



**उत्पाद मैनुअल**  
**सुबाह्य अग्नि शामक — कार्यकारिता और निर्माण,**  
**आई एस 15683 : 2018 के अनुसार**

**PRODUCT MANUAL FOR PORTABLE FIRE EXTINGUISHERS –**  
**PERFORMANCE AND CONSTRUCTION**  
**ACCORDING TO IS 15683: 2018**

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो) अनुरूपता मूल्यांकन (विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

|    |                                             |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----|---------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | मानक संख्या<br>IS No.                       | : | IS 15683: 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|    | शीर्षक<br>Title                             | : | Portable Fire Extinguishers – Performance and Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|    | संशोधनों की संख्या<br>No. of amendments     | : | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. | नमूना दिशानिर्देश<br>Sampling Guidelines    |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| a) | कच्चा माल<br>Raw material                   | : | Please refer to Annex-A<br>Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/ Factory Surveillance                                                                                                                                                                                                                                                                                                      |
| b) | समूहीकरण दिशानिर्देश<br>Grouping Guidelines | : | Please refer to Annex-B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| c) | नमूने का परिमाण<br>Sample Quantity          | : | 14 nos - for all tests except fire performance test<br>6 Nos - for fire performance test<br><br>Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (incase of market surveillance, effort may be made to procure therequired quantity of product sample, as far as possible since raw material sample may not be available in market) |

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| d) | परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर<br>Parameters to be Declared in Test Request                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - Same as the scope of licence                                                                                                                                                                                                                                                     |
| 3. | परीक्षण उपकरणों की सूची<br>List of Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | : Please refer to Annex-C                                                                                                                                                                                                                                                          |
| 4. | निरीक्षण और परीक्षण की स्कीम<br>Scheme of Inspection and Testing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | : Please refer to Annex-D                                                                                                                                                                                                                                                          |
| 5. | <b>एक दिन में संभावित परीक्षण</b><br><b>Possible tests in a day</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                    |
|    | (i) Fill density (Clause 5.3.1), (ii) Effective discharge time (Clause 7.2), (iii) Carrying handle (Clause 9.3), (iv) Mounting (Clause 9.4), (v) Caps, valve and closures (Clause 9.5), (vi) Hose assembly (Clause 9.8), (vii) Method of operation (Clause 9.9), (viii) Colour (Clause 10.1), (ix) Marking (Clause 10.2)<br><br>Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor. |                                                                                                                                                                                                                                                                                    |
| 6. | <b>लाइसेंस का दायरा /Scope of the Licence:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                    |
|    | “Licence is granted to use Standard Mark as per IS 15683:2018 with the following scope:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                    |
|    | Name of the product                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Portable Fire Extinguishers – Performance and Construction                                                                                                                                                                                                                         |
|    | Extinguisher media                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Water based/ Foam based/ Powder based extinguisher (ABC/BC/D Type)/ Carbon dioxide based/ Clean agent/ Water mist type                                                                                                                                                             |
|    | Nominal charge capacity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1kg/ 2kg/ 3kg/ 4kg/ 5kg/ 6kg/ 9kg/ 12kg/ 2ltr/ 3ltr/ 4ltr/ 6ltr/ 9ltr                                                                                                                                                                                                              |
|    | Fire rating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Class A/ Class B/ Class C/ Class D/ Class F                                                                                                                                                                                                                                        |
|    | Operating temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (+ 5°C to + 60°C)/ (0°C to + 60°C)/ (– 10°C to + 60°C)/ (– 20°C to + 60°C)/ (– 30°C to + 60°C)                                                                                                                                                                                     |
|    | Material of Cylinder body                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | - Steel (conforming to IS 7285 (Pt 1 & 2))<br>- Aluminium (conforming to IS 4947)<br>- Low carbon Steel (as per Cl 9.2.5 of IS 15683)<br>- Stainless Steel (as per Cl 9.2.6 of IS 15683)<br>- Aluminium (as per Cl 9.2.7 of IS 15683)<br>- Composite (as per Cl 9.2.8 of IS 15683) |

**ANNEX- A**  
**Raw Materials**

1. Extinguishing media- (Clause 5.1 of IS 15683)
  - a) Carbon dioxide – IS 15222
  - b) Clean agent –certificate of manufacturer/supplier
  - c) Powder – IS 4308
  - d) Foam concentrate – IS 4989
2. Propellants – Clause 5.2 of IS 15683
3. Gas cartridge - IS 4947
4. Construction requirement :
  - a) High pressure cylinder – Clause 9.1 of IS 15683
    - i) for Steel body - IS 7285 (Part 1 and 2)
    - ii) for Aluminium body - IS 15660
  - b) Low pressure cylinder – Clause 9.2 of IS 15683
    - i) Welded low carbon steel cylinders – Clause 9.2.5 of IS 15683
    - ii) Stainless steel cylinders – Clause 9.2.6 of IS 15683
    - iii) Aluminium Cylinder – Clause 9.2.7 of IS 15683
    - iv) Composite cylinder – Clause 9.2.8 of IS 15683
  - c) Carrying handle – Clause 9.3 of IS 15683
  - d) Mounting – Clause 9.4 of IS 15683
  - e) Caps, valves and closures – Clause 9.5 of IS 15683
  - f) Safety devices – Clause 9.6 of IS 15683
  - g) Plastic components – Clause 9.7 of IS 15683
  - h) Hose assemblies – Clause 9.8 of IS 15683
  - i) Safety locking devices – Clause 9.10 of IS 15683
  - j) Pressure gauges and indicators for low pressure extinguishers – Clause 9.11 of IS 15683
  - k) Dip tubes and filters for water based extinguishers – Clause 9.12 of IS 15683
  - l) Horn for Carbon dioxide extinguishers - Clause 9.13 of IS 15683
  - m) Extinguishants - Clause 9.14 of IS 15683

**ANNEX - B**  
**Grouping Guidelines**

1. Portable Fire Extinguishers covered under IS 15683 : 2018 are categorized as under:
  - a) Based on type of extinguishing media and capacity:
    - i) Water based extinguisher – 2, 3, 4, 6 and 9 litres
    - ii) Foam based extinguisher – 2, 3, 4, 6 and 9 litres
    - iii) Powder based extinguisher (ABC/BC/D Type) – 1, 2, 4, 6, 9 and 12 kg
    - iv) Carbon dioxide based extinguisher – 2, 3, 4 and 5 kg
    - v) Clean agent extinguisher – 2, 4 and 6 kg
    - vi) Water mist type extinguisher – 2, 3, 4, 6 and 9 litres
  - b) Based on Class of fire test : Class A/ Class B/ Class C/ Class D/ Class F  
(The fire rating shall be declared by the manufacturer)
  - c) Operating temperature ranges: (+ 5°C to + 60°C)/ (0°C to + 60°C)/ (– 10°C to + 60°C)/ (– 20°C to + 60°C)/ (– 30°C to + 60°C)
  - d) Material of Cylinder body : Steel (conforming to IS 7285 (Pt 1 & 2))/ Aluminium (conforming to IS 4947)/ Low carbon Steel (as per Cl 9.2.5 of IS 15683)/ Stainless Steel (as per Cl 9.2.6 of IS 15683)/ Aluminium (as per Cl 9.2.7 of IS 15683)/ Composite (as per Cl 9.2.8 of IS 15683)
2. Based on the above classifications, the following grouping guidelines shall be followed for considering GoL/CSoL:
  - (i) Fire Extinguisher of each type of Extinguishing Media, Nominal Capacity, Fire Rating and Material of Cylinder shall be tested to cover that particular variety in the scope of the licence.
  - (ii) Widest operating temperature range shall be tested to include all the intermediate temperature ranges including the operating temperature range tested.
3. The Firm shall declare the varieties of Fire Extinguishers (i.e. Extinguishing Media, Nominal Capacity, Fire Rating, Operating temperature range and Material of Cylinder) they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
4. Firm shall also declare the minimum torque value for tightening the cap of extinguisher.
5. During the operation of the Licence, BO shall ensure that all the varieties covered in the Licence are tested in rotation to the extent possible.

## ANNEX-B

### List of Test Equipment

*(INDICATIVE LIST, FOR GUIDANCE ONLY)*

| S. No. | Tests used in with Clause Reference                                                                                | Test Equipment                                                                                                                                                                                                                                                                                         |
|--------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | Fill density (Clause 5.3.1),<br>Filling tolerance(Clause 5.3.2),<br>Capacities (Clause 5.3.3)                      | <ul style="list-style-type: none"> <li>- Weighing balance</li> <li>- Measuring jar</li> </ul>                                                                                                                                                                                                          |
| 2      | Operating temperature(Clause 7.1)                                                                                  | <ul style="list-style-type: none"> <li>- Temperature incubator</li> <li>- Hot air oven</li> <li>- Deep freezer</li> </ul>                                                                                                                                                                              |
| 3      | Minimum Effective DischargeTime (Clause 7.2)<br><br>Retention of charge following partial discharge (Clause 7.4.1) | <ul style="list-style-type: none"> <li>- Performance Chamber</li> <li>- Stop Watch</li> <li>- Measuring Tape</li> <li>- Air conditioner</li> <li>- Hot air oven</li> <li>- Pressure gauge</li> <li>- Weighing balance</li> </ul>                                                                       |
| 4      | Resistance to Temperature Changes(Clause 7.3)                                                                      | <ul style="list-style-type: none"> <li>- Performance chamber</li> <li>- Stop watch</li> <li>- Hot air oven</li> <li>- Weighing balance</li> <li>- Conditioning chamber</li> </ul>                                                                                                                      |
| 5      | Leakage test (Clause 7.4.2)                                                                                        | <ul style="list-style-type: none"> <li>- Water tank</li> <li>- Glass funnel</li> </ul>                                                                                                                                                                                                                 |
| 6      | Mechanical resistance (Clause 7.5)<br>a) Impact resistance test(Clause 7.5.1)                                      | <ul style="list-style-type: none"> <li>- Conditioning chamber</li> <li>- Stop watch</li> <li>- Steel cylinder hammer</li> <li>- Rigid flat surface</li> </ul>                                                                                                                                          |
|        | b) Vibration resistance test (Clause 7.5.2)                                                                        | <ul style="list-style-type: none"> <li>- Vibration testing setup as per clause 7.5.2.5.2 of IS15658</li> <li>- Performance Chamber</li> <li>- Stop Watch</li> <li>- Measuring Tape</li> <li>- Air conditioner</li> <li>- Hot air oven</li> <li>- Pressure gauge</li> <li>- Weighing balance</li> </ul> |
| 7      | Resistance to corrosion(Clause 7.6)<br><br>a) External corrosion test(Clause 7.6.1)                                | <ul style="list-style-type: none"> <li>- Salt spray apparatus as per IS 11864</li> <li>- Sodium chloride and</li> <li>- Distilled water</li> </ul>                                                                                                                                                     |

|    |                                                                                |                                                                                                                                                                                                                                            |
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|    | b) Internal corrosion test for water and foam type extinguisher (Clause 7.6.2) | <ul style="list-style-type: none"> <li>- Hot air oven</li> <li>- Air conditioner</li> <li>- Closed glass container</li> </ul>                                                                                                              |
| 8  | Tapping test (Powder Extinguisher only) (Clause 7.7)                           | <ul style="list-style-type: none"> <li>- Compaction machine with rod and guided by castors as per Figure 1 of IS 15658</li> <li>- Steel supporting plate</li> <li>- Tapping machine as per IS 15658 with rigid steel plate</li> </ul>      |
| 9  | Intermittent discharge test (Clause 7.8)                                       | <ul style="list-style-type: none"> <li>- Conditioning chamber</li> <li>- Stop watch</li> </ul>                                                                                                                                             |
| 10 | Performance requirements for test fires (Clause 8)                             | <ul style="list-style-type: none"> <li>- As per clause 8.1 to 8.7 of IS 15658</li> </ul>                                                                                                                                                   |
| 11 | Electrical conductivity of extinguisher discharge (clause 8.8)                 | <ul style="list-style-type: none"> <li>- Metal plate (1 m X 1 m)</li> <li>- Transformer (36 kV)</li> <li>- Voltmeter</li> <li>- Ammeter</li> <li>- Measuring Tape</li> <li>- Wire</li> </ul>                                               |
| 12 | Construction requirements - Burst test (Clause 9.1.2)                          | <ul style="list-style-type: none"> <li>- Conditioning chamber</li> <li>- Pressure gauge</li> <li>- Burst test apparatus with pressure gauge and pressuring arrangement</li> </ul>                                                          |
| 13 | Construction requirements – Crushing test (Clause 9.1.3)                       | <ul style="list-style-type: none"> <li>- Crushing test apparatus</li> </ul>                                                                                                                                                                |
| 14 | Pressure cycling test (Clause 9.2.4)                                           | <ul style="list-style-type: none"> <li>- Pressure cycle testing arrangement with counter and pressuring unit</li> <li>- Stopwatch</li> </ul>                                                                                               |
| 15 | Minimum wall thickness (clause 9.2.5.3, 9.2.6, 9.2.7)                          | <ul style="list-style-type: none"> <li>- Micrometer</li> <li>- Vernier caliper</li> </ul>                                                                                                                                                  |
| 16 | Accelerated stress rupture test (clause 9.2.8.4)                               | <ul style="list-style-type: none"> <li>- Hydrostatic pressure test apparatus with pressuring unit and hour meter</li> <li>- Conditioning cabinet</li> <li>- Burst test apparatus with pressure gauge and pressuring arrangement</li> </ul> |
| 17 | Carrying handle (Clause 9.3)                                                   | <ul style="list-style-type: none"> <li>- Weighing balance</li> <li>- Vernier caliper</li> </ul>                                                                                                                                            |
| 18 | Mounting (Clause 9.4)                                                          | <ul style="list-style-type: none"> <li>- Mounting wooden board with bracket</li> <li>- Weighing balance</li> <li>- Stop watch</li> </ul>                                                                                                   |

|    |                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19 | Cap, valves and closures - Burst Test (Clause 9.5)                                                                                                                               | <ul style="list-style-type: none"> <li>- Burst test apparatus with pressure gauge and pressuring arrangement</li> <li>- Stop watch</li> </ul>                                                                                                                                                                                                                  |
| 20 | Requirement for plastic components (Clause 9.7)                                                                                                                                  | <ul style="list-style-type: none"> <li>- Conditioning cabinet for maintain temperature of 100 °C and <math>27 \pm 5</math> °C</li> <li>- Cylinder pressuring unit with water and nitrogen</li> <li>- Stop watch</li> <li>- oven</li> <li>- Steel cylinder hammer</li> <li>- Rigid flat surface</li> </ul>                                                      |
| 21 | Hose assembly (Clause 9.8)                                                                                                                                                       | <ul style="list-style-type: none"> <li>- Steel tape or scale</li> <li>- Conditioning cabinet</li> <li>- Pressuring unit with pressure gauge</li> <li>- Stop watch</li> </ul>                                                                                                                                                                                   |
| 22 | Method of operation (Clause 9.9)                                                                                                                                                 | <ul style="list-style-type: none"> <li>- Dynamometer</li> <li>- Cylindrical steel weight with flat face 75 mm dia and weight of 4 kg</li> </ul>                                                                                                                                                                                                                |
| 23 | Safety locking devices (Clause 9.10)                                                                                                                                             | <ul style="list-style-type: none"> <li>- Safety Locking Device</li> </ul>                                                                                                                                                                                                                                                                                      |
| 24 | Pressure gauges for low-pressure extinguishers (Clause 9.11)                                                                                                                     | <ul style="list-style-type: none"> <li>- Dead gauge testes with hydraulic pressure pump</li> <li>- Pressure impulse tester</li> <li>- Inverted water column/flow meter</li> <li>- Air/Nitrogen</li> <li>- Bourdon tube</li> <li>- 0.3 m of water tank</li> <li>- Leak detector apparatus</li> </ul>                                                            |
| 25 | Dip tube and filter (Clause 9.12)                                                                                                                                                | <ul style="list-style-type: none"> <li>- Conditioning cabinet for maintain temperature of 100 °C and <math>27 \pm 5</math> °C</li> <li>- Cylinder pressuring unit with water and nitrogen</li> <li>- Stop watch</li> <li>- oven</li> <li>- Steel cylinder hammer</li> <li>- Rigid flat surface</li> <li>- Vernier caliper / internal diameter gauge</li> </ul> |
| 26 | Horn test for carbon dioxide extinguisher (Clause 9.13)                                                                                                                          | <ul style="list-style-type: none"> <li>- Crushing test arrangement</li> <li>- Conditioning chamber</li> <li>- Static load of 25 kg as per clause 9.13 (d)</li> </ul>                                                                                                                                                                                           |
| 27 | Requirement for extinguishers filled in the extinguisher (Clause 9.14) –<br>a) Determination of mono ammonium phosphate, sodium bicarbonate/potassium bicarbonate as per IS 4308 | <ul style="list-style-type: none"> <li>- Analytical balance</li> <li>- Aluminium dishes</li> <li>- Glass desiccator</li> <li>- Oven</li> <li>- Sodium bicarbonate / Potassium bicarbonate</li> <li>- Centrifuge tubes</li> <li>- Centrifuge machine</li> <li>- Steam bath</li> <li>- pH meter</li> </ul>                                                       |

|  |                                   |                                                                                                                                                                                                    |
|--|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                   | <ul style="list-style-type: none"> <li>- Burette</li> <li>- Absolute /denatured ethanol</li> <li>- Ethanol</li> <li>- Sodium hydroxide</li> <li>- Melting point determination apparatus</li> </ul> |
|  | b) Surface tension as per IS 4989 | <ul style="list-style-type: none"> <li>- Du-Nouy precision tensiometer</li> <li>- Platinum ring</li> <li>- Glass container</li> </ul>                                                              |

## ANNEX C

### SCHEME OF INSPECTION AND TESTING

#### 1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

#### 1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : 100 Fire extinguishers or part thereof of same material of cylinder body, type/classification and capacity manufactured continuously or on consecutive days from same consignment of material under similar condition of manufacturing shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

**2 ENSURING COMPLIANCE THROUGH TESTING-** It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.3 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

**2.4 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.**

2.4.2 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per

IS/ISO/IEC 17025.

**2.5 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1),** where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.5.2 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website [www.bis.gov.in](http://www.bis.gov.in). (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

**2.6 TEST RECORDS-** The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

**3 PACKING AND MARKING** - The Standard Mark as given in the Schedule of the licence shall be marked on each fire extinguisher, provided always that the material so marked conforms to all requirements of the specification.

3.3 Marking and colour shall be done as per Clause 10 of IS 15683:2018.

3.4 Operating instructions as per Clause 10.2.2 and manual as per Clause 11 of IS 15683 : 2018 shall be provided with each extinguisher.

**3.5 Additional Marking requirements:** The material shall also be marked with the following additional requirement on each plywood:

a) “For BIS certification details please visit [www.bis.gov.in](http://www.bis.gov.in)”

**4 REJECTION** - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

**TABLE 1**  
***(ONLY FOR GUIDANCE PURPOSE)***

| (1)          |                                                           |                     |                      | (2)                                                                         | (3)               |                                     |                                                                                                                                                          |
|--------------|-----------------------------------------------------------|---------------------|----------------------|-----------------------------------------------------------------------------|-------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Details |                                                           |                     |                      | Test equipment requirement<br>R: required (or) S: Sub-contracting permitted | Levels of Control |                                     |                                                                                                                                                          |
| Cl.          | Requirement                                               | Test Methods Clause | Reference            |                                                                             | No. of Sample     | Frequency                           | Remarks                                                                                                                                                  |
| 5            | Extinguishing media, Propellants and filling requirements |                     |                      |                                                                             |                   |                                     |                                                                                                                                                          |
| 5.1.2        | Carbon dioxide                                            | 5.1.2               | IS 15683<br>IS 15222 | S                                                                           | 1                 | Each consignment                    | Further testing is not required if consignment received with test certificate. However one sample may be tested once in six month as verification sample |
| 5.1.3        | Clean agent                                               | 5.1.3               | IS 15683             | -                                                                           | -                 | -                                   | Manufacturers/suppliers test certificate shall be available.                                                                                             |
| 5.1.4        | Powders                                                   | 5.1.4               | IS 15683<br>IS 4308  | S                                                                           | 1                 | Each consignment                    | Further testing is not required if consignment received withtest certificate.                                                                            |
| 5.1.5        | Foam concentrate                                          | 5.1.5               | IS 15683<br>IS 4989  | S                                                                           | 1                 | Each type in a consignment received | Further testing is not requiredif consignment received with test certificate.                                                                            |
| 5.2          | Propellants                                               | 5.2                 | IS 15683             | -                                                                           | Each extinguisher | -                                   | -                                                                                                                                                        |
| 5.3.1        | Fill density                                              | 5.3.1               | IS 15683             | R                                                                           | 1                 | Each control unit                   | -                                                                                                                                                        |
| 5.3.2        | Filling tolerance                                         | 5.3.2               | IS 15683             | R                                                                           | 1                 | Each control unit                   | -                                                                                                                                                        |
| 5.3.3        | Capacities                                                | 5.3.3               | IS 15683             | R                                                                           | 1                 | Each control unit                   | -                                                                                                                                                        |

|       |                                                                                    |                         |          |   |   |                      |                                                                              |
|-------|------------------------------------------------------------------------------------|-------------------------|----------|---|---|----------------------|------------------------------------------------------------------------------|
| 6.1   | Test pressure                                                                      | 6.1                     | IS 15683 | R | 1 | Each control unit    | -                                                                            |
| 6.2   | Minimum burst pressure                                                             | 6.2                     | IS 15683 | R | 1 | Each control unit    | -                                                                            |
| 7.1   | Operating temperature range                                                        | 7.1                     | IS 15683 | - | - | -                    | Shall be declared by the manufacturer                                        |
| 7.2   | Minimum effective discharge time and Bulk range of discharge                       | 7.2.1<br>7.2.2<br>7.2.3 | IS 15683 | R | 1 | Each control unit    | -                                                                            |
| 7.3   | Resistance to temperature changes                                                  | 7.3.1<br>7.3.2          | IS 15683 | S | 2 | Once in three month  | -                                                                            |
| 7.4   | <b>Retention of charge</b>                                                         |                         |          |   |   |                      |                                                                              |
| 7.4.1 | Retention of charge following partial discharge (Discharge valve test)             | 7.4.1.1<br>7.4.1.3      | IS 15683 | S | 1 | Once in three months | -                                                                            |
| 7.4.2 | Leakage test                                                                       | 7.4.2                   | IS 15683 | S | 1 | Once in three months | -                                                                            |
| 7.5   | <b>Mechanical resistance</b>                                                       |                         |          |   |   |                      |                                                                              |
| 7.5.1 | Impact resistance test                                                             | 7.5.1                   | IS 15683 | S | 1 | Once in three month  | -                                                                            |
| 7.5.2 | Vibration resistance test                                                          | 7.5.2                   | IS 15683 | S | 1 | Once in three months | -                                                                            |
| 7.6   | <b>Resistance to corrosion</b>                                                     |                         |          |   |   |                      |                                                                              |
| 7.6.1 | External corrosion test for all types of extinguishers                             | 7.6.1                   | IS 15683 | S | 1 | Once in three months | All types of extinguishing media shall be covered over a period of one year. |
| 7.6.2 | Internal corrosion test for extinguishers using water based medium and clean agent | 7.6.2                   | IS 15683 | S | 1 | Once in three months |                                                                              |
| 7.7   | Tapping test (Powder extinguishers only)                                           | 7.7.1<br>7.7.2<br>7.7.3 | IS 15683 | S | 1 | Once in three months | All sizes and types shall be covered over a period of two years.             |

|                    |                                                   |                    |           |   |                                                                                                                                                                                                                                     |                           |                                                                                                                                                                                               |
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| 7.8                | Intermittent discharge test                       | 7.8.1<br>7.8.2     | IS 15683  | S | 1                                                                                                                                                                                                                                   | Once in three months      |                                                                                                                                                                                               |
| 8                  | Performance requirements for test fires           | 8.1 to 8.7         | IS 15683  | S | 1                                                                                                                                                                                                                                   | Once in a year            | All sizes, type and extinguishing media shall be covered in a year. For each class the manufacturer shall declare the fire rating. Testing may be done preferably in presence of BIS officer. |
| 8.8                | Electrical conductivity of extinguisher discharge | 8.8                | IS 15683  | S | 1                                                                                                                                                                                                                                   | Once in six months        | -                                                                                                                                                                                             |
| 9                  | <b>Construction requirements</b>                  |                    |           |   |                                                                                                                                                                                                                                     |                           |                                                                                                                                                                                               |
| 9.1                | High pressure extinguishers                       | 9.1                | IS 15683  | S | One                                                                                                                                                                                                                                 | Each consignment          | -                                                                                                                                                                                             |
| 9.2.1.1 to 9.2.1.7 | Low pressure extinguishers                        | 9.2.1.1 to 9.2.1.7 | IS 15683  | R | Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity |                           |                                                                                                                                                                                               |
| 9.2.1.8            | Determination of maximum service pressure         | 9.2.1.8            | IS 15683  | S | One sample from each type and size                                                                                                                                                                                                  | Once in three months      | -                                                                                                                                                                                             |
| 9.2.2              | Burst test                                        | 9.2.2              | IS 1568.3 | R | 1                                                                                                                                                                                                                                   | Each control unit         | -                                                                                                                                                                                             |
| 9.2.3              | Crushing test                                     | 9.2.3              | IS 15683  | S | One sample from each type and size                                                                                                                                                                                                  | Once in three months      | -                                                                                                                                                                                             |
| 9.2.4              | Pressure cycling test                             | 9.2.4              | IS 15683  | S | One sample from each type and size                                                                                                                                                                                                  | Once in three months      | -                                                                                                                                                                                             |
| 9.2.5              | Welded low carbon steel cylinder                  | 9.2.5              | IS 15683  | S | 1                                                                                                                                                                                                                                   | Each consignment received | -                                                                                                                                                                                             |



|        |                                                                                       |                  |          |   |                                                                                                                                                                                                                                     |                                                         |                                                                                              |
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| 9.7.1  | Air-oven ageing                                                                       | 9.7.1            | IS 15683 | S | 2                                                                                                                                                                                                                                   | Once in six month                                       | -                                                                                            |
| 9.7.2  | Impact resistance                                                                     | 9.7.2            | IS 15683 | S | 4                                                                                                                                                                                                                                   | Once in three month                                     | -                                                                                            |
| 9.7.3  | Test for exposure to extinguisher medium                                              | 9.7.3            | IS 15683 | S | 1                                                                                                                                                                                                                                   | Once in a year                                          | Additional sample shall be tested whenever there is change in source of supply or mix design |
| 9.8    | Hose assemblies                                                                       | 9.8.1 to 9.8.2   | IS 15683 | R | 2                                                                                                                                                                                                                                   | Each consignment                                        | Further testing is not required, if accompanied with test certificate or ISI marked.         |
| 9.9    | Method of operation                                                                   | 9.9.1 to 9.9.2   | IS 15683 | R | 1                                                                                                                                                                                                                                   | Each control unit                                       | -                                                                                            |
| 9.10   | Safety – locking device                                                               | 9.10.1 to 9.10.6 | IS 15683 | R | 2                                                                                                                                                                                                                                   | Each control unit                                       | -                                                                                            |
| 9.11   | <b>Requirements for pressure gauges and indicators for low pressure extinguishers</b> |                  |          |   |                                                                                                                                                                                                                                     |                                                         |                                                                                              |
| 9.11.1 | General                                                                               | 9.11.1           | IS 15683 | R | Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity |                                                         |                                                                                              |
| 9.11.2 | Calibration test– Gauges and Indicators                                               | 9.11.2           | IS 15683 | S | One                                                                                                                                                                                                                                 | Each consignment                                        | -                                                                                            |
| 9.11.3 | Burst strength test – Gauges and Indicators                                           | 9.11.3           | IS 15683 | R | 1                                                                                                                                                                                                                                   | Each 100 or part thereof from same source for each size |                                                                                              |
| 9.11.4 | Water resistance test– Gauges and Indicators                                          | 9.11.3           | IS 15683 | R | 1                                                                                                                                                                                                                                   | Each 100 or part thereof from same source for each size |                                                                                              |
| 9.12   | Dip tubes and filters – Water based Extinguishers                                     | 9.12.1 to 9.12.2 | IS 15683 | S | One                                                                                                                                                                                                                                 | Each consignment                                        | -                                                                                            |
| 9.13   | Horn test for carbon dioxide extinguisher                                             | 9.13             | IS 15683 | R | 1                                                                                                                                                                                                                                   | Once in three month                                     | -                                                                                            |
| 9.14   | Requirements for extinguishants filled in the extinguisher                            | 9.14.1 to 9.14.3 | IS 15683 | S | 1                                                                                                                                                                                                                                   | Each consignment received                               | No further testing is required if accompanied with test certificate or ISI marked.           |

|      |        |      |          |   |                                                                                                                                                                                                                                     |
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| 10.1 | Colour | 10.1 | IS 15683 | R | Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity |
|------|--------|------|----------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|