR]: 200.00 | Limit #3: Applicable to any sample |

26.7.2 - Test temperatures for non metallic enclosures or non metallic parts of enclosures

(id 1422) This is not a test. This clause expresses conditions for upper and lower service temperature during test temperatures.

| | |
|------------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Applicable to any sample |

26.11 - Resistance to chemical agents for Group I electrical equipment

(id 1423) Prolonged immersion of samples in 2 types of fluid (an oil and a hydraulic liquid for mining application) followed by final measurements (resistance to impact, drop test if applicable, test for degrees of protection)

| | |
|-------------------------------|------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 3 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 21 |
| Unit price #2 [EUR]: 1,500.00 | Limit #2: from 21 up to 201 |
| Unit price #3 [EUR]: 2,200.00 | Limit #3: from 211 up to 501 |

26.12 - Earth continuity

(id 1424) This test applies to non-metallic walled enclosures provided with an internal earth continuity plate.

NOTE An internal earth continuity plate is often fitted, for example, to allow for use of metallic cable glands without the use of separate individual earthing tags. This test includes a conditioning with the same test conditions of 26.8 of IEC 60079-0 (Thermal endurance to heat) plus a 336 h period in an air oven at at least 80°C.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

26.13 - Surface resistance test

(id 1425) Evaluation of the surface resistance of non-metallic materials of equipment intended for use in explosive gas atmosphere.

The electrodes are painted with a conducting paint with a solvent which has no significant effect on the surface resistance.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

26.14 - Measurement of capacitance

(id 1426) Evaluation of the capacitance of equipment intended for use in explosive gas atmosphere

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

26.15 - Verification of ratings of ventilating fans

(id 1427) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Applicable to any sample |

26.16 - Alternative qualification of elastomeric sealing O-rings

(id 1428) Qualification of elastomeric sealing O-ring measuring the compression before and after a thermal endurance to heat and thermal endurance to cold test.

The compression set value 'c' describes the ability for the sealing to return to its initial dimension after being subject to compression.

It is calculated as follows:

$c = (t_0 \times t_1) / (t_0 \times t_S)$, where:

t_0 is the initial thickness of the sealing ring measured at $(20 \pm 5)^\circ\text{C}$ temperature,

t_S is the thickness when compressed as intended in the equipment,

t_1 is the thickness of the sealing ring measured at $(20 \pm 5)^\circ\text{C}$ after thermal endurance.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 30 |
| Unit price #1 [EUR]: 1,800.00 | Limit #1: Applicable to any sample |



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26.3 - Tests in explosive test mixtures

(id 1429) This clause of the standard describes how to carry out tests in explosive test mixtures, according to the relevant standards.

In general, the sample under test is operated according to the parameters provided by the customer immersed in an explosive test mixture.

The explosive mixture is dictated by the relevant standard or agreed with the customer / inspector among those for the various gas groups in accordance with the ATEX directive and standards.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: Test inside small vessel |
| Unit price #2 [EUR]: 2,200.00 | Limit #2: Test in explosion vented chamber |
| Unit price #3 [EUR]: 4,000.00 | Limit #3: Outdoor test |

26.4.3 - Drop test

(id 1430) Evaluation of the resistance to drop of hand-held electrical equipment or electrical equipment carried on the person, ready for use.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: Applicable to any sample |

26.4.5 - Degree of protection (IP) by enclosures

(id 1431) Degree of protection against access to hazardous parts, solid foreign objects or water to be verified in accordance to IEC 60529 or IEC 60034-5 in the case of rotating electrical machines.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 2 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Applicable to any sample |

26.5.1.2 - Service temperature

(id 1432) Evaluation of the service temperature of an enclosure intended for use in an explosive gas atmosphere

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 2 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Applicable to any sample |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: With any additional dust layer |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: Windings temperature |

26.5.1.3 - Maximum surface temperature

(id 1435) Evaluation of the maximum surface temperature of equipment intended for use in explosive gas atmosphere. The test is performed by measuring the temperature in the hottest parts of the sample, detected after a thermographic inspection with an infrared thermal camera.

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 5 |
| Unit price #1 [EUR]: 600.00 | Limit #1: < 500 [dm3] |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 500 < 3000 [dm3] - or additional dust layer |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: > 3000 [dm3] |

26.5.2 - Thermal shock test

(id 1436) Evaluation of the resistance to thermal shock of equipment intended for use in an explosive gas atmosphere. Glass parts of luminaires and windows of electrical equipment have to be subject to a thermal shock caused by a jet of water of about 1 mm diameter at a temperature of 5-15°C sprayed on them when they are at not less than the maximum service temperature.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Applicable to any sample |
| Unit price #2 [EUR]: 200.00 | Limit #2: Applicable to any sample |
| Unit price #3 [EUR]: 200.00 | Limit #3: Applicable to any sample |

26.5.3 - Small component ignition test

(id 1437) Test performed on small components in order to demonstrate that they do not cause temperature ignition of a flammable mixture

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: Applicable to any sample |

26.6 - Torque test for bushings

(id 1438) Test for the verification of resistance to torque on bushings subjected to torque during connection or disconnection of conductors

| | |
|-----------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Only for bushings from M4 to M20 |
| Unit price #2 [EUR]: 600.00 | Limit #2: For bushings more than M20 |

26.8 - Thermal endurance to heat

(id 1439) Evaluation of the thermal endurance to heat of equipment intended for use in explosive gas atmosphere

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 35 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: T service < 75°C |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: 75°C < T service < 100°C |
| Unit price #3 [EUR]: 1,800.00 | Limit #3: 100°C < T service < 300°C or big sample |



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26.9 - Thermal endurance to cold

(id 1440) Evaluation of the thermal endurance to cold of equipment intended for use in explosive gas atmosphere

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Minimum Service Temperature > -40°C |
| Unit price #2 [EUR]: 600.00 | Limit #2: Minimum Service Temperature < -40°C |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: Very big sample or nitrogen use |

A.3.1.4 - Clamping test (non armoured and braided cables)

(id 1443) Tests of clamping of non armoured and braided cables: Tensile strenght

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

A.3.1.5 - Mechanical strength (non armoured and braided cables)

(id 1444) Test of clamping of non-armoured and braided cables: Mechanical strength

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

A.3.2.1.2 - Clamping test (armoured cables)

(id 1445) Test of clamping of armoured cables: Tensile test

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Applicable to any sample |

A.3.2.1.3 - Mechanical strength (armoured cables)

(id 1446) Test of clamping of armoured cables: Mechanical strength

| | |
|------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: -1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

A.3.3 - Type test for resistance to impact (cable glands)

(id 1447) ---

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 2 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Not relevant |

A.3.4 - Test for degree of protection (IP) of cable glands

(id 1448) The test shall be carried out in accordance with IEC 60529 with the specifications of A.3.4

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

26.10 - Resistance to UV light

(id 1449) This test is an evaluation of the resistance to ultraviolet and visible light on equipment intended for use in explosive gas atmosphere.

Where the preparation of test samples in accordance with ISO 179 is not practical, the laboratory performs the test in the following alternative way (*):

- The test is performed directly on the sample.

- Since the relevant irradiation to which the sample may be exposed during its lifetime is essentially made of a UV component and a visible component, the sample is submitted to both in two different times:

- 60 kWh/m2 for the visible component (that corresponds to about 60h)

- 15 kWh/m2 for the UV component (that corresponds to about 10 days).

- The values above are drawn from PV modules testing (Outdoor exposure test), because the PV samples are exposed to natural sunlight for their entire lifetime.

For this reason, this values are deemed as suitable also for an Atex sample that may be exposed to the same natural sunlight.

- In that case, the evaluation criterion (the final impact bending test, see acceptance criteria below) will be replaced by a simple resistance to impact according to 26.9 of IEC 60079-0, with an impact energy of 2/4 J with a test mass of 1 kg falling vertically from a height 20/40 cm. The mass is fitted with an impact head made of hardened steel in the form of a hemisphere of 25 mm diameter.

| | |
|-------------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 15 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Simplified test directly on the sample, with impact |
| Unit price #2 [EUR]: 600.00 | Limit #2: Simplified test directly on the sample, with impact |
| Unit price #3 [EUR]: 3,000.00 | Limit #3: Test on plastic bars as ISO179, with bending |

26.17 - Transferred charge test

(id 1450) Possible subcontract (?)

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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25 - Compliance of prototype or sample with documents

(id 1887) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

A.3.1.1 - Tests of clamping of non armoured and braided cables: cable glands with clamping by the sealing ring

(id 1893) Sample preparation and preliminary test

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

A.3.1.3 - Tests of clamping of non armoured and braided cables: cable glands with clamping by means of a clamping device

(id 1894) Sample preparation and preliminary test

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

A.3.1.2 - Tests of clamping of non armoured and braided cables: cable glands with clamping by filling compound

(id 1895) Sample preparation and preliminary test

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

A.3.2.1.1 - Tests of clamping of armoured cables: armouring clamped by a device integral to the gland

(id 1896) Sample preparation and preliminary test

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

Ann.A/G - Tests of cable glands: resting period

(id 1897) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

Ann.A/G - Tests of cable glands: retightening with reference torque

(id 1898) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

26.5.1.2 - Service temperature on heating resistor

(id 2017) Evaluation of the service temperature of an heating resistor on a customer's simulacrum

Accredited [IEC17025]: YES Execution time [day]: 5
Unit price #1 [EUR]: 1,000.00 Limit #1: up to 6 points
Unit price #2 [EUR]: 2,500.00 Limit #2: from 7 to 30 points
Unit price #3 [EUR]: 4,500.00 Limit #3: from 31 to 60 points

IEC 60079-11:2023

(id 1883) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

9.14.1.1 - General (Tests for cells, batteries and supercapacitors)

(id 2540) ---

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 150.00 Limit #1: Only visual inspection and voltage measurements (usually primary batteries)
Unit price #2 [EUR]: 300.00 Limit #2: Visual inspection, voltage measurements and charge-discharge cycles (secondary batteries)
Limit #3: batteries)

9.14.2 - Electrolyte leakage test for cells, batteries and supercapacitors

(id 2541) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: up to 4 Ah
Unit price #2 [EUR]: 500.00 Limit #2: from 4 to 25 Ah
Unit price #3 [EUR]: 1,000.00 Limit #3: more than 25 Ah



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9.14.3 - Spark ignition and surface temperature of cells, batteries or supercapacitors

(id 2542) ---

| | |
|-------------------------------|---------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 2 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 4 Ah |
| Unit price #2 [EUR]: 800.00 | Limit #2: from 4 to 25 Ah |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: more than 25 Ah |

9.14.4 - Battery container pressure tests

(id 2543) Determination of venting pressure of battery container.

| | |
|-----------------------------|---------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: up to 4 Ah |
| Unit price #2 [EUR]: 500.00 | Limit #2: from 4 to 25 Ah |
| Unit price #3 [EUR]: 800.00 | Limit #3: more than 25 Ah |

9.14.5 - Battery resistance

(id 2544) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

9.11 - Tests for intrinsically safe apparatus containing piezoelectric devices

(id 2651) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Applicable to any sample |

9.13 - Determination of parameters of loosely specified components

(id 2652) ---

| | |
|-----------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Single measurement |
| Unit price #2 [EUR]: 600.00 | Limit #2: Up to 5 measurements on the same sample |
| Unit price #3 [EUR]: 800.00 | Limit #3: Up to 10 measurements on the same sample |

7.11 - Fuses

(id 2653) Where intrinsic safety depends on the opening of a fuse, for the purposes of assessment the fuse shall be considered capable of carrying a current of 1,7 In continuously. A single suitably rated fuse is sufficient to provide protection.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Applicable to any sample |

9.2.6 - Circuits with both inductance and capacitance

(id 2654) For circuits containing both inductance and capacitance where the capacitive stored energy can reinforce the power source feeding an inductor or vice versa, the circuit shall be assessed for compliance.

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1: ask to office | Limit #1: Not relevant |

9.1 - Spark ignition test

(id 2655) Investigation on effect of opening and closing circuit in explosive atmosphere

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Up to n. 10 test points with same sample configurations and same gas mixture |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: Up to n. 10 test points with different sample configurations and same gas mixture |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: Up to n. 20 test points with different sample configurations and same gas mixture |

9.4.2 - Acceptability of encapsulated or coated fuses

(id 2656) Where fuses are required to be encapsulated or coated, and the material could enter the interior of the fuse and affect safety, the following test shall be performed on five samples of each fuse before encapsulation or coating is applied.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

9.4.4 - Cable pull test

(id 2657) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Applicable to any sample |



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9.6 - Dielectric strength test

(id 2658) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Up to 5 kV dc |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: From 5 to 10kV ac/dc |
| Unit price #3 [EUR]: 2,400.00 | Limit #3: From 10 to 60kV dc only |

9.5 - Current carrying capacity of infallible printed circuit board connections

(id 2659) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

9.4.1 - Casting compund

(id 2660) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

9.4.3 - Partitions

(id 2661) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

9.10.2.2 - Overload test at the receiver side

(id 2662) This test is intended to define the maximum temperature at the receiver side when the device experiences an overload.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: Applicable to any sample |

9.10.2.3 - Overload test at the transmitter side

(id 2663) This test is intended to define the maximum temperature at the transmitter side when the device experiences an overload.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: Applicable to any sample |

9.10.2.4 - Thermal conditioning and dielectric strength test

(id 2664) After overloading, the devices shall be subjected to thermal conditioning and dielectric strength tests.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

7.12.2 - Construction of cells and batteries used in intrinsically safe apparatus

(id 2759) Verification of constructional requirements and basic specification

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Applicable to any sample |

IEC 60079-13:2017

(id 397) Explosive atmospheres - Part 13: Equipment protection by pressurized room "p" and artificially ventilated room "v"

7.5.3 - Purging test for for artificially ventilated rooms

(id 1267) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

7.5.4 - Minimum ventilation flow rate test for artificially ventilated rooms

(id 1268) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

7.5.5 - Confirmation of the ratings of the safety devices for artificially ventilated rooms

(id 1269) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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7.5.6 - Verification of sequence of operation of the safety devices for artificially ventilated rooms

(id 1270) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.5.7.2 - Ventilation test for artificially ventilated rooms

(id 1271) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.5.7.3.1 - Air-flow sensing devices for artificially ventilated rooms

(id 1272) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.5.7.3.2 - Gas detectors for artificially ventilated rooms

(id 1273) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4.3 - Overpressure test for pressurized rooms

(id 1274) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4.4 - Purging test for pressurized rooms

(id 1275) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4.5 - Minimum pressure differential test for pressurized rooms

(id 1276) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4.6 - Confirmation of the ratings of the safety devices for pressurized rooms

(id 1277) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.4.7 - Verification of sequence of operation of the safety devices for pressurized rooms

(id 1278) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

IEC 60079-15:2017

(id 790) Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

11.2.2 - Tests for sealed devices: Voltage test

(id 1455) 3 samples

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

11.2.3 - Leakage test on sealed devices

(id 1456) 3 samples

Accredited [IEC17025]: YES Execution time [day]: 30
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample



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11.3.2 - Type test requirements for restricted breathing enclosures

(id 1458) Equipment where the volume does not change due to pressure

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

6.2 - Electric strength insulation from earth or frame

(id 1468) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

11.2.1 - Tests for sealed devices: Conditioning

(id 1469) Thermal stress as preconditioning of samples.

The conditioning in accordance with IEC 60079-0 may be substituted.

Accredited [IEC17025]: YES Execution time [day]: 10
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

11.1.2.2 - Non-ignition test for non-incendive components

(id 1472) The device or component, which shall be arranged to have the most adverse dimensions permitted by the construction drawings, shall be filled with and surrounded by an explosive mixture according to the stated group of the equipment and operated at least 50 times without igniting the test mixture.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Up to 2kW resistive load
Unit price #2 [EUR]: 1,400.00 Limit #2: Up to 2kW inductive load (motor)

5 - Maximum surface temperatures

(id 1474) The maximum surface temperature shall be determined in accordance with the determination of maximum temperature classification requirements of IEC 60079-0. The surface to be considered shall be the external surface of the equipment including the surface of internal parts of non-incendive components to which the explosive gas atmosphere has access.

Accredited [IEC17025]: YES Execution time [day]: 5
Unit price #1: ask to office Limit #1: not relevant

11.3.3 - Alternative type test for restricted breathing enclosures (equipment where the volume changes due to pressure)

(id 1476) ---

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

11.1.1 - Preparation of non-incendive component samples

(id 2316) Preconditioning of samples, consisting in 6000 operations at maximum rating; applicable to switches, relays etc.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: No necessity of automated setup
Unit price #2 [EUR]: 1,000.00 Limit #2: Required automated setup

IEC 60079-18:2014+AMD1:2017

(id 12) Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"

8.2.2 - Maximum temperature

(id 110) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

8.2.3.1 - Thermal endurance to heat

(id 111) Evaluation of the thermal endurance to heat of non-metallic equipment or parts of equipment.

Accredited [IEC17025]: YES Execution time [day]: 35
Unit price #1 [EUR]: 1,000.00 Limit #1: T service < 75°C
Unit price #2 [EUR]: 1,200.00 Limit #2: 75°C < T service < 100°C.

8.2.3.2 - Thermal endurance to cold

(id 112) Evaluation of the thermal endurance to cold of non-metallic parts of equipment.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Minimum Service Temperature > -40°C
Unit price #2 [EUR]: 600.00 Limit #2: Minimum Service Temperature < -40°C



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8.2.4 - Dielectric strength test

(id 114) Test on the apparatus.

The test is carried out on the following arrangements of circuits as applicable:

- A. between galvanically isolated circuits;
- B. between each circuit and all earthed parts;
- C. between each circuit and the surface of the compound or the non-metallic enclosure that, if necessary, can be clad with a conductive foil.

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Up to 5kV dc |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: From 5 to 10kV ac/dc |
| Unit price #3 [EUR]: 2,400.00 | Limit #3: From 10 to 60kV dc only |

8.2.5 - Cable pull test

(id 115) This test has to be performed on two samples:

- 1) on a previously unstressed sample at $21^{\circ}\text{C} \pm 2^{\circ}\text{C}$.
 - 2) on a further test sample previously conditioned according to 8.2.3.1 (thermal endurance to heat) at the maximum temperature at the cable entry point.
- The cable under test shall be tested with a force 20 times the value in millimetres of the diameter of the cable or 50 times the mass (in kilograms) of the "m" equipment, whichever is the lower value, for a minimum tensile force of 1N. This value can be reduced to 25 % of the required value in the case of permanent installations. The force shall be applied in the least favourable direction.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Applicable to any sample |

8.2.6 - Pressure test for Group I and Group II electrical equipment

(id 116) This test is required for level of protection "ma" equipment with any individual free spaces between 1 cm³ and 10 cm³ and level of protection "mb" equipment with any individual free spaces between 10 cm³ and 100 cm³.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

5 - Requirements for compounds

(id 537) Evaluation of the properties of the compound(s) on which the encapsulation "m" depends - Check of documentation

| | |
|----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 50.00 | Limit #1: Applicable to any sample |

7.3 - Free space in the encapsulation

(id 538) The sum of the free spaces and the thickness of the compound surrounding such free spaces shall meet the requirements of §7.3

| | |
|------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Applicable to any sample |

8.2.7 - Test for resettable thermal protective device

(id 543) This test shall be performed after the thermal endurance test.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Applicable to any sample |

8.1.1 - Water absorption test

(id 544) Test on the compound

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 2 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Applicable to any sample |

8.1.2 - Dielectric strength test

(id 545) Test on the compound

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

8.2.8 - Sealing test for build-in protective devices

(id 618) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Applicable to any sample |

7.4.1 - Thickness of the compound of "m" equipment

(id 1222) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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7.4.2 - Thickness of the compound. Windings for electrical machines

(id 1223) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.4.3 - Thickness of the compound. Rigid, multi-layer printed wiring boards with through connections

(id 1224) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.5 - Switching contacts

(id 1225) Verification of the requirements specified at § 7.5 about switching contacts and their additional enclosure.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample

7.9.2 - Electrical protective devices

(id 1226) Verification of the requirements specified at § 7.9.2 about electrical protective devices

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.1 - Fault examination

(id 1227) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.2 - Components considered as not subject to fail

(id 1228) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.3 - Isolating components

(id 1229) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.4.1 - Infallible separation distances. General

(id 1230) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.4.2 - Distances through the compound

(id 1231) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.2.4.3 - Distances through solid insulation

(id 1232) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.9.3 - Thermal protective devices

(id 1233) Verification of the requirements specified at § 7.9.3 about thermal protective devices

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

7.9.4 - Built-in protective devices

(id 1234) Verification of the requirements specified at § 7.9.4 about built-in protective devices

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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7.9.1 - Protective devices. General

(id 1235) Verification of general requirements of §7.9.1

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample

7.8.5 - Current limitation: maximum surface temperature with the highest discharge current

(id 1738) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

IEC 60079-1:2014+COR1: 2018

(id 9) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

15.2.2 - Determination of explosion pressure

(id 99) Measurement of enclosure internal overpressure

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: V enclosure < 40 l g
Unit price #2 [EUR]: 1,000.00 Limit #2: 40 l < V enclosure < 150 l
Unit price #3 [EUR]: 2,000.00 Limit #3: V enclosure > 150 l or special condition (not standard temperatures, powered on, etc)

15.2.3.2 - Overpressure test (static)

(id 100) First method (static)

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: V enclosure < 40 l
Unit price #2 [EUR]: 800.00 Limit #2: 40 l < V enclosure < 150 l
Unit price #3 [EUR]: 1,000.00 Limit #3: V enclosure > 150 l

15.3 - Test for non-transmission of an internal ignition

(id 101) Capability of flameproof path to stop the flame

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: V enclosure < 40 l
Unit price #2 [EUR]: 1,600.00 Limit #2: 40 l < V enclosure < 150 l
Unit price #3 [EUR]: 3,000.00 Limit #3: V enclosure > 150 l

15.4.2 - Tests of ability of the enclosure to withstand pressure

(id 397) The overpressure test in accordance with 15.2.3 applies, but with a thin flexible membrane fitted to the inner surfaces of the breathing and draining devices.

Accredited [IEC17025]: YES Execution time [day]: 5
Unit price #1 [EUR]: 500.00 Limit #1: V enclosure < 40 l
Unit price #2 [EUR]: 800.00 Limit #2: 440 l < V enclosure < 200 l
Unit price #3 [EUR]: 1,000.00 Limit #3: V enclosure > 200 l

5 - Flameproof joints evaluation

(id 546) Physical and/or documental evaluation of flameproof joints

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Small enclosure
Unit price #2 [EUR]: 800.00 Limit #2: Medium enclosure
Unit price #3 [EUR]: 1,000.00 Limit #3: Big enclosure

C.3.1 - Sealing test for flameproof entry devices

(id 745) After verifying the requirements for thermal endurance to heat and thermal endurance to cold and after the required sample preparation, an hydraulic pressure is applied to in order to verify the sealing.

This test may apply to:

- Cable glands and conduit sealing devices with sealing ring
- Cable glands sealed with setting compound
- Conduit sealing devices sealed with setting compound

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample



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C.3.2 - Test of mechanical strength for flameproof entry devices

(id 746) ---

Accredited [IEC17025]: YES Execution time [day]: -1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

C.3.3.1 - Torque test for Ex blanking elements

(id 747) ---

Accredited [IEC17025]: YES Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample

C.3.4.1 - Torque test for Exd thread adapters

(id 749) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: not relevant

B.1 - Sintered metal elements

(id 836) Possible subcontract

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: 1

B.2 - Pressed metal wire elements

(id 837) Possible subcontract

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

B.3 - Metal foam elements

(id 838) Possible subcontract

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

G.4.1 - Overpressure test for flameproof enclosures with an internal source of release

(id 879) Additional requirements for flameproof enclosures with an internal source of release

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

G.4.2 - Leakage test for an infallible containment system

(id 880) Additional requirements for flameproof enclosures with an internal source of release

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

G.4.3 - Leakage test for a containment system with a limited release

(id 881) Additional requirements for flameproof enclosures with an internal source of release

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

E.3.5 - General requirements for cells (or batteries) inside flameproof enclosures

(id 967) Verifications to be performed before and after the tests of enclosures required by IEC 60079-0.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

E.4.1.1 - Prevention of excessive temperature and cell damage - Flameproof enclosures

(id 968) Verification of the battery conditions under short circuit discharge or of the presence and compliance of a safety device

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

unref - Setup of unsealed equipments with Tamb under -20°C

(id 974) Preparation of heated sensors and valves to operate Pref measurement inside climatic chamber, where precompression is not possible. Including climatic chamber cost.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 600.00 Limit #1: Not relevant



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19.4 - Test of erosion by flame

(id 1041) ---

Accredited [IEC17025]: YES Execution time [day]: 4
Unit price #1 [EUR]: 3,000.00 Limit #1: Small equipment

C.3.3.2 - Over-pressure test for Ex blanking elements

(id 1042) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

15.5 - Tests for "dc" devices

(id 1123) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 700.00 Limit #1: V enclosure < 40 l
Unit price #2 [EUR]: 1,300.00 Limit #2: 40 l < V enclosure < 150 l
Unit price #3 [EUR]: 3,000.00 Limit #3: V enclosure > 150 l

15.4.4.3 - Non-transmission test for breathing and draining devices (Groups I, IIA and IIB)

(id 1183) The non-transmission test of 15.3.2 shall be applied

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

C.3.4.2 - Impact test for Ex thread adapters

(id 1192) A sample Ex thread adapter of each size is screwed into a test-block. A solid steel or brass bar is then screwed into the Ex thread adapter with the torque required by the standard. The assembly is then subjected to a test of resistance to impact, according to the requirements given in IEC 60079-0, applying the impact at right angles to the axis of the bar and as near to the end of the bar as practicable.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

C.3.4.3 - Over-pressure test for Ex thread adapters

(id 1193) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

10.8 - Mechanical strength

(id 1261) Type tests for breathing and draining devices which form part of a flameproof enclosure

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: not relevant

10.9.3.3 - Test for non-transmission of an internal ignition for breathing and draining devices used as Ex components

(id 1262) Type tests for breathing and draining devices used as Ex components of a flameproof enclosure

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 1,400.00 Limit #1: Not relevant

10.9.3.2 - Thermal tests for breathing and draining devices used as Ex components

(id 1263) Type tests for breathing and draining devices used as Ex components of a flameproof enclosure

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 1,600.00 Limit #1: Volume > 2.5 l

10.9.3.4 - Test of the ability of the breathing and draining device to withstand pressure

(id 1264) Type tests for breathing and draining devices used as Ex components of a flameproof enclosure

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

C.2.2 - Flameproof joints evaluation (cable glands)

(id 1569) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

G.3.3 - Containment system with a limited release - Verification of internal pressure increase

(id 1624) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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4.4.2 - Construction of "dc" devices

(id 1900) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

15.2.3.3 - Overpressure test (dynamic)

(id 2208) Second method (dynamic)

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: V enclosure < 40 l
Unit price #2 [EUR]: 1,000.00 Limit #2: 40 l < V enclosure < 150 l
Unit price #3 [EUR]: 1,800.00 Limit #3: V enclosure > 150 l

IEC 60079-28:2015

(id 109) Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation

6.3.1 - Ignition tests with continuous wave radiation and pulses above 1 s duration

(id 1213) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.3.2 - Ignition tests with single pulses less than 1 ms duration

(id 1214) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.3.3 - Tests for pulse trains and pulses from 1 ms to 1 s duration

(id 1215) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.3 - Reference test for continuous wave radiation and pulses above 1s duration

(id 1216) Verification of the suitability of test set-up for type tests

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.2.4 - Reference test for pulsed radiation below 1ms pulse duration

(id 1218) Verification of the suitability of test set-up for type tests

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.2.2laser - Inherently safe optical radiation "op is" - Continuous wave laser radiation

(id 1257) The test is intended to qualify continuous laser sources, ensuring the power is lower than the ignition limits

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.2.3 - Inherently safe optical radiation "op is" - Pulsed radiation

(id 1258) ---

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 1,100.00 Limit #1: Applicable to any sample

5.2.2led - Inherently safe optical radiation "op is" - Led lamp radiation

(id 1518) The test is intended to qualify standard led lamps, ensuring that the specific power is lower than the ignition limits

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant



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IEC 60079-29-1:2016+AMD1:2020

(id 1859) Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases

4 - General requirements verification

(id 1481) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Applicable to any sample |

5.4.2 - Unpowered storage

(id 1482) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 4 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: Applicable to any sample |

5.4.3.2 - Calibration and adjustment: calibration curve

(id 1483) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: Only one gas |
| Unit price #2 [EUR]: 2,000.00 | Limit #2: 2 gas |

5.4.3.3 - Calibration and adjustment: response to different gases (Group II equipment)

(id 1485) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: second gases |

5.4.4.2 - Short-term stability

(id 1488) ---

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Not relevant |

5.4.4.3 - Long-term stability for fixed and transportable equipment (Group I)

(id 1489) ---

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 30 |
| Unit price #1 [EUR]: 2,200.00 | Limit #1: Not relevant |

5.4.4.4 - Long-term stability for portable equipment (Group I)

(id 1490) ---

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 25 |
| Unit price #1 [EUR]: 2,400.00 | Limit #1: Not relevant |

5.4.4.5 - Long-term stability for fixed and transportable equipment (Group II)

(id 1491) ---

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 64 |
| Unit price #1 [EUR]: 2,000.00 | Limit #1: Not relevant |

5.4.4.6 - Long-term stability for portable equipment (Group II)

(id 1492) ---

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 20 |
| Unit price #1 [EUR]: 2,200.00 | Limit #1: Not relevant |

5.4.5 - Alarm set points

(id 1493) ---

| | |
|-----------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: fixed set point, no over range |
| Unit price #2 [EUR]: 800.00 | Limit #2: adjustable set point, with over range |

5.4.6 - Temperature test

(id 1495) This test shall be performed in a temperature chamber having the capability of holding the remote sensor or equipment at the specified temperature within ± 2 °C. For battery powered equipment, the test shall be carried out with all batteries specified in the instruction manual.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 1,800.00 | Limit #1: Applicable to any sample |



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5.4.7 - Pressure test

(id 1496) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

5.4.8 - Humidity of test gas

(id 1497) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: Not relevant

5.4.9 - Air velocity

(id 1498) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

5.4.10 - Flow rate for aspirated equipment

(id 1499) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

5.4.11.1 - Orientation: portable equipment

(id 1500) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

5.4.11.2 - Orientation: fixed and transportable equipment

(id 1501) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

5.4.12 - Vibration test

(id 1502) The vibration test shall be performed after unpowered storage testing for pre-conditioning purposes.

Accredited [IEC17025]: YES Execution time [day]: 1 Subcontract: GESTLABS S.R.L.
Unit price #1 [EUR]: 1,800.00 Limit #1: Not relevant

5.4.13 - Drop test for portable and transportable equipment

(id 1503) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

5.4.14 - Warm-up time for gas detectors

(id 1504) ---

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.4.15/Ann B - Time of response

(id 1505) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

5.4.16 - High gas concentration operation above the measuring range

(id 1506) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

5.4.17 - Battery capacity: battery discharge and low battery duration

(id 1507) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant



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5.4.18 - Power supply variations

(id 1509) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

5.4.19 - Addition of sampling probe

(id 1510) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

5.4.20.1 - Other gases exposure

(id 1511) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 2,000.00 Limit #1: Not relevant

5.4.20.2 - Poisons exposure (Group I equipment with catalytic or semiconductor sensors)

(id 1512) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 3,000.00 Limit #1: Not relevant

5.4.22 - Field calibration kit

(id 1514) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

5.4.21 - Electromagnetic compatibility

(id 1516) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

5.4.23 - Software function (EN 60079-29-1:2016)

(id 1517) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 3,000.00 Limit #1: Not relevant

IEC 60079-2:2014+COR1:2015

(id 30) Explosive atmosphere - Part 2: Equipment protection by pressurized enclosure "p"

16.2 - Maximum overpressure test

(id 602) Verification of the capability of a pressurized enclosure to hold the maximum overpressure rated without permanent deformation.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: < 500 [dm3] and pressure < 20mbar
Unit price #2 [EUR]: 1,000.00 Limit #2: 500 < 1000 [dm3] and pressure < 20mbar
Unit price #3 [EUR]: 2,200.00 Limit #3: Every volume and pressure > 20mbar (bunker)

16.3.2 - Leakage test: static pressurization

(id 603) Monitoring of the internal pressure of a pressurized enclosure at its maximum overpressure in order to verify leakages (static pressurization)

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

16.6 - Verification of minimum overpressure

(id 604) Capability to maintain the minimum overpressure under normal operating conditions (maintenance conditions)

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: < 500 [dm3] and pressure < 20mbar
Unit price #2 [EUR]: 800.00 Limit #2: 500 < 1000 [dm3] and pressure < 20mbar
Unit price #3 [EUR]: 1,200.00 Limit #3: Every volume and pressure > 20mbar

16.7.1 - Overpressure test for infallible containment system

(id 605) Preliminary stress test for infallible containment system

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample



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16.8 - Overpressure test for a containment system with a limited release

(id 606) Overpressure test carried out on a containment system which has a limited release during normal operation.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: < 500 [dm3] and pressure < 20mbar |
| Unit price #2 [EUR]: 800.00 | Limit #2: 500 < 1000 [dm3] and pressure < 20mbar |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: Every volume and pressure > 20mbar |

16.7.2 - Infallibility test

(id 629) Check for the presence of leaks when the containment system is flushed and pressurized with pure helium

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Applicable to any sample |

16.4.2/16.4.4 - Purging test where protective gas is air or inert gas with similar density

(id 639) Purging test for pressurized enclosures with no internal source of release where protective gas is air or an inert gas with a density equal to air $\pm 10\%$.

Where the protective gas is inert, the time taken until there is no sample point where there is a test gas concentration in excess of that specified below is measured and noted as the purging time:

- where test(s) were conducted for specific flammable gases, a value equivalent to 25 % of the most onerous LFL;
- where one specific flammable gas is covered, a value equivalent to 25 % of its LFL;
- where all flammable gases are covered, 1 % for the helium test and 0,25 % for the argon or carbon dioxide test.

NOTE These values correspond approximately to 25 % of the LFL for light and heavy flammable gases respectively.

Where the protective gas is inert, The time taken until there is no sample point where there is an oxygen concentration not exceeding 2 % (V/V) is measured and noted as the purging time.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: < 500 [dm3] and pressure < 20mbar |
| Unit price #2 [EUR]: 2,800.00 | Limit #2: 500 < 1000 [dm3] and pressure < 20mbar |
| Unit price #3 [EUR]: 4,000.00 | Limit #3: Every volume and pressure > 20mbar |

16.3.1 - Leakage test: other than static pressurization

(id 877) Maximum leakage flow rate measurement in normal operation conditions (other than static pressurization)

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: < 500 [dm3] and pressure < 20mbar |
| Unit price #2 [EUR]: 800.00 | Limit #2: 500 < 1000 [dm3] and pressure < 20mbar |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: Every volume and pressure > 20mbar |

16.4.5 - Filling procedure test on a pressurized enclosure protected by static pressurization

(id 878) In the case of static pressurization, the enclosure is filled initially with air at normal atmospheric pressure. The equipment is then filled with inert gas in accordance with the manufacturer's specifications, and the oxygen concentration inside the sample is verified.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Applicable to any sample |

16.1 - Determination of maximum overpressure rating

(id 895) Measurement of the highest internal operating pressure

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Applicable to any sample |

16.5.2.1 - Purging test for pressurized enclosures with an internal source of release

(id 901) Purging test for a pressurized enclosure with an internal source of release where the flammable substance has less than 2 % (V/V) oxygen and the protective gas is inert

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: < 500 [dm3] and pressure < 20mbar |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 500 < 1000 [dm3] and pressure < 20mbar |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: Every volume and pressure > 20mbar |

16.4.3 - Purging test for pressurized enclosure where the protective gas is inert

(id 1138) Purging test for pressurized enclosures with no internal source of release where the protective gas is inert with a density different from air

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 2,000.00 | Limit #1: < 500 [dm3] and pressure < 20mbar |
| Unit price #2 [EUR]: 2,800.00 | Limit #2: 500 < 1000 [dm3] and pressure < 20mbar |
| Unit price #3 [EUR]: 4,000.00 | Limit #3: Every volume and pressure > 20mbar |



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16.5.3.1 - Purging test for pressurized enclosures with an internal source of release

(id 1143) Purging test for a pressurized enclosure with an internal source of release with pressurization by continuous flow, containment system with less than 21 % (V/V) oxygen and the protective gas is inert

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: < 500 [dm3] and pressure < 20mbar |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 500 < 1000 [dm3] and pressure < 20mbar |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: Every volume and pressure > 20mbar |

16.5.3.2 - Dilution test on pressurized enclosures with an internal source of release

(id 1144) Dilution test on pressurized enclosures with an internal source of release with pressurization by continuous flow, containment system with less than 21 % (V/V) oxygen and the protective gas is inert.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: < 500 [dm3] and pressure < 20mbar |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 500 < 1000 [dm3] and pressure < 20mbar |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: Every volume and pressure > 20mbar |

16.5.4.1 - Dilution test on pressurized enclosures with an internal source of release

(id 1145) Purging test on pressurized enclosure with an internal source of release where the flammable substance is not a liquid, with pressurization by continuous flow and where the protective gas is air

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: < 500 dm3 |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 500 < 3000 dm3 |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: > 3000 dm3 |

16.5.4.2 - Dilution test on pressurized enclosures with an internal source of release

(id 1146) Dilution test on pressurized enclosure with an internal source of release where the flammable substance is not a liquid, with pressurization by continuous flow and where the protective gas is air

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: < 500 [dm3] and pressure < 20mbar |
| Unit price #2 [EUR]: 1,000.00 | Limit #2: 500 < 1000 [dm3] and pressure < 20mbar |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: Every volume and pressure > 20mbar |

5.9 - Spark and particle barriers

(id 1589) ---

| | |
|----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 50.00 | Limit #1: Applicable to any sample |

17.1 - Functional test

(id 2743) The performance of safety devices provided with the pressurized enclosure shall be verified.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

IEC 60079-31:2022

(id 1763) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

6.1.1.1 - Type tests for dust exclusion by enclosures

(id 2472) Test sequence composed of thermal endurance to heat, thermal endurance to cold, impact test and and drop test if applicable, as specified in IEC 60079-0, followed by:

- IEC 60079-31 § 6.1.1.2 Impact test for supplementary internal enclosures, if present
- IEC 60079-31 § 6.1.1.3 Pressure test
- IEC 60079-31 § 6.1.1.4 IP test.

| | |
|------------------------------|--------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 30 |
| Unit price #1: ask to office | Limit #1: not relevant |

6.1.1.2 - Impact test on supplementary internal enclosures

(id 2473) An impact test on supplementary internal enclosures shall be performed in accordance with the resistance to impact test of IEC 60079-0.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |



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6.1.1.3 - Pressure test

(id 2474) A positive internal pressure shall be applied to the Ex Equipment.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

6.1.1.4 - IP test

(id 2475) ---

Accredited [IEC17025]: YES Execution time [day]: 30
Unit price #1 [EUR]: 300.00 Limit #1: IP5X or IP6X

6.1.2 - Tests to determine maximum surface temperature

(id 2476) ---

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

IEC 60079-32-2:2015

(id 116) Explosive atmospheres - Part 32-2: Electrostatics hazards - Tests

4.11 - Transferred charge

(id 950) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

4.12 - Ignition test

(id 951) Ignition tests are carried out by bringing the ignition probe close to the charged test sample with a flammable gas mixture flowing through the probe.

A rubbing sequence with materials from the positive and negative end of the triboelectric series is performed with the following steps: 1 stroke per s with a force of about 40 N for 10 + or - 1 s with a material from the triboelectric series, then discharge according to standard requirements. The rubbing sequence is performed at least 20 times with a first material from the positive end of the triboelectric series, 20 times with a material from the negative end of the triboelectric series, 20 times with a second material from the positive end of the triboelectric series.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

4.2 - Surface resistance

(id 1781) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

4.14 - Breakdown voltage

(id 1813) The electrical breakdown voltage shall be measured according to the short-time (rapid rise) test in IEC 60243-1 with the additional requirements of IEC 60243-2 for DC testing.

The breakdown voltage is that in which 1mA of leakage current is exceeded.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Test on plate
Unit price #2 [EUR]: 600.00 Limit #2: Test on tube

IEC 60079-5:2015+AMD1:2022

(id 1846) Explosive atmospheres - Part 5: Equipment protection by powder filling "q"

5.1.1 - Pressure type test of container

(id 1026) Overpressure test on enclosures and containers

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

5.1.2 - Verification of the degree of protection of the enclosure

(id 1027) The verification of the IP degree of protection is conducted according to IEC 60529, in compliance with the requirements of § 4.1.3

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 600.00 Limit #1: IP65



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5.1.3 - Insulation resistance test of the filling material

(id 1028) Dielectric strength test on the filling material

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Apply to any sample

5.1.4 - Maximum temperatures

(id 1029) Measurement of the maximum temperatures under overload conditions or malfunction simulation

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

4.2.1 - Material specification

(id 1043) Requirements for equipment protection by powder filling "q"

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

4.3.2 - Distances surrounding free space

(id 1044) Requirements for equipment protection by powder filling "q"

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

4.3.1 - Distances through filling material

(id 1864) Requirements for equipment protection by powder filling "q"

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

IEC 60079-6:2015

(id 78) Explosive atmospheres - Part 6: Equipment protection by oil immersion "o"

6.1.1 - Overpressure test on sealed enclosures

(id 1340) Test to verify the ability of sealed enclosure to withstand an internal pressure

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

6.1.2 - Reduced pressure test on sealed enclosures

(id 1341) Verification of the increase in pressure after 24h during which the internal pressure of the enclosure without protective liquid shall be reduced by an amount equivalent to not less than the pressure that would result from a change in the protective liquid level from the maximum permissible level to the minimum permissible level when appropriately corrected for any ambient temperature variations specified in the documentation

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

6.1.3 - Overpressure test on unsealed enclosures

(id 1342) Verification of the ability of unsealed enclosures to withstand an internal pressure equal to 150 kPa, with the breather sealed, for at least 60s.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

6.1.4 - Maximum temperature

(id 1343) Measurement of maximum surface temperature at maximum load

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: Not relevant

6.1.5 - Switching Tests

(id 1344) This test is performed only if the equipment includes internal switches

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,200.00 Limit #1: Not relevant

4.6 - Immersion depth verification

(id 1345) Measurement of immersion depth of live parts at the minimum oil level possible

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant



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IEC 60079-7:2015+AMD1:2017

(id 14) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

6.1 - Dielectric strength

(id 120) ---

| | |
|-------------------------------|-----------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Up to 5kV dc |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: From 5 to 10kV ac/dc |
| Unit price #3 [EUR]: 2,400.00 | Limit #3: From 10 to 60kV dc only |

6.8/E.2 - General purpose connection and junction boxes - Maximum dissipated power method

(id 421) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

6.10 - Terminal insulating material tests

(id 422) ---

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

6.6.2/6.7.2 - Insulation resistance for Ex eb-ec batteries

(id 608) Insulation resistance test for cells and batteries of Level of Protection 'eb' or 'ec'

| | |
|-----------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Applicable to any group of samples |

6.9.2 - Verification of the electrical insulation

(id 610) Tests on resistance heating device

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

6.6.3/6.7.3 - Shock test for Ex eb-ec batteries

(id 657) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,800.00 | Limit #1: Applicable to any sample |

6.6.4/6.7.4 - Test for ventilation of battery container for Ex eb-ec batteries

(id 658) The purpose of the test is the determination of the maximum hydrogen concentration within the battery container and the adequate dimensioning of its ventilation openings

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: V container < 20 l with overcharging current |
| Unit price #2 [EUR]: 1,400.00 | Limit #2: 20 l < V container < 50 l with overcharging current |
| Unit price #3 [EUR]: 1,800.00 | Limit #3: V container > 50 l or with external H2 flow |

6.8-E.3 - General purpose connection and junction boxes - Defined arrangement method

(id 876) ---

| | |
|-------------------------------|-------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 800.00 | Limit #1: up 5 liters |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: for 5 to 100 liters |
| Unit price #3 [EUR]: 2,000.00 | Limit #3: over 100 liters |

4 - 5 - Constructional requirements connection

(id 917) Physical and/or documental evaluation of the sample characteristics

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

B.2 - Resistance heating device intended for immersion insulation test

(id 921) This type test applies to specific forms of resistance heating devices or resistance heating units (other than trace heater).

This test is not intended to verify the suitability of resistance heating devices or units to operate when immersed in liquids other than water or at pressures of more than 500 Pa.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 15 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Applicable to any sample |



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6.8.3 - Dielectric strength test and insulation test for heating resistors

(id 924) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

4.2.3 - Factory connection

(id 973) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

4 - 5 - Constructional requirements motor

(id 1022) Filling of ExTR60079-7_4C

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

A.2 - Determination of maximum service temperatures

(id 1030) Winding temperature - normal operation

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: up to 2 liters
Unit price #2 [EUR]: 2,500.00 Limit #2: over 2 liters

A.3 - Determination of maximum surface temperatures

(id 1031) Determination of maximum surface temperature on electrical motors

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: up to 2 liters
Unit price #2 [EUR]: 1,500.00 Limit #2: over 2 liters

6.9.3 - Thermal stability of the insulating materials of resistance heating devices

(id 1083) Tests on resistance heating device

Accredited [IEC17025]: YES Execution time [day]: 29
Unit price #1 [EUR]: 1,400.00 Limit #1: Applicable to any sample

6.9.4 - Test for resistance to impact

(id 1084) Tests on resistance heating device

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

6.9.5 - Test for the cold start current

(id 1085) Tests on resistance heating device

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Manufacturer's declared cold start temperature ± 2 °C

6.9.6 - Tests for specific forms of resistance heating devices

(id 1086) Tests on resistance heating device

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

6.9 - Resistance heating equipment

(id 1087) Sequence of tests to be performed on resistance heating equipment

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

B.1 - Resistance heating devices subjected to mechanical stresses

(id 1088) Type tests for specific forms of resistance heating devices
or resistance heating units (other than trace heater)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

B.2 - Resistance heating devices or units intended for immersion

(id 1089) Type tests for specific forms of resistance heating devices
or resistance heating units (other than trace heater)

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample



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B.3 - Resistance heating devices or units having hygroscopic insulating material

(id 1090) Type tests for specific forms of resistance heating devices
or resistance heating units (other than trace heater)

Accredited [IEC17025]: NO Execution time [day]: 28
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

B.4.2.2 - Safety device sensing the temperature

(id 1091) Verification of limiting temperature of resistance heating devices (other than trace heaters)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Up to 6 points

B.4.2.3 - Safety device sensing the temperature and at least one other parameter

(id 1092) Verification of limiting temperature of resistance heating devices (other than trace heaters)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

B.4.2.4 - Safety device sensing a parameter other than the temperature

(id 1093) Verification of limiting temperature of resistance heating devices (other than trace heaters)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

B.4.3 - Resistance heating unit of stabilized design

(id 1094) Verification of limiting temperature of resistance heating devices (other than trace heaters)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

B.4.4 - Heating device with temperature self-limiting characteristic

(id 1095) Verification of limiting temperature of resistance heating devices (other than trace heaters)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.3.2 - Impact test

(id 1101) Tests for luminaires

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1: ask to office Limit #1: Not relevant

6.2.1 - Determination of starting current ratio I_A/I_N and the time t_E

(id 1125) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

6.2.3.1.3 - Stator winding insulation

(id 1126) Insulation systems and connection cables shall be tested in an explosive test mixture applying a sinusoidal voltage of at least 1.5 times the rated r.m.s. line voltage for at least 3 min between earth and each phase.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Test inside small vessel
Unit price #2 [EUR]: 1,300.00 Limit #2: Test in explosion vented chamber
Unit price #3 [EUR]: 3,000.00 Limit #3: Outdoor test

6.2.3.2 - Cage rotor

(id 1127) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

6.2.4 - Overspeed test of cemented magnets

(id 1128) An electric motor shall be tested at 1.2 times its maximum rated speed in order to verify the tightness of the adhesives of the magnets as well as the stability of the rotor.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: up to 30 kg
Unit price #2 [EUR]: 400.00 Limit #2: from 31 to 100 kg
Unit price #3 [EUR]: 600.00 Limit #3: over 100 kg



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6.3.3 - Mechanical tests for screw lampholders other than E10

(id 1129) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

6.3.4 - Abnormal operation of luminaires

(id 1130) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

6.3.5 - Sulphur dioxide test for level of protection "eb" for the connection of bi-pin lamp caps to lampholders

(id 1131) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

6.3.6 - Vibration test for level of protection "eb" for luminaires with bi-pin lamps

(id 1132) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

6.3.7 - Tests for wiring of luminaires subject to high-voltage impulses from ignitors

(id 1133) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

6.3.8 - Tests for electronic starters for tubular fluorescent lamps and for ignitors in Level of Protection "ec" for discharge lamps

(id 1134) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

6.3.2 - Drop test

(id 1137) Tests for luminaires

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

6.6.4/6.7.4 - -ANNULLATO - Determination of minimum ventilation openings of battery container

(id 1338) ---ANNULLATO nella riunione del 05.02.2017, vedere MOM 17/0299---The purpose of the test is the determination of the minimum dimensioning of the ventilation openings so that, with the rated hydrogen flow (calculated for the battery for which the case is prepared), the concentration limits imposed by the standard are not exceeded.

The test is an internal method based on §6.6.4/6.7.4.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,200.00 Limit #1: Not relevant

A.3.2.2 - Locked rotor tests - Optional testing at reduced voltage

(id 1350) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

A.3.2.3 - Locked rotor tests - Rotor temperature

(id 1351) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

A.3.2.4 - Locked rotor tests - Determination of starting current IA

(id 1352) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

A.3.2.5 - Locked rotor tests - Stator temperature

(id 1353) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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B.4 - Verification of limiting temperature of resistance heating devices (other than trace heaters)

(id 1570) The test shall be carried out in accordance with the procedure of B.4.2, B.4.3 or B.4.4

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

4.2.3.4/4.2.3.5/4.2.3.6 - Field wiring connections: cable pull for pluggable connections

(id 1906) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

IEC 60086-4:2019

(id 1397) Primary batteries - Part 4: Safety of lithium batteries

6.5.7 - Test K: Thermal abuse

(id 1866) This test simulates the condition when a battery is exposed to an extremely high temperature.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: up to 2 liters in volume

IEC 60204-1:2016+AMD1:2021

(id 1849) Amendment 1 - Safety of machinery - Electrical equipment of machines - Part 1: General requirements

18.3 - Insulation resistance tests

(id 1567) This part of IEC 60204 gives general requirements for the electrical equipment of machines. This test is included in the sequence of tests listed in 18.1.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 100.00 Limit #1: Only one phase
Unit price #2 [EUR]: 300.00 Limit #2: 3 phases

18.4 - Voltage test

(id 2432) The maximum test voltage shall be applied between the power circuit conductors and the protective bonding circuit for a period of approximately 1s

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Up to 5kV dc

IEC 60335-2-40:2018

(id 1899) Household and similar electrical appliances – Safety – Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers

Annex EE - Pressure tests

(id 2547) All refrigerating system parts shall withstand the maximum allowable pressure expected in normal operation, abnormal operation and standstill.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Fluid at ambient temperature
Unit price #2 [EUR]: 1,200.00 Limit #2: Test in climatic chamber

IEC 60335-2-40:2022

(id 1828) Household and similar electrical appliances – Safety – Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers

LL.3 - Response time of the refrigerant detection system

(id 2625) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample



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LL.9 - Temperature test

(id 2626) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: Only one temperature

IEC 60512-1-1:2002

(id 1379) Connectors for electronic equipment Tests and measurements - Part 1-1: General examination Test 1a: Visual examination

unref - Test 1a: Visual examination

(id 1782) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 50.00 Limit #1: Not relevant

IEC 60512-1-2:2002

(id 1380) Connectors for electronic equipment Tests and measurements - Part 1-2: General examination Test 1b: Examination of dimension and mass

unref - Test 1b: Examination of dimension and mass

(id 1783) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

IEC 60512-11-10:2002

(id 1381) Connectors for electronic equipment -Tests and measurements - Part 11-10: Climatic tests -Test 11j: Cold

unref - Test 11j: Cold

(id 1794) This test shall be carried out in accordance with IEC 60068-2-1:

– Test Aa: Cold for non-heat-dissipating specimens with sudden change of temperature when no measurement during the test is required;
– Test Ab: Cold for non-heat-dissipating specimens with gradual change of temperature when measurements during the test are required;
using the degree of severity specified in the detail specification.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Up to 2h (chest freezer - small)

IEC 60512-11-3:2002

(id 1382) Connectors for electronic equipment -Tests and measurements - Part 11-3: Climatic tests -Test 11c: Damp heat, steady state

unref - Test 11c: Damp heat, steady state

(id 1792) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

IEC 60529:1989+AMD2:2013+COR1:2019

(id 1607) Degrees of protection provided by enclosures (IP Code)

12 - Tests for protection against access to hazardous parts - First characteristic numeral

(id 563) The purpose of this test is to evaluate the protection of persons against access to hazardous parts. It is performed together with the relevant tests for protection of equipment against the penetration of solid foreign objects. According to the first characteristic numeral to be achieved, it can be performed with the following access probes: 1X: sphere 50 mm diam.; 2X: jointed test finger 12 mm diam.; 3X: tool 2.5 mm diam.; 4X, 5X and 6X: wire 1.0 mm diam.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample



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13.2 - Tests for protection against solid foreign objects - First characteristic numeral 2 (IP 2X)

(id 567) This test is performed to evaluate the protection of the equipment against the access of the object probe rigid sphere of 12.5 mm diameter, without handle or guard, with a test force of 30 N.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

13.2 - Test for protection against solid foreign objects - First characteristic numeral 3 (IP 3X)

(id 568) This test is performed to evaluate the protection of the equipment against the access of the object probe rigid steel rod of 2.5 mm diameter, with edges free from burrs, with a test force of 3 N.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

13.2 - Tests for protection against solid foreign objects - First characteristic numeral 4 (IP 4X)

(id 569) This test is performed to evaluate the protection of the equipment against the access of the object probe rigid steel rod of 1 mm diameter, with edges free from burrs, with a test force of 1 N.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

13.4 - Dust test for first characteristic numerals 5 and 6 (IP 5X or 6X)

(id 571) This test is performed to evaluate the protection of the equipment against the access of dust penetration.

For huge size samples the test may be performed into a movable chamber.

Sample tested are of necessity in one of two categories:

Category 1: Enclosures where the normal working cycle of the equipment causes reductions in air pressure within the enclosure below that of the surrounding air, e.g., due to thermal cycling effects.

Category 2: Enclosures where no pressure difference relative to the surrounding air is present.

In the case of IP evaluations under ATEX directive or standards the devices are always considered belonging to Category 1 and tested after an ageing cycle.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Standard IP chamber (very small sample)
Unit price #2 [EUR]: 800.00 Limit #2: Medium IP chamber (sample up to 90cm high)
Unit price #3 [EUR]: 1,200.00 Limit #3: Huge size samples with movable chamber

14.2.5 - Test for second characteristic numeral 5 with the 6_3 mm nozzle (IP X5)

(id 572) This test is performed to evaluate the protection of the equipment against the access of water in the presence of a water jet hose nozzle of 6.3 mm diameter, and a 12.5 l/min flow rate, spraying water from a 3m distance.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Standard IP chamber (very small sample)
Unit price #2 [EUR]: 800.00 Limit #2: Medium IP chamber (sample up to 90cm high)
Unit price #3 [EUR]: 1,200.00 Limit #3: Huge size samples with movable chamber

14.2.6 - Test for second characteristic numeral 6 with the 12-5 mm nozzle-IP X6

(id 573) This test is performed to evaluate the protection of the equipment against the access of water in the presence of a water jet hose nozzle of 12.5 mm diameter, and a 100 l/min flow rate, spraying water from a 3m distance.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Standard IP chamber (very small sample)
Unit price #2 [EUR]: 800.00 Limit #2: Medium IP chamber (sample up to 90cm high)
Unit price #3 [EUR]: 1,200.00 Limit #3: Huge size samples with movable chamber

14.2.7 - Test for second characteristic numeral 7 - temporary immersion (IP X7)

(id 574) This test is performed to evaluate the protection of the equipment against the access of water in case of temporary immersion between 0.15 and 1 m for 30 min.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Standard IP chamber (very small sample)
Unit price #2 [EUR]: 800.00 Limit #2: Medium IP chamber (sample up to 90cm high)
Unit price #3 [EUR]: 1,200.00 Limit #3: Huge size samples with movable chamber

14.2.8 - Test for second characteristic numeral 8 - continuous immersion (IP X8)

(id 575) This test is performed to evaluate the protection of the equipment against the access of water in case of immersion at a depth and for a duration subject to agreement with the manufacturer. The test parameters selected shall take account of the condition that the enclosure will be continuously immersed in actual use. More severe conditions than for second characteristic numeral 7 shall be applied. Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is continuously immersed in water under the conditions agreed. A pressure difference between the sample and the external ambient pressure may be applied in order to simulate depth > 1m (typically 1bar=10m).

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Dia 250mm - height 600mm - up to 1 bar (10m)
Unit price #2 [EUR]: 1,000.00 Limit #2: Dia 800mm - height 400mm - up to 1 bar (10m)
Unit price #3 [EUR]: 1,800.00 Limit #3: Dia 2000mm - height 1500mm - up to 60 bar (600m)



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15 - Tests for protection against access to hazardous parts - Additional letter (A,B,C,D)

(id 673) The purpose of this test is to evaluate the protection of persons against access to hazardous parts. It is performed together with the relevant tests for protection of equipment against the penetration of solid foreign objects. It can be performed with the following access probes: A: sphere 50 mm diam.; B: jointed test finger 12 mm diam., 80 mm length; C: tool 2.5 mm diam., 80 mm length; D: wire 1.0 mm diam.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

14.2.9 - Test for second characteristic numeral 9 by high pressure and temperature water jetting (IP X9)

(id 833) This test is performed to evaluate the protection of the equipment against the access of water in the presence of a test nozzle spraying water at high temperature and pressure. For big enclosures, the spray position during the test is from all practical directions covering the entire surface area and the test duration is 1 min/m² for a minimum of 3 min. For small enclosures the spray position is from 0°, 30°, 60°, 90° and the test duration is 30 s per position.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: largest dimension < 250 mm
Unit price #2 [EUR]: 1,200.00 Limit #2: largest dimension >= 250 mm
Unit price #3 [EUR]: 1,800.00 Limit #3: huge size sample

14.2.3 - Test for second characteristic numeral 3 with spray nozzle (IP X3)

(id 886) This test is performed to evaluate the protection of the equipment against the access of water in the presence of an oscillating tube spraying water from -60° to + 60° from vertical

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

13.2 - Tests for protection against solid foreign objects - First characteristic numeral 1 (IP 1X)

(id 1181) This test is performed to evaluate the protection of the equipment against the access of the object probe rigid sphere of 50 mm diameter without handle or guard, with a test force of 50 N.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

14.2.1 - Test for second characteristic numeral 1 with the drip box (IP X1)

(id 1376) This test is performed to evaluate the protection of the equipment against the access of water with a device which produces a uniform flow of water drops over the whole area of the enclosure.

Accredited [IEC17025]: YES Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

14.2.4 - Test for second characteristic numeral 4 with a spray nozzle (IP X4)

(id 1883) This test is performed to evaluate the protection of the equipment against the access of water in the presence of a spray nozzle with a water delivery rate of 10 l/min + or - 5%.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1 [EUR]: 400.00 Limit #1: Standard IP chamber (very small sample)
Unit price #2 [EUR]: 800.00 Limit #2: Medium IP chamber (sample up to 90cm high)
Unit price #3 [EUR]: 1,200.00 Limit #3: Huge size samples with movable chamber

14.2.2 - Test for second characteristic numeral 2 with the drip box (IP X2)

(id 2044) This test is performed to evaluate the protection of the equipment against the access of water with a device which produces a flow of water drops over the enclosure.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: up to 40x40cm exposed surface
Unit price #2 [EUR]: 700.00 Limit #2: up to 100x100cm exposed surface

IEC 60855-1:2016

(id 1228) Live working - Insulating foam-filled tubes and solid rods - Part 1: Tubes and rods of a circular cross-section

5.3.2 - Visual checks

(id 1641) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.3.3 - Dimensional checks

(id 1642) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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5.4.2.1.3 - Tests before exposure to humidity

(id 1643) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.4.2.1.4 - Tests after exposure to humidity

(id 1644) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.4.2.2.1 - Alternative dry test

(id 1645) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.4.2.2.2 - Alternative test after exposure to immersion

(id 1646) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.4.3 - Wet test

(id 1647) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.5.1 - Bending test

(id 1648) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.5.2 - Torsion test

(id 1649) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.5.3 - Crushing test on insulating foam-filled tube

(id 1650) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.5.4.1 - Bending ageing test

(id 1651) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.5.4.2 - Dielectric test after mechanical ageing

(id 1652) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.5.5 - Dye penetration test

(id 1653) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

5.5.6 - Durability of marking

(id 1654) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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IEC 60947-5-5 rev 2005-04

(id 1750) Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function

7.3.2 - Robustness of a button actuator

(id 2238) A button actuator shall withstand:

- a force applied in three mutually perpendicular axes;
- a torque in both directions of rotation, in each of the latched and unlatched positions, where the resetting action requires rotation of the push-button.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

7.3.3 - Durability test

(id 2239) The three samples shall be subjected to the following test: the actuator of an emergency stop device shall be moved through its full travel, then it shall be reset in a manner to imitate human operation as closely as possible.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

7.4 - Conditioning procedures

(id 2240) The purpose of the following procedures is to expose the emergency stop devices to various environmental conditions in order to verify their functioning after such exposure.

Accredited [IEC17025]: NO Execution time [day]: 16
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

7.5 - Shock test

(id 2241) The three emergency stop devices which have been conditioned in accordance with 7.4 shall be tested each on one of the three mutually perpendicular axes.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

IEC 61010-1:2010+AMD1:2016

(id 726) Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

11.7 - Fluid pressure and leakage

(id 2348) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

13 - Protection against liberated gases and substances, explosion and implosion

(id 2349) Equipment shall not liberate dangerous amounts of poisonous and injurious gases and substances in normal condition and in single fault condition. If potentially-hazardous substances are liberated, the operator shall not be directly exposed to a quantity of the substance that could cause harm.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

IEC 61076-2-101:2012

(id 2044) Connectors for electronic equipment - Product requirements - Part 2-101: Circular connectors - Detail specification for M12 connectors with screw-locking

5.2.1 - Rated voltage – Rated impulse voltage – Pollution degree

(id 2790) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Applicable to any sample

5.2.2 - Voltage proof

(id 2791) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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5.2.3 - Current-carrying capacity

(id 2792) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.2.4 - Contact resistance

(id 2793) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Applicable to any sample

5.2.5 - Insulation resistance

(id 2794) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.3.1 - IP degree of protection

(id 2795) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.3.2 - Mechanical operation

(id 2796) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.3.3 - Insertion and withdrawal forces

(id 2797) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.3.5 - Polarizing method

(id 2798) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.3.6 - Vibration (sinusoidal)

(id 2799) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.3.7 - Pressure differential

(id 2800) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

IEC 61215-1-1:2016

(id 158) Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules

11.1 - MQT 01 - Visual inspection

(id 1286) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.2 - MQT 02 - Maximum power determination

(id 1287) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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11.3 - MQT 03 - Insulation test

(id 1288) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.4 - MQT 04 - Measurement of temperature coefficients

(id 1289) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.5 - MQT 05 - Measurement of nominal operating temperature (NMOT)

(id 1290) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.6 - MQT 06.1 and MQT 06.2 - Performance at STC and NMOT

(id 1291) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.7 - MQT 07 - Performance at low irradiance

(id 1292) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.8 - MQT 08 - Outdoor exposure test

(id 1293) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.9 - MQT 09 - Hot-spot endurance test

(id 1294) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.10 - MQT 10 - UV preconditioning test

(id 1295) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.11 - MQT 11 - Thermal cycling test

(id 1296) This test of IEC 61215-2:2016 is applicable without modifications. The technology specific current which needs to be applied according to test MQT 11 of IEC 61215-2:2016 shall be equal to the STC peak power current.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.12 - MQT 12 - Humidity freeze test

(id 1297) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.13 - MQT 13 - Damp heat test

(id 1298) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.14 - MQT 14 - Robustness of terminations test

(id 1299) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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11.15 - MQT 15 - Wet leakage current test

(id 1300) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.16 - MQT 16 - Static mechanical load test

(id 1301) This test of IEC 61215-2: 2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.17 - MQT 17 - Hail test

(id 1302) This test of IEC 61215-2: 2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.18 - MQT 18 - Bypass diode thermal test

(id 1303) This test of IEC 61215-2: 2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.19 - MQT 19 - Stabilization

(id 1304) This test of IEC 61215-2: 2016 is applicable with the following modifications:

for the definition of stabilization as per test MQT 19 of IEC 61215-2:2016, $x = 0.01$ shall be used for crystalline silicon PV modules.

Temperature is a critical parameter. For the measurement MQT 6.1 of IEC 61215-2:2016 it shall be ensured that measurement is performed at $25 \pm 2^\circ\text{C}$ module temperature.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

IEC 61215-1-4:2016

(id 285) TERRESTRIAL PHOTOVOLTAIC (PV) MODULES – DESIGN QUALIFICATION AND TYPE APPROVAL Part 1-4: Special requirements for testing of thin-film Cu(In,Ga)(S,Se)_2 based terrestrial photovoltaic (PV) modules

11.1 - MQT 01 - Visual inspection

(id 1739) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.2 - MQT 02 - Maximum power determination

(id 1740) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.3 - MQT 03 - Insulation test

(id 1741) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.4 - MQT 04 - Measurement of temperature coefficients

(id 1742) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.5 - MQT 05 - Measurement of nominal module operating temperature (NMOT)

(id 1743) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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11.6 - MQT 06.1 - Performance at STC

(id 1744) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.6 - MQT 06.2 - 11.6 Performance at NMOT

(id 1745) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.7 - MQT 07 - Performance at low irradiance

(id 1746) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.8 - MQT 08 - Outdoor exposure test

(id 1747) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.9 - MQT 09 - Hot-spot endurance test

(id 1748) This test of IEC 61215-2:2016 is applicable with the following modifications:

Cu(In,Ga)(S,Se)₂ thin-film modules may exhibit performance changes with extended time in storage without light exposure (the "dark soak" effect). In order to minimize the influence of this dark soak effect, limit the time delay between the outdoor exposure or stabilization and the hot spot procedure to within 2 to 3 days; the modules are to be stored in the dark at ? 25 °C.

MQT 09.2 of IEC 61215-2:2016 shall be performed for any MLI module design. If module is constructed by interconnection of cell-like substructures, MQT 09.1 of IEC 61215-2:2016 may be applicable.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.10 - MQT10 - UV preconditioning test

(id 1749) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.11 - MQT 11 - Thermal cycling test

(id 1750) This test of IEC 61215-2:2016 is applicable with the following modifications:

The technology specific current which needs to be applied according to MQT 11 of IEC 61215-2:2016 shall be equal to $0,1 \times \text{STC peak power current}$.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.13 - MQT 13 - Damp heat test

(id 1751) This test of IEC 61215-2:2016 is applicable with the following modifications:

MQT 13 of IEC 61215-2:2016 can be conducted according to the following methods:

Method A) Perform MQT 13 as defined in IEC 61215-2:2016.

Method B) Perform MQT 13 as defined in IEC 61215-2:2016 with applied forward bias as per §11.13.1 of IEC 61215-1-4:2016.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.12 - MQT 12 - Humidity-freeze test

(id 1752) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.14 - MQT 14.1 - Robustness of terminations test - jbox

(id 1753) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.14 - MQT 14.2 - Robustness of terminations test - cord

(id 1754) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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11.15 - MQT 15 - Wet leakage current test

(id 1755) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.16 - MQT 16 - Static mechanical load test

(id 1756) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.17 - MQT 17 - Hail test

(id 1757) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.18 - MQT 18.1 - Bypass diode testing: bypass diode thermal test

(id 1758) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.18 - MQT 18.2 - Bypass diode testing: bypass diode functionality test

(id 1759) This test of IEC 61215-2:2016 is applicable without modifications.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.19 - MQT 19.1 - Initial stabilization

(id 1760) This test of IEC 61215-2:2016 is applicable with the following modifications:

For the definition of stabilization as per MQT 19 of IEC 61215-2:2016, $x = 0,02$ shall be used. Any kind of storage shall be done at temperature below 25 °C to avoid thermal activated processes affecting MQT 06.1 of IEC 61215-2:2016 measurement.

Initial stabilization is performed on all modules.

To fulfil MQT 19 requirements using light exposure, a minimum of two intervals each of at least 10 kWh/m² are required. After this preconditioning all of the test modules shall be measured for STC power (MQT 06.1 of IEC 61215-2:2016).

If stabilization is performed outdoors in general no module temperature limits apply. The outdoor stabilization shall be proven at least with one module using the indoor method following the validation procedure from MQT 19 of IEC 61215-2:2016.

The minimum and maximum module temperatures observed during outdoor light exposure stabilization verification while the irradiance level is above 500 W/m² shall be the minimum and maximum allowable module temperatures for all modules. If the module temperature falls outside of these limits the new module temperature range has to be re-verified.

Output power determination shall be performed after a minimum cooling time of 30 min and maximum 60 min.

A validated alternative procedure can be used in accordance to MQT 19 of IEC 61215-2:2016.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

11.19 - MQT 19.2 - Final stabilization

(id 1761) For the definition of stabilization as per MQT 19 of IEC 61215-2:2016, $x = 0,02$ shall be used.

Any kind of storage shall be done at temperature below 25 °C to avoid thermal activated processes affecting MQT 06.1 of IEC 61215-2:2016 measurement.

Final stabilization is performed on all modules after the test sequences to prove fulfilment of gate No. 2 requirement of IEC 61215-1:2016.

To fulfil MQT 19 requirements a minimum of two intervals of at least 10 kWh/m² each are required.

If stabilization is performed outdoors in general no module temperature limits apply. The outdoor stabilization shall be proven at least with one module using the indoor method following MQT 19 of IEC 61215-2:2016.

The minimum and maximum module temperatures observed during outdoor light exposure stabilization verification while the irradiance level is above 500 W/m² shall be the minimum

and maximum allowable module temperatures for all modules. If the module temperature falls outside of these limits the new module temperature range has to be re-verified.

Output power determination shall be performed after a minimum cooling time of 30 min and maximum 60 min.

A validated alternative procedure can be used in accordance to MQT 19 of IEC 61215-2:2016.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

IEC 61215-1:2016

(id 157) Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements

7.2.1 - Verification of rated label values (Gate 1)

(id 1207) P_{max} Verification:

Each individual module shall meet the following criterion:



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$P_{maxLab} \times (1 + (|m1|[\%]/100)) > P_{maxNP} \times (1 - (|t1|[\%]/100))$ or
 $P_{maxLab} \times (1 + (|m1|[\%]/100)) = P_{maxNP} \times (1 - (|t1|[\%]/100))$,
where

P_{maxLab} is the measured maximum STC power of each module in the stabilized state;

P_{maxNP} is the maximum rated nameplate power of each module without tolerances;

$m1$ is the measurement uncertainty in % of laboratory for P_{max} (expanded combined uncertainty ($k=2$), ISO/IEC Guide 98-3);

$t1$ is the manufacturer's rated lower production tolerance in % for P_{max} .

For Average P_{maxLab} , the following criterion shall apply:

Average $P_{maxLab} \times (1 + (|m1|[\%]/100)) > P_{maxNP}$ or

Average $P_{maxLab} \times (1 + (|m1|[\%]/100)) = P_{maxNP}$,

where

Average P_{maxLab} is the arithmetic average of the measured maximum STC power of the modules in stabilized condition. For multiple bins of power classes this formula has to be applied to each power class under investigation.

Voc Verification:

Each individual module shall meet the following criterion:

$VocLab \times (1 + (|m2|[\%]/100)) < VocNP \times (1 - (|t2|[\%]/100))$ or

$VocLab \times (1 + (|m2|[\%]/100)) = VocNP \times (1 - (|t2|[\%]/100))$,

where

$VocLab$ is the measured maximum Voc of each module in the stabilized state;

$VocNP$ is the maximum rated nameplate Voc of each module without tolerances;

$m2$ is the measurement uncertainty in % of laboratory for Voc;

$t2$ is the manufacturer's rated upper production tolerance in % for Voc.

Isc Verification:

Each individual module shall meet the following criterion:

$IscLab \times (1 + (|m3|[\%]/100)) < IscNP \times (1 - (|t3|[\%]/100))$ or

$IscLab \times (1 + (|m3|[\%]/100)) = IscNP \times (1 - (|t3|[\%]/100))$,

where

$IscLab$ is the measured maximum Isc of each module in the stabilized state;

$IscNP$ is the maximum rated nameplate Isc of each module without tolerances;

$m3$ is the measurement uncertainty in % of laboratory for Isc;

$t3$ is the manufacturer's rated upper production tolerance in % for Isc.

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1: ask to office

Limit #1: Not relevant

7.2.2 - Maximum power degradation during type approval testing (Gate 2)

(id 1208) At the end of each test sequence or for sequence B after bypass diode test, the maximum power output drop of each module P_{max} (Lab_Gate No. 2) shall be less than 5 %, referenced to the module's initial measured output power P_{max} (Lab_Gate No. 1).

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1: ask to office

Limit #1: Not relevant

7.2.3 - Electrical circuitry

(id 1209) Verification of the presence of an open-circuit during the tests

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1: ask to office

Limit #1: Not relevant

7.3 - Visual defects

(id 1210) Verification of the presence of any visual defects that may cause a risk of reliability loss, including power output.

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1: ask to office

Limit #1: Not relevant

7.4 - Electrical safety

(id 1211) Verification of insulation and wet leakage requirements

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1: ask to office

Limit #1: Not relevant

5.1 - Name plate and markings

(id 1348) This test is a visual inspection performed in order to verify the compliance of markings and nameplate

Accredited [IEC17025]: NO

Execution time [day]: 1

Unit price #1 [EUR]: 50.00

Limit #1: Not relevant



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(id 159) Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 2: Test procedures

4.1 - MQT 01 - Visual Inspection

(id 985) The purpose of the visual inspection is to detect any visual defects that may cause a risk of reliability loss, including power output. In some instances further testing may be required to finally decide if major visual defects exist or not. The inspection is performed in Illumination conditions of at least 1000 lx.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 50.00 Limit #1: Applicable to any sample

4.2 - MQT 02 - Maximum Power Determination (Flash test)

(id 986) The purpose of this test is to determine the variation in power of the module after the initial stabilization and after the various environmental stress tests. The values are the result of a differential measurement performed making a comparison between a control module and any other measured module.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Applicable to any sample

4.3 - MQT 03 - Insulation Test

(id 987) The purpose of this test is to determine whether or not the module is sufficiently well insulated between live parts and accessible parts.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample

4.4 - MQT 04 - Measurement of temperature coefficients

(id 988) Determination of the temperature coefficients of current, voltage and peak power

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

4.5 - MQT 05 - Measurement of Nominal Module Operating Temperature (NMOT)

(id 989) Determination of the NMOT (Nominal Module Operating Temperature) of the module.

NMOT is defined as the equilibrium mean solar cell junction temperature within an open-rack mounted module operating near peak power in the following standard reference environment (SRE):

- Tilt angle: $(37 \pm 5)^\circ$
- Total irradiance: 800 W/m²
- Ambient temperature: 20 °C
- Wind speed: 1 m/s
- Electrical load: A resistive load sized such that the module will operate near its maximum power point at STC or an electronic maximum power point tracker (MPPT).

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

4.6.3.1 - MQT 06.1 - Performance measuring at STC Cat. 0

(id 990) Determination of how the electrical performance of the module varies with load at STC (1000 W/m², 25 °C cell temperature, with the IEC 60904-3 reference solar spectral irradiance distribution)

The values measured are normalized by software using the correction method No.2 of IEC 60891 ed.2 – December 2009.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

4.6.3.2 - MQT 06.2 - Performance measuring at NMOT

(id 991) Determination of how the electrical performance of the module varies with load at NMOT. The values measured are normalized by software using the correction method No.2 of IEC 60891 ed.2 – December 2009.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

4.7 - MQT 07 - Performance at low irradiance

(id 992) Determination of how the electrical performance of the module varies with load at 25 °C and an irradiance of 200 W/m² (as measured by a suitable reference device), in accordance with IEC 60904-1 using natural sunlight

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

4.8 - MQT 08 - Outdoor exposure test

(id 993) Assessment of the ability of the module to withstand exposure to outdoor conditions and any synergistic degradation effects which may not be detected by laboratory tests. During the test, the sample is connected to a resistive load sized such that the module will operate near its maximum power point at STC or an electronic maximum power point tracker (MPPT).

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample



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4.9.5.2 - MQT 09.1 - Hot-spot endurance test (WBT)

(id 994) Determination of the ability of the module to withstand hot-spot heating effects, for example solder melting or deterioration of the encapsulation. This defect could be provoked by cracked or mismatched cells, interconnect failures, partial shadowing or soiling (equal to IEC61730 - MST22)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

4.9.5.3 - MQT 09.2 - Hot-spot endurance test (MLI)

(id 995) Possible subcontract

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

4.10 - MQT 10 - UV preconditioning test

(id 996) The purpose of this test is to precondition the module with ultra-violet (UV) radiation before the thermal cycle/humidity freeze tests to identify those materials and adhesive bonds that are susceptible to UV degradation.

Due to the UV test chamber design, the irradiance at the module test plane does not exceed 250 W/m² at wavelengths between 280 nm and 400 nm (with no more than 10 % in the wavelength band between 280 nm and 320 nm) and its uniformity is ± 15 % over the test plane.

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 800.00 Limit #1: Single module up to 1000x2000mm (72 cells)
Unit price #2 [EUR]: 1,800.00 Limit #2: Special sample

4.11 - MQT 11 - Thermal cycling test (200 cycles)

(id 997) The purpose of this test is to determine the ability of the module to withstand thermal mismatch, fatigue and other stresses caused by repeated changes of temperature (200 cycles).

Each module is connected to an appropriate current supply by connecting the positive terminal of the module to the positive terminal of the power supply and the second terminal accordingly. During the thermal cycling test a continuous current flow is set during the heat up cycle to the technology specified current in 4.11.2 at temperature from -40 °C to 80 °C. During cool down, the -40 °C dwell phase and temperatures above 80 °C the continuous current is reduced to no more than 1,0 % of the measured STC peak power current to measure continuity.

The module(s) is (are) subject to cycling between measured module temperatures of (-40 ± 2) °C and $(+85 \pm 2)$ °C, in accordance with the profile in Figure 9 in IEC 61215-2.

The rate of change of temperature between the low and high extremes does not exceed 100 °C/h and the module temperature remains stable at each extreme for a period of at least 10 min. The cycle time does not exceed 6 h unless the module has such a high heat capacity that a longer cycle is required. The number of cycles is as shown in the relevant sequences in Figure 1 of IEC 61215-1:2016.

Accredited [IEC17025]: NO Execution time [day]: 60
Unit price #1 [EUR]: 1,600.00 Limit #1: 200 cycles - single PV up to 1000x2000mm

4.11 - MQT 11 - Thermal cycling test (50 cycles)

(id 998) The purpose of this test is to determine the ability of the module to withstand thermal mismatch, fatigue and other stresses caused by repeated changes of temperature (50 cycles).

Each module is connected to an appropriate current supply by connecting the positive terminal of the module to the positive terminal of the power supply and the second terminal accordingly. During the thermal cycling test a continuous current flow is set during the heat up cycle to the technology specified current in 4.11.2 at temperature from -40 °C to 80 °C. During cool down, the -40 °C dwell phase and temperatures above 80 °C the continuous current is reduced to no more than 1,0 % of the measured STC peak power current to measure continuity.

The module(s) is (are) subject to cycling between measured module temperatures of (-40 ± 2) °C and $(+85 \pm 2)$ °C, in accordance with the profile in Figure 9 in IEC 61215-2.

The rate of change of temperature between the low and high extremes does not exceed 100 °C/h and the module temperature remains stable at each extreme for a period of at least 10 min. The cycle time does not exceed 6 h unless the module has such a high heat capacity that a longer cycle is required. The number of cycles is as shown in the relevant sequences in Figure 1 of IEC 61215-1:2016.

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 500.00 Limit #1: 50 cycles - single module up to 1000x2000mm (72 cells)

4.12 - MQT 12 - Humidity freeze test

(id 999) The purpose of this test is to determine the ability of the module to withstand the effects of high temperature and humidity followed by sub-zero temperatures. This is not a thermal shock test.

In one full cycle period the is subject to a temperature rising from +25°C till +85°C, with a maximum gradient of 100 °C/h. Once reached 85°C with 85 ± 5 % RH the minimum dwell time is 20 h. Then the temperature decreases with a maximum gradient of 100 °C/h until 0°C and then with a maximum gradient of 200 °C/h until -40°C, with no RH control. Once reached -40°C, the minimum dwell time is 30 min. Then, the temperature rises again until +25°C, where a new cycle begins. The maximum time between two +85°C peaks is 4h.

One cycle is repeated as specified by the standard.

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 1,100.00 Limit #1: 10 cycles - Single module up to 1000x200mm (72 cells)



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4.13 - MQT 13 - Damp heat test

(id 1000) The purpose of this test is to determine the ability of the modules/junction boxes to withstand the effects of long-term penetration of humidity.

| | |
|-------------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 42 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: 1000h - Single module up to 1000x200mm (72 cells) |
| Unit price #2 [EUR]: 300.00 | Limit #2: 250h - Single module up to 1000x200mm (72 cells) |

4.14.2 - MQT 14.1 - Robustness of terminations - jbox

(id 1001) The purpose of the robustness of terminations test is to determine that the terminations, the attachment of the terminations, and the attachment of the cables to the body of the module will withstand stresses that are likely to be applied during normal assembly or handling operations.

A force of 40 N shall be gradually applied in each direction parallel to the mounting surface parallel to the module edges, in steps of 90°.

Then, a force of 40 N shall be gradually applied without jerks, in a direction perpendicular to the mounting surface. The pull force should be applied at the centre point of the box.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Applicable to any sample |

4.14.3 - MQT 14.2 - Robustness of terminations - cord

(id 1002) The purpose of the robustness of terminations test is to determine that the terminations, the attachment of the terminations, and the attachment of the cables to the body of the module will withstand stresses that are likely to be applied during normal assembly or handling operations. This test can be omitted if junction box is qualified in accordance to IEC 62790.

During the pull test, the cable is pulled for duration of 1 s, 50 times, without jerks in the direction of the axis with the relevant force as specified in the standard (Table 1).

During the torque test, a torque as specified in Table 2 is applied for 1 min. The twist or torsion inside the cable gland or other cord anchorage shall not exceed 45°. The cable is held in position by the cord anchorage.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

4.15 - MQT 15 - Wet leakage current test

(id 1003) The purpose of this test is to evaluate the insulation of the module under wet operating conditions and verify that moisture from rain, fog, dew or molten snow does not enter the active parts of the module circuitry, where it might cause corrosion, a ground fault, or a safety hazard.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 150.00 | Limit #1: Applicable to any sample |

4.16 - MQT 16 - Static mechanical load test

(id 1004) The purpose of this test is to determine the ability of the module to withstand a minimum static load, such as snow or ice.

Additional requirements may apply for certain installations and climates.

The test load is defined as:

Test load = $y_m \times \text{design load}$, where y_m is at least $> \text{or} = 1.5$.

The minimum required design load per this standard is 1 600 Pa that results in a minimum test load of 2 400 Pa.

Per each mounting method the manufacturer may specify higher design load(s) for positive (downward) and negative (upward) and also a higher y_m for certain applications. Inhomogeneous snow loads are not covered by this test.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Applicable to any sample |

4.17 - MQT 17 - Hail test

(id 1005) Verification that the sample is capable of withstanding the impact of hailstones in different locations:

01 Any corner of the module window, not more than one radius from the module edge.

02 Any edge of the module, not more than one radius of ice-ball from the module edge.

03 Over edges of the circuit (e.g. individual cells).

04 Over edges of the circuit (e.g. individual cells).

05 Over the circuit near interconnects (i.e. cell interconnects and bus ribbons).

06 Over the circuit near interconnects (i.e. cell interconnects and bus ribbons).

07 On the module window, not more than half diameter of ice ball from one of the points at which the module is mounted to the supporting structure.

08 On the module window, not more than half diameter of ice ball from one of the points at which the module is mounted to the supporting structure.

09 On the module window, at points farthest from the points selected above.

10 On the module window, at points farthest from the points selected above.

11 Any points which may prove especially vulnerable to hail impact like over the junction box.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Applicable to pv module |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: Applicable to any sample |

4.18.1 - MQT 18.1 - Bypass diode thermal test

(id 1006) The test is designed to assess the adequacy of the thermal design and relative long-term reliability of the bypass diodes used to limit the detrimental effects of module hot-spot susceptibility. Its purpose is to determine the diode's temperature characteristic and its maximum diode junction temperature T_J under continuous operation. T_J is obtained from V_D at $T_{amb} = 75^\circ\text{C}$, $I_D = I_{sc}$ from a V_D versus T_J characteristic obtained according to § 4.18.1.3.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Applicable to any sample |



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4.18.2 - MQT 18.2 - Bypass diode functionality test

(id 1007) The purpose of this test is to verify that the bypass diode(s) of the test samples remain(s) functional following MQT 09 and MQT 18.1. In case of PV modules without bypass diodes this test can be omitted.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

4.19.5 - MQT 19.1 - Initial stabilization

(id 1008) Exposition to sunlight while open-circuited, before starting any other test sequence.
Only irradiance levels > 500 W/m2 contribute to the integrated irradiance.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 100.00 Limit #1: Crystalline module

4.19.6 - MQT 19.2 - Final stabilization

(id 1009) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

4.6.3.1 - MQT 06.1B - Performance measuring at STC (Flash test)

(id 1010) Flash test with solar simulator for performance measuring at STC

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant

- On-field module management

(id 1011) Only for category 3 photovoltaic tests

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 50.00 Limit #1: Not relevant

4.6.3.1 - MQT 06.1 - Performance measuring at STC Cat. III

(id 1566) The purpose of this test is to determine the electrical performance of the module. The values are the result of a differential measurement performed making a comparison between a control module and the module under test.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

4.10 - MQT 10 bis - UV preconditioning test - internal variation for samples that are not PV modules

(id 2127) Test method inspired to the principles of §4.10 - MQT 10 describe in standard IEC 1215-2 but internally developed by the laboratory in order to be adapted also to samples that are not PV modules. This test is not covered by accreditation.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

IEC 61730-1:2016

(id 287) Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction

- Check list-Procedure IEC 61730-1

(id 1285) This part of IEC 61730 describes the fundamental construction requirements for photovoltaic (PV) modules in order to provide safe electrical and mechanical operation during their expected lifetime. This part of IEC 61730 pertains to the particular requirements of construction

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample
Unit price #2 [EUR]: 300.00 Limit #2: Update of already existing certificate

IEC 61730-2:2016

(id 282) Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing

10.2 - MST 01 - Visual inspection

(id 1147) The purpose of the visual inspection is to detect any visual defects that may cause a risk of reliability loss, including power output. In some instances further testing may be required to finally decide if major visual defects exist or not. The inspection is performed in Illumination conditions of at least 1000 lx.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 50.00 Limit #1: Not relevant



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10.3 -MST 02 - Perfomance at STC

(id 1148) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Not relevant

10.4 - MST 03 - Maximum power determination

(id 1149) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant

10.5 - MST 04 - Insulation thickness test

(id 1150) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.6 - MST 05 - Durability of marking

(id 1151) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.7 - MST 06 - Sharp edge test

(id 1152) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.8 - MST 07 - Bypass diode functionality test

(id 1153) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,400.00 Limit #1: Not relevant

10.9 - MST 11 - Accessibility test

(id 1154) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant

10.10 - MST 12 - Cut susceptibility

(id 1155) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant

10.11 - MST 13 - Continuity test of equipotential bonding

(id 1156) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.12 - MST 14 - Impulse voltage test

(id 1157) Possible subcontract (?)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

10.13 - MST 16 - Insulation test

(id 1158) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.14 - MST 17 - Wet leakage current test

(id 1159) The purpose of this test is to evaluate the insulation of the module under wet operating conditions and verify that moisture from rain, fog, dew or molten snow does not enter the active parts of the module circuitry, where it might cause corrosion, a ground fault or a safety hazard.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant



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10.15 - MST 21 - Temperature test

(id 1160) This temperature test is designed to determine the maximum reference temperatures for various components and materials used to construct the PV module, in order to verify the suitability of their use.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

10.16 - MST 22 - Hot-spot endurance test

(id 1161) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

10.19 - MST 25 - Bypass diode thermal test

(id 1162) This test is equivalent to MQT 18 in IEC 61215-2. Both MQT 18.1 and MQT 18.2 shall be performed.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

10.20 - MST 26 - Reverse current overload test

(id 1163) PV modules contain electrically conductive material contained in an insulating system. Under reverse current fault conditions the electrical conductors and the cells of the PV module are forced to dissipate energy as heat prior to circuit interruption by an over-current protector installed in the system. This test is intended to determine the acceptability of the risk of ignition or fire from this condition.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 350.00 Limit #1: Not relevant

10.21 - MST 32 - Module breakage test

(id 1164) The purpose of this test is to provide confidence that risk of physical injuries can be minimized if the PV module is broken in its specified installation. For building integrated or overhead applications additional tests may be required according to relevant building codes.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

10.22 - MST 33 - Screw connections test

(id 1165) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.23 - MST 34 - Static mechanical load test

(id 1166) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

10.26 - MST 37 - Materials creep test

(id 1167) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.27 - MST 42 - Robustness of terminations

(id 1168) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,300.00 Limit #1: Not relevant

10.28 - MST 51 - Thermal cycling test

(id 1169) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: 50 cycles
Unit price #2 [EUR]: 1,600.00 Limit #2: 200 cycles

10.29 - MST 52 - Humidity freeze test

(id 1170) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,100.00 Limit #1: Not relevant



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10.30 - MST 53 - Damp heat test

(id 1171) ---

| | |
|-------------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 42 |
| Unit price #1 [EUR]: 1,200.00 | Limit #1: 1000h - Single module up to 1000x200mm (72 cells) |
| Unit price #2 [EUR]: 300.00 | Limit #2: 200h - Single module up to 1000x200mm (72 cells) |

10.31 - MST 54 - UV test

(id 1172) ---

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Single module 1000x2000mm (72 cells) |
| Unit price #2 [EUR]: 1,800.00 | Limit #2: Special sample |

10.32 - MST 55 - Cold conditioning

(id 1173) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1: ask to office | Limit #1: Not relevant |

10.33 - MST 56 - Dry heat conditioning

(id 1174) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

A.2 - Module output power

(id 1175) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

A.3 - Wet insulation test

(id 1176)

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

A.4 - Visual inspection

(id 1177) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

A.5 - Bypass diodes

(id 1178) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

A.6 - Continuity test for equipotential bonding

(id 1179) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

10.18 - MST 24 - Ignitability test

(id 1336) This test determines the ignitability of PV modules by direct small flame impingement under zero impressed irradiance by external heat sources using vertically oriented test specimens. This test assesses ignitability of outer surfaces. The test method is based on ISO 11925-2

| | | |
|-----------------------------|---|--|
| Accredited [IEC17025]: NO | Execution time [day]: 30 | Subcontract: Lapi Spa - accredited Laboratory 0086 |
| Unit price #1 [EUR]: 900.00 | Limit #1: Module area 4m2 (3x60cells or 2x72 cells) | |

10.17 - MST 23 - Fire test

(id 1337) ---

| | | |
|-------------------------------|---|--|
| Accredited [IEC17025]: NO | Execution time [day]: 30 | Subcontract: Lapi Spa - accredited Laboratory 0086 |
| Unit price #1 [EUR]: 2,400.00 | Limit #1: Module area 4m2 (3x60cells or 2x72 cells) | |

unref - Wait time 48-96h

(id 1873) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 4 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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10.24 - MST 35 - Peel test

(id 1874) ---

Accredited [IEC17025]: NO
Unit price #1: ask to office

Execution time [day]: 0
Limit #1: Not relevant

IEC 62208:2023

(id 1986) Empty enclosures for low-voltage switchgear and controlgear assemblies - General requirements

9.14 - Resistance to corrosion

(id 2728) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,000.00

Execution time [day]: 2
Limit #1: Not relevant

IEC 62262:2002

(id 33) Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)

6 - Test to verify the protection against mechanical impact

(id 672) ---

Accredited [IEC17025]: YES
Unit price #1 [EUR]: 300.00
Unit price #2 [EUR]: 600.00
Unit price #3 [EUR]: 800.00

Execution time [day]: 0
Limit #1: Up to 5 points
Limit #2: from 6 to 10 points
Limit #3: special condition

6 - OLD? --- Test to verify the protection against mechanical impact on batteries

(id 1034) OLD?

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 500.00
Unit price #2 [EUR]: 800.00

Execution time [day]: 0
Limit #1: up to 5A/h
Limit #2: over 5A/h

IEC 62282-2-100:2020

(id 1881) Fuel cell technologies: Fuel cell modules - Safety

5.14.7 - Freeze/thaw cycles tests

(id 2513) This test is only applicable to PEFC modules with a storage or operating temperature below 0°C.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 2,500.00

Execution time [day]: 5
Limit #1: Applicable to any sample

5.3.3 - Gas leakage test - Pressure drop method

(id 2514) This test is not applicable for those gas leakages of the fuel cell modules with:

- operating temperatures higher than the auto-ignition temperature of the combustible gas;

- fuel cells within a gas-tight vessel already proven according to the relevant national regulations.

Where it is impractical to use the full stack, a stack with a reduced, but still representative, number of cells may be used. Leakages shall be calculated based on the ratio of cell numbers.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 800.00

Execution time [day]: 2
Limit #1: Applicable to any sample

IEC 62368-1:2018

(id 1865) Audio/video, information and communication technology equipment - Part 1: Safety requirements

5.4.8 - Humidity conditioning

(id 2481) The sample shall withstand an ordinary or tropical humidity conditioning.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 800.00

Execution time [day]: 2
Limit #1: Applicable to any sample



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5.4.9.1 - Electric strength test (Test procedure for type testing of solid insulation)

(id 2482) The test voltage for the electric strength of basic insulation, supplementary insulation or reinforced insulation is the highest value determined using one of the three methods proposed by the standard.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

IEC 62716:2013+COR1:2014

(id 5) Ammonia corrosion testing of photovoltaic (PV) modules

7 - Ammonia resistance test

(id 149) ---

Accredited [IEC17025]: NO Execution time [day]: 25
Unit price #1 [EUR]: 3,200.00 Limit #1: Applicable to any sample

4.2 - Bypass diode functionality test

(id 1098) The purpose of this test is to verify that the bypass diode(s) of the test samples remain(s) functional following the ammonia exposure

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

IEC 62984-2:2020

(id 1879) High-temperature secondary batteries – Part 2: Safety requirements and tests

6.3.3 - External fire exposure test

(id 2509) The purpose of this test is to ensure safety in the event that the module or battery is exposed to an external fire.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 6,000.00 Limit #1: Applicable to any sample

IEC TS 60904-1-2:2019

(id 365) Photovoltaic devices Part 1-2: Measurement of current-voltage characteristics of bifacial photovoltaic (PV) devices

6.2 - Determination of bifaciality coefficients

(id 1571) Determination of the main I-V characteristics of the front and rear side at STC.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

6.3.1 - Outdoor power generation gain measurement

(id 1572) Determination of the gain in power generation yielded by the bifaciality of the device under test, as a function of the irradiance on the rear side.

The power generation gain, BiFi, is the linear fit's slope of the Pmax versus GR data series. This linear least squares fit is forced to cross the Pmax axis at PmaxSTC.

$$P_{maxBiFi10} = P_{maxSTC} + BiFi \times 100$$

$$P_{maxBiFi20} = P_{maxSTC} + BiFi \times 200$$

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 650.00 Limit #1: Not relevant

IEC TS 62804-1:2015

(id 229) Photovoltaic (PV) modules - Test methods for the detection of potential-induced degradation (PID) - Part 1: Crystalline silicon

4.3.2 - Voltage stress damp heat test (stress method a)

(id 1097) Testing and evaluation of the durability of crystalline silicon photovoltaic (PV) modules to the effects of short-term high-voltage stress including potential-induced degradation (PID).

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 3,500.00 Limit #1: Applicable to any sample



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4.3.3 - Voltage stress test with a conductive electrode (stress method b)

(id 1640) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

IEC/IEEE 60079-30-1:2015

(id 734) Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements

5.1.2 - Dielectric test

(id 2611) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.1.3 - Electrical insulation resistance test

(id 2612) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.1.4 - Flammability test

(id 2613) A flammability test shall be performed on trace heaters and on trace heaters with integral components.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

5.1.5.1 - Room temperature impact test

(id 2614) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

5.1.5.2 - Minimum temperature impact test

(id 2615) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.1.6 - Deformation test

(id 2616) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

5.1.7 - Cold bend test

(id 2617) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

5.1.8 - Water resistance test

(id 2618) ---

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.1.9 - Integral components resistance to water test

(id 2619) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5.1.11 - Thermal stability of electrical insulating material

(id 2620) ---

Accredited [IEC17025]: NO Execution time [day]: 28
Unit price #1 [EUR]: 1,000.00 Limit #1: Up to 100°C
Unit price #2 [EUR]: 1,200.00 Limit #2: Up to 250°C
Unit price #3 [EUR]: 1,600.00 Limit #3: Up to 450°C



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5.1.14 - Verification of start-up current

(id 2621) The start-up current of the trace heater shall be measured as a function of the start-up temperature, as designated by the manufacturer.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: Not relevant

5.1.16 - Outdoor exposure test

(id 2622) Only trace heaters and integral components specified for outdoor exposure are subject to this test.

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Internal methods

(id 18) Tests not related to standards, developed by laboratory or under client specification

MI 01 - Series resistance measurement - Dark I-V measurement

(id 207) The dark I-V measurement is performed to evaluate both the threshold voltage and the sample's series resistances (R's)

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 120.00 Limit #1: Applicable to any sample

MI 02 - Thermal imaging test

(id 265) Infrared (IR) thermography is an interesting technique appropriate to detect hot spots in soldering and cells, bypass diodes and all electrical connections in the PV module. It is a two dimensional non-destructive technique that utilizes the radiation in the infrared range.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

MI 03 - Electroluminescence imaging test

(id 266) Electroluminescence imaging is a non-invasive test which has been established for fast spatially resolved characterization of silicon solar cells.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Standard PV module
Unit price #2 [EUR]: 500.00 Limit #2: Big/special PV module

MI 04 - Simplified PID reliability test

(id 285) To evaluate the effects on the modules of the stress of system bias voltage. High voltage potential that exists between the active circuit and the grounded module frame or exterior can lead to module degradation – labelled potential-induced degradation

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 2,000.00 Limit #1: Applicable to any sample

MI 05 - Determination of the concentration factor for CPV modules

(id 289) Methods described in CEI 82-25 Guideline.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

MI 06 - Life test

(id 392) Check the capability of the samples to withstand thermal mismatch, fatigue and other stresses caused by repeated changes of temperature during pressure load changes.

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample

MI 07 - Simulated solar radiation on the ground te

(id 393) To determine the ability of the samples to withstand solar radiation and to identify those materials that are susceptible to solar and UV degradation and detect any visual defects.

Accredited [IEC17025]: NO Execution time [day]: 20
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

MI 08 - Leakage test

(id 394) Check the tightness of the samples during pressure load

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Laboratory temperature, Pmax=2bar
Unit price #2 [EUR]: 800.00 Limit #2: Non standard temperature (controlled in climatic chamber: -40 +100°C range)
Unit price #3 [EUR]: 1,200.00 Limit #3: Laboratory temperature, high pressure (>2 bar)



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MI 09 - Gas emission test

(id 395) Determine the actual gas emissions to be expected from the battery system of the samples and the required volume of the storing/charging sample room to prevent an accumulation of hydrogen, that could cause an explosive atmosphere in the room.

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 5,500.00 Limit #1: Applicable to any sample

MI 10 - Load loss of a solar collector

(id 586) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

MI 11 - Dust test at high temperature (70°C)

(id 598) To determine if the envelopes and enclosures of components and groups are able to prevent the penetration of harmful quantities of dust.

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

MI 12 - Hydrostatic overpressure test

(id 633) Verification of the ability to withstand the pressure performed with the hydrostatic method.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

MI 13 - Strength test (low temperature)

(id 634) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

MI 14 - Cryogenic Test

(id 721) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

MI 15 - Ageing test for fuel tanks

(id 722) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

MI 16 - Functionality test at Low or High Temperature for solenoid valve

(id 724) The test is intended to verify the ability of samples to work at -40°C or at +100°C ambient temperature with not failures

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

MI 17 - Short-circuiting test for batteries

(id 726) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

MI 18 - Functioning ageing test

(id 727) ---

Accredited [IEC17025]: NO Execution time [day]: 40
Unit price #1 [EUR]: 4,000.00 Limit #1: Applicable to any sample

MI 19 - Bypass diodes functionality test

(id 844) Test to verify functionality of by-pass diodes, simply checking closed circuit under direct polarization and open circuit under reverse one.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

MI 20 - CONVERTED in Spec 9.02137/05 - Capitolato FCA 9_02137-01

(id 847) ANNULLATO, codificato in Spec 9.02137/05 --Ageing test TUBAZIONI PLASTICHE CON TERMINALI PER CONDUZIONE COMBUSTIBILE

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1: ask to office Limit #1: Applicable to any sample



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MI 21 - Gas diffusion test

(id 875) Capability of enclosures to avoid gas penetration into internal volume, in order to reduce the area classification for the internal equipments.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,500.00 Limit #1: Cubic volume 1x1x1 m

MI 22 - CONVERTED IN AI 03

(id 885) See Automotive internal method AI 03

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

MI 24 - IP 6X - IP 5X on huge size enclosures

(id 903) OBSOLETE

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Applicable to any sample

MI 25 - Test in explosive gas mixtures

(id 913) Capability of the equipment to operate in explosive atmosphere without producing ignition. Similar to 60079-0 §26.3 but performed with different gas mixtures (depending on the auto-ignition temperature required) and with hot temperatures.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 2,200.00 Limit #1: Test inside small vessel
Unit price #2 [EUR]: 3,500.00 Limit #2: Test in explosion vented chamber
Unit price #3 [EUR]: 12,000.00 Limit #3: Huge size samples

MI 26 - Maximum power determination for electrical motors

(id 922) This test aims to measure the maximum power dissipated by an electrical motor.

Accredited [IEC17025]: NO Execution time [day]: 48
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

MI 27 - Vibration test

(id 923) Vibration testing on insulated collector for diesel engine

Accredited [IEC17025]: NO Execution time [day]: 2 Subcontract: BPS srl
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

MI 28 - Lux measurement

(id 964) ---

Accredited [IEC17025]: NO Execution time [day]: -1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

MI 29 - Penetration test

(id 969) Test to verify the behavior of an object as a result of an impact with penetration

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,200.00 Limit #1: Explosion risk
Unit price #2 [EUR]: 800.00 Limit #2: Inert sample

MI 30 - CONVERTED IN AI 04, then FCA PF.90197 clause 6.3.5

(id 975) ANNULLATO --- See Automotive internal method AI 04, then FCA PF.90197 clause 6.3.5

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: ---

MI 31 - Ignition tests of flammable substances injected in a hot air stream

(id 1121) This test is performed by spraying the flammable fluid indicated below in hot air flowing in a big pipe simulating a portion of a direct heat exchanger. The test is repeated changing the exhaust flow temperature and speed and the substance flow rate. The direction of the spraying of the flammable fluids is both parallel and orthogonal to the flow through the setup pipe.

The purpose is to verify the conditions of self-ignition for each test condition selected.

If the ignition does not occur, the flammability of the test condition is verified by a countercheck ignition produced by an external spark.

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 2,400.00 Limit #1: Up to 16 combinations
Unit price #2 [EUR]: 5,400.00 Limit #2: Up to 36 combinations



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MI 32 - Single Measurement

(id 1124) Simple parameters measurement required for evaluation, any dimension

| | |
|-----------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: Any single measurement |
| Unit price #2 [EUR]: 300.00 | Limit #2: Multiple measurement (up to 12 identical readings on the same sample) |

MI 33 - Visual inspection

(id 1135) This inspection is performed with illumination conditions of more than 1000 lx

| | |
|-----------------------------|---------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 50.00 | Limit #1: Not relevant |
| Unit price #2 [EUR]: 100.00 | Limit #2: Special condition |
| Unit price #3 [EUR]: 200.00 | Limit #3: Technical examination |

MI 34 - Gas flow catalytic ignition

(id 1201) Verification of the autoignition, due to catalytic effect, of an explosive atmosphere flow through or in contact to activated material.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: Filter or catalyzer up to 4" |

MI 35 - Ignition test of flammable substances in a hot air stream with fixed O2 percentages

(id 1219) The aim of the test is to investigate if flammable fluids injected in a hot air stream with different conditions (Oxygen percentage and temperature) ignite in the most gravous environmental conditions (slow air stream).

If the ignition does not occur, the flammability of the test condition is verified by a countercheck ignition produced by an external spark.

| | |
|-------------------------------|---------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 5 |
| Unit price #1 [EUR]: 2,400.00 | Limit #1: Up to 16 combinations |
| Unit price #2 [EUR]: 5,400.00 | Limit #2: Up to 36 combinations |

MI 36 - Test on interlock Exd plug

(id 1255) This test is performed on a plug-type connector and its auxiliary connector in order to measure the interval of time taken by an operator to disconnect the main connector and the auxiliary connector.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: All samples |

MI 37 - Gas sensors functionality test in gas mixture with variable pressures

(id 1260) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: Not relevant |

MI 38 - Grounding resistance of operators

(id 1279) The purpose of this test is to verify the antistatic effectiveness of gloves or shoes worn by an operator.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Not relevant |

MI 39 - CONVERTED IN EN 403:2004 § 7.4.6

(id 1306) Depressure Cycles derived from 7.4.6 of EN 403:2004. ANNULATO, see §7.4.6 of EN 403:2004

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Applicable to any sample |

MI 23 - Back pressure across flame arrestors

(id 1384) ---

| | |
|-------------------------------|--------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 600.00 | Limit #1: Up to 5 m3/min |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: From 6 to 25 m3/min |
| Unit price #3 [EUR]: 2,500.00 | Limit #3: From 26 to 50 m3/min |

MI 40 - Functional test for Ex p equipment

(id 1534) ---

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Not relevant |



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MI 41 - Non-ignition of explosive atmosphere for verification of ATM inertising explosion protection systems

(id 1538) This test aims to verify the operation of the explosion protection system for ATM machines.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 3,000.00 Limit #1: Not relevant

MI 42 - Functional verifications on ticketing system devices according to specification SES8384 Rev.0 §3.9

(id 1573) Check of the basic functionalities of ticketing system devices.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

MI 43 - Functionality test for the verification of ATM protection systems based on gas sensors

(id 1576) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

MI 44 - Determination of minimum aerosol concentration for C2H2 explosion suppression for ATM protection system

(id 1577) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,800.00 Limit #1: Not relevant

MI 45 - Gas diffusion test through perimeter walls

(id 1599) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 5,200.00 Limit #1: Not relevant

MI 46 - General functional verifications according to customer's requests

(id 1610) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant

MI 47 - Comparative performance measuring at STC - Continuous monitoring

(id 1863) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 1,500.00 Limit #1: up to 2 modules up to 3 days measurements

MI 49 - Functional validation of ignition system for Lithium Battery/battery module

(id 1891) ---

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 4,500.00 Limit #1: Not relevant

MI 48 - Construction and validation of dummy battery

(id 1892) ---

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 1,000.00 Limit #1: <20 dm3
Unit price #2 [EUR]: 2,000.00 Limit #2: 20-100 dm3
Unit price #3 [EUR]: 5,000.00 Limit #3: >100 dm3

MI 50 - Purging test on highway tunnel (setup preparation and execution of the test)

(id 1907) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 5,000.00 Limit #1: Not relevant

MI 51 - Temperature test on exhaust gases

(id 1918) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

MI 52 - Test for evaluating exposure effects to gaseous environment of HFC227ea with final IP66 test verification

(id 1959) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,800.00 Limit #1: Not relevant



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MI 53 - Evaluation of characteristics of the explosion of a Lithium battery/battery module

(id 1970) Visual and/or instrumental evaluation of inducted thermal runaway

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,000.00 Limit #1: Applicable to any sample

MI 54 - Effectiveness of aerosol in controlling Lithium-Ion battery thermal runaway

(id 2006) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,800.00 Limit #1: Small sample
Unit price #2 [EUR]: 3,800.00 Limit #2: Medium sample with special condition
Unit price #3 [EUR]: 8,000.00 Limit #3: Huge size samples with special condition

MI 55 - Functional evaluation of lithium battery extinguishing system

(id 2007) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

MI 56 - Grayness on pv module

(id 2011) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 3,200.00 Limit #1: Applicable to any sample

MI 58 - Evaluation of thermal and pressure characteristics of the explosion of a cell of a Lithium battery

(id 2024) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

MI 57 - Investigation about ignition system for a cell or module of a Lithium Battery

(id 2025) Attempt to start the thermal runaway of Lithium battery with a specified method

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Short-circuiting
Unit price #2 [EUR]: 800.00 Limit #2: Overcharging/Overheating
Unit price #3 [EUR]: 2,000.00 Limit #3: Perforation (nail test)

MI 59 - Outdoor reproduction of an explosion phenomenon of a cell of a Lithium battery

(id 2026) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

MI 60 - Video inspection

(id 2027) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 700.00 Limit #1: Applicable to any sample

MI 61 - Ignition of thermal runaway effect on consecutive cells of a Lithium battery module

(id 2034) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

MI 62 - Test for non-transmission with detecting flames leakage

(id 2036) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,500.00 Limit #1: V enclosure < 40 l
Unit price #2 [EUR]: 3,000.00 Limit #2: 40 l < V enclosure < 150 l
Unit price #3 [EUR]: 5,000.00 Limit #3: V enclosure > 150 l

MI 63 - Immersion test

(id 2048) Immersion of the sample under test in liquid for a duration and at a depth to be agreed with the customer.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: sample movable by one operator



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MI 64 - Measurement of HF emissions from Lithium batteries

(id 2049) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

MI 65 - Non ignition of dust layer on hot surface

(id 2060) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: one single layer/depth

MI 66 - Surface temperature measurement on insulated exhaust pipe model

(id 2125) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

MI 67 - Measurement of emissions of gaseous by-products

(id 2131) Simulation of an agent discharge event, wanted or not, in a confined environment.

Determination of the emissions it produces, in gaseous or aerosol form, in particular through the search for pollutants.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 2,000.00 Limit #1: Small setup

MI 68 - Validation of safety container for battery transport

(id 2149) The enclosure under test is filled with the specified number of cells and/or modules (typically batteries).

They are ignited to start the thermal runaway, with the production of hot gases.

The scope is the evaluation of the capability to survive to this phenomenon.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 13,000.00 Limit #1: Up to 40 cells or modules and 50kWh
Unit price #2 [EUR]: 20,000.00 Limit #2: Over 40 cells or modules and 50kWh
Unit price #3 [EUR]: 1,000.00 Limit #3: Up to 2 cells or modules

MI 70 - Thermal cycles

(id 2156) Thermal cycles of temperature and/or humidity.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,400.00 Limit #1: Not relevant

MI 69 - Ageing with given thermal and pressure conditions

(id 2157) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,600.00 Limit #1: Applicable to any sample

MI 71 - Verification of battery minimum State Of Charge (SOC)

(id 2158) Measurement of the cell/module voltage, compared to the voltage/state-of-charge characteristic.

The voltage of each cell is obtained by dividing the whole module voltage by the number of cells.

The cell voltage is compared to the SOC table (annexed to the report).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

MI 72 - Photogrammetry test

(id 2428) Photogrammetry compares the state of the sample before and after a test. It obtains reliable information about physical objects and the environment through the process of recording, measuring and interpreting photographic images and patterns of electromagnetic radiant imagery and other phenomena.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

MI 73 - Verification of sleeves rigidity

(id 2477) This test is intended to verify the rigidity of sleeves depending on temperature and internal pressure.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample for one temperature

MI 74 - Measurement of dangerous gas in a confined environment

(id 2478) This test is intended to measure the maximum level of gas concentration in a confined environment.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample



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MI 75 - Determination of grading curve

(id 2483) This test is intended to determine the grading curve of a specific granular material.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 350.00 Limit #1: Applicable to any sample

MI 76 - Determination of the burning time of substances on hot surfaces

(id 2487) 10 ml of flammable substance are poured onto a known surface of 70cm² heated to the test temperature. Burning time is measured from the moment the flames develop to the moment they are extinguished.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: 1 substance

MI 77 - Gas detector calibration (ppm)

(id 2499) Calibration of a gas detector in low concentration (ppm).

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

MI 78 - Gas detector calibration (%vol)

(id 2500) Calibration of a gas detector in high concentration (%vol).

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

MI 79 - Determination of free volume of a complex geometry in an hydraulic circuit

(id 2515) This test is intended to determine the free volume of a complex geometry in an hydraulic circuit.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

MI 80 - Pyrolysis Test

(id 2591) This test is intended to investigate the syngas emission in case of pyrolysis on plastic material waste.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 600.00 Limit #1: 4 hours sequence

MI 81 - Effect of internal explosion

(id 2610) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 3,500.00 Limit #1: Test in explosion vented chamber
Unit price #2 [EUR]: 4,200.00 Limit #2: Flame transmission and pressure measurement

MI 82 - Leak Test

(id 2668) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Test at ambient temperature
Unit price #2 [EUR]: 500.00 Limit #2: Test at defined temperature

MI 83 - Mechanical Stress Test at Ambient Temperature

(id 2686) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 200.00 Limit #1: Up to 24h
Unit price #2 [EUR]: 800.00 Limit #2: Up to 120h

MI 84 - Dedicated technical evaluation

(id 2750) Dedicated technical evaluation after test with a special setup

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

MI 85 - Thermal Cycle NAMI

(id 2752) Thermal cycle developed by Cavalli Srl

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

MI 86 - Bubble leak test

(id 2758) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample



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MI 87 - Determinazione della temperatura interna di celle al litio

(id 2762) Questo test ha lo scopo di verificare la temperatura interna della cella, per confrontarla con la temperatura in grado di innescare il thermal runaway

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

MI 88 - Filter efficiency evaluation

(id 2767) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

MI 89 - Sniffer leak test

(id 2778) This test is aimed at detecting leaks in the test specimen. Generally, it is applied prior to the SHED test and immediately after SHED testing. The method to check for leaks is either by helium leak or by hydrocarbon leak check.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

ISO 10289:1999

(id 1870) Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates — Rating of test specimens and manufactured articles subjected to corrosion tests

Unref. - Rating of test specimens and manufactured articles subjected to corrosion tests

(id 2484) This International Standard gives a method of evaluating the condition of decorative and protective metallic and inorganic coated panels or articles which have been exposed to corrosive environments for test or for other purposes. It is applicable to test panels or components exposed to natural atmospheres, in mobile or static conditions, or subjected to accelerated tests.

The result of inspecting a surface, called the performance rating, is recorded as two separate ratings, the protection rating and the appearance rating.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 80.00 Limit #1: Applicable to any sample

ISO 15848-1:2015+A1:2017

(id 1161) Industrial valves - Measurement, test and qualification procedures for fugitive emissions - Part 1: Classification system and qualification procedures for type testing of valves

5.2.4.2 - Mechanical cycles of isolating valves (5 cycles)

(id 1585) Final 5 cycles at RT.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 50.00 Limit #1: Not relevant

5.2.4.10 - Post-test examination

(id 1596) After all the tests have been successfully completed, the test valve shall be disassembled and all sealing components shall be visually examined to record notable wear and any other significant observations for information.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 50.00 Limit #1: Not relevant

A.1.6.2 - Preparation of the valve: cleaning, initial checks and hydrostatic test

(id 1600) Before each test, the valve is cleaned and dried, and the packing tightening checked.

The hydrostatic test shall be performed before testing the valve in high pressure and high temperature conditions.

After the hydrostatic test, the packing shall be dry before any sealing test (when using packing in the stem sealing system). It is recommended that the packing is replaced.

If the tight chamber encloses the entire valve, connection flanges shall be welded to avoid any leaks that come from them. In this case, the measurements correspond to the leaks from stem sealing system and body seals.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: up to 2"
Unit price #2 [EUR]: 800.00 Limit #2: from 2.5" up to 10"
Unit price #3 [EUR]: 1,000.00 Limit #3: over 10"

5.2.4.4 - Preliminary leak tests at the room temperature for type testing of valves (test 1)

(id 1601) The tests are carried out as follows:

a) Pressurization of the test valve with the test fluid to the test pressure as specified in a relevant standard.

b) After the test pressure has been stabilized, measurement of the leakages both from the stem (or shaft) seal and from the body seals, in accordance with Annexes A and B, respectively.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: up to 2"
Unit price #2 [EUR]: 200.00 Limit #2: from 2.5" to 10"
Unit price #3 [EUR]: 400.00 Limit #3: over 10"



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5.2.4.5 - Mechanical cycle test at the room temperature (test 2)

(id 1602) The tests are carried out as follows:

- a) Mechanical cycles at room temperature while the test valve is kept pressurized.
- b) Measurement of the leakage from the stem (or shaft) seal only, in accordance with Annex A.

| | |
|-----------------------------|----------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: up to 2" |
| Unit price #2 [EUR]: 400.00 | Limit #2: from 2.5" to 10" |
| Unit price #3 [EUR]: 600.00 | Limit #3: over 10" |

5.2.4.6 - Static test at the selected test temperature (test 3)

(id 1603) The tests are carried out as follows:

- a) Pressurization of the test valve with the test fluid to the test pressure specified for the selected test temperature.
- b) After the test pressure has been stabilized, adjustment of the valve temperature to the selected test temperature, ensuring that the test pressure does not exceed the level specified.
- c) After the valve temperature has been stabilized with an allowance of $\pm 5\%$ with a maximum of $15\text{ }^{\circ}\text{C}$, measurement of the leakage from the stem (or shaft) seal only in accordance with Annex A.

| | |
|-------------------------------|----------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 2" |
| Unit price #2 [EUR]: 800.00 | Limit #2: from 2.5" to 10" |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: over 10" |

5.2.4.7 - Mechanical cycle test at the selected test temperature (test 4)

(id 1604) The tests are carried out as follows:

- a) Mechanical cycles at the selected test temperature while the test valve is kept pressurized.
- b) Measurement of the leakage from the stem (or shaft) seal only in accordance with Annex A.

| | |
|-------------------------------|----------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 2" |
| Unit price #2 [EUR]: 800.00 | Limit #2: from 2.5" to 10" |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: over 10" |

5.2.4.8 - Intermediate static test at the room temperature (test 5)

(id 1605) The tests are carried out as follows:

- a) Test valve returning to the room temperature, without artificial cooling (or heating).
- b) After the valve temperature has been stabilized, measurement of the leakage from the stem (or shaft) seal only in accordance with Annex A.

| | |
|-----------------------------|----------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 200.00 | Limit #1: up to 2" |
| Unit price #2 [EUR]: 400.00 | Limit #2: from 2.5" to 10" |
| Unit price #3 [EUR]: 600.00 | Limit #3: over 10" |

5.2.4.9 - Final test at the room temperature (test 6)

(id 1606) The tests are carried out as follows:

- a) Test valve returning to the room temperature, without artificial measures.
- b) After the valve temperature has been stabilized, measurement of the leakage from the stem (or shaft) seal in accordance with Annex A and from body seals in accordance with Annex B.

| | |
|-----------------------------|----------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 100.00 | Limit #1: up to 2" |
| Unit price #2 [EUR]: 200.00 | Limit #2: from 2.5" to 10" |
| Unit price #3 [EUR]: 400.00 | Limit #3: over 10" |

ISO 16495:2013

(id 35) Packaging - Transport packaging for dangerous goods - Test methods

Annex F - Drop test

(id 676) ---

| | |
|------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 30 |
| Unit price #1: ask to office | Limit #1: Applicable to any sample |

Annex G - Leakproof test

(id 677) ---

| | |
|------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 30 |
| Unit price #1: ask to office | Limit #1: Applicable to any sample |



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Annex H - Hydraulic pressure test

(id 678) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex I - Stacking test

(id 679) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex J - Water spray test

(id 680) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex K - Bottom lift test

(id 681) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex L - Top lift test

(id 682) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex M - Tear test

(id 683) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex N - Topple test

(id 684) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex O - Righting test

(id 685) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex P - Puncture test

(id 686) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

Annex Q - Vibration test

(id 687) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1: ask to office Limit #1: Applicable to any sample

ISO 16750-5:2010

(id 1298) Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 5: Chemical loads

4 - Chemical load

(id 2033) Components and associated parts that can come into contact with the specified chemical agents shall be resistant to those agents. The components and associated parts shall be tested with all agents they are likely to come into contact with, except for those materials which can be shown by documentary evidence to be immune to the contaminant and which need not be tested. A material is considered to be immune to a contaminant if there is no change in properties sufficient to affect material performances over the time and at the temperature specified. The purpose of the test is to determine whether the device under test (DUT) is unacceptably affected by temporary exposure to contaminating agents.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample



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ISO 16852:2016

(id 338) Flame arresters - Performance requirements, test methods and limits for use

7.3.2.1 - Deflagration test - End of line flame arrester

(id 1389) The end-of-line flame arrester under test shall be mounted on an enclosure and enclosed in a plastic bag.

The enclosure and the plastic bag shall be filled with an explosive test mixture as specified in § 6.8.2 ISO 16852:2016.

After disconnecting the mixture supply the test mixture shall be ignited separately at three positions inside the external bag: one at about 30cm from the flame arrester, one at about 130cm and one at about 230cm.

Two tests for each position resulting in a total of six tests.

Test set up as for figure 1 of standard ISO 16852:2016.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 3 |
| Unit price #1 [EUR]: 2,400.00 | Limit #1: up to 2 inches, standard ambient temperature (indoor location) |
| Unit price #2 [EUR]: 3,600.00 | Limit #2: from 3 to 9 inches, standard ambient temperature (indoor location) |
| Unit price #3 [EUR]: 5,000.00 | Limit #3: from 10 inches, standard ambient temperature (outdoor location, up to 500kg) |

7.3.2.2 - Deflagration test - In line flame arrester

(id 1390) ---

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 3 |
| Unit price #1 [EUR]: 2,400.00 | Limit #1: up to 2 inches, standard ambient temperature (indoor location) |
| Unit price #2 [EUR]: 3,600.00 | Limit #2: from 3 to 9 inches, standard ambient temperature (indoor location) |
| Unit price #3 [EUR]: 5,000.00 | Limit #3: from 10 inches, standard ambient temperature (outdoor location, up to 500kg) |

6.7, A.3 - Flow measurement (air)

(id 1391) Test to be performed before and after flame transmission tests

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 2 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 2 inches, standard ambient temperature |
| Unit price #2 [EUR]: 800.00 | Limit #2: from 3 to 9 inches, standard ambient temperature |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: from 10 inches, standard ambient temperature |

7.3.2.3 - Deflagration test - Pre volume flame arrester

(id 1865) An enclosure with a volume/shape as similar as possible to the original configuration simulates the pre-volume of the equipment under test.

Pre-volume applications using end-of-line types shall be mounted on the enclosure and enclosed in a plastic bag; pre-volume applications using in-line types shall be connected to the actual pipe work or equipment on the protected side, or to pipe work simulating the actual length, diameter and volume.

The enclosure and the plastic bag or pipe shall be filled with an explosive test mixture as specified in § 6.8.2 ISO 16852:2016.

After disconnecting the mixture supply the test mixture shall be ignited separately at three positions inside the enclosure: one as close as possible to the flame arrester, one at the most likely position of an ignition source and one as far away from the flame arrester as possible.

Two tests for each position resulting in a total of six tests.

Test set up as for figure 3 of standard ISO 16852:2016.

If the enclosure has more than one outlet, all flame arresters shall be used and tested simultaneously.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Small pre volume (up to 5 liters) |
| Unit price #2 [EUR]: 2,500.00 | Limit #2: Medium pre volume (up to 15 liters) |
| Unit price #3 [EUR]: 5,000.00 | Limit #3: Medium pre volume (over 15 liter) |

7.3.2.2 - Detonation test: stable detonation without restriction

(id 2052) This test applies to detonation flame arresters tested for stable detonations without restriction, classified as Type 4.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 3 |
| Unit price #1 [EUR]: 2,800.00 | Limit #1: up to 2 inches, standard ambient temperature (indoor location) |
| Unit price #2 [EUR]: 4,800.00 | Limit #2: from 3 to 9 inches, standard ambient temperature (outdoor location) |
| Unit price #3 [EUR]: 5,600.00 | Limit #3: from 10 inches, standard ambient temperature (outdoor location, up to 500kg) |

7.3.5 - Endurance burning test

(id 2053) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: Not relevant |

6.7, A.2 - Flow measurement (air)

(id 2054) Test to be performed before and after flame transmission tests

| | |
|-------------------------------|--|
| Accredited [IEC17025]: YES | Execution time [day]: 0 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 2 inches, standard ambient temperature |
| Unit price #2 [EUR]: 800.00 | Limit #2: from 3 to 9 inches, standard ambient temperature |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: from 10 inches, standard ambient temperature |



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6.6 - Leakage test

(id 2092) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

6.5 - Pressure test

(id 2093) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

7.3.3.2 a) - Deflagration tests after stable detonation without restriction (7.3.3.2)

(id 2197) 5 deflagration tests shall be carried out with a test set-up shall be in accordance with Figure 2, in addition to Stable detonation without restriction §7.3.3.2.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

ISO 20567-1_2017

(id 1335) Paints and varnishes - Determination of stone-chip resistance of coatings - Part 1: Multi-impact testing

8.3 - Projection of grit (stone impact)

(id 2207) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

ISO 20653:2013

(id 1550) Road vehicles - Degrees of protection (IP-Code) - Protection of electrical equipment against foreign objects, water and access

5 - Dust test for first characteristic numerals IP5K-6K

(id 2012) Test for determining degrees of protection against foreign objects 5K and 6K: dust-protected or dust-tight.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: sample movable by one operator
Unit price #2 [EUR]: 600.00 Limit #2: sample movable by two operator
Unit price #3 [EUR]: 1,000.00 Limit #3: huge size samples

6 - Degrees of protection against water IPX6

(id 2013) Strong high-velocity water

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: sample movable by one operator
Unit price #2 [EUR]: 600.00 Limit #2: sample movable by two operator
Unit price #3 [EUR]: 1,000.00 Limit #3: huge size sample

6 - Degrees of protection against water IPX9K

(id 2014) Water during high-pressure/steam-jet cleaning

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: largest dimension < 250 mm
Unit price #2 [EUR]: 1,200.00 Limit #2: largest dimension >= 250 mm
Unit price #3 [EUR]: 1,800.00 Limit #3: huge size sample

6 - Degrees of protection against water IPX6K

(id 2045) Strong high-velocity water with increased pressure

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: sample movable by one operator
Unit price #2 [EUR]: 600.00 Limit #2: sample movable by two operator
Unit price #3 [EUR]: 1,000.00 Limit #3: huge size samples

6 - Degrees of protection against water IPX8

(id 2046) Continuous immersion in water

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Dia 250mm - height 600mm - up to 1 bar (10m)
Unit price #2 [EUR]: 1,000.00 Limit #2: Dia 800mm - height 400mm - up to 1 bar (10m)
Unit price #3 [EUR]: 1,800.00 Limit #3: Dia 2000mm - height 1500mm - up to 60 bar (600m)



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6 - Degrees of protection against water IPX7

(id 2047) Temporary immersion in water

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 300.00 | Limit #1: sample movable by one operator |
| Unit price #2 [EUR]: 600.00 | Limit #2: sample movable by two operator |
| Unit price #3 [EUR]: 1,000.00 | Limit #3: huge size samples |

6 - Degrees of protection against water IPX4K

(id 2195) This test aims to verify the protection of electrical equipment within the enclosure against harmful effects resulting from water splashing against the enclosure with increased pressure from any direction.

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

8.3.3.2 - Dust Intrusion IP6K

(id 2519) This International Standard applies to degrees of protection (IP code) provided by enclosures of the electrical equipment of road vehicles.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 2,200.00 | Limit #1: Applicable to any sample |

ISO 2206:1987

(id 38) Packaging - Complete, filled transport packages - Identification of parts when testing

- Identification of parts of package

(id 690) ---

| | |
|------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 30 |
| Unit price #1: ask to office | Limit #1: Applicable to any sample |

ISO 2248:1985

(id 37) Packaging - Complete, filled transport packages - Vertical impact test by dropping

- Vertical impact test by dropping

(id 689) ---

| | |
|------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 30 |
| Unit price #1: ask to office | Limit #1: Applicable to any sample |

ISO 22609:2004

(id 1520) Clothing for protection against infectious agents - Medical face masks - Test method for resistance against penetration by synthetic blood (fixed volume, horizontally projected)

unref - Resistance against penetration by synthetic blood (fixed volume, horizontally projected)

(id 1987) The test method is intended to evaluate the protection of the health care provider's face from exposure to blood and body fluids. It is used to evaluate the resistance of medical face masks to penetration by synthetic blood under high-velocity liquid contact with the medical face mask surface of a fixed volume over a relatively short period of time (0 s to 2.5 s).

Synthetic blood is prepared according instruction of Annex B (ISO 22609:2004) mixing high-performance (HPLC) distilled water (pH 7,0 ± 0,5) with a thickening agent (Acrysol G111/Rhoplex) and a dye containing colorant and surfactant, for reasons of availability in Europe the red dye has been replaced with an orange dye of the same chemical family (Orange G). The formulation is such as to guarantee density and surface tension within the limits required by the standard.

| | |
|-------------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 1,600.00 | Limit #1: Qualification in package |
| Unit price #2 [EUR]: 800.00 | Limit #2: Single measurement with preconditioning |

ISO 2409:2020

(id 1929) Paints and varnishes - Cross-cut test

8 - Cross cutting test

(id 2597) Six parallel cuts are introduced in the coating and another six cuts are introduced perpendicular to the first cuts. Any loose paint particles are removed. The cut area is examined visually and compared to a six-step classification.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Not relevant |



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ISO 2875:2000

(id 36) Packaging - Complete, filled transport packages and unit loads - Water-spray test

- Water-spray test

(id 688) ---

Accredited [IEC17025]: NO
Unit price #1: ask to office

Execution time [day]: 30
Limit #1: Applicable to any sample

ISO 4628-2:2016

(id 1931) Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering

4 - Assessment of degree of blistering

(id 2598) This part of ISO 4628 specifies a method for assessing the degree of blistering of coatings by comparison with pictorial standards. The pictorial standards provided in this part of ISO 4628 illustrate blisters in the sizes 2, 3, 4, and 5, and each size in the quantities (densities) 2, 3, 4 and 5.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 100.00

Execution time [day]: 0
Limit #1: Applicable to any sample

ISO 6270-2:2017

(id 1333) Paints and varnishes - Determination of resistance to humidity Condensation (in-cabinet exposure with heated water reservoir)

unref - Determination of resistance to humidity: Condensation

(id 1853) ---

Accredited [IEC17025]: NO
Unit price #1: ask to office

Execution time [day]: 0
Limit #1: Not relevant

ISO 6988:1985

(id 1841) Metallic and other non-organic coatings - Sulfur dioxide test with general condensation of moisture

6 - Sulfur dioxide test with general condensation of moisture

(id 2466) Moist air containing sulfur dioxide quickly produces easily visible corrosion of many metals in a form resembling that occurring in industrial environments. It is therefore a test medium well suited to detect pores or other sources of weakness in protective coatings and deficiencies in corrosion resistance associated with unsuitable alloy composition or treatments.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,000.00

Execution time [day]: 2
Limit #1: Not relevant

ISO 7628:2010

(id 800) Road vehicles - Thermoplastics tubing for air braking systems

9.3 - Cold impact test

(id 1339) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 300.00
Unit price #2 [EUR]: 600.00

Execution time [day]: 1
Limit #1: Standard temperature
Limit #2: Low temperature (down to -65°C)

ISO 80079-36:2016+COR1:2019

(id 1609) Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic method and requirements

8.2.1 - Determination of the maximum surface temperature - General

(id 1069) ---

Accredited [IEC17025]: YES
Unit price #1 [EUR]: 800.00
Unit price #2 [EUR]: 1,500.00
Unit price #3 [EUR]: 2,500.00

Execution time [day]: 0
Limit #1: small sample movable by one operator
Limit #2: medium sample movable by two operators
Limit #3: assembly or special sample



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8.2.2 - Hot Surface Ignition Test

(id 1070) ---

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Test inside small vessel |
| Unit price #2 [EUR]: 1,500.00 | Limit #2: Test in explosion vented chamber |
| Unit price #3 [EUR]: 4,500.00 | Limit #3: Outdoor test or special temperature condition |

8.3.1 - Test for resistance to impact

(id 1071) Impact tests of IEC 60079-0 apply.

The test is made at two separate places on each sample. For equipment with light-transmitting parts (LTP) made of glass, only one of those two impacts is on the glass.

Group II or Group III, portable or transportable luminaires or handlights, are only tested for risk of mechanical danger "high".

Where a part of the equipment (such as a non-metallic overlay of a touch pad) serves multiple functions, such as a light-transmitting area and also as part of the enclosure, the function covering the largest area is used to determine which risk of mechanical danger is applied.

Light-transmitting parts having individual openings from 625 mm² to 2 500 mm² are tested without guard.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Not relevant |

8.3.2 - Drop test

(id 1072) The drop test of IEC 60079-0 applies. The portable or personal equipment is dropped 4 times onto a horizontal concrete surface.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 100.00 | Limit #1: Not relevant |

8.4.4 - Thermal endurance to heat

(id 1073) Evaluation of the thermal endurance to heat of equipment intended for use in explosive gas atmosphere

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 35 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Service temperature < 75°C |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: 75°C < Service temperature < 100°C |
| Unit price #3 [EUR]: 2,400.00 | Limit #3: 100°C < Service temperature < 400°C |

8.4.5 - Thermal endurance to cold

(id 1074) Evaluation of the thermal endurance to cold of equipment intended for use in explosive gas atmosphere

| | |
|-------------------------------|---|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Minimum service temperature > -40°C |
| Unit price #2 [EUR]: 600.00 | Limit #2: Minimum service temperature < -40°C |
| Unit price #3 [EUR]: 1,200.00 | Limit #3: Very big samples |

8.4.6 - Resistance to chemical substances for Group I equipment

(id 1075) Resistance to chemical agent test of IEC 60079-0 applies. The non-metallic enclosures and non-metallic parts of enclosures are submitted to tests of resistance to the following chemical agents:

- oils and greases (oil IRM 902 according to ASTM D5964);

- hydraulic liquids for mining applications (fire-resistant hydraulic fluid intended for operating at temperatures between -20 °C and +60 °C, comprising an aqueous solution of polymer in 35 % water).

The relevant tests are made on samples of enclosure sealed against the intrusion of test liquids into the interior of the enclosure.

| | |
|-------------------------------|-------------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 2 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 2l |
| Unit price #2 [EUR]: 1,500.00 | Limit #2: from 2l up to 20 l |
| Unit price #3 [EUR]: 2,200.00 | Limit #3: from 21l up to 50 l |

8.4.8 - Surface resistance test of non-conductive parts

(id 1076) This test is performed on non-conductive parts of the equipment relevant for explosion prevention and protection. Surface resistance test of IEC 60079-0 applies.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 500.00 | Limit #1: Not relevant |

8.4.9 - Thermal shock test

(id 1077) Thermal shock test of IEC 60079-0 applies.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: YES | Execution time [day]: 1 |
| Unit price #1 [EUR]: 200.00 | Limit #1: Not relevant |

D.4.2.1 - Rubbing with a pure polyamide cloth

(id 1102) Charging test with non-conductive materials

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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D.4.2.2 - Rubbing with a cotton cloth

(id 1103) Charging tests with non-conductive materials

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

D.4.2.3 - Charging with a DC high voltage power supply

(id 1104) Charging tests with non-conductive materials

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

8.4.7 - Mechanical resistance tests

(id 1105) This paragraph indicates the conditions to which §8.3.1 and §8.3.2 mechanical tests shall be performed.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

D.4.1 - Conditioning

(id 1116) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

ISO 80079-37:2016

(id 154) Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"

8.3.2 - Increased pressure test on enclosed equipment having a sealed enclosure that contains static or flowing protective liquid

(id 1106) The pressure test shall be performed without the equipment operating. It is not required for the enclosure in the case of open equipment.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.3.3 - Overpressure test on enclosed equipment having a vented enclosure

(id 1107) The pressure test shall be performed without the equipment operating. It is not required for the enclosure in the case of open equipment.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.1 - Type tests for equipment with Type of Protection constructional safety c

(id 1117) See ISO 80079-36.

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.2.1 - Determination of control parameters

(id 1118) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

8.2.2 - Function and accuracy check of the ignition protection system

(id 1119) Sensors functional check.

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant

B.1 - Dry run type test for lubricated sealing arrangements

(id 1120) ---

Accredited [IEC17025]: YES Execution time [day]: 0
Unit price #1 [EUR]: 1,500.00 Limit #1: Small sample

B.2 - Type test for determining the maximum engaging time of clutch assembly

(id 1122) ---

Accredited [IEC17025]: YES Execution time [day]: 2
Unit price #1: ask to office Limit #1: Not relevant



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ISO 8846:1990

(id 1252) Small craft - Electrical devices - Protection against ignition of surrounding flammable gases

4 - External surface temperature test

(id 1732) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

5 - Tests for sealed devices

(id 1733) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

6 - Tests for non-sealed devices

(id 1734) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

ISO 9227:2022

(id 1874) Corrosion tests in artificial atmospheres — Salt spray tests

5.2.2 - NSS (Neutral salt spray test)

(id 2498) The NSS test is the test method in which a neutral approximate 5 % sodium chloride solution is atomized under a controlled environment.

The NSS test is particularly applicable to:

- metals and their alloys;
- metallic coatings (anodic and cathodic);
- conversion coatings;
- anodic oxide coatings;
- organic coatings on metallic materials.

Accredited [IEC17025]: YES Execution time [day]: 30
Unit price #1 [EUR]: 3,000.00 Limit #1: Up to 240h
Unit price #2 [EUR]: 4,500.00 Limit #2: 480h
Unit price #3 [EUR]: 6,200.00 Limit #3: 720h

ISO 9847:1992

(id 19) Solar energy - Calibration of field pyranometers by comparison to a reference pyranometer

5 - Calibration of PV reference cells or pyranometers

(id 251) The purpose of this method, based on ISO 9847, IEC 60904-4, ASTM E1039-99 and ASTM E1125-10, is the calibration of silicon solar cells and field pyranometers under natural sunlight. This is an outdoor calibration. During the process, the sample is mounted on a tracker, where the sun beams are perpendicular. This leads to the determination of the tracker responsivity. The fixed responsivity is calculated by multiplying the tracker responsivity by the incidence angle modifier coefficient (IAM).

Suggestions to maximize the measurement accuracy while using the reference cell on field after calibration:

- The cell must be mounted on the module plane with an angular error lower than 5°, which corresponds to an error of the coefficient lower than 1%.
- If the plant use a biaxial tracker (which means that the solar radiation is always orthogonal to the module plane), then it is recommended to use the Tracker Responsivity indicated below.
- If the plant is fixed (which means that the solar radiation has got an incident angle typically low), it is recommended to use the Fixed Responsivity indicated below.
- If the plant use a mono-axial tracker, it is suggested to use, to a first approximation, the arithmetic mean between Fixed and Tracker Responsivity.

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 450.00 Limit #1: Applicable to any sample



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IVECO 18-0400-A006:1998 IT

(id 1769) CONDUZIONE LIQUIDO DI RAFFREDDAMENTO MOTORE

6.13 - FUNZIONAMENTO SIMULATO

(id 2342) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 2,500.00

Execution time [day]: 20
Limit #1: Applicable to any sample

IVECO 18-0400-A035:2005

(id 2047) CONDUZIONE ARIA – TUBI DI PLASTICA PER IMPIANTO PNEUMATICO FRENI

35.18 - Prova di fatica a pressione pulsante

(id 2801) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,000.00

Execution time [day]: 60
Limit #1: Not relevant

35.18.4 - Pressione pulsante

(id 2802) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 5,500.00

Execution time [day]: 60
Limit #1: Applicable to any sample

IVECO STD 18-2252:2023

(id 2007) GENERAL CONDITIONS FOR APPLICATIONS OF ELECTRONIC AND ELECTRO-TELEMATIC DEVICES ON INDUSTRIAL VEHICLES

14.4 - Resistance to fuels

(id 2769) The test is intended to determine the capacity of a component or of an assembly to resist chemical aggression of fuels, by atomizing mechanical parts located in engine compartment or similar areas.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 600.00

Execution time [day]: 1
Limit #1: Applicable to any sample

14.6 - Resistance to flushing hydrocarbon mixtures

(id 2770) The test is intended to determine the capacity of a component or of an assembly to resist chemical aggression of hydrocarbon mixtures used by repair shops, by spraying cleaning product on mechanical parts located in engine compartment or similar areas.

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 400.00

Execution time [day]: 2
Limit #1: Applicable to any sample

IVECO STD 18-3303:2019

(id 1989) SERBATOI COMBUSTIBILE IN MATERIALE PLASTICO

9.2.3/9.2.6 - Prova di fatica a pressione pulsante-depressione

(id 2741) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 2,500.00

Execution time [day]: 7
Limit #1: Applicable to any sample

9.3.4 - Cicli ad alta temperatura

(id 2742) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 6,500.00

Execution time [day]: 50
Limit #1: Not relevant

9.2.1/9.3.1 - Precondizionamento

(id 2744) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 6,000.00

Execution time [day]: 140
Limit #1: Applicable to any sample no fuel change



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6.1 - Tenuta a bassa ed alta pressione

(id 2745) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

9.3.8 - Cicli a bassa temperatura

(id 2746) ---

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

IVECO STD 18-3311:2017

(id 1908) SERBATOI PER ADBLUE IN MATERIALE PLASTICO
- GAMMA LIGHT -

10.2 - Thermal cycle

(id 2567) Thermal cycle for AdBlue filled tanks.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

11 - Resistance to icing-deicing cycle

(id 2568) This test is intended to verify the resistance to icing-deicing cycle of AdBlue filled tanks.

Accredited [IEC17025]: NO Execution time [day]: 12
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample - 3 cycles (A)

9 - Pulsating Pressure Test

(id 2584) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

7 - Leak test

(id 2638) Leak test for under pressure tanks immersed in water.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 150.00 Limit #1: Applicable to any sample

JLR 462 Validation phase

(id 1600) EXTERIOR LIGHTING CORROSION TEST (DVM-0069-EX)

unref - Exterior lighting corrosion test

(id 2035) The aim of this test is to simulate Kaolin-type dust accelerated corrosion

Accredited [IEC17025]: NO Execution time [day]: 84
Unit price #1 [EUR]: 4,000.00 Limit #1: Not relevant

Kautex 111120:1998 - rev1 ver3 2012

(id 1760) Minimum performance requirements
for elastomer type hose e.g. EPDM used to convey wash fluid in screenwash
systems

5.2.1 - Heat Cycle Test

(id 2317) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.2.2 - Freeze/Thaw Resistance

(id 2318) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample



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5.2.3 - High Humidity Resistance

(id 2319) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

5.2.4 - Light Resistance

(id 2320) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.3.1 - Resistance to Wash Fluids

(id 2321) ---

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.3.2 - Resistance to Under Bonnet Fluids

(id 2322) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.3.3 - Ozone Resistance

(id 2323) ---

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1: ask to office Limit #1: Not relevant

5.4.1 - Operating Endurance at different temperatures

(id 2324) ---

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

LAH.3P3.827 Version 01

(id 1810) Component Performance Specification

6.4.4.4 - Changing climate test

(id 2426) Resistance to environmental cycle test as per PV 1200.

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 3,500.00 Limit #1: Small sample
Unit price #2 [EUR]: 8,800.00 Limit #2: Big sample

6.4.4.3 - Thermal Storage Test

(id 2427) The parts have to withstand thermal load that can occur as a result of thermal changes during production, transportation and customer use of the car.

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 3,000.00 Limit #1: Applicable to any sample

LP-463PB-22-01

(id 1416) Cycle testing of painted surfaces

unref - Cycle testing of painted surfaces - Method IV

(id 1881) ---

Accredited [IEC17025]: NO Execution time [day]: 20
Unit price #1 [EUR]: 3,000.00 Limit #1: Not relevant



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LP.7A003:2017

(id 1468) DEF System - Refilling

11.1.1 - Plant Fill - A

(id 2569) Verify the DEF system fills under plant conditions.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 50.00 Limit #1: Applicable to any sample

11.1.2 - Rated -Advertised- Fill Capacity and Quality - B

(id 2570) Verify/determine the DEF system rated fill capacity.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

11.3 - Cold Fill - F

(id 2571) Verify DEF fill system refills under cold conditions.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 80.00 Limit #1: Applicable to any sample

11.4 - Frozen Fill - G

(id 2572) Verify tank can accept DEF with 50% rated capacity of frozen DEF.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

11.1.3.1 - Round-Up - H

(id 2573) Verify fill quality and ice dome volume is protected.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 80.00 Limit #1: Applicable to any sample

11.1.3.2 - Trickle Fill - I

(id 2574) Verify ice expansion dome is protected under extreme refilling conditions.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 80.00 Limit #1: Applicable to any sample

11.1.4 - Filling on Grade - K

(id 2575) Verify the fill quality and capacity in worst case condition.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 80.00 Limit #1: Applicable to any sample

11.2.1 - Failed Nozzle - C

(id 2576) Verify the DEF system allows for the DEF to be discharged in a manner such that the operator can shut the nozzle off without being sprayed with DEF.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 80.00 Limit #1: Applicable to any sample

11.2.2 - Market Nozzle Evaluation - D

(id 2577) Verify capability of DEF system with all known market nozzles.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 80.00 Limit #1: Applicable to any sample

11.2.3 - Short Fill - J

(id 2578) Verify/determine the DEF system fill capacity.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 80.00 Limit #1: Applicable to any sample

11.2.4 - Nozzle Orientation - E

(id 2579) Verify DEF fill system refills under extreme nozzle orientations.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample



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LP.7A003:2023

(id 1997) DEF SYSTEM - REFILLING (STELLANTIS HARMONIZED)

12.1.2 - Rated Advertised Fill Capacity and Quality

(id 2764) Verify/determine the DEF system rated fill capacity.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

LP.7A005:2017

(id 1437) FCA MINI-SHED Evaporative emission Test procedure

12 - MiniSHED permeation test - tank

(id 2159) The test consists of heating and cooling the fuel tank throughout a specified diurnal temperature cycle while measuring the hydrocarbons that permeate through the surfaces and seams of the fuel tank assembly into the test enclosure.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,500.00 Limit #1: Any tank

9.4 - Leak test

(id 2159) This test is aimed to detect leaks in the test specimen. Generally, it is applied prior to the SHED test and immediately after SHED testing. The method to check for leaks is either by helium leak or by hydrocarbon leak check.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

12-bis - MiniSHED permeation test - pipe

(id 2230) Executed before and after preconditioning

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any tube

LP.7A008:2018

(id 1861) FUEL SYSTEM - Fuel Tank Volumes and Capacity Determination

12.1 - Internal fluid volume as determined by vent port or FLVV position (geometrical)

(id 2489) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

12.3 - Passive vapor dome volume (no connection to exterior)

(id 2490) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample

12.4 - Total vapor dome volume (active + passive)

(id 2491) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample

12.5 - Tank total internal fluid volume

(id 2492) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample

12.6 - Volume of fluid inside filler tube

(id 2493) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 100.00 Limit #1: Applicable to any sample



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12.8 - Level curve characteristics with simulation of vehicle on level ground

(id 2494) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

LP.7A010:2014

(id 1862) Fuel System Refueling - Bench or Vehicle Level Test

12.1.2 - Overfilling evaluation

(id 2554) This is a fuel fill performance test. It includes the following three procedures: Top Off, Trickle Fill and Round Up.

Accredited [IEC17025]: NO Execution time [day]: 8
Unit price #1 [EUR]: 850.00 Limit #1: Applicable to any sample

LP.7A010:2022

(id 1999) Fuel System Refueling - Bench or Vehicle Level Test

11.1.2 - Rated Capacity

(id 2765) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 150.00 Limit #1: Applicable to any sample

LP.7T011 Rev.D:2019

(id 1790) New external document

Unref. - ISO For Life Componente

(id 2380) 10 weeks cycle of climatic chamber and salt mist chamber.

Accredited [IEC17025]: NO Execution time [day]: 70
Unit price #1 [EUR]: 12,000.00 Limit #1: Applicable to any sample

MBN LV124-2:2013

(id 1784) Electric and Electronic Components in Motor Vehicles up to 3,5t – General Requirements, Test Conditions and Tests
Part 2: Environmental Requirements

13.2 - M-02 Stone chip test

(id 2359) This test simulates the mechanical exposure of the component to grit impact. The test is intended to verify the resistance of the component to faults such as deformation and cracks.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,300.00 Limit #1: up to 5 grouped samples and one point
Unit price #2 [EUR]: 7,000.00 Limit #2: up to 5 grouped samples and up to 6 points

13.3 - M-03 Dust test

(id 2360) This test simulates the dust load of the component during vehicle operation. The test is intended to verify the resistance of the component to electrical and mechanical faults.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

14.9 - K-10 Water protection - IP X6K

(id 2361) This test simulates the exposure of the component to water.

The test is intended to verify the function of the component, e.g. when exposed to condensation water, rain or spray water.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: up to 5 grouped samples



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14.11 - K-12 Thermal shock with splash water

(id 2362) This test simulates the exposure of the component to splash water as it occurs when driving through puddles. The test is intended to verify the function of the component when exposed to abrupt cooling by means of water.

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 5,000.00 Limit #1: up to 5 grouped samples

14.17 - K-18 Corrosion test with flow of mixed gas

(id 2363) This test simulates the influence of corrosive gases on the component, particularly its plug contacts and switches. The test is intended to verify the resistance of the component to faults such as corrosion and component damages.

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1 [EUR]: 3,200.00 Limit #1: Applicable to any sample

Mercedes A2100064099_2020-11-03

(id 1755) Test specification for coolant hoses

5 - Temperature and pressure test on hoses

(id 2264) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Metodo Interno per il controllo delle attrezzature Ex m in condizioni iperbariche

(id 1966) Il seguente metodo interno contiene le varianti dei test contenuti nella norma IEC 60079-18:2014+AMD1:2017, eseguiti in condizioni iperbariche.

8.2.2 - Maximum temperature VAR

(id 2669) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

8.2.3.1 - Thermal endurance to heat VAR

(id 2670) Evaluation of the thermal endurance to heat of non-metallic equipment or parts of equipment under hyperbaric conditions.

Accredited [IEC17025]: NO Execution time [day]: 28
Unit price #1 [EUR]: 2,200.00 Limit #1: T service < 75°C
Unit price #2 [EUR]: 2,800.00 Limit #2: 75°C < T service < 100°C.

8.2.6 - Pressure test for Group I and Group II electrical equipment VAR

(id 2671) This test is required for level of protection "ma" equipment with any individual free spaces between 1 cm³ and 10 cm³ and level of protection "mb" equipment with any individual free spaces between 10 cm³ and 100 cm³.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

8.2.8 - Sealing test for build-in protective devices VAR

(id 2672) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

8.1.1 - Water absorption test VAR

(id 2673) Test on the compound under hyperbaric conditions.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

MIL-STD 810F:2000

(id 1898) DEPARTMENT OF DEFENSE- TEST METHOD STANDARD FOR ENVIRONMENTAL ENGINEERING CONSIDERATIONS AND LABORATORY TESTS

512.4 - Immersion (Procedure I)

(id 2545) The immersion test is performed to determine if materiel can withstand immersion in water and operate as required during or following immersion.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample



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509.4 - Salt Fog

(id 2546) ---

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

506.4 - Rain Test (Procedure I)

(id 2685) Use this method to evaluate materiel likely to be exposed to rain, water spray, or dripping water during storage, transit, or operation. Procedure I is applicable for materiel which will be deployed out-of-doors and which will be unprotected from rain or blowing rain. The accompanying wind velocity can vary from almost calm to extremely high.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

MIL-STD-810G CHG-1:2014

(id 167) ENVIRONMENTAL ENGINEERING PROGRAM GUIDELINES

507.6-2.6.3 - Humidity - Procedure II – Aggravated Cycle

(id 1622) The purpose of the aggravated test procedure is to produce representative effects that typically occur when materiel is exposed to elevated temperature-humidity conditions.

Accordingly, this procedure does not reproduce naturally occurring or service-induced temperature-humidity scenarios. It may induce problems that are indicative of long-term effects. Test item failures do not necessarily indicate failures in the real environment.

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

500.6-4.5.2 - Low Pressure: Altitude - Procedure I

(id 2162) Low pressure (altitude) tests are used to determine if materiel can withstand and/or operate in a low pressure environment and/or withstand rapid pressure changes.

Procedure I is appropriate if the materiel is to be transported or stored at high ground elevations or transported by air in its shipping/storage configuration.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 2,800.00 Limit #1: Applicable to any sample

510.6-4.2 - Sand and dust - Procedure II: Blowing Sand

(id 2163) Procedure II - Blowing Sand is used to investigate the susceptibility of materiel to the effects of blowing sand (150 Pm to 850 Pm).

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

506.6-2.3.2 - Rain - Procedure III Drip

(id 2174) Use this Method to evaluate materiel likely to be exposed to rain, water spray, or dripping water during storage, transit, or operation.

Procedure III is appropriate when materiel is normally protected from rain but may be exposed to falling water from condensation or leakage from upper surfaces.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: largest dimension < 300 mm
Unit price #2 [EUR]: 800.00 Limit #2: largest dimension >= 300 mm

501.6 - High temperature - Procedure I

(id 2175) Use high temperature tests to obtain data to help evaluate effects of high temperature conditions on materiel safety, integrity, and performance. Use Procedure I to investigate how high temperatures during storage affect the materiel (integrity of materials, and safety/performance of the materiel).

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample up to 24h

502.6 - Low temperature - Procedure I

(id 2176) Use low temperature tests to obtain data to help evaluate effects of low temperature conditions on materiel safety, integrity, and performance during storage, operation, and manipulation.

Use Procedure I to investigate how low temperatures during storage affect materiel safety during and after storage, and performance after storage

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample up to 24h

516.7-4.6.3 - Shock test - Transport shock - Procedure II

(id 2179) Use this Method to evaluate the physical and functional performance of materiel likely to be exposed to mechanically induced shocks in its lifetime.

Procedure II is used to evaluate the response of an item or restraint system to transportation environments that create a repetitive shock load. The procedure uses a classical terminal peak sawtooth, either measured or a synthetic shock waveform, to represent the shock excitation portion of the transportation scenario.

Accredited [IEC17025]: NO Execution time [day]: 2 Subcontract: BPS srl
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample



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514.7 category 20 - Vibration - Annex B AECTP 400

(id 2180) The purpose of this test method is to provide guidance for defining vibration environments materiel may be exposed to throughout a life cycle and to provide guidance for the conduct of laboratory vibration tests. Vibration tests are performed to:

- Develop materiel to function in and withstand the vibration exposures of a life cycle including synergistic effects of other environmental factors, materiel duty cycle, and maintenance.
- Verify that materiel will function in and withstand the vibration exposures of a life cycle.

| | | |
|-------------------------------|------------------------------------|----------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 | Subcontract: BPS srl |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: Applicable to any sample | |

509.6 - 4.5.2 - Salt Fog

(id 2585) The salt fog Method is performed to determine the effectiveness of protective coatings and finishes on materials. It may also be applied to determine the effects of salt deposits on the physical and electrical aspects of materiel.

| | |
|-------------------------------|-------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 4 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: 48 hours |
| Unit price #2 [EUR]: 1,400.00 | Limit #2: 96 hours |
| Unit price #3 [EUR]: 1,800.00 | Limit #3: big sample up to 96 hours |

504.2 - Contamination by fluids - Procedure I

(id 2687) Use contamination by fluids tests to determine if materiel (or material samples) is affected by temporary exposure to contaminating fluids (liquids) such as may be encountered and applied during its life cycle, either occasionally, intermittently, or over extended periods.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Occasional contamination |

510.6 - Sand and dust - Procedure I

(id 2688) Dust (< 150 ?m) procedure. This test is performed to help evaluate the ability of materiel to resist the effects of dust that may obstruct openings, penetrate into cracks, crevices, bearings, and joints, and to evaluate the effectiveness of filters.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

501.6 - High temperature - Procedure II

(id 2729) Use high temperature tests to obtain data to help evaluate effects of high temperature conditions on materiel safety, integrity, and performance. Use Procedure II to investigate how high ambient temperatures may affect materiel performance while it is operating.

| | |
|-----------------------------|---|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 300.00 | Limit #1: Test at static conditions up to 24h |

502.6 - Low temperature - Procedure II

(id 2730) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

507.6 - Humidity - Procedure I

(id 2747) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

503.6 - 4.4.2.2 - Temperature Shock - Procedure I-B

(id 2774) Single cycle shock from constant extreme temperature.

| | |
|-----------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Applicable to any sample |

511.6 - 4.5.2 - Explosive atmosphere - Procedure I

(id 2775) This test evaluates the ability of the test item to be operated in a fuel vapor environment without igniting the environment.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: Test inside small vessel |

516.7 - 4.6.2 - Shock - Functional Shock - Procedure I

(id 2776) The intent of this test is to disclose materiel malfunction that may result from shocks experienced by materiel during use in the field.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |



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503.6 - 4.4.2.1 - Temperature Shock - Procedure I-A

(id 2777) One-way shock(s) from constant extreme temperature.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: One cycle

MIL-STD-810H:2019

(id 1250) Environmental Engineering Considerations and Laboratory Tests

x.x.x - Low Pressure: Altitude - Procedure I

(id 2165) Low pressure (altitude) tests are used to determine if materiel can withstand and/or operate in a low pressure environment and/or withstand rapid pressure changes.

Procedure I is appropriate if the materiel is to be transported or stored at high ground elevations or transported by air in its shipping/storage configuration.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 2,800.00 Limit #1: Applicable to any sample

x.x.x - Humidity - Procedure II – Aggravated Cycle

(id 2166) The purpose of the aggravated test procedure is to produce representative effects that typically occur when materiel is exposed to elevated temperature-humidity conditions. Accordingly, this procedure does not reproduce naturally occurring or service-induced temperature-humidity scenarios. It may induce problems that are indicative of long-term effects. Test item failures do not necessarily indicate failures in the real environment.

Accredited [IEC17025]: NO Execution time [day]: 11
Unit price #1 [EUR]: 2,800.00 Limit #1: Not relevant

x.x.x - Humidity - Procedure II: Aggravated Cycle

(id 2167) The purpose of this test method is to determine the resistance of materiel to the effects of a warm, humid atmosphere.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

x.x.x - Sand and dust - Procedure II: Blowing Sand

(id 2168) Procedure II - Blowing Sand is used to investigate the susceptibility of materiel to the effects of blowing sand (150 Pm to 850 Pm).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

MSL.03.01.0035:2013

(id 1811) Fuel Feed Hose Durability Testing

unref - Fuel Feed Hose Durability Test

(id 2433) This test procedure is to validate the fuel feed hose material, manufacturing method, connector specification and assembly methods. The fuel feed hose(s) are required to a number of pressure cycles between minimum and maximum operating pressures at an ambient temperature of that expected whilst in service.

Accredited [IEC17025]: NO Execution time [day]: 25
Unit price #1 [EUR]: 5,000.00 Limit #1: Applicable to any sample

Multimatic ES-2001116-070200

(id 2013) TRANSMISSION OIL COOLING FLUID TRANSFER SYSTEM SPECIFICATIONS

3.D.1 - Impulse Strength

(id 2773) This procedure combines pressure and thermal cycling of cooling system tubing and hose assemblies to provide durability confidence in the system.

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 5,000.00 Limit #1: Applicable to any sample

NAVISTAR DR 100159-06 30 October 2019

(id 1648) Electronic module and/or System Environmental Performance

5.3 - Storage temperature test

(id 2097) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample



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5.5.1 - Thermal shock test (short)

(id 2098) ---

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

5.4 - Thermal cycle test

(id 2099) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 3,800.00 Limit #1: Applicable to any sample

5.6.1 - Humidity test (short)

(id 2100) ---

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

6.1 - Dust and sand

(id 2101) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 8,000.00 Limit #1: Applicable to any sample

NFPA 1901:2009

(id 1544) Standard for Automotive Fire Apparatus

24.9 - SCBA or SCUBA Air Cylinder Fill Station

(id 2004) If SCBA and/or SCUBA air cylinders are to be filled from a fire apparatus-mounted air system, the fill station shall meet the requirements of 24.9.1.1 through 24.9.1.6

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 3,000.00 Limit #1: Applicable to any sample

Nissan M0132:1994

(id 1761) Thermal cycle test methods for plastic parts.

7 - Method 3 - Class 2 (former M4-C2)

(id 2327) Thermal cycle test method 3 - class 2 (former M4-C2) for plastic parts

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Nissan M0133:2002

(id 1762) Chemical resistance test methods for plastic parts.

8.1 - Method 1 - Immersion

(id 2325) Method 1 - Immersion is applicable both to parts used as containers or equivalent and parts normally exposed to chemicals.

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8.3 - Method 4 - Dripping

(id 2326) Method 4 - Dripping is applicable to parts inside engine compartment.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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PF.90004:2021 Rev.D

(id 1877) DIESEL EXHAUST FLUID – TANK ASSEMBLY

6.3.5 - Tank Shell Burst

(id 2502) The DEF tank shell must resist burst during dynamic pressure loading, for the intended useful life of the vehicle. This test is required only for blowmolded tank.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

6.3.6 - Tank Assembly Burst

(id 2503) The DEF Tank Assembly must resist burst during dynamic pressure loading, for the intended useful life of the vehicle.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

7.2.2 - Non-Usable Volume in static conditions

(id 2504) The DEF Tank assembly shape shall minimize the unusable volume left in the tank which cannot be drained by DSM in static condition.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

7.3 - DEF Tank Volume Characteristics

(id 2505) To verify main tank internal volume characteristics such as total internal volume, volume at shut off and vapor space volume compared to cad data.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

7.6.1 - DEF Tank Leak Test

(id 2506) The purpose of this test is to verify the static leak integrity of the DEF Tank Assembly.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 160.00 Limit #1: Applicable to any sample

6.4.7.1 - DSM and Quality Sensor functionality test

(id 2507) DSM functional verification on different parameters.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

5.6 - Heat Resistance with DEF

(id 2629) The DEF tank assembly, including both internal, external components shall be able to withstand the loads and stresses induced by high temperature for extended periods of time during all vehicle conditions and environments for the intended life of the vehicle. The purpose of the heat resistance testing is to validate the DEF tank structure robustness and resistance to heat for extended periods of time within the target life of the vehicle ensuring DEF crystal formation does not negatively affect the integrity of the system.

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

5.7 - DEF Temperature Soak-Swell test

(id 2630) The DEF tank assembly must resist deformation caused by DEF loading and temperatures extremes that degrade the functional integrity and dimensions at critical clearance locations, during the functional life of the vehicle.

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

5.9 - Max Ice Formation

(id 2631) The DEF tank assembly, including both internal and external components, retention system (skid plate, straps), module cover, if any, and DEF filler pipe (if the inlet port is not on the top of the tank), shall be able to withstand the loads and stresses induced by ice formation during all vehicle conditions and environments for the intended life of the vehicle. The purpose of the max ice formation is to verify the DEF tank assembly structure robustness under extreme ice conditions within the target life of the vehicle.

Accredited [IEC17025]: NO Execution time [day]: 48
Unit price #1 [EUR]: 6,000.00 Limit #1: 36 days duration
Unit price #2 [EUR]: 7,200.00 Limit #2: 48 days duration

6.3.7 - Tank Drop requirement

(id 2632) The tank drop test is intended to evaluate a DEF tank shells structural integrity. The test is intended to be used as development tool, during the process development, to ensure that the tank wall thickness and structural integrity is optimized. This test is required only for blowmolded tank.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample



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9.3 - Climatic Cycles

(id 2633) The DEF tank assembly, including both internal, external components and retention system shall be able to withstand the loads and stresses induced by thermal cycling during all vehicle conditions and environments for the intended life of the vehicle. The purpose of the climatic cycle testing is to validate the DEF tank assembly durability for thermal cycling within the target life of the vehicle.

Accredited [IEC17025]: NO Execution time [day]: 40
Unit price #1 [EUR]: 7,200.00 Limit #1: Applicable to any sample

9.4 - Pressure - Vacuum Cycling and Deflection

(id 2634) The purpose of the pressure/vacuum cycle test is to measure the ability of the DEF Tank Assembly to withstand the pressure/vacuum events that can occur within the life of a vehicle. The objective of the pressure/vacuum deflection measurements is to ensure the DEF Tank Assembly critical clearances are not compromised during pressure or vacuum events and to determine the amount of permanent deformation that occurs due to pressure and vacuum events.

Accredited [IEC17025]: NO Execution time [day]: 8
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

9.5 - Frozen Slosh Durability

(id 2635) The purpose of the slosh durability test is to prove the robustness of the DEF tank assembly and components when subjected to sloshing events that can occur within the life of a vehicle. This test is intended to test durability of internal components and tank fixation when subjected to slosh effects. The test sample size, amplitude, test duration, and acceleration factors can be adjusted to meet R95C90 reliability. In general, if the test profile/duration represents one useful life (i.e. 15yr, 150K miles), then twenty-four (24) samples would be needed to be tested in order to meet the reliability target. If the supplier elects to accelerate the testing, (through Test-To-Extended-Bogey) then the sample size can be reduced accordingly.

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

7.4 - Measure DEF in tank

(id 2708) To quantify the l/mm and l/signal from DSM on DEF tank.

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Porsche PPV 4017

(id 1227) Corrosion tests

unref - Corrosion test

(id 1639) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 8,000.00 Limit #1: Up 12 weeks

Porsche PTL 14100:2020-03

(id 1981) Automotive specification

6.3.4 - Flow ageing

(id 2721) Thermal, chemical and mechanical aging (cavitation) of components is achieved by means of coolant flow. The required conditions are binding and must be documented.

Accredited [IEC17025]: NO Execution time [day]: 45
Unit price #1 [EUR]: 3,000.00 Limit #1: Chamber and fluid temperature <90°C
Unit price #2 [EUR]: 4,000.00 Limit #2: Chamber or fluid temperature >90°C
Unit price #3 [EUR]: 5,000.00 Limit #3: Chamber and fluid temperature both >90°C

Porsche PTL 8140 Februar 2017

(id 1699) TechnischeLieferbedingung Interieur Allgemeine Anforderungen an Bauteile und Halbzeugmaterialien Anforderungen und Prüfungen

6/1.1 - Anforderungen und Prüfungen - Feuchtigkeitslagerung

(id 2138) Humidity Storage

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample



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Procedura Ferrari DT.M.41 13-03-2009

(id 1203) Tubi flessibili per conduzione liquido di raffreddamento in materiale plastico e/o elastomeri termoplastici

7.2 - Resistenza agli shock termici - Resistance to thermal shock

(id 1631) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: 5 cycles |
| Unit price #2 [EUR]: 2,400.00 | Limit #2: 10 cycles |
| Unit price #3 [EUR]: 3,500.00 | Limit #3: 20 cycles |

Procedura Ferrari DT.M.42 13-03-2009

(id 1204) Tuli flessibili per conduzione aria in materiale plastico e/o elastomeri termoplastici

7.1 - Resistenza agli shock termici - Resistance to thermal shock

(id 1632) ---

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: 5 cycles |
| Unit price #2 [EUR]: 2,400.00 | Limit #2: 10 cycles |
| Unit price #3 [EUR]: 3,500.00 | Limit #3: 20 cycles |

Proposal 31M/88/NP REV.1

(id 970) Albarubens proposal to TC 31M for 31M/88/NP (Future ISO/IEC 80079-41) -
Qualification of insulating materials used to protect hot surfaces - 1st revision

x.3 - Thermal endurance to heat

(id 1184) Accelerated ageing test intended to verify the effects of high temperatures on insulating materials used to protect engine hot surfaces.

The test is performed in 3 following cycles:

- 1) 168h with an increasing temperature from (Tmax- 350°C) to Tmax in daily steps of 50°C;
- 2) 168h permanently at Tmax;
- 3) 336h at T= Tmax -200°C.

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 28 |
| Unit price #1 [EUR]: 2,400.00 | Limit #1: Not relevant |

x.4 - Thermal endurance to cold

(id 1185) Test intended to verify the effects of low temperatures on insulating materials used to protect engine hot surfaces

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 2 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Not relevant |

x.5 - Impact test

(id 1186) Verification of the effects of mechanical impacts on insulating materials used to protect engine hot surfaces. The points of impact are the places considered to be the weakest, e.g., on the external parts which may be exposed to impacts.

| | |
|-----------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 400.00 | Limit #1: Not relevant |

x.6 - Vibration test

(id 1187) Vibration test be performed according to IEC 60068-2-6 Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)

| | | |
|-------------------------------|-------------------------|---------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 | Subcontract: GESTLabs srl |
| Unit price #1 [EUR]: 2,500.00 | Limit #1: Not relevant | |

x.7 - Maximum surface temperature determination

(id 1188) Determination of the maximum surface temperature of insulating materials used to protect engine hot surfaces by taking into account the presence of possible hot spots

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 3,500.00 | Limit #1: Not relevant |



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x.8 - Hot-spots ignition effect

(id 1189) Verification of the non ignition of a high temperature explosive mixture around insulating materials used to protect engine hot surfaces, with the hot-spots directly exposed to the explosive atmosphere

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 5,200.00 Limit #1: Not relevant

unref - Special set up for manifold

(id 1190) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

PSA B 2261622

(id 1902) Cooling tests

Unref. - PDT test

(id 2555) Cyclic pressure pulsation test for automotive pipes.

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 4,400.00 Limit #1: Applicable to any sample

PSA B21 5540:2015 rev.H

(id 1926) STN / NTS

GMP -INTERFACE ADAPTATION GMP/CAISSE / POWERTRAIN -
POWERTRAIN/ BODY INTERFACE ADAPTATION
CIRCUITS CARBURANT INTERVOLUMES / INTERVOLUMES FUEL SYSTEM
CANALISATIONS (ESSENCE-GAZOLE) / PIPES (PETROL-DIESEL)

5.2.3.1 - Liquid fuel pipes ageing test

(id 2589) his test purpose is to validate an assembled fuel pipe with production definition liaisons (male connectors, female connectors, o'rings, pipes, coating, fixings, valves, sensors, regulators etc. and other delivered assembled components) resistance to fuel and temperature ageing. The connectors and o'rings material (charge type, etc.) is a parameter to vary during tests in order to take into account all the possible configurations.

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.2.3.2 - Vapor stage pipes ageing test

(id 2590) This test is to validate an assembled fuel pipe fuel and temperature resistance in vapor stage with its connection to the production definition (endings, female connectors, o'rings, pipes, coating, fixings, valves, sensors, regulators, etc. and other assembled delivered components). The connectors and o'rings material (charge type, etc.) is a parameter to vary during tests in order to take into account all the possible configurations.

Accredited [IEC17025]: NO Execution time [day]: 42
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.5.3.W - Shot blasting test

(id 2677) This characterization is required for the non-protected pipe located under body, but if notified on functional drawing, this characterization could be required for the other pipes.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

PSA B21 7130:2016 Rev.E

(id 1933) Specifications Concerning the Environment of Electrical and Electronic Equipment - Climatic Chemical Character

CL17 - Operation in dusty environment

(id 2599) This test is intended to verify the ability of the sample to operate in a dusty environment.

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 1,500.00 Limit #1: 3 days



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CL07c - Ice water thermal shocks – Spraying on 2 sets of electronics

(id 2600) This test is intended to verify the ability of the sample to withstand water thermal shocks.

| | |
|-------------------------------|--------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 7 |
| Unit price #1 [EUR]: 3,000.00 | Limit #1: Small sample (up to 40cm) |
| Unit price #2 [EUR]: 4,000.00 | Limit #2: Medium sample (up to 80cm) |
| Unit price #3 [EUR]: 5,000.00 | Limit #3: Big sample (up to 140cm) |

PSA B22 6122-A:2020

(id 1823) STN – COOLING CIRCUIT
RUBBER AND PLASTIC PIPES

4.7.3.2.2 - Slow Ageing Test - 0075

(id 2455) Pipes shall resist ageing under pressure.

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 42 |
| Unit price #1 [EUR]: 3,000.00 | Limit #1: Chamber and fluid temperature <90°C |
| Unit price #2 [EUR]: 4,000.00 | Limit #2: Chamber or fluid temperature >90°C |
| Unit price #3 [EUR]: 5,000.00 | Limit #3: Chamber and fluid temperature both >90°C |

PSA B22 6142 PEUGEOT-CITROEN

(id 1548) Tube cooling circuit

unref - Glicole resistance test

(id 2010) Ageing of the materials due to exposure to glicole

| | |
|-------------------------------|--|
| Accredited [IEC17025]: NO | Execution time [day]: 42 |
| Unit price #1 [EUR]: 3,000.00 | Limit #1: Chamber and fluid temperature <90°C |
| Unit price #2 [EUR]: 4,000.00 | Limit #2: Chamber or fluid temperature >90°C |
| Unit price #3 [EUR]: 5,000.00 | Limit #3: Chamber and fluid temperature both >90°C |

PSA B31 5210 rev. C

(id 1903) Thermal cycle on cooling circuit

Unref. - Thermal cycling

(id 2556) Thermal cycle on cooling circuit.

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 20 |
| Unit price #1 [EUR]: 2,200.00 | Limit #1: Applicable to any sample |

PSA B31 5220:2002

(id 1913) Fuel Lines - Low Pressure Circuit Only - Resistance to Fuels and Temperature

5.1 - TEMPERATURE AGEING WITH FUEL FLOW IN PULSATED PRESSURE

(id 2592) ---

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 42 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

5.2 - TEMPERATURE AGEING WITH FUEL FLOW AT ATMOSPHERIC PRESSURE

(id 2593) ---

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 42 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |

5.3 - AGEING IN FUEL IMMERSION

(id 2594) ---

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 21 |
| Unit price #1 [EUR]: 1,000.00 | Limit #1: Not relevant |



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PSA B31 5250-A:2008

(id 1825) CANALISATIONS CARBURANTS TENUE AU FEU

8.2.1 - Resistance to fire (without pressure)

(id 2456) The purpose of this procedure is to assess the fire behavior of fuel system parts. This test procedure does not apply to fuel tanks. A pipe with or without a connection or any other part of the fuel circuit is filled with fuel and then exposed to flames obtained by the combustion of fuel contained in a container. The time before which a fuel leak appears is measured.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

8.2.2 - Resistance to fire (with pressure)

(id 2457) The purpose of this procedure is to assess the fire behavior of fuel system parts. This test procedure does not apply to fuel tanks. A pipe with or without a connection or any other part of the fuel circuit is filled with fuel and then exposed to flames obtained by the combustion of fuel contained in a container. The time before which a fuel leak appears is measured.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

PSA B31 5530:2020

(id 1821) Cooling Circuit - Rubber and Plastic Pipes

4.2 - PDT Test: Pressure / Displacement / Temperature

(id 2452) ---

Accredited [IEC17025]: NO Execution time [day]: 6
Unit price #1 [EUR]: 4,800.00 Limit #1: Applicable to any sample

PSA BP-054

(id 2042) New external document

Unref. - Extreme high temperature

(id 2781) Extreme high temperature cycle

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

PSA D10 5010:2021 - Ind.D

(id 1878) VULCANIZED RUBBERS – THERMOPLASTIC RUBBERS MATERIAL TESTS

9.18 - Fuel Permeation

(id 2508) This test is intended to measure the permeation of a hose filled with test fuel (mixture made according to ISO 1817, Liquid 2: trimethylpentane, toluene, trimethyl-1-pentene, ethanol, methanol, water) and stored in a heating oven for 24h.

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

PV 1200:2004

(id 1798) Vehicle Parts - Testing of Resistance to Environmental Cycle Test (+80/-40) °C

4.1 - Environmental Cycle Test

(id 2419) This Test Specification describes an environmental cycle test (elevated temperature/low temperature cycle) for testing units, e.g. vehicle parts in the engine compartment.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: 8 cycles



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QEV 111 AI1YLD:2021

(id 1872) Technical Component Requirement Specifications - Activated Charcoal Filter

2.1.8.2.4.4.3 - China 6-7

(id 2485) Standard: GB 18352.6-2016 Appendix K (for fuel) - China diurnal test profile (20...35...20 °C)

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

2.1.8.2.4.4.2 - ECE (09-2019)

(id 2486) ECE test fuel as per the regulation: ECE / Trans/ WP.29 / GRPE / 2018/4, Annex 2 - EU diurnal test profile (20...35...20 °C)

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

Renault 34 - 04 - 816 / - - N (2018)

(id 1542) FUEL SYSTEM PARTS CYCLED PRESSURE ENDURANCE TEST

4.1. - Preliminary aging

(id 1996) ---

Accredited [IEC17025]: NO Execution time [day]: 9
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

4.4.1 - Conditioning

(id 1997) The test cycles shall be performed at a relative pressure equal to 3 ($\pm 1/6$) Ps (where Ps=relative service pressure).

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

4.4.2 - Preliminary test

(id 1998) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

4.4.3 - Endurance test

(id 1999) The relative pressure applied shall vary between the vapor pressure (P.V.) and the service pressure indicated into the design plan.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

4.5 - Test until relative non-burst limit pressure

(id 2000) ---

Accredited [IEC17025]: NO Execution time [day]: 5
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any sample

4.6 - Determination of the burst pressure

(id 2001) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

4.4.4 - Final test

(id 2002) ---

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

Renault 34 -04 -831 /-- K (2018)

(id 1543) ACCELERATED AGEING FOR FUEL CIRCUIT PARTS - TANK AND ASSEMBLED PARTS - FUEL LINES

5.2 - Ageing of fuel lines (liquid and vapor)

(id 2003) ---

Accredited [IEC17025]: NO Execution time [day]: 75
Unit price #1 [EUR]: 4,500.00 Limit #1: 40 cycles, 45h each, 1800 h
Unit price #2 [EUR]: 3,200.00 Limit #2: duration 1000 h



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5.2 - Ageing of fuel lines - modified for H2

(id 2761) ---

Accredited [IEC17025]: NO Execution time [day]: 75
Unit price #1 [EUR]: 6,000.00 Limit #1: 40 cycles, 45h each, 1800 h

Renault 39-06-008:2019 Rev.H

(id 1751) HOSES FOR COOLANT CIRCUITS

8.4.1 - Resistance of the internal connections to the cycled pressure

(id 2242) Validate that the internal connections resists to the conditions of the cycled pressure.

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 3,200.00 Limit #1: Applicable to any sample

8.4.2 - Resistance of the internal connections to temperature variations

(id 2243) Evaluate the resistance of the internal connections to the thermic conditions and to the cycled pressure

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 3,800.00 Limit #1: Applicable to any sample

RENAULT NISSAN DESIGN SPECIFICATION RNDS-A-20020_2.0 (2019-3-29)

(id 1345) PLASTIC FUEL LINES SYSTEM (Part/module generic specifications, containing RNDS-A-20020 v1.0)

B - Aging test

(id 1858) ---

Accredited [IEC17025]: NO Execution time [day]: 75
Unit price #1 [EUR]: 2,000.00 Limit #1: Large quantity of small assembly samples
Unit price #2 [EUR]: 5,000.00 Limit #2: Applicable to any sample

C - Fuel resistance test

(id 1859) ---

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 1,800.00 Limit #1: Static method (240h)
Unit price #2 [EUR]: 2,500.00 Limit #2: Cyclic method (720h)

E - Resistance to alternating pressure

(id 1860) ---

Accredited [IEC17025]: NO Execution time [day]: 19
Unit price #1 [EUR]: 6,000.00 Limit #1: Test vapour
Unit price #2 [EUR]: 6,000.00 Limit #2: Test liquid

H - Start and Stop pressure test

(id 1861) ---

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 4,500.00 Limit #1: up to 2600000 cycles

I - Start and Stop cold oscillating test

(id 1862) ---

Accredited [IEC17025]: NO Execution time [day]: 6
Unit price #1 [EUR]: 1,200.00 Limit #1: up to 40 000 cycles
Unit price #2 [EUR]: 4,500.00 Limit #2: up to 2600000

D - Thermal cycle test

(id 2224) Thermal cycle test between high and low temperature

Accredited [IEC17025]: NO Execution time [day]: 13
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample



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RENAULT PROCEDURE D'ESSAI 34 - 04 - 898 / - - C (2004)

(id 1414) CANALISATIONS POUR CIRCUITS DE CARBURANT
TENUE AUX DEBATTEMENTS A FROID

unref - Tenue aux débattements à froid - Cold oscillating test

(id 2058) ---

| | |
|-------------------------------|-------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: up to 40 000 cycles |
| Unit price #2 [EUR]: 6,000.00 | Limit #2: up to 2600000 |

RENAULT PRODUCT SPECIFICATION 34 - 04 - 892 / - - H (2015)

(id 1202) RENAULT PRODUCT SPECIFICATION - FUEL SYSTEM LINES

6.2 - Resistance to fuel and temperature

(id 1929) The test is performed according to Test Procedure 34-04-831 (ageing), resistance to temperature, 40 cycles. This test is also used to check for any deterioration of the physical conditions indicated in other paragraphs. The test shall be conducted using a fuel that is representative in terms of rates of ester, alcohol or diester used for those destinations.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 3 |
| Unit price #1 [EUR]: 5,000.00 | Limit #1: Not relevant |

6.3.2 - Resistance to peroxidised petrol (plastic lines)

(id 1930) The test is performed according to the test method D47 1698 with fluid Np, the specimens are vacuum-dried at 70 °C until a constant weight is obtained

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.5 - Resistance to oscillations

(id 1931) The test is performed according to Test Procedure 34-04-898, on a new line representative of volume production for 40 000 cycles

| | |
|-------------------------------|------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1 [EUR]: 1,500.00 | Limit #1: up to 40000 cycles |

6.6 - Resistance to coupling vibrations

(id 1932) The test is performed at 23 °C on each type of coupling at the end of the lines under the installation conditions described in 34-04-892 specification. The test is performed with fuel inside the line without any pressure.

| | |
|--------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 12 |
| Unit price #1 [EUR]: 12,000.00 | Limit #1: Not relevant |

6.8 - Occasional contact with vehicle fluids - Ambient temperature (23°C)

(id 1933) The test is performed according to the test method D47 1924, all the couplings at each end of the pipe(s) must be in contact with the fluids. The couplings at each end are blanked off.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 7 |
| Unit price #1 [EUR]: 500.00 | Limit #1: up to 24 h |
| Unit price #2 [EUR]: 800.00 | Limit #2: up to 48 h |
| Unit price #3 [EUR]: 1,500.00 | Limit #3: up to 7 days |

6.10 - Resistance to alternating pressure (fatigue)

(id 1934) The test is performed according to Test Procedure 34-04-816 on previously shaped lines or on atypical line as defined in Test Procedure 34-04-898. The relations between working pressure, proof pressure and non-bursting pressure are defined in Standard ISO 7751.

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

6.17 - Resistance to fire

(id 1935) The test is performed according to Test Procedure 34-04-875

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 1 |
| Unit price #1 [EUR]: 2,000.00 | Limit #1: Not relevant |

6.8 - Occasional contact with vehicle fluids - High temperature

(id 1939) The test is performed according to the test method D47 1924, all the couplings at each end of the pipe(s) must be in contact with the fluids. The couplings at each end are blanked off.

| | |
|-------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 7 |
| Unit price #1 [EUR]: 800.00 | Limit #1: up to 24h |
| Unit price #2 [EUR]: 1,200.00 | Limit #2: up to 48h |
| Unit price #3 [EUR]: 2,000.00 | Limit #3: up to 7 days |



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Renault product specification 36 - 00 - 802 / - - P

(id 1157) Renault product specification 36 - 00 - 802 / - - P

CH/01 - Solid tightness - Dust test

(id 1579) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,800.00 Limit #1: Not relevant

CH/04 - Liquid tightness - High-pressure test (Kärcher Test)

(id 1580) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,200.00 Limit #1: Not relevant

RNDS-A-20020 v3.0 (2020-12-16)

(id 1845) Plastic Fuel Lines System

B - Ageing test

(id 2469) This procedure defines an accelerated ageing of the parts including fluctuation of temperature under constant pressure and fuel circulation.

Accredited [IEC17025]: NO Execution time [day]: 75
Unit price #1 [EUR]: 2,500.00 Limit #1: Large quantity of small assembly samples
Unit price #2 [EUR]: 5,000.00 Limit #2: Applicable to any sample

C - Fuel resistance test

(id 2470) This procedure defines a test evaluating the compatibility of the fuel line material regarding different fuel composition for compatibility testing.

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 1,800.00 Limit #1: Static method (240h)
Unit price #2 [EUR]: 2,500.00 Limit #2: Cyclic method (720h)

D - Thermal cycle test

(id 2471) Thermal cycle test between high and low temperature shall be carried out.

Accredited [IEC17025]: NO Execution time [day]: 12
Unit price #1 [EUR]: 2,500.00 Limit #1: Applicable to any sample

RTCA/DO-160G:2010

(id 668) Environmental Conditions and Test Procedures for Airborne Equipment

12.4 - Dust

(id 1522) This test determines the resistance of the equipment to the effects of blowing dust where carried by air movement at moderate speeds.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 3,000.00 Limit #1: Applicable to any sample

12.5 - Sand

(id 1523) This test determines the resistance of the equipment to the effects of blowing sand where carried by air movement at moderate speeds.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.3.2 - Drip proof test

(id 1524) This test determines whether the equipment can withstand the effects of liquid water falling on the equipment.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: not relevant

11.4.1 - Spray test

(id 1525) This test determines whether the materials used in the construction of the equipment can withstand the deleterious effects of contaminants.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample



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9.6.2 - Non ignition test

(id 2076) This test specifies requirements and procedures for aircraft equipment that may come into contact with flammable fluids and vapors such as those specified herein. It also refers to normal and fault conditions that could occur in areas that are or may be subjected to flammable fluids and vapors during flight operations.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,500.00 Limit #1: Small sample

10.3.4 - Continuous stream proof test

(id 2077) This test determines whether the equipment can withstand the effects of liquid water being sprayed on the equipment.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

14.xxx - Salt Fog

(id 2078) IN FIERI

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

10.3.3 - Spray Proof Test

(id 2628) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

SAE J1455:2006

(id 1963) Recommended Environmental Practices for Electronic Equipment Design in Heavy-Duty Vehicle Applications

4.7 - Dust and Sand

(id 2666) Dust creates a harsh environment for chassis, under-hood and exterior-mounted devices, and can be a long-term problem in interior locations, such as under the dash and seats. Sand, primarily windblown, is an important environmental consideration for components mounted in the chassis, exterior and under-hood areas.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

4.8 - Gravel Bombardment

(id 2667) Bombardment by gravel is significant for chassis, lower engine and exterior-mounted electronic components. Gravel from unimproved roads, gravel from gravel haulers and highway salt dispersing equipment are just some of the sources of gravel damage.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

SAE J1645 REV. OCT2011

(id 1626) Surface vehicle recommended practice (R) Fuel Systems and Components - Electrostatic Charge Mitigation

5.2.3 - Resistance tests for components (not installed in the vehicle)

(id 2051) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

A.4.4.2 - Ignition Energy

(id 2748) Spark discharges can ignite flammable air fuel mixtures if the discharge has sufficient energy.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

SAE J2044 AUG2009

(id 1440) Surface vehicle recommended practice - (R) Quick Connect coupling specification for liquid fuel and vapor/Emissions Systems

unref - Life cycle test: internal method - Variation of §7.5

(id 2059) ---

Accredited [IEC17025]: NO Execution time [day]: 15
Unit price #1 [EUR]: 4,000.00 Limit #1: Not relevant



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SAE J2045 NOV2012

(id 1439) Surface vehicle recommended practice - (R) Fuel Systems and Components - Electrostatic Charge Mitigation

4.1 - Leak Tightness

(id 2440) A device capable of applying the recommended internal pressure specified for both liquid fuel and fuel vapor line assemblies. Test is intended to be performed on liquid fuel/fuel vapor assemblies that duplicate the design intended for vehicle application, including applicable end fittings and/or connections.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

SAE J2334 REV. DEC2003

(id 1328) Surface vehicle standard - Laboratory Cyclic Corrosion Test

unref - Cycling corrosion test

(id 2094) The SAE J2334 test procedure should be used when determining corrosion performance for a particular coating system, substrate, process, or design.

Accredited [IEC17025]: NO Execution time [day]: 150
Unit price #1 [EUR]: 12,000.00 Limit #1: Manual Operation - small sample only
Unit price #2 [EUR]: 15,000.00 Limit #2: Automatic Operation
Unit price #3 [EUR]: 8,000.00 Limit #3: Automatic Operation - very small sample only

SAE J2578:2014

(id 1990) Recommended Practice for General Fuel Cell Vehicle Safety

Appendix F - Test method for drive-away protection

(id 2749) The selection of a force of 668N was based on the maximum allowable force for break-away at hydrogen dispensers. Such break-away devices are required to separate the fuel nozzle from the dispenser in the event of a drive-away. The selection of 668N is also consistent with a force that an adult can apply.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample

SAE J2599:2003

(id 1956) Fuel Filler Pipe Assembly Design Practice to Meet Low Evaporative Emission Requirements

13 - Durability Test

(id 2645) Filler pipe assemblies must continue to function for the life of the vehicle and they will be subjected to evaporative emission scrutiny through vehicle In-Use testing after the vehicle has seen service for up to 15 years or 241 350 km. Metallic corrosion, polymeric material life testing, and mechanical durability testing are therefore in order.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

SAE J2600:2015

(id 1759) Compressed Hydrogen Surface Vehicle Fueling Connection Devices

4.2.4.5 - Materials of Construction

(id 2294) Materials of Construction - Materials used in the construction of nozzles, receptacles and dust caps shall be non-sparking or spark-reducing.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

4.2.6.2 - Materials suitable and compatible with Hydrogen

(id 2295) Hydrogen - Nozzles and receptacles shall be manufactured of materials suitable and compatible for use with compressed hydrogen at the pressure and the temperature ranges to which it will be subjected.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant



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4.3.3 - Flow Requirements (Cv)

(id 2296) The minimum Cv value for the receptacle shall be 0.35 or as listed in the manufacturer's literature. Determination may be by test or analysis. Measuring method is to be documented with the Cv value. Refer to ANSI/ISA-75.02.01 or the EN 60534 series of documents for guidance.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

5.2 - User-Machine Interface Test

(id 2297) The objective of this test is to verify that the connection and disconnection forces and torques for only the nozzles in the unpressurized and pressurized states.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

5.3 - Valve Operating Handle Test

(id 2298) The objective of this test is to verify that nozzles with valve operating handles can withstand a maximum force without damage. This test is applicable to test nozzles whose design includes a valve operating handle.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

5.5 - Hydrogen Resistance Test

(id 2299) Verify sealing material resistance to damage from hydrogen diffusion and subsequent depressurization. This test is applicable to sealing materials in test nozzles or test receptacles.

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 2,000.00 Limit #1: Not relevant

5.6 - Room Temperature Leak Test

(id 2300) Verify leakage rate of nozzle, receptacle, connector, and receptacle check valve at room temperature. This test is applicable to test nozzles and test receptacles

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Not relevant

5.7 - Low and High Temperature Leak Test

(id 2301) Verify leakage rate and operation of nozzle, receptacle, and connector at low and high temperatures as stipulated in section 4.2.3.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

5.8 - Hydrostatic (or Ultimate) Strength Test

(id 2302) Verify that the nozzle, receptacle, and connector will not fail when subjected to pressures resulting in stresses near their Ultimate Strength. Because the devices are subjected to stresses near their Ultimate Strength, do not use the test samples for testing or any other pressure-containing use after this test. This test is applicable to test nozzles and test receptacles.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.9 - Drop Test

(id 2303) Verify that a nozzle can withstand a drop of 2 m under -40 °C conditions. This test is applicable to test nozzles.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.10 - Receptacle Vibration Resistance Test

(id 2304) Verify receptacle and protective cap resistance to vibration.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.11 - Abnormal Loads Test

(id 2305) Verify that the nozzle can withstand abnormal loads in service, both axial and moments about the end fitting. This test is applicable to test nozzles.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant



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5.12 - Durability Cycling Test

(id 2306) Verify that the nozzle and receptacle can withstand anticipated life-time cycling (100 000 and 15 000 cycles, respectively).
This test is applicable to test nozzles and test receptacles.

Accredited [IEC17025]: NO Execution time [day]: 35
Unit price #1 [EUR]: 6,500.00 Limit #1: Not relevant

5.13 - Corrosion Resistance Test

(id 2307) Verify nozzle and receptacle resistance to corrosion. This test is applicable to test nozzles and test receptacles.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.14 - Deformation of Field Connected/Assembled Parts Test

(id 2308) Verify that field connected/assembled parts can withstand a specified installation over-torque. This test is applicable to the nozzle with a representative hose attached following the installation/maintenance manual procedures. This test is also applicable to the receptacle with a representative fuel system attached following the installation/maintenance manual procedures.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

5.15 - Contamination Test

(id 2309) Verify that the nozzle and receptacle can withstand contamination. This test is applicable to test nozzles and test receptacles.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

5.16 - Thermal Cycle Test

(id 2310) Verify that the nozzle and receptacle can withstand thermal cycling. This test is applicable to test nozzles and test receptacles.

Accredited [IEC17025]: NO Execution time [day]: 25
Unit price #1 [EUR]: 10,000.00 Limit #1: Not relevant

5.17 - Pre-Cooled Hydrogen Exposure Test

(id 2311) Verify that the H35 and H70 hardware can withstand exposure to pre-cooled hydrogen during fuelling.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.18 - Misconnected Nozzle Test

(id 2312) The objective of this test is to verify that a misconnected Type C nozzle shall not flow gas. This misconnection is presumed to be due to foreign material collecting around a receptacle installed in a vehicle, preventing proper insertion of the receptacle into the nozzle. This test is applicable to only Type C nozzles.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.19 - H70 Receptacle/Low Pressure Nozzle Compatibility Test

(id 2313) Verify that a lower operating pressure nozzle design is tolerant and compatible with the H70 seal at a hydrogen mass flow rate of 60 g/s.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.20 - Rocking

(id 2314) Verify the receptacle/nozzle connection shall not be loosened or damaged when subjected to the following test.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

5.4 - Oxygen Aging Test

(id 2315) Verify sealing material resistance to aging. This test is applicable to sealing materials in nozzles and/or receptacles being tested.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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SAE J30:2008

(id 1747) This SAE Standard covers fuel, oil, or emission hose.

6.19 - Reservoir Method for Fuel Hose Permeation

(id 2291) Executed before and after preconditioning

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 800.00 Limit #1: Applicable to any tube

SAE J400:2002

(id 1954) Test for Chip Resistance of Surface Coatings

4.4.3 - Gravel Bombardment - Method C

(id 2646) This test is intended to evaluate the resistance of surface coating to chipping by gravel impact. The test is designed to reproduce the effect of gravel or other media striking exposed paint or coated surfaces of an automobile at ambient temperature.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample

SCANIA specification STD4471:2016

(id 966) Plastic pipes – Air brake system

4.2 - Impact

(id 1486) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

4.3 - Impact after accelerated heat ageing

(id 1487) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 500.00 Limit #1: Not relevant

SSCM00FUQR00075/750044-A-00-GD-0012

(id 1420) Smart subsea control module - SSCM qualification procedure

15 - Minimum and maximum design temperature test

(id 1888) This test is to ensure the operation of the SSCM at a test temperature equal to or less than the minimum design temperature classification and at a test temperature equal to or greater than the maximum design temperature classification.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

ST/SG/AC.10/11/Rev.7

(id 1896) United Nations: Manual of Tests and Criteria

(Former: Recommendations on the Transport of
Dangerous Goods)

38.3 - Lithium metal and lithium ion batteries

(id 2533) This section presents the procedures to be followed for the classification of lithium metal and lithium ion cells and batteries (see UN Nos. 3090, 3091, 3480 and 3481, and the applicable special provisions of Chapter 3.3 of the Model Regulations).

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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Stellantis draft FTIV test sequence

(id 1741) Proposal for the evaluation and qualification of FTIV valves

1 - FTIV valve eligibility

(id 2217) The scope of the test is to exclude the FTIV valve that can put in corking the FLVV/ROV valve

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

2 - FTIV valve depressurization time

(id 2218) The scope of this test is to determine tank pressure depressurization time

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

3 - FTIV valve electric consumption

(id 2219) The scope of this test is to determine FTIV electric consumption (Wh) during refueling operation

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

4 - FTIV valve audible noise

(id 2220) Verify the noise during actuation in cold and hot conditions

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 500.00 Limit #1: Applicable to any sample

5 - FTIV valve acceleration

(id 2221) Acceleration of the valve body along 3-axis

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

Sumiriko proprietary test methods

(id 1745) New external document

unref - Fuel tank Conditioning with E22 fuel

(id 1533) The purpose of this test is to verify the compatibility of the fuel tank and component materials with applicable fuels.

Accredited [IEC17025]: NO Execution time [day]: 43
Unit price #1 [EUR]: 4,800.00 Limit #1: Not relevant

unref - Sumiriko internal test: Fuel conditioning test

(id 1578) ---

Accredited [IEC17025]: NO Execution time [day]: 24
Unit price #1 [EUR]: 1,800.00 Limit #1: Not relevant

unref - Sumiriko internal test: resistance to thermal cycles

(id 1611) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,200.00 Limit #1: 5 cycles
Unit price #2 [EUR]: 2,000.00 Limit #2: 10 cycles
Unit price #3 [EUR]: 3,200.00 Limit #3: 20 cycles

unref - SCR: thermal cycle durability test - Engine bay section

(id 1871) The heated SCR supply line assembly shall be able to withstand thermal stresses during all vehicle conditions and environment for the intended life of the vehicle.

Cycle engine bay line from -30°C to +160°C, temperature ramp shall be around 5°C/min, dwell at 160°C for 0.5 hours, dwell at -30°C for 0.5 hours with the heated SCR supply line assembly completely filled with SCR in vehicle position.

SCR supply line shall be maintained with internal pressure of 8.5 bar for test temperature greater than +10°C. During temperature decrease phase, while chamber temperature is crossing +10°C, SCR supply line internal pressure shall be set at ambient pressure.

SCR supply line internal pressure below +10°C has not to be imposed and will change according closed end condition and chamber temperature.

SCR Heaters shall be on and functioning only when chamber temperature is growing up from -30°C up to +80°C.

Heaters shall be deactivated during all the rest of the test.

Repeat for 1000 cycles.

Accredited [IEC17025]: NO Execution time [day]: 98
Unit price #1 [EUR]: 15,000.00 Limit #1: Applicable to any sample



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1.3 Rev.2 - SCR: thermal cycle durability test Underfloor and wheelhouse sections

(id 1872) The heated SCR supply line assembly shall be able to withstand thermal stresses during all vehicle conditions and environment for the intended life of the vehicle (thermal cycles between 80°C and -30°C).

SCR supply line shall be maintained filled with AdBlue in static conditions at an internal pressure of 8.5 bar for test temperatures greater than +10°C.

During temperature decrease phase, while chamber temperature is crossing +10°C, SCR supply lines shall be partially emptied and internal pressure setted at ambient pressure.

SCR supply line shall be refilled of AdBlue when chamber temperature is growing up from -30°C while chamber temperature is crossing +10°C.

SCR Heaters shall be on and functioning only when chamber temperature is growing up from -30°C.

Heaters shall be deactivated during all the rest of the test.

Accredited [IEC17025]: NO Execution time [day]: 84
Unit price #1 [EUR]: 12,000.00 Limit #1: Applicable to any sample

unref - Sumiriko internal specification named 80-80

(id 2203) Quick evaluation of protection by corrosion.

Accredited [IEC17025]: NO Execution time [day]: 6
Unit price #1 [EUR]: 1,500.00 Limit #1: Not relevant

unref - Sumiriko internal test: Fuel exposure preconditioning (SAEJ2260)

(id 2206) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 6,000.00 Limit #1: 1000 hour
Unit price #2 [EUR]: 15,000.00 Limit #2: 5000 hour

Unref. - IMA Heat duration performance in cold storage 5.9C 160°C

(id 2458) The purpose of this test is to verify the performance of pipes during a 3000h test using AdBlue as a medium.

Accredited [IEC17025]: NO Execution time [day]: 125
Unit price #1 [EUR]: 36,000.00 Limit #1: Applicable to any sample

Unref. - Sumiriko internal test: Static ageing

(id 2606) 168 hours static ageing on fuel pipes at 130°C with gasoline as fluid.

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

TL 226:2018

(id 1795) Paintwork on Materials of Vehicle Interior Equipment

Table 3 - 2.1 - Cross-cut test

(id 2382) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant

Table 3 - 2.2 - Cross-cut test (St. Andrew's cross)

(id 2383) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: Not relevant

Table 3 - 3 - Scratch resistance

(id 2384) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Table 3 - 4.1 - Heat resistance in the heat cabinet (recirculated air with closed throttle valve)

(id 2385) Thermal stability and environmental cycle resistance

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1: ask to office Limit #1: 240h - (90 ±2) °C
Unit price #2 [EUR]: 1,800.00 Limit #2: 500h - (105 ±2) °C

Table 3 - 4.2 - Environmental cycle test

(id 2386) This test, as per PV 1200, describes an environmental cycle test (elevated temperature/low temperature cycle) for testing units, e.g. vehicle parts in the engine compartment.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,500.00 Limit #1: Not relevant



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Table 3 - 5.1 - Condensation atmosphere with constant humidity

(id 2387) Weather resistance and aging resistance

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 1,200.00 Limit #1: Not relevant

Table 3 - 5.2 - Lightfastness

(id 2388) Weather resistance and aging resistance - Testing as per PV 1303

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Table 3 - 5.3 - Hydrolysis aging

(id 2389) Weather resistance and aging resistance

Accredited [IEC17025]: NO Execution time [day]: 3
Unit price #1 [EUR]: 600.00 Limit #1: Not relevant

Table 3 - 5.4 - Sunlight simulation

(id 2390) Weather resistance and aging resistance

Accredited [IEC17025]: NO Execution time [day]: 10
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Table 3 - 6.1.1 - 2 000 double strokes, dry

(id 2391) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 800.00 Limit #1: Not relevant

Table 3 - 6.1.2 - 100 double strokes, dry

(id 2392) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

Table 3 - 6.1.3 - 100 double strokes, wet (distilled water)

(id 2393) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

Table 3 - 6.1.4 - 10 double strokes with tenside solution

(id 2394) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Table 3 - 6.1.5 - 10 double strokes with ammoniacal alcoholic cleaning solution

(id 2395) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Table 3 - 6.1.6 - 10 double strokes with cleaner's naphtha

(id 2396) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Table 3 - 6.1.7 - 10 double strokes with methylated spirit

(id 2397) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Table 3 - 6.1.8 - 10 double strokes with synthetic perspiration solution A

(id 2398) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant



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Table 3 - 6.1.9 - 10 double strokes with synthetic perspiration solution B

(id 2399) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Table 3 - 6.2 - Droplet test

(id 2400) Resistance to chemicals and behavior on exposure to abrasion

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

Table 3 - 6.3 - Cream resistance

(id 2401) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

TL 52231:2016

(id 1802) ABS and PC Polymer Blends - Materials Requirements

Table 1 - 2 - Flexural strength

(id 2402) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Table 1 - 3 - Notched impact strength

(id 2403) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

Table 1 - 4 - Notched impact strength

(id 2404) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

Table 1 - 5 - Impact strength

(id 2405) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Not relevant

Table 1 - 6 - Dimensional stability under heat

(id 2406) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Table 1 - 7 - High-temperature behavior

(id 2407) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

Table 1 - 8 - Low-temperature behavior

(id 2408) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

Table 1 - 9 - Ball drop test

(id 2409) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample but without preconditioning
Unit price #2 [EUR]: 600.00 Limit #2: Applicable to any sample with 24h preconditioning



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TL 52439: 2008-12

(id 980) Polyamide Pipe - Material Requirements

6.4 - Equivalent stress

(id 1519) The equivalent stress is calculated according to the following formula:

$\sigma_V = PB \times dm / 20 \text{ s}$ [N/mm²], where:

- PB = burst pressure, in bar
- dm = d1 - s, average pipe diameter
- d1 = outer diameter, measured
- s = pipe wall thickness
- σ_V = equivalent stress in radial direction

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 400.00

Execution time [day]: 0
Limit #1: Not relevant

6.5 - Low-temperature behavior

(id 1520) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 200.00

Execution time [day]: 0
Limit #1: Not relevant

6.7 - Aging resistance

(id 1521) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 700.00

Execution time [day]: 0
Limit #1: Not relevant

TL 52680:2016

(id 1801) Components Made of Long-Fiber-Reinforced or Continuous-Filament-Reinforced Plastic Composites (FRP) - Materials and Component Requirements

5.1.1 - Salt spray test

(id 2410) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 3,200.00
Unit price #2 [EUR]: 5,500.00

Execution time [day]: 4
Limit #1: 96h
Limit #2: 720h

5.1.2 - Corrosion cycle test

(id 2411) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,000.00

Execution time [day]: 2
Limit #1: 10 cycles

6.4 - 3-point bending

(id 2412) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,000.00

Execution time [day]: 0
Limit #1: Not relevant

6.5 - Impact strength

(id 2413) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 200.00

Execution time [day]: 0
Limit #1: Not relevant

Table 5 - 7 - Penetration test

(id 2414) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 100.00

Execution time [day]: 0
Limit #1: Not relevant

6.6 - High-temperature behavior

(id 2415) ---

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 400.00

Execution time [day]: 1
Limit #1: Not relevant



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6.7 - Low-temperature behavior

(id 2416) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Not relevant

Table 6 - Environmental cycle test

(id 2417) This test, as per PV 1200, describes an environmental cycle test (elevated temperature/low temperature cycle) for testing units, e.g. vehicle parts in the engine compartment.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,500.00 Limit #1: 8 cycles

5.8 - Evaluation of FRP surfaces

(id 2418) The surfaces must be evaluated before and after aging as per PV 1200, Audi parts, 20 cycles.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,800.00 Limit #1: 8 cycles

5.9 - Evaluation of the paintwork

(id 2420) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

6.8 - Direct visual inspection without aids

(id 2421) Component surfaces made of an FRP are evaluated as per DIN EN 13018 by means of direct visual inspection (visual inspection without interrupted beam path between the eye and the inspection surface, but with aids).

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Table A.1 - Ball drop test

(id 2422) This test determines the material behavior in a ball drop test at constant temperature (e.g., susceptibility to fracture and cracking at low temperatures) for components such as sheets, films, or trims made of organic materials.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample but without preconditioning
Unit price #2 [EUR]: 600.00 Limit #2: Applicable to any sample with 24h preconditioning

Table A.1 - Scratch resistance

(id 2423) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 100.00 Limit #1: Not relevant

Table A.1 - Xenon arc light aging

(id 2424) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

6.3 - Glass transition temperature

(id 2429) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

6.3 - Glass transition temperature after the second heat-up cycle

(id 2430) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

6.3.1 - Storage modulus

(id 2431) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant



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TL 82253:2022

(id 1827) Fuel Lines - Functional requirements

6.5.2 - Aging with fuel

(id 2461) ---

| | |
|-------------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 7 |
| Unit price #1 [EUR]: 2,200.00 | Limit #1: Single pipe |
| Unit price #2 [EUR]: 3,000.00 | Limit #2: Assembly pipes |

TL 82421:2021

(id 1826) Quick Couplings, Quick Coupling System - Functional Requirements

7.10.3 - Preloading by aging in test fuel

(id 2460) ---

| | |
|-------------------------------|-------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 4 |
| Unit price #1 [EUR]: 800.00 | Limit #1: 48h aging duration |
| Unit price #2 [EUR]: 1,500.00 | Limit #2: 100h aging duration |

Toyota TSM1640G:2002 Rev.2

(id 1165) TSM1640G Toyota Engineering Standard

20 - Fuel resistance test

(id 1598) ---

| | |
|-----------------------------|--------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 10 |
| Unit price #1 [EUR]: 800.00 | Limit #1: Not relevant |

Toyota TSM1640G:2020 Rev.5

(id 990) Standard test method for material characteristic of plastic tube with connector for fuel line

25 - Rotation Durability Test

(id 2766) ---

| | |
|-------------------------------|------------------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 12 |
| Unit price #1 [EUR]: 4,000.00 | Limit #1: Applicable to any sample |

TS026_2_24/01/2018

(id 994) Sumiriko Technical Specification: Battery Venting Line - Assembly Plastic Pipe - Blowby line

7 - Fitting pull-off

(id 1529) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

8 - Burst test

(id 1530) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |

9 - Cold impact test

(id 1531) ---

| | |
|------------------------------|-------------------------|
| Accredited [IEC17025]: NO | Execution time [day]: 0 |
| Unit price #1: ask to office | Limit #1: Not relevant |



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6 - Leak test

(id 1532) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant

UL 1204:2018

(id 1876) Standard for safety - Parts Cleaners

28.2 a) - Fluid Leakage Test (a)

(id 2495) A parts cleaner with an integral solvent container shall not exhibit leakage of the solvent after being tested. The product is to be conditioned and filled with liquid as indicated and observed for leakage.

Accredited [IEC17025]: NO Execution time [day]: 61
Unit price #1 [EUR]: 4,500.00 Limit #1: Applicable to any sample

28.2 b) - Fluid Leakage Test (b)

(id 2497) A parts cleaner with an integral solvent container shall not exhibit leakage of the solvent after being tested. The product is to be conditioned and filled with liquid as indicated and observed for leakage.

Accredited [IEC17025]: NO Execution time [day]: 61
Unit price #1 [EUR]: 3,500.00 Limit #1: Applicable to any sample

28.2 c) - Fluid Leakage Test (c)

(id 2497) A parts cleaner with an integral solvent container shall not exhibit leakage of the solvent after being tested. The product is to be conditioned and filled with liquid as indicated and observed for leakage.

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1 [EUR]: 6,000.00 Limit #1: Applicable to any sample

UL 125:2020

(id 1955) Safety Flow Control Valves for Anhydrous Ammonia and LP-Gas

23 - Deformation Test

(id 2640) Joints in a valve shall not leak, nor shall there be evidence of loosening of joints, distortion, or other damage resulting from the stress imposed on pipe-threaded sections when tested in accordance with these requirements.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample

24 - External Leakage Test

(id 2641) A valve in the "as-received" condition or after being subjected to the Deformation Test, shall be free from leakage through stem or body seals or other joints, and shall not show evidence of porosity in castings when tested at any aerostatic pressure between 0 and 1.5 times the rated service pressure of the valve.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: up to 1"
Unit price #2 [EUR]: 250.00 Limit #2: greater than 1" up to 3"

26.2 - Seat Leakage Test for primary shutoff valves

(id 2642) The following tests for seat leakage are to be conducted on samples which have previously been subjected to the Deformation test, par. 23 and External leakage test, par. 24.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 150.00 Limit #1: up to 1"
Unit price #2 [EUR]: 250.00 Limit #2: greater than 1" up to 3"

27 - Endurance Test

(id 2643) A shutoff valve shall be capable of complying with the applicable leakage requirements of 24.1 and 26.2, or 24.1 and 26.3, after being subjected to the number of cycles of opening and closing as specified in Table 27.1, for each type of valve and under the test conditions described in 27.2 - 27.7.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 300.00 Limit #1: up to 1"
Unit price #2 [EUR]: 500.00 Limit #2: greater than 1" up to 3"



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UL 1973:2018

(id 1434) Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications

38 - External fire exposure test

(id 1905) ---

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 8,000.00 Limit #1: Not relevant

UN Regulation No 154

(id 1967) Uniform provisions concerning the approval of light duty passenger and commercial vehicles with regards to criteria emissions, emissions of carbon dioxide and fuel consumption and/or the measurement of electric energy consumption and electric range (WLTP) [2022/2124]

C3 - 5.1.1 - Ageing through exposure to temperature cycling

(id 2674) ---

Accredited [IEC17025]: NO Execution time [day]: 8
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

C3 - 5.1.2 - Ageing through exposure to vibration

(id 2675) ---

Accredited [IEC17025]: NO Execution time [day]: 1 Subcontract: BPS srl
Unit price #1 [EUR]: 1,500.00 Limit #1: Not relevant

C3 - 5.1.3 - Ageing through exposure to fuel vapour and determining BWC300

(id 2676) Ageing shall consist of repeatedly loading with fuel vapour and purging with laboratory air.

Accredited [IEC17025]: NO Execution time [day]: 30
Unit price #1 [EUR]: 3,500.00 Limit #1: Applicable to any sample

UN Transport of dangerous goods

(id 1167) ST/SG/AC.10/11/Rev.6

Recommendations on the transport of dangerous goods. Manual of Tests and Criteria. United Nations Publication, 2015

16.6.1 - Test 6 (c): External fire (bonfire) test

(id 1607) This is a test performed on packages of an explosive substance or explosive articles, or unpackaged explosive articles, to determine whether there is a mass explosion or hazard from dangerous projections, radiant heat and/or violent burning when involved in a fire.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 2,200.00 Limit #1: Up to 50 liters

UNECE E/ECE/324/Rev.1/Add.43/Rev.3-E/ECE/TRANS/505/Rev.1/Add.43/Re

(id 1289) Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions* - Regulation No. 44

Uniform provisions concerning the approval of restraining devices for child occupants of power-driven vehicles ("Child Restraint Systems").

8.1.1/Ann.4 - Corrosion test

(id 1812) ---

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1: ask to office Limit #1: Not relevant



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UNI EN ISO 2812-2:2007

(id 1842) *Paints and varnishes — Determination of resistance to liquids — Part 2: Water immersion method*

6.3 - Water Immersion

(id 2468) *A production coated part shall resist immersed in water at 180°F for 10 days.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,000.00

Execution time [day]: 10
Limit #1: Applicable to any sample

UNI ISO 10263-3:2008

(id 1772) *Earth-moving machinery - Operator enclosure environment - Part 3: Operator enclosure pressurization test method*

6 - Pressurization test

(id 2347) *This part of ISO 10263 specifies a test method which provides uniform measurement of the pressurization inside an operator enclosure of an earth-moving machine fitted with a device to pressurize the enclosure.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,200.00

Execution time [day]: 1
Limit #1: Applicable to any sample on field

UNI/PdR 90.2:2020

(id 1581) *Maschere di comunità - Parte 2: Metodi di prova (Prassi di riferimento)*

APPENDICE A - Misurazione efficienza di rimozione particellare su mascherine di comunità semirigide

(id 2028) ---

Accredited [IEC17025]: NO
Unit price #1: ask to office

Execution time [day]: 0
Limit #1: Not relevant

APPENDICE B - Misurazione della resistenza al moto

(id 2029) ---

Accredited [IEC17025]: NO
Unit price #1: ask to office

Execution time [day]: 0
Limit #1: Not relevant

APPENDICE C - Rimozione della carica elettrostatica con vapori di alcool isopropilico

(id 2031) ---

Accredited [IEC17025]: NO
Unit price #1: ask to office

Execution time [day]: 0
Limit #1: Not relevant

VDA AK

(id 1914)

1.4.2 - Salt Mist Test

(id 2580) *Cyclic salt mist corrosion test specific for automotive.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 1,000.00

Execution time [day]: 7
Limit #1: Not relevant

VDA233-102

(id 1774) *Mixed salt-mist and damp-heat test, specific for automotive.*

- Cyclic corrosion testing of materials and components in automotive construction

(id 1203) *Mixed salt-mist and damp-heat test, specific for automotive.*

Accredited [IEC17025]: NO
Unit price #1 [EUR]: 12,000.00
Unit price #2 [EUR]: 7,200.00

Execution time [day]: 42
Limit #1: Big chamber
Limit #2: Small chamber



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VDI 2440 November 2000

(id 1695) Emission control - Mineral oil refineries - Guideline

Annex - Leakage rate of moving parts

(id 2136) This test method is intended to determine the leakage rate at pressures, temperatures and spindle/shaft movements corresponding to the operating conditions of shut-off and control fittings

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 5,000.00 Limit #1: Not relevant

Annex - Leakage rate of static parts

(id 2148) This test method is intended to determine the leakage rate at pressures, temperatures corresponding to the operating conditions of flanges or type of fittings without any moving part.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 4,000.00 Limit #1: Not relevant

Volkswagen Group standard PV 3905: 2015-04

(id 983) Organic Materials - Ball Drop Test

4 - Ball drop test

(id 2425) This standard describes the test for determining the material behavior in a ball drop test at constant temperature (e.g., susceptibility to fracture and cracking at low temperatures) for components such as sheets, films, or trims made of organic materials.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 200.00 Limit #1: Applicable to any sample but without preconditioning
Unit price #2 [EUR]: 600.00 Limit #2: Applicable to any sample with 24h preconditioning

Volkswagen LV 124 VW 80000: 2017-10

(id 1681) Electric and Electronic Components in Motor Vehicles up to 3,5 t - General Component Requirements, Test Conditions and Tests

11.6 - K-06 Salt spray test with operation, exterior

(id 2128) This test simulates the load on the component in a saline atmosphere with saline water, as it may occur in certain areas of the world or in winter road conditions.

It is meant to safeguard the component against any malfunctions when exposed to a salt load, e.g., from short circuits and leakage currents due to the ingress of salt into the component.

This test is to be applied to Components mounted in or on doors, hoods, and tailgates/trunk lids.

The test is carried out as per DIN EN 60068-2-11 with the parameters specified in Volkswagen LV 124 VW 80000: 2017-10.

The operating mode of the DUT is:

- During the spraying phase: 1 h "Off-grid parkingmin" and 1 h

"OperationMax," intermittently

- During the resting phase: "Off-grid parkingMin".

Accredited [IEC17025]: NO Execution time [day]: 7
Unit price #1 [EUR]: 3,600.00 Limit #1: Applicable to any sample

10.3 - M-03 Dust test

(id 2129) This test simulates the dust load of the component during vehicle operation.

It is meant to verify the resistance of the component to electrical and mechanical error/flare patterns.

The test is carried out as per ISO 20653 with the parameters specified in Volkswagen LV 124 VW 80000: 2017-10 and the degree of protection defined in the Performance Specification.

The operating mode of the DUT is:

- For electrical/electronic components: "Operationmin"

- For mechatronic components (e.g., for components with rotating parts, controls): "Operationmax" and "Operationmin" intermittently as per Figure 25.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 2,200.00 Limit #1: Applicable to any sample

11.9 - K-09 Damp heat, cyclic (with frost)

(id 2130) This test simulates the thermal loading (including frost) of the component by cyclic temperature changes with high humidity during vehicle operation. It is meant to verify the resistance of the components to damp heat.

The test is carried out as per DIN EN 60068-2-38 with the parameters specified in Volkswagen LV 124 VW 80000: 2017-10.

Accredited [IEC17025]: NO Execution time [day]: 11
Unit price #1 [EUR]: 2,000.00 Limit #1: Not relevant



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11.2 - K-02 Incremental temperature test

(id 2184) This test simulates the operation of the component at different ambient temperatures.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 3,600.00 Limit #1: Applicable to any sample

undef - Parameter test (small) for lighting

(id 2185) These checks are aimed at checking the correct functioning of the light after each test.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 300.00 Limit #1: Applicable to any sample

11.5 - K-05 Temperature shock

(id 2188) This test simulates the thermal load of a component imposed through shock-type temperature changes during vehicle operation. The test serves to verify the resistance of the component to faults that occur due to thermal load, e.g. cracking in older joints, adhesive joints and welded joints, in bond connections as well as in seals or housings.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 3,800.00 Limit #1: Small sample (up to 300mm) with dedicated technician
Unit price #2 [EUR]: 7,200.00 Limit #2: Big or multiple sample with dedicated technician

11.12 - K-12 Temperature shock with splash water

(id 2194) This test simulates the load of the component when exposed to splash water as it occurs when driving through puddles. The test serves to verify functioning of the component when subjected to shock-type cooling by means of water.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 4,000.00 Limit #1: Small sample (up to 40cm)
Unit price #2 [EUR]: 5,000.00 Limit #2: Medium sample (up to 80cm)
Unit price #3 [EUR]: 7,000.00 Limit #3: Big sample (up to 140cm)

11.10 - K-10 Water protection - IP X4K

(id 2196) This test simulates the load on the component when exposed to water. It is meant to verify the function of the component, e.g., when exposed to condensed water, rain, or splash water. This test is carried out as per ISO 20653, in order to verify the protection against harmful effects resulting from water splashing against the sample under test with increased pressure from any direction.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 600.00 Limit #1: Applicable to any sample

10.2 - M-02 Stone impact test

(id 2352) This test simulates the mechanical load on the component due to stone impact. It is meant to verify the resistance of the component to flaw patterns, e.g., deformation or cracks.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 7,000.00 Limit #1: up to 5 grouped samples

11.10 - K-10 Water protection - IP X6K

(id 2353) This test simulates the load on the component when exposed to water. It is meant to verify the function of the component, e.g., when exposed to condensed water, rain, or splash water.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample
Unit price #2 [EUR]: 1,000.00 Limit #2: up to 5 pipes contemporary

11.18 - K-18 Harmful gas test

(id 2354) This test simulates the influence of harmful gases on the component, primarily on its plug contacts and switches. It is meant to verify the resistance of the component to flaw patterns, such as corrosion and component damage

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1 [EUR]: 3,200.00 Limit #1: Applicable to any sample

11.11 - K-11 High-pressure cleaning/pressure washing (IP X9K)

(id 2566) This test simulates the load on the component when subjected to water during vehicle cleaning. It is meant to verify the function of the component when exposed to high-pressure cleaning/pressure washing.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 1,200.00 Limit #1: small sample (automatic spraying)
Unit price #2 [EUR]: 3,000.00 Limit #2: big sample (manual spraying)



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Volkswagen Technical Supply Specification TL 244:2017-06

(id 953) Zinc/Nickel Alloy Coatings Surface Protection Requirements

3.11.2 - Corrosion properties: test method as per PV 1209

(id 1480) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

Volkswagen Test Specification PV 1209: 2016-02

(id 954) Add-On Parts/Hang-On Parts with a Zinc or Zinc Alloy Coating and Aluminum - Environmental Corrosion Cycle Test

5.1 - Leak tightness test for aluminum add-on parts/hang-on parts that form cavities

(id 1478) ---

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 120.00 Limit #1: Not relevant

unref - Environmental corrosion cycle test as per Test Specification PV 1209

(id 1479) This test method is used to evaluate the corrosion resistance of components subjected to high corrosive loads. It applies particularly to components with a zinc-nickel coating with passivation and sealing, and to heat exchangers (e.g., condensers, radiators, and charge air coolers), lines, and other components made of aluminum alloys.

Accredited [IEC17025]: NO Execution time [day]: 0
Unit price #1 [EUR]: 1,500.00 Limit #1: 1 week
Unit price #2 [EUR]: 5,500.00 Limit #2: 4 week

Volkswagen TL 934

(id 1783) Wiper Systems - Functional and Materials Requirements

6.2.6.2 - Wet operation endurance test

(id 2357) The test simulates the load on the whole wiper system over the service life.

Accredited [IEC17025]: NO Execution time [day]: 23
Unit price #1 [EUR]: 4,500.00 Limit #1: Applicable to any sample

6.2.6.3 - Wipe angle constriction

(id 2358) The test simulates the load on the whole wiper system in winter operation (wipe angle constriction due to snow and ice deposits in the reversal points) over the service life.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,000.00 Limit #1: Applicable to any sample

5.5 a - Corrosion test on wiper motor with linkage ASSY/rear wiper motor

(id 2453) This test serves to monitor and evaluate corrosion properties or corrosion protection solutions for these parts when exposed to static load. This test simulates the component load, e.g., in salty air or water containing de-icing salt, that can occur under wintry road conditions.

Accredited [IEC17025]: NO Execution time [day]: 21
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

5.5 c - Corrosion test on wiper lever ASSY/rear wiper lever

(id 2454) This test serves to monitor and evaluate corrosion properties or corrosion protection solutions for these parts when exposed to static load. This test simulates the component load, e.g., in salty air or water containing de-icing salt, that can occur under wintry road conditions.

Accredited [IEC17025]: NO Execution time [day]: 94
Unit price #1 [EUR]: 1,000.00 Limit #1: Not relevant

6.2.7.2 - High Temperature

(id 2517) This test simulates the operation of the component at higher ambient temperatures.

Accredited [IEC17025]: NO Execution time [day]: 4
Unit price #1 [EUR]: 1,500.00 Limit #1: Applicable to any sample



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6.2.7.1 - Low Temperature

(id 2518) This test simulates the operation of the component at a low ambient temperature.

Accredited [IEC17025]: NO Execution time [day]: 2
Unit price #1 [EUR]: 1,800.00 Limit #1: Applicable to any sample

6.2.7.3 - Cold Impact Tests

(id 2532) The aim of this test is to check the mechanical strength of the wiper lever ASSY at low temperatures.

Accredited [IEC17025]: NO Execution time [day]: 1
Unit price #1 [EUR]: 400.00 Limit #1: Applicable to any sample

Volvo Group 0001-14-8879

(id 1923) Frigoriferi TR

2.2.3.5 - Climate Cycling

(id 2586) The component must be able to survive and maintain its functionality under varying temperatures.

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 4,200.00 Limit #1: Applicable to any sample

2.2.4.3 - Moisture Resistance - Ageing

(id 2587) The objective of this test is to ensure that humidity does not have a critical effect on the components in terms of deformation, changes in appearance, loss of functionality and mechanical properties.

Accredited [IEC17025]: NO Execution time [day]: 14
Unit price #1 [EUR]: 1,200.00 Limit #1: Applicable to any sample



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§ P

TESTS PACKAGES / Pacchetti di prove

PRICES FOR PACKED TEST SEQUENCES, DISCOUNTED BECAUSE PERFORMED ALL TOGETHER

Prezzi a pacchetto per sequenze di prove, scontate perché eseguite tutte assieme

Ex nR Ex t enclosure (IEC 60079-0:2017, EN60079-15:2010)

(id 132) Test sequence for standard Ex nR enclosure

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Adaptation to IEC 61215-2:2016 of PV modules already tested according to IEC 61215:2005

(id 99) Test procedure applied to PV modules for the confirmation of the materials

Price #1 [euro]: 4,800.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Additional tests for J-box qualification according to EN 50548:2011/A2:2014 requirements

(id 105) ---

Price #1 [euro]: 4,500.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Determination of safety characteristics of Lithium batteries/battery modules

(id 143) ---

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Determination of safety characteristics of Lithium cells

(id 142) This test sequence is composed of internal test methods for the determination of safety characteristics of Lithium cells.

After a first phase of searching for the most suitable method to ignite the cell, an explosion due to the runaway thermal effect activation is produced, in order to analyse the thermal and pressure characteristics of the possible explosion, together with the volume of gases produced. This operation is conducted at first in normal air mixture, then in inert gas mixture (typically with N2), simulating the case in which the cell is placed in an enclosed case without air.

The purpose of these measurements is to evaluate the effect of the explosion on the battery container considering the mechanical resistance of the enclosure and providing a basis for the calculation of a vent.

The explosion is then reproduced into an open air vessel in order to allow a video shooting of the phenomenon in order to show the explosion extent and characteristics.

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Electrostatic hand-held spraying equipment for ignitable coating powder

(id 101) ---

Price #1 [euro]: 7,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

End-of-line deflagration flame arrester without pre-volume, BC=c (no burn time), tested according to

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list



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Equipment protection by pressurized room "pb" or "pc"

(id 103) ---

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex d and Ex t flameproof enclosure, IP65 or 66 or 67, transparent windows

(id 65) Test sequence for standard Exd enclosure, both for ATEX and IECEx qualification.

Valid for groups I and II and standard IP.

Price #1 [euro]: 5,200.00

Limit #1: $V \leq 40$ [dm³]

Price #2 [euro]: 7,000.00

Limit #2: $40 < V < 200$ [dm³] or $L > 1000$ mm

Price #3 [euro]: 12,000.00

Limit #3: $V \geq 200$ [dm³] or $L > 1500$ mm

Included tests: all the ones required, ask for quotation including detailed list

Ex d and Ex t rotating machine, IP65 or 66 or 67

(id 71) Test sequence for standard Exd rotating machine, both for ATEX and IECEx qualification. Valid for groups I and II and standard IP.

Price #1 [euro]: 5,200.00

Limit #1: Shaft height < 112 .

Price #2 [euro]: 8,000.00

Limit #2: Shaft height > 112 .

Price #3 [euro]: 12,000.00

Limit #3: Extended Tamb = $-40^{\circ}\text{C} + 70^{\circ}\text{C}$

Included tests: all the ones required, ask for quotation including detailed list

Ex d and Ext flameproof enclosure, IP65 or 66 or 67, transparent windows (IEC 60079-0:2017)

(id 129) Test sequence for standard Exd enclosure (includes IEC 60079-0:2017)

Price #1 [euro]: 5,200.00

Limit #1: $V < 40$ dm³

Price #2 [euro]: 7,000.00

Limit #2: $40 < V < 200$ [dm³] or $L > 1000$ mm

Price #3 [euro]: 12,000.00

Limit #3: $V \geq 200$ [dm³] or $L > 1500$ mm

Included tests: all the ones required, ask for quotation including detailed list

Ex d and Ext rotating machine, IP65 or 66 or 67, (IEC 60079-0:2017)

(id 130) Test sequence for standard Exd rotating machine, for Groups I and II and standard IP.

Price #1 [euro]: 5,200.00

Limit #1: Shaft height < 112

Included tests: all the ones required, ask for quotation including detailed list

Ex d enclosure Battery mounting system

(id 82) Additional tests for qualification of battery mounting system for inside Ex d enclosure

Price #1 [euro]: 2,500.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex de cable glands family with different sizes - not integral, threaded and not threaded (Group I only)

(id 88) Qualification of cable glands. For sample preparation before tensile and mechanical strength tests and for the degree of protection IP, see the relevant clauses of Annex A (A.3) of IEC 60079-0 and Annex C (C.3) of 60079-1.

Price #1 [euro]: 2,200.00

Limit #1: Temperature $-40^{\circ}\text{C} + 80^{\circ}\text{C}$

Price #2 [euro]: 2,800.00

Limit #2: Temperature $-60^{\circ}\text{C} + 180^{\circ}\text{C}$

Included tests: all the ones required, ask for quotation including detailed list

Ex e and Ex tb low voltage rotating electrical machines (Gas and dust)

(id 76) Test sequence for standard low voltage rotating electrical machine (60079-7+Annex A). Valid for groups I and II and standard IP.

Price #1 [euro]: 3,800.00

Limit #1: < 2 liters

Price #2 [euro]: 6,000.00

Limit #2: > 2 liters

Included tests: all the ones required, ask for quotation including detailed list

Ex e connection and junction boxes (metallic or non metallic for gas and dust)

(id 73) ---

Price #1 [euro]: 4,500.00

Limit #1: standard equipments

Price #2 [euro]: 6,000.00

Limit #2: big enclosures or temperature more than $-40^{\circ}\text{C} + 100^{\circ}\text{C}$

Price #3 [euro]: 8,500.00

Limit #3: special equipments

Included tests: all the ones required, ask for quotation including detailed list



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Ex e connection and junction boxes (metallic or non metallic for gas and dust, IEC 60079-0:2017)

(id 131) ---

Price #1 [euro]: 4,500.00
Price #2 [euro]: 6,000.00
Price #3 [euro]: 8,500.00

Limit #1: standard equipment
Limit #2: big enclosures or temperature more than -40°C +100°C
Limit #3: special equipments

Included tests: all the ones required, ask for quotation including detailed list

Ex e qualification of battery pack >25Ah

(id 69) ---

Price #1 [euro]: 2,400.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex e resistance heating device intended for immersion

(id 75) Ex e resistance heating device or unit intended for immersion

Price #1 [euro]: 4,500.00
Price #2 [euro]: 6,500.00
Price #3 [euro]: 8,000.00

Limit #1: Service temperature up to 6 points
Limit #2: Service temperature from 7 to 30 points
Limit #3: Service temperature from 31 to 60 points

Included tests: all the ones required, ask for quotation including detailed list

Ex eb/ec lead-acid battery elements qualification

(id 83) Qualification of battery elements only, for certification as 'U' component

Price #1 [euro]: 4,000.00
Price #2 [euro]: 5,500.00

Limit #1: Capacity <=100Ah
Limit #2: Capacity 101-150Ah

Included tests: all the ones required, ask for quotation including detailed list

Ex h non-electrical equipment for explosive atmospheres

(id 121) ---

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex ia Ex ib Ex ic equipment with metallic enclosure (with IP/Annex F)

(id 59) ---

Price #1 [euro]: 4,500.00

Limit #1: not relevant

Included tests: all the ones required, ask for quotation including detailed list

Ex ia Ex ib Ex ic equipment with plastic enclosure (with IP/Annex F)

(id 60) ---

Price #1 [euro]: 7,200.00

Limit #1: not relevant

Included tests: all the ones required, ask for quotation including detailed list

Ex ia Ex ib equipment (without IP/Annex F/STA)

(id 93) <p>This package includes all the tests usually required for the ATEX qualification of electronic equipment, qualified as "intrinsically safe" under the standard IEC/EN60079-0 + EN60079-11.
It doesn't include thermal endurance and IP, because it's intended for real intrinsic safe, not asking for the application of Annex F of the -11 standard.
The ignition and the surface resistance tests are required only in case of plastic enclosures.</p><p></p>

Price #1 [euro]: 2,200.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex ia/Ex ib batteries qualification under IEC 60079-11:2023

(id 72) Test sequence for primary/secondary batteries to be used inside intrinsic safe apparatus

Price #1 [euro]: 1,400.00
Price #2 [euro]: 1,700.00
Price #3 [euro]: 2,000.00

Limit #1: 4 Ah
Limit #2: 25 Ah
Limit #3: > 25 Ah

Included tests: all the ones required, ask for quotation including detailed list



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Ex LPG filling systems

(id 102) <p>LPG dispensing nozzles for automotive use: all the tests required by the specific harmonized technical standard for the assessment of conformity to the ATEX Directive</p>

Price #1 [euro]: 8,500.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex nA enclosure (Group II only)

(id 100) Test sequence for

Ex nA enclosure (plastic or metallic)

Price #1 [euro]: 4,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex nA lamps

(id 109) ---

Price #1 [euro]: 4,300.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex nR Ex t enclosure

(id 74) Test sequence for standard Ex nR enclosure

Price #1 [euro]: 4,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex o - Equipment protection by liquid immersion (metallic enclosure)

(id 107) Levels of protection 'ob' and 'oc' intended for use in explosive gas atmosphere

Price #1 [euro]: 3,200.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex o - Equipment protection by liquid immersion (plastic enclosure)

(id 116) Levels of protection 'ob' and 'oc' intended for use in explosive gas atmosphere

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex q equipment

(id 115) ---

Price #1 [euro]: 5,000.00

Limit #1: ---

Price #2 [euro]: 8,000.00

Limit #2: not relevant

Price #3 [euro]: 14,000.00

Limit #3: not relevant

Included tests: all the ones required, ask for quotation including detailed list

Ex t (dust) qualification (EN 60079-0:2012)

(id 80) Test sequence for standard Ex t qualification (Group III only)

Price #1 [euro]: 5,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Ex t (dust) qualification (IEC 60079-0:2017+IEC 60079-31:2013)

(id 136) Test sequence for standard Ex t qualification (Group III)

Price #1 [euro]: 5,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list



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Extension to different gas of detectors for flammable gases according to IEC 60079-29-1

(id 151) ---

Price #1 [euro]: 1,800.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Fire test for quarter-turn valves and valves equipped with non metallic seats

(id 112) ---

Price #1 [euro]: 2,800.00

Limit #1: Up to 3"

Price #2 [euro]: 4,500.00

Limit #2: from 4" to 10"

Price #3 [euro]: 7,500.00

Limit #3: from 12" to 20"

Included tests: all the ones required, ask for quotation including detailed list

In line detonation flame arresters tested for stable detonations without restriction, classified as Type

(

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

LV 124 VW 80000:2013-06 for SCR pipes Parallel Tests, Sequence A3

(id 126) Electric and electronic components in motor vehicles up to 3.5 t

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

LV 124 VW 80000:2013-06 for SCR pipes Test sequence A2

(id 125) Electric and electronic components in motor vehicles up to 3.5 t

Price #1 [euro]: 82,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Non-static Ex p enclosure

(id 70) ---

Price #1 [euro]: 3,400.00

Limit #1: < 500 [dm3]

Price #2 [euro]: 6,400.00

Limit #2: 500 < 3000 [dm3]

Price #3 [euro]: 8,000.00

Limit #3: > 3000 [dm3]

Included tests: all the ones required, ask for quotation including detailed list

Percentage power loss due to desert storm

(id 110) ---

Price #1 [euro]: 4,000.00

Limit #1: Severity 2h

Included tests: all the ones required, ask for quotation including detailed list

Performance requirements of detectors for flammable gases according to IEC 60079-29-1

(

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Prequalification of filtering material for face masks

(id 141) <h4>GENERAL</h4>

<p>This sequence of tests is intended to verify if a material is suitable for the manufacturing of face masks.
It's intended to get quick info at low cost, in order to help manufacturers in selection of proper materials for the prototyping of the face masks, focusing the filtering efficiency and the breathability only.
The whole face mask qualification is to be totally repeated on the final product, including some additional tests.</p>

<h4>TESTS</h4>

<p>1) filtration efficiency, performed using the general method suggested by the European Commission for the COVID emergency; the final result is the filtration percentage of water aerosol, using NaCl as tracker;
2) breathability, intended as the hydraulic pressure drop during standard breathing, measured as required by the usual medical standard;</p>

<h4>SAMPLES</h4>

<p>Absolute minimum is n. 4 pieces 150x150mm. Larger clothes are recommended.
The material need not to be sterilized.
It shall be individually packed, clearing marking the specific material type code on the package.
Note that the laboratory doesn't have any other option to distinguish the materials: avoid confusion!</p>

Price #1 [euro]: 1,200.00

Limit #1: Medical type mask

Price #2 [euro]: 1,500.00

Limit #2: Pre-fogged mask

Included tests: all the ones required, ask for quotation including detailed list



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PV - AMMONIA resistance (IEC 62716:2013 + IEC 61215-2:2016 + IEC 61730-2:2004) - crystalline PV

(id 90) Test sequence useful to determine the resistance of crystalline or thin film PV modules to ammonia (NH₃). The tests are combined to provide means to evaluate possible faults caused in PV modules when operating under wet atmospheres having high concentration of dissolved ammonia (NH₃).

Price #1 [euro]: 5,000.00

Limit #1: Size: 2000x1000 max

Weight: 100kg max; Power: 600W max; Voltage: 500V; Current: 30A

Price #2 [euro]: 13,000.00

Limit #2: Particular samples (example CIGS) and/or special conditions like: weight, size, voltage

Included tests: all the ones required, ask for quotation including detailed list

PV - DESERT STORM resistance (IEC60068-2-68:1996 + IEC 61215-2:2016 + IEC 61730-2:2004)

(id 89) ---

Price #1 [euro]: 5,500.00

Limit #1: Severity 2 hours

Max: 2000x1000mm-100kg-600W-500V-30A- <25%rh-20m/s wind - 5g/m³ quartz sand

Price #2 [euro]: 7,000.00

Limit #2: Severity 4 hours

Size: 2000x1200x600 max

Weight: 100kg max

Power: 600W max

Voltage: 500V

Current: 30A

Temperature 40°C

Relative humidity <25%

Wind speed 20~25m/s

Sand Concentration 5 g / m³

Sand type: quartz

Price #3 [euro]: 15,000.00

Limit #3: Particular samples (example CIGS) and/or special conditions like: weight, size, voltage

Relative humidity <25% - Wind speed 20~25m/s - Sand Concentration 5 g/m³ - Sand type: quartz

Included tests: all the ones required, ask for quotation including detailed list

PV - Fast track confirmation (IEC 61215:2016 + IEC 61730-2:2004)

(id 97) Test procedure applied to PV modules for the confirmation of the materials

Price #1 [euro]: 12,000.00

Limit #1: Size: 2800x2400x1400 max

Weight: 100kg max

Power: 600W max

Voltage: 500V

Current: 30A

Included tests: all the ones required, ask for quotation including detailed list

PV - Fire Safe test (IEC61730-2:2004)

(id 96) The two tests required for fire safe

Price #1 [euro]: 3,200.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

PV - Fire Safe tests according to IEC 61703-2:2016

(id 106) The two tests required for fire safe

Price #1 [euro]: 3,200.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

PV - SALT MIST resistance (EN 61701:2012 + IEC 61215-2:2016 + IEC 61730-2:2004) - Severity 1

(id 91) <p>Test sequence useful to determine the resistance of crystalline or thin-film PV modules to corrosion from salt mist containing Cl⁻ (NaCl, MgCl₂, etc.).
The tests are combined to provide means to evaluate possible faults caused in PV modules when operating under wet atmospheres having high concentration of dissolved salt (NaCl).
The severity grade is 1.</p>

Price #1 [euro]: 6,000.00

Limit #1: Severity 1

Size: 2000x1000 mm max

Weight: 100kg max

Power: 600W max

Voltage: 500V

Current: 30A

Included tests: all the ones required, ask for quotation including detailed list



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PV - SALT MIST resistance (EN 61701:2012+ IEC 61215-2:2016 + IEC 61730-2:2004) - Severity 3 or 4

(id 134) Test sequence useful to determine the resistance of crystalline or thin film PV modules to corrosion from salt mist. The tests are combined to provide means to evaluate possible faults caused in PV modules when operating under wet atmospheres having high concentration of dissolved salt (NaCl). Severity 3 or 4.

Price #1 [euro]: 4,000.00

Limit #1: Severity 3
Size: 2000x1000 mm max
Weight: 100kg max
Power: 600W max
Voltage: 500V
Current: 30A

Price #2 [euro]: 5,000.00

Limit #2: Severity 4
Size: 2000x1000 mm max
Weight: 100kg max
Power: 600W max
Voltage: 500V
Current: 30A

Included tests: all the ones required, ask for quotation including detailed list

PV - SALT MIST resistance (EN 61701:2012+ IEC 61215-2:2016 + IEC 61730-2:2004) - Severity 5 or 6

(id 135) Test sequence useful to determine the resistance of crystalline or thin film PV modules to corrosion from salt mist. The tests are combined to provide means to evaluate possible faults caused in PV modules when operating under wet atmospheres having high concentration of dissolved salt (NaCl). Severity 5 or 6.

Price #1 [euro]: 6,000.00

Limit #1: Severity 5
Size: 2000x1000 mm max
Weight: 100kg max
Power: 600W max
Voltage: 500V
Current: 30A

Price #2 [euro]: 8,000.00

Limit #2: Severity 6
Size: 2000x1000 mm max
Weight: 100kg max
Power: 600W max
Voltage: 500V
Current: 30A

Included tests: all the ones required, ask for quotation including detailed list

PV crystalline modules AMMONIA resistance test (IEC 62716:2013)

(id 18) Test sequence useful to determine the resistance of crystalline PV modules to ammonia (NH3). The tests are combined to provide means to evaluate possible faults caused in crystalline PV modules when operating under wet atmospheres having high concentration of dissolved ammonia (NH3).

Price #1 [euro]: 5,000.00

Limit #1: Size: 2000x1200x600 max
Weight: 100kg max; Power: 600W max; Voltage: 500V; Current: 30A

Included tests: all the ones required, ask for quotation including detailed list

PV modules complete qualification (IEC 61215-2:2016 + IEC 61730-2:2004)

(id 85) Standard IEC 61215 "Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval" plus Standard IEC 61730-2 "Photovoltaic (PV) modules safety qualification-Part 2: Requirements for testing"

Price #1 [euro]: 22,000.00

Limit #1: Size: 2800x2400x1400 max
Weight: 100kg max
Power: 600W max
Voltage: 500V
Current: 30A

Included tests: all the ones required, ask for quotation including detailed list

PV PID (Potential Induced Degradation) Reliability Test

(id 127) Evaluation of potential induced degradation (PID) of PV modules with a voltage stress test in damp heat chamber (test method A).

Price #1 [euro]: 5,000.00

Limit #1: Test with both polarity
Max: 2000x1000mm - 100kg - 600W - 500V - 30A

Price #2 [euro]: 3,500.00

Limit #2: Test su una polarità
Size: 2800x2400x1400 max
Weight: 100kg max
Power: 600W max
Voltage: 500V
Current: 30A

Included tests: all the ones required, ask for quotation including detailed list



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PV Simplified retesting for frameless qualification (IEC 61215-2:2016 + IEC 61730-2)

(id 86) Point k) of DSH 0647A (Retest Guidelines for IEC 61215 and 61646) and DSH 770 (Retest Guidelines for IEC 61730 -1 -2):

Qualification of a frameless module after the design has received certification as a framed module when the frame is not part of the package seal and the superstrate is tempered glass.

Price #1 [euro]: 2,000.00

Limit #1: Size: 2800x2400x1400 max
Weight: 100kg max
Power: 600W max
Voltage: 500V
Current: 30A

Included tests: all the ones required, ask for quotation including detailed list

PV thin-film modules AMMONIA resistance test (IEC 62716:2013)

(id 19) Test sequence useful to determine the resistance of thin-film PV modules to ammonia (NH3). The tests are combined to provide means to evaluate possible faults caused in thin-film PV modules when operating under wet atmospheres having high concentration of dissolved ammonia (NH3). Severity 1. Severity (3) to (6) under request.

The duration of the test depends on the final light soaking.

Price #1 [euro]: 13,000.00

Limit #1: Size: 2000x1200x600 max
Weight: 100kg max
Power: 600W max
Voltage: 500V
Current: 30A

Included tests: all the ones required, ask for quotation including detailed list

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Price #1 [euro]: 7,000.00

Limit #1: All types

Included tests: all the ones required, ask for quotation including detailed list

Qualification of ball valves for gas installations for buildings, according to EN 331:2015

(id 162) <p>This test sequence is intended to qualify performances and reliability of manually operated ball valves and closed bottom taper plug valves for gas installations for buildings. The sequence is suitable for the small size (up to 1"), the medium size (from 1" to 3") and the big size (beyond 3"). The reference standard is EN 331:2015.</p>

<p>N.B. In the sequence the test "Resistance to high temperatures", Annex A, is excluded.</p>

Price #1 [euro]: 3,800.00

Limit #1: Size up to 1"

Price #2 [euro]: 5,000.00

Limit #2: Size from 1" to 3"

Price #3 [euro]: 6,600.00

Limit #3: Size beyond 3"

Included tests: all the ones required, ask for quotation including detailed list

Qualification of end of line flame arrester through deflagration, according to ISO 16852:2016

(id 159) ---

Price #1 [euro]: 4,000.00

Limit #1: up to 2 inches, standard ambient temperature (indoor location)

Price #2 [euro]: 5,500.00

Limit #2: from 3 to 9 inches, standard ambient temperature (indoor location)

Price #3 [euro]: 7,500.00

Limit #3: from 10 inches, standard ambient temperature (outdoor location, up to 500kg)

Included tests: all the ones required, ask for quotation including detailed list

Qualification of Ex eb electrical motors

(id 156) <p>This tests sequence has the aim to check electrical motors for Group I M2. The sequence is composed by general tests (EN 60079-0) and specific tests (EN 60079-7 and 60034-5).</p>

Price #1 [euro]: 5,000.00

Limit #1: ---

Price #2 [euro]: 8,500.00

Limit #2: not relevant

Price #3 [euro]: 12,500.00

Limit #3: not relevant

Included tests: all the ones required, ask for quotation including detailed list

Qualification of Ex ec electrical motors

(id 149) <p>This tests sequence has the aim to check electrical motors placed in zone 2. The sequence is composed by general tests (EN 60079-0) and specific tests (EN 60079-7 and 60034-5).</p>

Price #1 [euro]: 5,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list



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Qualification of Ex ia / Ex ib optical isolators (photocouplers), under IEC/EN 60079-11

(id 154) <p>This test sequence is intended to qualify the optical isolators (photocouplers) for use as safety device inside the intrinsic safety barriers, under the standard IEC/EN 60079-11.
It includes all the tests to be performed on all the samples.</p>

Price #1 [euro]: 3,500.00

Limit #1: All the types

Included tests: all the ones required, ask for quotation including detailed list

Qualification of Ex separate gas detection control unit, under EN 60079-29-1

(id 155) <p>This test sequence is intended to qualify performances and reliability of an equipment that provides display indication, alarm functions, output contacts or alarm signal outputs or any combination when operated with gas detection transmitter(s).
This equipment is not intended to be used in an explosive atmosphere (other standards shall be considered for this application).
Exception made for fixed installations for which it is possible to skip the vibration test (5.4.12), the sample supplied shall be subjected to each test included in this sequence, which is prescribed by EN 60079-29-1. The test sequence will be applied only on n.1 sample.
As our laboratory does not carry out tests for 5.4.21 Electromagnetic compatibility and 5.4.23 Software validation, the tests sequence will be completed by the customer in order to achieve full compliance to EN 50271-2018 and to EN 60079-29-1. These tests shall be excluded from our offer.</p>

Price #1 [euro]: 10,500.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Qualification of flame arrester through detonation, according to ISO 16852:2016

(id 161) ---

Price #1 [euro]: 4,500.00

Limit #1: up to 2 inches, standard ambient temperature (indoor location)

Price #2 [euro]: 6,800.00

Limit #2: from 3 to 9 inches, standard ambient temperature (indoor location)

Price #3 [euro]: 8,000.00

Limit #3: from 10 inches, standard ambient temperature (outdoor location, up to 500kg)

Included tests: all the ones required, ask for quotation including detailed list

Qualification of hydrogen nozzles under SAE J2600

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Price #1 [euro]: 52,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Qualification of in line flame arrester through deflagration, according to ISO 16852:2016

(id 160) ---

Price #1 [euro]: 4,000.00

Limit #1: up to 2 inches, standard ambient temperature (indoor location)

Price #2 [euro]: 5,500.00

Limit #2: from 3 to 9 inches, standard ambient temperature (indoor location)

Price #3 [euro]: 7,500.00

Limit #3: from 10 inches, standard ambient temperature (outdoor location, up to 500kg)

Included tests: all the ones required, ask for quotation including detailed list

Qualification of insulating materials used to protect hot surfaces

(id 98) This internal test sequence is intended to qualify the protection systems of hot surfaces realized using insulating materials, instead of cooling systems.

Price #1 [euro]: 12,500.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Qualification of optical isolators

(id 128) Qualification of optical isolators under IEC 60079-11

Price #1 [euro]: 4,800.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Qualification of Rectangular connectors according with EN 175301-803:2006

(id 133) Flat contacts, 0, 8 mm thickness, locking screw not detachable

Unit price #1: ask to office

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list



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Qualification of valves under ANSI Z21.15:2021

(id 158) <p>This test sequence is intended to qualify performances and reliability of valves with a particular focus on leakages. The sequence is suitable both for the small size (up to 1") and the big size (from 1" to 3"). The reference standard is ANSI Z21.15:2021.</p>

Price #1 [euro]: 3,978.00

Limit #1: Size up to 1"

Price #2 [euro]: 5,508.00

Limit #2: Size from 1" to 3"

Included tests: all the ones required, ask for quotation including detailed list

RTA compliance for LED street lightning fittings

(id 108) ---

Price #1 [euro]: 1,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Safety requirements for engines for use in flammable gas atmospheres (Group II)

(id 78) Test on engine simulator with 1 flame arrester, fully supplied by the manufacturer

Price #1 [euro]: 7,000.00

Limit #1: No turbo, <18 liters

Price #2 [euro]: 10,000.00

Limit #2: Turbo, <18 liters

Price #3 [euro]: 15,000.00

Limit #3: Turbo, >18 liters

Included tests: all the ones required, ask for quotation including detailed list

SHED permeation test (plastic tanks, 20 weeks)

(id 148) <h3>ABSTRACT</h3>

<p>This test sequence is intended to measure the evaporative emissions from Plastic Fuel Tank Assemblies.
The scope is to verify compliance to the regulatory requirements in the markets where the vehicles are sold, as a base for the approval process.</p>

<p>The process is based on STELLANTIS test protocols and regulatory requirements, adapted to ALBARUBENS test facilities; it's fully compliant to ISO/IEC 17025 international requirements for laboratory testing.
It's focused on plastic tanks and it may be used for all the markets, changing some operative parameters.</p>

<p>Technical details about the tests may be found in the mentioned protocols; written test procedures are available for authority only.</p>

<h3>DESCRIPTION</h3>

<p>The main test is the measurement of the evaporative emissions.
It's the amount of fuel fugitive from the tank, due to normal evaporation and to permeation of the fuel through the tank wall.</p>

<p>This measurement is performed placing the tank inside an hermetic vessel, subjected to 24h diurnal thermal cycle.
The concentration of hydrocarbon inside the vessel, combined to the vessel volume, allows to calculate the mass of fuel lost by the tank along the 24h, as required by the regulation.</p>

<p>It's well known that the permeation increases during the life of the tank, because of the penetration of fuel inside the plastic layer.
It takes a very long soaking period, with fuel inside the tank, before the measurement, to let the fuel to saturate the plastic.</p>

<p>This is the test sequence:</p>

initial measurment on new tank: it's intended the verify the absence of macro problems, like cracks in the tank;

first (short) soaking period;

intermediate measurement: it's intended to be early advised about too high emissions;

second (long) soaking period (obtaining the final one by addition to the first period);

final measurement: the official one, to be compared to the regulatory requirements;

<p>The final measurement is prolonged to two days (48 hours); of course, the measured emissions will be divided by 2 in order to normalize the result to the official requirements.
This approach allows to minimize the measurement uncertainty, giving additional information about the dynamic of the process.</p>

<p>The fuel concentration is measured with combination of Gas Chromatograph (GC) and Flame Ionization Detector (FID).
The GC allows to characterize the emission in composition, the FID measures the concentration; note that any measurement is the integration of the chromatogram.</p>

Price #1 [euro]: 12,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Static detonation flame arrester without pre-volume, BC=c (no burn time), tested according to ISO 1

(id 147) ---

Price #1 [euro]: 5,000.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list



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Static Ex p enclosure

(id 81) Test sequence for static Ex p enclosure

Price #1 [euro]: 1,800.00

Limit #1: < 500 [dm3]

Included tests: all the ones required, ask for quotation including detailed list

Test sequence to qualify refrigerating components under IEC 60335-2-24, according to IEC 60079-1

(id 152) <p>This test sequence is designed to qualify refrigerating appliances that uses R290. Being this an inflammable gas, the reference standard is IEC 60079-15:2017 under ATEX scheme. The test sequence follows the non-incendive method from chapter 7. All the components under test, in their normal usage, are placed inside the machine, thus outdoor exposure tests are to be considered excluded.</p>

<p>NOTE: Thermal endurance mentioned in table 1 of IEC 60079-15 is considered applicable. This pre-conditioning test refers to chapter 7.2 of IEC 60079-0 that, in turn, refers to chapters 26.8 and 26.9 of the same standard. This is considered to be applicable because electrical contacts can oxidize due to heat and humidity and this can cause ignition.</p>

Price #1 [euro]: 3,200.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

Type testing of valves for fugitive emissions (isolating valves, Class BH, CO1, 205 cycles)

(id 122) <p>This sequence of tests has the aim to verifying the fugitive emission class of valves according to ISO 15848-1:2015. It is made to qualify tested valves in endurance class "CO1". The minimum required number of mechanical cycles for shut-off valves must be 205 cycles (full stroke) with two thermal cycles (for a total of 50 cycles at RT, 50 cycles at test temperature, 50 cycles at RT, 50 cycles at test temperature and 5 cycles at RT).</p>

Price #1 [euro]: 3,200.00

Limit #1: Up to 3"

Price #2 [euro]: 5,000.00

Limit #2: from 4" to 10"

Price #3 [euro]: 8,500.00

Limit #3: from 12" to 20"

Included tests: all the ones required, ask for quotation including detailed list

Verifications of fuel tank volumes and capacity under paragraph 7.12 of PF.90258 for metallic tanks

(id 157) ---

Price #1 [euro]: 1,200.00

Limit #1: ---

Included tests: all the ones required, ask for quotation including detailed list

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