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| **Laboratory** | **Advance Fire Tec and Research Lab Private Limited, B-3 Mangolpuri, Industrial Area, Phase – II, New Delhi** | | |
| **Accreditation Standard** | **ISO/IEC 17025: 2005** | | |
| **Discipline** | **Mechanical Testing** | **Issue Date** | **22.04.2014** |
| **Certificate Number** | **T-2929** | **Valid Until** | **27.03.2016** |
| **Last Amended on** | **11.08.2014** | **Page** | **1 of 41** |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT LABORATORY** | | | |
| | **I. PERFORMANCE TEST** | | | |
| **1.** | **Dry Chemical Powders for Fighting B & C Class fires** | | IS 4308 : 2003 | |
| | | Free Flowing Characteristics | CL.- 4.10 | 0 to100 g/s |
| | | Foam Compatibility | CL. - 4.11 | Qualitative |
| | | Fire Knocking down for Class B fires | CL. - 4.12 | Qualitative |
| **2.** | **Dry Chemical Powders for fighting A,B,C Class fires** | | IS 14609 : 1999 | |
| | | Free Flowing Characteristics | CL. - 4.10 | 0 to100 g/s |
| | | Foam Compatibility | CL. - 4.11 | Qualitative |
| | | Fire Knocking down For Class A fires | CL. - 4.12.1 | Qualitative |
| | | Fire Knocking down For Class B fires | CL. - 4.12.2 | Qualitative |
| **3.** | **Dry Powder for Fighting Fires in Burning metals** | | IS 4861 : 1984 | |
| | | Free flowing Characteristics | CL. - 2.5 | Qualitative |
| | | Fire Extinguishment Test | CL. - 2.7 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **4.** | **Dry Chemical Fire Extinguisher** | | UL 299 : 2009 | |
| | | General Pressure build up test | CL. - 23.1 | Qualitative |
| | | Locking device | CL. - 25 | Upto 500 N |
| | **Capacity(Water capacity) ;-** | **Handle & mounting** | CL. - 26 | Qualitative |
| | 4.5, 9.0, 14.0, 18.0, 36.0, 64.0, 125.0 l | - Static load test | CL. - 26.1 &26.2 | Qualitative |
| | | - Force required to open the bracket | CL. - 26.3 | Upto 500 N |
| | | Operation Test | CL. - 27 | Qualitative |
| | | Discharge Duration Test | CL. - 28 | Upto 3 min . |
| | | Rate of Flow Test | CL. - 29 | 0 to100 % |
| | | Discharge Range | CL. - 30 | Upto 5 mt |
| | | Intermittent Discharge | CL. - 31 | 0 to 100 % |
| | | Operating temperature limits test | CL. - 32 | 0 to 100 % |
| | | Temperature cycling test | CL. - 33 | 0 to 100 % |
| | | 30 Day elevated temperature exposure test | CL. - 34 | 0 to 100 % |
| | | High temperature exposure test | CL. - 35 | Qualitative |
| | | Abnormal operation test | CL. - 36 | 0 to 100 % |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Dry Chemical Fire Extinguisher Capacity (Water capacity) ;- 4.5, 9.0, 14.0, 18.0, 36.0, 64.0, 125.0 l** | Pressure – retention test | CL. - 37 | Qualitative |
| | | Packed Chamber test | CL. - 38 | 0 to100 % |
| | | Packed Hose test | CL. - 39 | Upto 300 s |
| | | Hydrostatic pressure test | CL. - 40 | Qualitative |
| | | Discharge valve (HPT) | CL. - 40.2 | Qualitative |
| | | Hose Assemblies (HPT) | CL. - 40.3 | Qualitative |
| | | Gas cartridges (HPT) | CL. - 40.4 | Qualitative |
| | | Vibration test | CL. – 41 | Qualitative |
| | | Mounting of test sample | CL. - 41.2 to 41.5 | Qualitative |
| **5.** | **Portable Fire Extinguishers – Performance & construction Capacity :-a)Water base : 2,6,9 l b)Foam : 2,4,6,9 l c) Dry Powder : 1,2,4,6,9 l d) $CO_2$ : 2,3,4.5 kg e) Clean Agent 2,4,6 kg** | | IS 15683 : 2006 | |
| | | Service Pressure (Ps) | CL. - 3.5 & 9.2.1.1 | Upto 100 bar |
| | | Maximum service pressure (Pms) | CL. - 3.6 | Upto 150 bar |
| | | Fill density | CL. - 5.3.1 | Upto 2 kg/l |
| | | Filling Tolerance | CL. - 5.3.2 | Upto (±) 25 % |
| | | Test pressure | CL. - 6.1 | Upto 100 bar |
| | | Minimum Burst pressure | CL. - 6.2 | Upto 260 bar |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Portable Fire Extinguishers – Performance & construction** | Minimum effective discharge time for Class A rated Extinguishers | CL. - 7.2.1 | Upto 120 s |
| | **Capacity :-** **a)Water base : 2,6,9 l** **b)Foam : 2,4,6,9 l** **c) Dry Powder : 1,2,4,6,9 l** **d) $CO_2$ : 2,3,4.5 kg** **e) Clean Agent 2,4,6 kg** | Minimum effective discharge time for Class B rated Extinguishers | CL. - 7.2.2 | Upto 120 s |
| | | Bulk Range Throw | CL. - 7.2.3 | Upto 15 m |
| | | Resistance to temperature changes | CL. - 7.3 | (+) 80°C to (-) 30°C & retention Upto100% |
| | | Retention of charge following partial discharge | CL. - 7.4.2 | Upto 100 % |
| | | leakage Test | CL. - 7.4.3 | Qualitative |
| | | Resistance to Impact (Mechanical resistance) | CL. - 7.5.1 | Qualitative |
| | | Resistance to Vibration's | CL. - 7.5.2 | Qualitative |
| | | External Corrosion Test | CL. - 7.6.1 | Qualitative |
| | | Internal Corrosion Test | CL. - 7.6.2 | Qualitative |
| | | Tapping Test | CL. - 7.7 | 0 to 100 % |
| | | Intermittent Discharge test | CL. - 7.8 | Upto 100 % |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Portable Fire Extinguishers – Performance & construction Capacity :-**<br>**a)Water base : 2,6,9 l**<br>**b)Foam : 2,4,6,9 l**<br>**c) Dry Powder : 1,2,4,6,9 l**<br>**d) $CO_2$ : 2,3,4.5 kg**<br>**e) Clean Agent 2,4,6 kg** | Construction Requirements of High-Pressure Extinguishers | CL - 9.1 | Upto 200 bar |
| | | Service Pressure | CL - 9.2.1.1 | Upto 100 bar |
| | | Construction (service pressure test) | CL - 9.2.1.2 | Upto 200 bar |
| | | Requirement of wielding | CL - 9.2.1.3 | Qualitative |
| | | Construction (test of stress & corrosion) | CL - 9.2.1.4 | Qualitative |
| | | Thread of Plastic components (No. of thread per cm) | CL - 9.2.1.6 | Upto 10 No /cm |
| | | Construction (test of pressure retaining part of the body) | CL - 9.2.1.7 | Upto 25 mm |
| | | Burst test | CL - 9.2.2.1 to 9.2.2.6 | Upto 260 bar |
| | | Crushing Test | CL - 9.2.3 | Upto 260 bar |
| | | Pressure cycling test | CL - 9.2.5 | Upto 100 bar |
| | | Measured thickness of the cylinder | CL - 9.2.6.3 | Upto 25 mm |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Portable Fire Extinguishers – Performance & construction Capacity :-** **a)Water base : 2,6,9 l** **b)Foam : 2,4,6,9 l** **c) Dry Powder : 1,2,4,6,9 l** **d) $CO_2$ : 2,3,4.5 kg** **e) Clean Agent 2,4,6 kg** | Carrying handle test | CL - 9.3.1 | Qualitative |
| | | Requirement of Handle length | CL - 9.3.2 | Upto 0.5 m |
| | | Requirement of handle clearance | CL - 9.3.3 | Upto 0.5 m |
| | | Mounting test | CL-9.4.1 | Qualitative |
| | | Requirement of mounting hook | CL-9.4.2 | Qualitative |
| | | Requirement of mounting bracket | CL - 9.4.3 & 9.4.4 | Qualitative |
| | | Requirement of strap | CL - 9.4.5 | Qualitative |
| | | Requirement of hanger loop | CL - 9.4.6 | Qualitative |
| | | Claps, valves & Closure | CL - 9.5.1 | Qualitative |
| | | Requirement of threaded connections on cylinder (No. of full thread) | CL - 9.5.2 | Upto 30 nos. |
| | | Requirement of filling opening | CL - 9.5.3 | Upto 100 mm |
| | | Requirement of collar | CL - 9.5.4 | Qualitative |
| | | Requirement of burst test of cap,valve,& closure | CL - 9.5.5 | Upto 250 bar |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Portable Fire Extinguishers – Performance & construction Capacity :-**<br>**a)Water base : 2,6,9 l**<br>**b)Foam : 2,4,6,9 l**<br>**c) Dry Powder : 1,2,4,6,9 l**<br>**d) $CO_2$ : 2,3,4.5 kg**<br>**e) Clean Agent 2,4,6 kg** | Requirement of edges& surfaces | CL - 9.5.6 | Qualitative |
| | | Requirement of hose assemblies | CL - 9.9.1 | Qualitative |
| | | Requirement of hose & coupling system | CL - 9.9.2 | Qualitative |
| | | Requirement of burst pressure of hose assemblies | CL - 9.9.3 | Upto 260 bar |
| | | Requirement of withstanding hydrostatic pressure of hose assemblies | CL - 9.9.4 | Upto 100 bar |
| | | Method of Operation | CL - 9.10 | Upto 500 N |
| | | Safety locking device | CL - 911&9.11.1 | Upto 500 N |
| | | Requirement of safety device material | CL - 9.11.2 | Qualitative |
| | | a. Requirement of safety-locking pin or other device | a.CL - 9.11.3, 9.11.4, 9.11.5 | a. Qualitative |
| | | b.Force required for breaking the tamper indicator | b. CL - 9.11.6 | b. Upto 500 N |
| | | Requirement of Dip-Tubes & Filters | CL - 9.13 | Upto 5 mm |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | | Special Requirement for $Co_2$ Extinguishers | CL - 9.14 | Qualitative |
| | | Colour test (Shade Test) | CL - 10.1 | Qualitative |
| **6** | **Fire fighting portable fire extinguishers-Performance and construction Capacity :-** | | ISO 7165 : 2009 | |
| | | Service Pressure (Ps) | CL - 3.20 & 9.2.1.1 | Upto 100 bar |
| | | Maximum service pressure (Pms) | CL - 3.14 | Upto 150 bar |
| | **a)Water base ; 2,3,6,9 l** | Fill density | CL - 5.3.1 | Upto 2 kg/l |
| | **b)Powder ; 1,2,3,4,6,9,12 kg** | Filling Tolerance | CL - 5.3.2 | Upto (±)25% |
| | **c) $CO_2$ ; 2,5 kg** | Test pressure | CL - 6.1 | Upto 100 bar |
| | **d)Clean agent : 1,2,4,6 kg** | Minimum Burst pressure | CL - 6.2 | Upto 260 bar |
| | | Minimum effective discharge time for Class A rated Extinguishers | CL - 7.2.1 | Upto 120 s |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Fire fighting portable fire extinguishers- Performance and construction Capacity :- a)Water base ; 2,3,6,9 l b)Powder ; 1,2,3,4,6,9,12 kg c) $CO_2$ ; 2,5 kg d)Clean agent : 1,2,4,6 kg** | Minimum effective discharge time for Class B rated Extinguishers | CL - 7.2.2 | Upto 120 s |
| | | Bulk Range Throw | CL - 7.2.3 | Upto 15 m |
| | | Resistance to temperature changes | CL - 7.3 | (+) 80°C to (-) 30°C & retention Upto 100 % |
| | | Retention of charge following partial discharge | CL - 7.4.2 | Upto 100 % |
| | | Long term leakage Test | CL - 7.4.3 | Upto 100 % |
| | | Resistance to Impact (Mechanical resistance) | CL - 7.5.1 | Qualitative |
| | | Resistance to Vibration's | CL - 7.5.2 | Qualitative |
| | | External Corrosion Test | CL - 7.6.1 | Qualitative |
| | | Internal Corrosion Test | CL - 7.6.2 | Upto 100 % |
| | | Tapping Test | CL - 7.7 | Upto 100 % |
| | | Intermittent Discharge test | CL - 7.8 | |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Fire fighting portable fire extinguishers- Performance and construction Capacity :- a)Water base ; 2,3,6,9 l b)Powder ; 1,2,3,4,6,9,12 kg c) $CO_2$ ; 2,5 kg d)Clean agent : 1,2,4,6 kg** | Construction (Requirements of High-Pressure Extinguishers) | CL - 9.1 | Qualitative |
| | | Service Pressure | CL - 9.2..1.1 | Upto 100 bar |
| | | Test of vertical stand | CL - 9.2.1.2 | Qualitative |
| | | Requirement of wielding | CL - 9.2.1.3 | Qualitative |
| | | Construction (design) | CL - 9.2.1.4 | Qualitative |
| | | Thread of Plastic components (No. of thread per cm) | CL - 9.2.1.6 | Upto 10 Nos/cm |
| | | Construction (pressure retention part) | CL - 9.2.1.7 | Qualitative |
| | | Burst test | CL - 9.2.2 | Upto 260 bar |
| | | Crushing Test | CL-9.2.3 | Upto 260 bar |
| | | Measured thickness of the cylinder | CL-9.2.5.3,9.2.6 &9.2.7 | Upto 25 mm |
| | | Carrying handle | CL-9.3.1 | Qualitative |
| | | Requirement of Handle length | CL-9.3.2 | Upto 0.5 m |
| | | Requirement of handle clearance | CL-9.3.3 | Upto 0.5 m |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Fire fighting portable fire extinguishers- Performance and construction Capacity :- a)Water base ; 2,3,6,9 l b)Powder ; 1,2,3,4,6,9,12 kg c) $CO_2$ ; 2,5 kg d)Clean agent : 1,2,4,6 kg** | Mounting | CL-9.4.1 | Qualitative |
| | | Requirement of mounting hook | CL-9.4.2 | Qualitative |
| | | Requirement of mounting bracket | CL-9.4.3&9.4.4 | Qualitative |
| | | Requirement of strap | CL-9.4.5 | Qualitative |
| | | Requirement of hanger loop | CL-9.4.6 | Qualitative |
| | | Claps, valves & Closure test | CL-9.5.1 | Upto 10 mm |
| | | Requirement of threaded connections on cylinder (No. of full thread) | CL-9.5.2 | Upto 30 Nos. |
| | | Requirement of filling opening | CL-9.5.3 | Upto 100 mm |
| | | Requirement of collar | CL-9.5.4 | Qualitative |
| | | Requirement of burst test of cap, valve & closure | CL-9.5.5 | Upto 260 bar |
| | | Requirement of edges & surfaces | CL-9.5.6 | Qualitative |
| | | Requirement of hose assemblies | CL-9.9 & 9.9.1 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | | Requirement of hose & coupling system | CL-9.9.2 | Qualitative |
| | | Requirement of burst pressure of hose assemblies | CL - 9.9.3 | Upto 260 bar |
| | | Requirement of withstanding hydrostatic pressure of hose assemblies | CL - 9.9.4 | Upto 100 bar |
| | | Method of Operation | CL - 9.10 | Upto 500 N |
| | | Safety locking device | CL - 9.11.1 | Upto 500 N |
| | | Requirement of safety device material | CL - 9.11.2 | Qualitative |
| | | Requirement of safety-locking pin or other device | CL - 9.11.3, 9.11.4, 9.11.5 | Qualitative |
| | | Force required for breaking the tamper indicator | CL - 9.11.6 | Upto 500 N |
| | | Requirement of Dip-Tubes &Filters | CL - 9.13 | Upto 5 mm |
| | | Special Requirement for $Co_2$ Extinguishers | CL - 9.14 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **7.** | **Wheeled fire Extinguishers – Performance & Construction** | | **IS 16018: 2012** | |
| | **Capacity :-** | Maximum service pressure (Pms) | CL-3.16 | Upto 260 bar |
| | **a)Water base ; 20,45,60, 125 l** | Service Pressure (Ps) | CL-3.19 | Upto 260 bar |
| | **b)Powder ; 25,50,75 kg** | Test Pressure | CL-3.20 | Upto 260 bar |
| | **c)Clean agent ; 10,20,30,50 kg** | Fill density | CL-5.3 | Upto 2 kg/l |
| | **d) CO2 ; 4.5,6.5,22.5,45 kg** | Filling Tolerance | CL-5.4 | Upto (±)25% |
| | | Effective discharge time | CL - 6.2.1.1, 6.2.1.2, 6.2.1.3 | Upto 240 s |
| | | Bulk Range Throw | CL-6.2.2 | Upto 15 m |
| | | Resistance to temperature changes | CL-6.3 | Ambient to 80 $^{o}$C & Ambient to (-) 30 $^{o}$C |
| | | Retention of charge | CL-6.4 | Upto 100 % |
| | | Intermittent Discharge test | CL-6.5 | Upto 100 % |
| | | External Corrosion Test | CL-6.6.1 | Qualitative |
| | | Internal Corrosion Test | CL-6.6.2 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Wheeled fire Extinguishers – Performance & Construction Capacity :- a)Water base ; 20,45,60, 125 l b)Powder ; 25,50,75 kg c)Clean agent ; 10,20,30,50 kg d) CO2 ; 4.5,6.5,22.5,45 kg** | Service Pressure | CL - 8.1.1 | Upto 100 bar |
| | | Requirement of wielding | CL - 8.1.3 | Qualitative |
| | | Part attached to the body of the cylinder(test of stress & corrosion) | CL - 8.1.4 | Qualitative |
| | | Thread of Plastic components (type of thread) | CL - 8.1.6 | Qualitative |
| | | High Pressure Extinguisher (Ps test) | CL - 8.2 | Upto 200 bar |
| | | Low Pressure extinguisher (Ps test) | CL- 8.3 | Upto 200 bar |
| | | Burst Test | CL - 8.3.1 | Upto 260 bar |
| | | Deformation Test | CL - 8.3.2 | Upto 260 bar |
| | | Pressure Cycling test | CL - 8.3.3 | Upto 260 bar |
| | | Minimum wall thickness | CL-8.6 | Upto 25 mm |
| | | Claps, valves& Closure test | CL - 8.7.1 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Wheeled fire Extinguishers – Performance & Construction** | Requirement of threaded connections on cylinder (No. of thread per cm) | CL - 8.7.2 | Upto 10 Nos./cm |
| | **Capacity :-** | Requirement of filling opening | CL - 8.7.3 | Upto 100 mm |
| | **a)Water base ; 20,45,60, 125 l** | Requirement of collar | CL - 8.7.4 | Qualitative |
| | **b)Powder ; 25,50,75 kg** | Requirement of burst test of cap, valve & closure | CL - 8.7.5 | Upto 260 bar |
| | **c)Clean agent ; 10,20,30,50 kg** | Requirement of edges& surfaces | CL - 8.7.6 | Qualitative |
| | **d) CO2 ; 4.5,6.5,22.5,45 kg** | Safety and Anti-overfill device test | CL - 8.8 | Qualitative |
| | | Discharge Assembly (Requirement of Hose) | CL - 8.11.1 | Qualitative |
| | | Hose & Coupling system | CL - 8.11.2 | Qualitative |
| | | Burst Pressure of Hose | CL - 8.11.3 | Upto 260 bar |
| | | Control valve (leakage test) | CL - 8.12 | Qualitative |
| | | Horn for Carbon dioxide | CL - 8.13 | Qualitative |
| | | Method of Operation | CL - 8.14 | Upto 500 N |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | | Safety locking device | CL - 8.15 | Upto 500 N |
| | | Dip tubes and filters for water based extinguisher | CL - 8.17 | Upto 10 mm |
| | | Carriage assembly (Mobility test) | CL - 8.18.1 & 8.18.2 | Upto 500 N |
| | | Hose Retaining unit | CL-8.18.3 | Qualitative |
| | | Colour test | CL-9.1 | Qualitative |
| **8.** | **Portable Fire Extinguishers Part-7, Characteristics performance measurements & test method capacity:-Powder; 1,2,3,4,6,9,12 kg Water base; 2,3,6,9 l $CO_2$ ; 2, 5 kg Halon ; 1,2,4,6 kg** | | EN : 3 7 : 2007-10 | |
| | | Control of Discharge | CL - 4.2 | Qualitative |
| | | Operating position | CL - 4.3 | Qualitative |
| | | Hose Assembly | CL - 4.4 | Qualitative |
| | | Stored pressure extinguisher | CL - 4.6 | Qualitative |
| | | Nominal charge test | CL - 6.1 | 0 to 30 kg |
| | | Filling Tolerance | CL - 6.2 | Upto (±) 25 % |
| | | Duration of operation, minimum duration, spread measurement | CL - 7.1.1 & 7.1.2 | Upto 120 s & throw Upto 10 m |
| | | Residual charge | CL - 7.2 | Upto 50 % |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Portable Fire Extinguishers Part-7, Characteristics performance measurements & test method capacity:-Powder; 1,2,3,4,6,9,12 kg Water base; 2,3,6,9 l $CO_2$ ; 2, 5 kg Halon ; 1,2,4,6 kg** | Commencement of discharge | CL - 7.3 | 0 to 10 s |
| | | Effective range of operating temperature | CL - 7.4 | Upto 180 s |
| | | General requirement (Operating mechanism) | CL-10.1 | Upto 500 N |
| | | Operation & Emission control mechanism / devices | CL-10.2 | Upto 500 N |
| | | Safety Devices | CL-10.3 | Upto 500 N |
| | | Filter for water based portable fire extinguisher | CL-10.4 | 0 to 25 mm |
| | | Hose & Coupling system (HPT) | CL-10.5 | Upto 100 bar |
| | | Control value (leakage test) | CL-10.6 | Upto 100 % |
| | | Horns for Carbon dioxide Portable fire extinguishers (Deformation test) | CL-12 | 0 to 25 mm |
| | | Portable fire extinguisher Mounting Bracket (load test) | CL-13 | Qualitative |
| | | Resistance to External Corrosion test | CL-14.1 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | | Resistance to extinguishing medium of extinguisher using water based media | CL-14.2 | Qualitative |
| **9.** | **Mobile Fire Extinguishers – Part-1:characteristics Performance and test methods Capacity:- Powder;- 25,50,100,150kg Water base ;- 20,25,45,50, 90,100,135, 150 l CO2 ;- 10, 20, 30, 50 kg** | Effective range of time of operating temperatures | DINEN 1866-1 : 2007-10 CL - 6.1 | Upto 180 s |
| | | Filling Tolerance | CL - 6.2.2 | Upto 25 % |
| | | Duration of operation | CL - 6.3.1 | Upto 240 s |
| | | Maximum residual mass | CL - 6.3.2 | Upto 100 % |
| | | Control value (P.leak test) | CL - 6.5 | Upto 100 % |
| | | Working position (Hose pull test) | CL - 6.6 | Upto 500 N |
| | | Hose and Coupling | CL - 6.7 | Upto 10 m |
| | | Operating and jet control mechanism devices | CL - 6.8.2 | Upto 500 N |
| | | Safety devices | CL - 6.8.3 | Upto 500 N |
| | | Discharge from water based extinguishers(orifice test) | CL - 6.8.4 | 0 to 25 mm |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Mobile Fire Extinguishers – Part-1:characteristics Performance and test methods Capacity:- Powder;- 25,50,100,150kg Water base ;- 20,25,45,50, 90,100,135, 150 l CO2 ;- 10, 20, 30, 50 kg** | Design of the filling opening | CL - 6.8.6.1 | Qualitative |
| | | Diameter of the two wheels | CL - 6.8.6.2 | Upto 300 mm |
| | | Width of the tyres | CL - 6.8.6.3 | Upto 300 mm |
| | | Distance between the handle and the floor | CL - 6.8.6.4 | Upto 2 m |
| | | Socket for the Nozzle | CL - 6.8.6.5 | Qualitative |
| | | Damage of the Hose | CL - 6.8.6.6 | Qualitative |
| | | Temperature Test | CL - 7.1 | Qualitative |
| | | External Corrosion Test | CL - 7.2.1 | Qualitative |
| | | Internal Corrosion Test for water based extinguishers | CL - 7.2.2 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **10.** | **For Non-Percolating Flexible Fire Fighting Delivery Hose** | | IS 636 : 1988 | |
| | | Workmanship (Def. test) | CL - 5.1.1.1 | Qualitative |
| | | Internal Diameter | CL - 5.2 | Upto 100 mm |
| | | Length | CL - 5.3 | Upto 50 m |
| | | Mass | CL - 5.4 | Upto 300 kg |
| | | Coil Diameter | CL-5.5 | Upto 5 m |
| | | Hydrostatic Burst Pressure test | CL-5.6 | Upto 100 bar |
| | | Hydrostatic Proof Pressure test | CL-5.7 | Upto 100 bar |
| | | Kink test | CL-5.8 | Upto 100 bar |
| | | Change in length | CL-5.9 | Upto 100 mm |
| | | Change in Diameter | CL-5.10 | Upto 100 mm |
| | | Requirement for Rubber lining and the outer coating, adhesion test | CL-5.11.1 | Upto 100 mm/min |
| | | Accelerated Ageing test | CL-5.11..2 | Upto 100 mm/min |
| | | Abrasion Resistance | CL-5.12 | Upto 500 cycle |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | | Water Pick up / Moisture Absorption (for type B only) | CL-5.13 | Upto 1 kg/mt² |
| | | Heat Resistance | CL-5.14 | Upto 80◦C |
| | | Oil Resistance test (for type B only) | CL-5.15 | Upto 80◦C |
| **11.** | **Controlled Percolating Hose For Fire Fighting – Specification** | Diameter | IS 8423 : 1994<br>CL - 4.1&4.1.1 | Upto 100 mm |
| | | Length | CL - 5.1 | Upto 50 m |
| | | Coil Diameter (Machine coiled) | CL - 6.1 | Upto 5 m |
| | | Mass | CL - 7.1 | Upto 300 kg |
| | | Percolation | CL - 8.1 | Upto20 kg/ltr. |
| | | Evenness of wetting out | CL-9.1 | Upto 100 kg/cm² |
| | | Hydrostatic Proof Pressure | CL-10.1 | Upto 100 kg/cm² |
| | | Hydrostatic Bursting Pressure | CL-11.1 | Upto 100 kg/cm² |
| | | Flammability | CL-12.1 | Upto 100 kg/cm² |
| | | Kink test<br>Change in size | CL-13.1<br>14.1 | Upto 100 kg/cm²<br>Upto 100 mm |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **12.** | **Thermoplastic Hoses (Textile Rein Forced) For Water – General Purpose** | Requirements (Physical test of lining, reinforcement & Cover) | IS 12585 : 1988 CL-4.1 | Qualitative |
| | | Dimensions and Tolerances | CL-4.2 | Upto 15 m |
| | | Loss in Mass on Heating | CL-4.3.1 | Upto 20 % |
| | | Adhesion | CL-4.3.2 | Upto 20 KN/m |
| | | Pressure requirements | CL-4.3.3 | Upto 100 kg/cm² |
| | | Minimum Bend Radius | CL-4.3.4 | Qualitative |
| | | Low temperature flexibility | CL-4.3.5 | 500 mm |
| **13.** | **Unlined Flax Canvas Hose Fire Fighting** | Material (Alkali solubility test of Flex yarn) | IS 4927 : 1992 CL - 3 | Qualitative |
| | | Size | CL-4.1 | Upto 100 mm |
| | | Tolerances on Internal Diameter | CL-4.2 | Upto 100 mm |
| | | Length | CL-5 | Upto 50 m |
| | | Mass | CL-6 | Upto 20 kg |
| | | Flexibility(Coil dia) | CL-7 | Upto 5 m |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | | Percolation | CL-8 | Upto 20 l |
| | | Change in length &Change in Diameter | CL-9.1 & 9.2 | Upto 5 m |
| | | Hydrostatic proof pressure | CL-10 | Upto 100 kg/cm² |
| | | Hydrostatic burst pressure tests | CL-11 | Upto 100 kg/cm² |
| **14.** | **Landing valves** | | IS 5290 : 1993 | |
| | | Types & Dimension | CL - 5 | Upto 100 mm |
| | | Water tightness test for the Valve | CL - 7.1 | Upto 300 bar |
| | | Hydrostatic Pressure test | CL - 7.2 | Upto 100 bar |
| **15.** | **Fireman's Axe** | | IS 926 : 1985 | |
| | | Shape, Dimension & Construction | CL-4 | Upto 500 mm |
| | | Workmanship & Finish (Def. test) | CL-5 | Qualitative |
| | | Performance Test | CL-6 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **16** | **Gas Cartridges For Use In Fire Extinguishers** | | IS 4947 : 2006 | |
| | | General Requirements (Design & Shape) | CL-3 & 5 | Qualitative |
| | | Capacity & Contents | CL-6 | Upto 300 g |
| | | Performance requirement test (HPT) | CL-7.1 & 7.2 | Upto 650 kg/cm² |
| | | Leakage test | CL-7.3 | Qualitative |
| | | Finish (Defectiveness test) | CL-8 | Qualitative |
| | | Body work (design & length) | CL - 5.6 | Upto 5 m |
| | | Cable winch (design & length) | CL-5.7 | Upto 30 m |
| | | Miscellaneous (structure of Bumper, size of ladder etc) | CL-5.9 | Upto 3 m |
| | | Locker (Shape & size) | CL-5.10 | Upto 5 m |
| | | Workmanship & Finish (Defectiveness test) | CL- 6 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **17.** | **Couplings, double male and double female instantaneous pattern for fire fighting** | | IS 901 : 1988 | |
| | | Dimension | CL-3.1 | Upto 300 mm |
| | | Hydraulic test requirement | CL-4.1 | Upto 100 kg/cm² |
| | | Workmanship and finish (Def. test) | CL-5.1 | Qualitative |
| **18.** | **Suction Hose Coupling For Fire Fighting Purpose** | | IS 902 : 1992 | |
| | | Shape & Dimension | CL-4.1 | Upto 300 mm |
| | | Construction couplings (Design & shape) | CL-5.1 | Upto 300 mm |
| | | Round threads for male coupling and nut | CL-5.2 | Upto 25 mm |
| | | Thread for locking ring and nut | CL-5.3 | Major Dia-95 to160 mm & Pitch Dia- 93 to 158 mm |
| | | Workmanship and finish ( Def. test) | CL-7 | Qualitative |
| | | Hydraulic test | CL-8.1 | Upto 100 kg/cm² |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **19.** | **Fire Hose Delivery Couplings Branch Pipe Nozzles And Nozzle Spanner** | | IS 903 : 1993 | |
| | | Delivery Hose Coupling | CL - 5.1 | Qualitative |
| | | Size and Dimension | CL - 5.3 | Upto 100 mm |
| | | Hydraulic test Requirement | CL - 5.4 | Upto 100 kg/cm² |
| | | Shape and Dimension | CL - 6.2 | Upto 100 mm |
| | | Hydraulic test Requirement | CL - 6.3 | Upto 100 kg/cm² |
| | | Size of Nozzle | CL - 7.2 | Upto 100 mm |
| | | Hydraulic test Requirement | CL - 7.3 | Upto 100 kg/cm² |
| | | Shape and Dimension of spanner | CL - 8.2 | Upto 200 mm |
| | | Deflection test Requirement | CL - 8.4 | Upto 100 kg |
| **20.** | **2 way and 3 way suction collecting heads for fire fighting purposes** | | IS 904 : 1983 | |
| | | Shape & Dimension | CL-3.1 | Upto 200 mm |
| | | Finish (Def. Test) | CL-4.1 | Qualitative |
| | | Hydraulic test | CL-5.1 | Upto 100 kg/cm² |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **21.** | **Delivery Breechings, Dividing And Collecting, Instantaneous Pattern, For Fire Fighting Purposes** | | IS 905 : 1980 | |
| | | Types and Dimension | CL - 4.1 & 4.2 | Upto 300 mm |
| | | Finish (Def. Test) | CL - 5 | Qualitative |
| | | Hydraulic test | CL - 6.1 | Upto 100 bar |
| **22.** | **Revolving Branch Pipe For Fire Fighting** | | IS 906 : 1988 | |
| | | Dimension & Construction | CL - 4.1 | Upto 300 mm |
| | | Finish (Def.test) | CL - 5.0 | Qualitative |
| | | Performance requirements | CL - 6.1 &6.2 | Upto 100 kg/cm² |
| **23.** | **Fire Hydrant, Stand Post Type** | | IS 908 : 1975 | |
| | | General Requirement (No. of sluice valve) | CL-2.1 | Qualitative |
| | | Workmanship and Finish (Def. test) | CL-4.1 | Qualitative |
| | | Hydrostatic test requirement | CL-5.1 | Upto 100 bar |
| | | Coating | CL-6.0 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **24.** | **Hydrant Stand-Pipe For Fire Fighting** | | IS 5714 : 1981 | |
| | | Types and Dimensions | CL - 4.1 | Upto 100 mm |
| | | Finish (Def.test) | CL - 5.1, 5.2, 5.3 | Qualitative |
| | | Hydrostatic Pressure test | CL - 6.1 | Upto 100 bar |
| **25.** | **First –Aid Hose-Reel for Fire Fighting** | | IS 884 : 1985 | |
| | | Dimension | CL-5.1 | Upto 5 m |
| | | Resistance to leakage | CL-5.2 | Upto 100 kg/cm² |
| | | Impact test | CL-5.3.1 | Qualitative |
| | | Load test | CL-5.3.2 | Qualitative |
| **26.** | **Coupling, Branch Pipe, Nozzle Used In Hose Reel Tubing For Fire Fighting** | | IS 8090 : 1976 | |
| | | Workmanship and finish (defectiveness test) | CL-4.1 | Qualitative |
| | | Branch pipe - Shape & dimension | CL-6.1 | Upto 300 mm |
| | | Branch Pipe - Construction (Design & Dimension) | CL-6.2 | Upto 300 mm |
| | | Branch Pipe - Hydraulic test requirement | CL-6.3 | Upto 100 bar |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **Coupling, Branch Pipe, Nozzle Used In Hose Reel Tubing For Fire Fighting** | Nozzles dimension | CL-7.1 | Upto 300 mm |
| | | Construction (Design) | CL - 7.2 | Qualitative |
| | | Hydraulic test requirement | CL - 7.3 | Upto 100 bar |
| **27.** | **Branch Pipe, Universal, For Fire Fighting Purpose** | | IS 2871 : 1983 | |
| | | Shape & Dimension | CL - 3 | Upto 300 mm |
| | | Workmanship and finish (Def. test) | CL - 4 | Qualitative |
| | | Hydraulic test | CL - 5 | Upto 100 bar |
| **28.** | **Fire Hooks** | | IS 927 : 1981 | |
| | | Handle (Length) | CL - 2.2 | Upto 5 m |
| | | Shape & dimensions | CL - 3 | Upto 5m |
| | | Workmanship & finish (Def. test) | CL - 4 | Qualitative |
| | | Performance test requirement (Load test) | CL - 5 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **29** | **Fire Beaters** | | IS 8096 : 1992 | |
| | | Handle | CL - 4.1 | Qualitative |
| | | Blade | CL - 4.2 | Qualitative |
| | | Assembling | CL - 5 | Qualitative |
| | | Workmanship (Def. test) | CL – 6 | Qualitative |
| | | Length | CL - 7.1 | Upto 5 m |
| | | Mass | CL - 7.2 | Upto 10 kg |
| | | Painting (Thickness) | CL - 7.3 | Upto 2 mm |
| | | Testing (Drop Test) | CL - 8 | Qualitative |
| **30.** | **Fire Blanket** | | IS 15381 : 2003 | |
| | | Materials (thickness of as bestors cloth & stitching pattern) | CL - 3 | Upto 25 mm |
| | | Manufacture (Design No. of pieces, stitching tension) | CL - 4 | Qualitative |
| | | Dimension & Tolerances | CL - 5 | Upto 3 m |
| | | Workmanship & Finish | CL - 6 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| **31.** | **Galvanized Mild Steel Fire Bucket** | | IS 2546 : 1974 | |
| | | Shape and Essential Dimension | CL - 3 | Upto 270 mm |
| | | Body | CL - 4.1 | Upto 10 mm |
| | | Bottom | CL - 4.2 | Upto 10 mm |
| | | Ears | CL - 4.3 | Upto 10 smm |
| | | Top Handle | CL - 4.4 | Upto 10 mm |
| | | Bottom Handle | CL - 4.5 | Upto 10 mm |
| | | General (workmanship) | CL - 4.6 | Qualitative |
| | | Finishing | CL - 5.1 | Qualitative |
| | | Labeling(letter size) | CL - 5.3.1 | Upto 80 mm |
| | | Performance Requirements (Leakage test) | CL - 6 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| | **I. PERFORMANCE TEST** | | | |
| **1.** | **Foam Concentrates for producing mechanical foam for Fire Fighting viz. AFFF, Protein Foam, Film Forming Fluoro Protein Foam & Synthetic Foam** | | IS 4989 : 2006 | |
| | | Film formation | Annex-H | Qualitative |
| | | Expansion | Annex-J | Upto 20 |
| | | 25% drainage time | Annex-J | Upto 10 minutes |
| | | Fire control | Annex-K | Qualitative |
| | | Fire Extinction | Annex-K | Qualitative |
| | | Burn Back | Annex-K | Qualitative |
| | | Sealability | Annex-K | Qualitative |
| **2.** | **Multipurpose Aqueous Film Forming Foam Liquid Concentrates for Extinguishing Hydrocarbon & Polar Solvent Fires** | | IS 4989 (Part 4): 2003 | |
| | | Film formation | E-5 (Amendment No.1) | Qualitative |
| | | Expansion | Annex-F | Upto 20 |
| | | 25% drainage time | Annex-G | Upto 10 minutes |
| | | Fire control time on n Heptane | Annex-J | Qualitative |
| | | Fire Extinction time on n Heptane | Annex-J | Qualitative |
| | | Burn Back on n-heptane | Annex-K | Qualitative |
| | | Fire Performance test on Polar Solvent | Annex-H | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| **3.** | **Aqueous Film Forming Foam (AFFF), Protein (P), Film Forming Fluoro Protein (FFFP), Fluoro Protein (FP) for both hydrocarbon & Polar Fuel group** | | UL - 162 : 1999 | |
| | | 25% drain time test using 2 GPM nozzle as per IS 4989: 2006 | CL - 8.2 (8.2.1 to 8.2.7) | Upto 10 minutes |
| | | Expansion Test using 2 GPM nozzle as per IS 4989: 2006 | CL - 8.3 (8.3.1 to 8.3.2) | Upto 20 |
| | | Class-B Fire Test- Top Side discharge devices using 2 GPM nozzle as per IS 4989: 2006 | CL - 10 (10.1.1 to 10.5.6) | Qualitative |
| **4.** | **Dry Chemical Fire Extinguisher Capacity (Water capacity) ;- 4.5, 9.0, 14.0, 18.0, 36.0, 64.0, 125.0 l** | | UL - 299 : 2009 | |
| | | Fire Test | CL - 24 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| **5.** | **Portable Fire Extinguishers – Performance & construction Capacity :- a)Water base : 2,6,9 l b) Foam : 2,4,6,9 l c) Dry Powder : 1,2,4,6,9 l d) $CO_2$ : 2,3,4.5 kg e) Clean Agent 2,4, 6 kg** | | IS 15683 : 2006 | |
| | | Class A Test Fire | CL-8.3 | Qualitative (1A to 6A) |
| | | Class B Test Fire | CL-8.4 | Qualitative (8B to 233B) |
| | | Class D Test Fire | CL-8.5 | Qualitative |
| **6.** | **Fire fighting portable fire extinguishers- Performance and construction Capacity :-a)Water base ; 2,3,6,9 l b)Powder ; 1,2,3,4,6,9,12 kg c)CO2 ;2,5 kg d)Clean agent : 1, 2, 4, 6 kg** | | ISO 7165 : 2009 | |
| | | Class A Test Fire | CL-8.3 | Qualitative (1A to 20A) |
| | | Class B Test Fire | CL-8.4 | Qualitative (8B to 233B) |
| | | Class D Test fire | CL-8.5 | Qualitative |
| | | Class F Test fire | CL-8.7 & 8.8 | Qualitative (5F to 75F) |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| **7.** | **Wheeled fire Extinguishers – Performance & Construction Capacity :-a)Water base ; 20,45,60, 125 l b)Powder ; 25,50,75 kgc)Clean agent ; 10,20,30,50 kg d) CO2 ; 4.5,6.5, 22.5, 45 kg** | | IS 16018 : 2012 | |
| | | **Durability Test** | CL-6.7 | Qualitative |
| | | **Class A Fire Test** | CL-7.2 | Qualitative (4A to 6A) |
| | | **Class B Fire Test** | CL-7.3 | Qualitative (8B to 233B) |
| | | **Class D Fire Test** | CL-7.4 | Qualitative |
| **8.** | **Portable Fire Extinguishers Part-7, Characteristics performance measurements & test method capacity:-Powder; 1,2,3,4,6,9,12kg Water base; 2,3,6,9 l CO2 ; 2,5 kg Halon ; 1,2,4,6 kg** | | EN:3-7:2007-10 | |
| | | **Class A Fire rating** | CL-15.2 | Qualitative(5A to 55A) |
| | | **Class B Fire rating** | CL-15.3 | Qualitative(21B to 233B) |
| | | **Class F Fire rating** | CL-15.4 | Qualitative(5F to 25F) |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| **9.** | **Rating and Fire Testing of fire extinguishers** | | **UL -711: 2004** | |
| | | Class - A extinguishers - Wood crib Fire Test | CL-7.1 &7.2 | Qualitative (1A to 40A) |
| | **Capacity (Water capacity) :- 4.5,9.0,14.0, 18.0,36.0,64.0,125.0 l** | Class – B extinguishers – Flammable Liquid fire test | CL-8.1 &8.2 | Qualitative (1B to 640B) |
| | | Class – K extinguishers – Kitchen fire test (Vegetable Oil fire test) | CL-11.1 &11.2 | Qualitative |
| **10.** | **Mobile Fire Extinguishers – Part-1:characteristics Performance and test methods Capacity:- Powder;- 25,50,100,150 kg Water base ;- 20,25,45,50, 90,100,135, 150 l CO2 ;- 10, 20, 30, 50 kg** | | **DINEN1866-1 : 2007-10** | |
| | | Class A Fire Test object | CL-8.1 | Qualitative (5A to 55A) |
| | | Class B Fire Test object | CL-8.2 | Qualitative (Type 1B to Type 4B) |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| **11.** | **Landing valves** | | IS 5290 : 1993 | |
| | | Flow test (Capacity of water flow in LPM) | CL-7.3 | Upto 1000 l/min |
| **12.** | **Functional requirements for water tender type 'a' for fire brigade use** | | IS 948 : 1983 | |
| | | Body work & storage (design & dimension) | CL-4.4.1 to4.4.5 | Upto 11 m |
| | | Workmanship and finish (Defectiveness test) | CL-5.1 & 5.2 | Qualitative |
| **13.** | **Emergency (rescue) tender – functional requirements** | | IS 949 : 2012 | |
| | | Design and Construction (Dimension) | CL - 5.1 | Upto 5 m |
| | | Body work (design) & length | CL - 5.6 | Upto 5 m |
| | | Cable winch (design) & length | CL - 5.7 | Upto 30 m |
| | | Miscellaneous (structure of Bumper, size of ladder etc) | CL - 5.9 | Upto 3 m |
| | | Locker (Shape & size) | CL - 5.10 | Upto 5 m |
| | | Workmanship & Finish (Defectiveness test) | CL - 6 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| **14.** | **Functional requirements for water tender, type b for fire brigade use** | | IS 950 : 2012 | |
| | | Water tank (capacity) | CL-5.3 | Upto 7000 l |
| | | Hose reels (HP, length) | CL-5.4 | Upto 70 m |
| | | Pump (capacity) | | Upto 5000 LPM |
| | | (i) a) Suction inlet | CL-5.5 | Upto 300 mm |
| | | b) Delivery valves (dimension, capacity) | CL-5.6 | Upto 5000 LPM |
| | | Primer (capacity) | CL-5.7 | Upto 7m |
| | | Pipelines & Valve (Type & design) | CL-5.8 | Qualitative |
| | | Body work and stowage (design) | CL-5.11 | Qualitative |
| | | Miscellaneous (dimension & design) | CL-5.12 | Upto 300 mm |
| | | Provision for stowage of equipments (design) | CL-5.13 | Qualitative |
| | | Ladder Gallows (design) | CL-5.17 | Qualitative |
| | | Workmanship & Finish (Def. test) | CL-6.00 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| **15.** | **Functional requirements for crash fire tender for air fields** | | IS 951 : 2003 | |
| | | General(capacity) | CL-3 | Upto 10,000 l |
| | | Classification requirements (design & capacity) | CL-4 | Upto 10,000 l |
| | | Fuel system (capacity) | CL-7.3 | Upto 200 l |
| | | Exhaust system (design) | CL-7.4 | Qualitative |
| | | Vehicle drive | CL-7.6 | Qualitative |
| | | Suspension (design) | CL-7.7 | Qualitative |
| | | Rims, Types and Wheels (design) | CL-7.8 | Qualitative |
| | | Towing Connection (design) | CL-7.9 | Qualitative |
| | | Brakes (design) | CL-7.10 | Qualitative |
| | | Brakes, Air system (design) | CL-7.11 | Qualitative |
| | | Steering (design) | CL-7.12 | Qualitative |
| | | Cabin (design & size) | CL-7.13 | Upto 5 m |
| | | Body (design) | CL-7.15 | Qualitative |
| | | Fire fighting systems and agent (type) | CL-7.16 | Qualitative |
| | | Agents Pump and drives (design ) | CL-7.17 | Qualitative |
| | | Pump drive | CL-7.18 | Qualitative |
| | | Suction and delivery connection (design) | CL-7.19 | Qualitative |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| | **Functional requirements for crash fire tender for air fields** | Piping, couplings and valves (design) | CL-7.20 | Qualitative |
| | | Water Tank (capacity) | CL-7.21 | Upto 10000 l |
| | | Foam Tank (capacity) | CL-7.22 | Upto 1000l |
| | | Hand lines (capacity) | CL-7.24 | Upto 1000 LPM |
| | | Foam quality (type & Quality) | CL-7.25 | Qualitative |
| | | Under truck nozzle (design & capacity) | CL-7.26 | Qualitative |
| | | Primer (capacity of Suction) | CL-7.27 | Upto 7 m |
| | | Dry chemical powder (type & Quantity) | CL-7.30 | Upto 300 kg |
| **16.** | **First - Aid Hose-Reel for Fire Fighting** | Range and water flow rate in LPM | IS 884 : 1985<br>CL-5.4 | Upto 1600 s<br>& throw Upto 15 m |
| **17.** | **Foam making branch pipe** | General (Design & type) | IS 2097 : 1993 | Qualitative |
| | | Performance requirements (Exp.) | CL-2.1 & 3<br>CL-5.1 | Upto 20 |
| | | 25 % drainage time | CL-5.2 | Upto 5 minutes |

| | | | |
|---|---|---|---|
| **Laboratory** | **Advance Fire Tec and Research Lab Private Limited, B-3 Mangolpuri, Industrial Area, Phase – II, New Delhi** | | |
| **Accreditation Standard** | **ISO/IEC 17025: 2005** | | |
| **Discipline** | **Mechanical Testing** | **Issue Date** | **22.04.2014** |
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| **Last Amended on** | **11.08.2014** | **Page** | **41 of 41** |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|---|---|---|---|
| | **AT SITE** | | | |
| | **Killa No.75/5/1, Kishora Road, Village-Kamaspur, Sonepat, Haryana** | | | |
| **18.** | **Nozzle for fire brigade use** | Shape & Dimension | IS 952 : 1986 | Upto 5 m |
| | | Performance requirements | CL-3 | Upto 900 ltre/min. |
| | | Workmanship & finish | CL-4.1, 4.2 & 4.2.1 | |
| | | (Defectiveness test) | CL- 5 | Qualitative |

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**Dheeraj Chawla**
**Convenor**

**N. Venkateswaran**
**Program Manager**