



## PRODUCT MANUAL FOR MOULDED RAISED HIGH DENSITY FIBRE (HDF) PANEL DOORS ACCORDING TO IS 15380 : 2003

*This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence 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 licence/certificate.*

1.	<b>Product</b>	:	IS 15380 : 2003
	<b>Title</b>	:	MOULDED RAISED HIGH DENSITY FIBRE (HDF) PANEL DOORS
	<b>No. of Amendments</b>	:	01
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	1) Timber – Clause 6.1 of IS 15380 : 2003 2) Raised Fibreboard Skin – Clause 6.2 of IS 15380 : 2003 3) Adhesive – BWP Grade of IS 848
b)	<b>Grouping guidelines</b>	:	Please refer <a href="#">ANNEX – A</a>
c)	<b>Sample Size</b>	:	2 Panel Doors
3.	<b>List of Test Equipment</b>	:	Please refer <a href="#">ANNEX – B</a>
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer <a href="#">ANNEX – C</a>
5.	<b>Possible tests in a day :</b>		
	a) Workmanship and finish (Clause 9) b) Dimensions and Squareness Test (Clause 11.1) c) General Flatness test (Clause 11.2) d) Local Planeness test (Clause 11.3) e) Impact indentation test (Clause 11.4) f) Flexure test (Clause 11.5) g) Edge loading test (Clause 11.6) h) Shock resistance test (Clause 11.7) i) Buckling test (Clause 11.8) j) Slamming test (Clause 11.9) k) Misuse test (Clause 11.10)		
6.	<b>Scope of the Licence</b>	:	Please refer <a href="#">ANNEX – D</a>

**ANNEX – A****Grouping Guidelines**

1. Moulded Raised High Density Fibre (HDF) Panel Doors as per IS 15380 : 2003 are classified as given below:

a) Types : Heavy Duty and Light Duty

b) Sizes :

Sl. No.	Width (mm)	Height (mm)	
		Option 1	Option 2
i	700	2005	-
ii	700	2045	2070
iii	800	2045	2070
iv	900	2045	2070
v	1000	2045	2070
vi	1000	2045	2070

Note : Other sizes i.e. width and height , as agreed between the manufacturer and the purchaser, are also permitted provided they are in modules of 5 mm.

c) Nominal thickness of Shutter : 30, 35 & 40 mm

2. Moulded Raised High Density Fibre (HDF) Panel Door of highest size and thickness from each Type shall be tested for all requirements to cover Panel Doors of all sizes and thickness upto and including the size and thickness tested for that particular Type.
3. The Firm shall declare the varieties of Moulded Raised High Density Fibre (HDF) Panel Door 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. During the operation of the Licence, BO shall ensure that all the types and sizes covered in the Licence are tested in rotation, to the extent possible.

**ANNEX B****List of Test Equipment***Major test equipment required to test as per the Indian Standard*

<b>S. No.</b>	<b>Tests used in with Clause Reference</b>	<b>Test Equipment</b>
1.	Timber and Adhesive (Clause 6.1 and 6.3)	<ul style="list-style-type: none"> <li>- Moisture Meter</li> <li>- Stop Watch</li> <li>- Viscosity Cups B-4 Cup /B-6 Cup</li> <li>- Thermometer</li> <li>- Desiccators</li> <li>- IS Sieve</li> <li>- Air Conditioner</li> <li>- Dry /Wet Thermometer</li> <li>- Distilled Water</li> <li>- Electronic Balance</li> <li>- PH Meter</li> <li>- Enamelled Tray</li> </ul>
	Raised Fibre board Skin	<ul style="list-style-type: none"> <li>- Micrometer</li> </ul>
	Modulus of Rupture (Clause 6.2)	<ul style="list-style-type: none"> <li>- Tensile testing machine with bend facility and with attachment for static bending test and with variable speed</li> <li>- Extensometer/Dial gauge</li> </ul>
	Water absorption (Clause 6.2)	<ul style="list-style-type: none"> <li>- Water bath</li> <li>- Soluble sealant material such as wax</li> </ul>
	Swelling in water – General absorption (Clause 6.2)	<ul style="list-style-type: none"> <li>- Water bath</li> <li>- Soluble sealant material such as wax</li> <li>- Arrangement for measurement of change in length</li> </ul>
	Swelling in water – Surface absorption (Clause 6.2)	<ul style="list-style-type: none"> <li>- Water bath</li> <li>- Soluble sealant material such as wax</li> <li>- Micrometer</li> </ul>
	Internal Bond Strength (Clause 6.2) a) Dry state b) Wet state (3 h boiling)	<ul style="list-style-type: none"> <li>- Loading fixture for tension test perpendicular to surface</li> <li>- Hot air oven</li> <li>- Water bath</li> </ul>
	Immersion in boiling water at 100 ± 3 °C for 4 h	<ul style="list-style-type: none"> <li>- Loading fixture for tension test perpendicular to surface</li> <li>- Water bath</li> </ul>
	Formaldehyde Emission (Clause 6.2)	<ul style="list-style-type: none"> <li>- Precision balance</li> <li>- Hot air oven</li> <li>- Extraction apparatus</li> <li>- Glassware – Volumetric flask / Precision burette/ Pipette/ Measuring cylinder</li> <li>Reagents – Toulene/ Sulphuric acid/ Sodium thiosulfate/ Sodium hydroxide/ Starch solution</li> </ul>

		<ul style="list-style-type: none"> <li>- Test chamber as per clause 6.1 of IS/ISO 12460-1</li> <li>- Equipments for monitoring test conditions</li> <li>- Air sampling system</li> <li>- Washing bottles</li> <li>- Silica absorber</li> <li>- Gas flow valve</li> <li>- Gas flow meter</li> <li>- Spectrophotometer</li> <li>- Water bath</li> <li>- Volumetric flask</li> <li>- Bulb pipette</li> <li>- Micro burette</li> <li>- Flasks</li> <li>- Weighing balance</li> <li>- Acetyl-acetone solution</li> <li>- Ammonium acetate solution</li> <li>- Iodine solution</li> <li>- Sodium thiosulphate solution</li> <li>- Sodium hydroxide solution</li> <li>- Sulphuric acid</li> <li>- Starch solution</li> </ul>
2.	Dimensions and Squareness test (Clause 11.1)	<ul style="list-style-type: none"> <li>- Measuring Tape</li> <li>- Steel Scale</li> <li>- Micrometer</li> <li>- Vernier Caliper</li> <li>- Squareness Gauge</li> <li>- Straight Edge</li> <li>- Feeler Gauge</li> </ul>
3.	General flatness test (Clause 11.2)	<ul style="list-style-type: none"> <li>- General Flatness test assembly/fixture with Plump Bob</li> <li>- Feeler Gauge</li> <li>- Spirit Level</li> </ul>
4.	Local planeness test (Clause 11.3)	<ul style="list-style-type: none"> <li>- Local Planeness test assembly/fixture with Dial Gauge</li> <li>- Spirit Level</li> <li>- Filler Gauge</li> </ul>
5.	Impact indentation test (Clause 11.4)	<ul style="list-style-type: none"> <li>- Impact indentation test assembly/fixture with steel ball</li> <li>- Dial gauge</li> <li>- Ball stand</li> </ul>
6.	Flexure test (Clause 11.5)	<ul style="list-style-type: none"> <li>- Flexure test arrangement with Loads</li> </ul>
7.	Edge loading test (Clause 11.6)	<ul style="list-style-type: none"> <li>- Edge loading test arrangement with Loads</li> <li>- Depth gauge</li> </ul>
8.	Shock resistance test (Clause 11.7)	<ul style="list-style-type: none"> <li>- Shock resistance test arrangement</li> <li>- Leather ball</li> </ul>
9	Buckling test (Clause 11.8)	<ul style="list-style-type: none"> <li>- Buckling resistance test arrangement with Loads</li> <li>- Angle protector</li> </ul>

10	Slamming test (Clause 11.9)	<ul style="list-style-type: none"> <li>- Slamming Test assembly/fixture with Protractor, Stop watch</li> <li>- Hard wood strips</li> </ul>
11	Misuse test (Clause 11.10)	<ul style="list-style-type: none"> <li>- Misuse test assembly with angle protector, hard wood strip and loading arrangement</li> </ul>
12	Varying humidity test (Clause 11.11)	<ul style="list-style-type: none"> <li>- Temperature and humidity control cabinet</li> </ul>
13	End immersion test (Clause 11.12)	<ul style="list-style-type: none"> <li>- End emersion test arrangements</li> <li>- Door holding arrangement</li> </ul>
14	Glue adhesion test (Clause 11.13)	<ul style="list-style-type: none"> <li>- Glue Adhesion Test</li> <li>- Water Bath with temperature controller</li> <li>- Humidity Chamber with temperature controller</li> </ul>
15	Screw withdrawal Resistance test (Clause 11.14)	<ul style="list-style-type: none"> <li>- Tensile Testing Machine with fixture for screw withdrawal</li> <li>- Screws</li> <li>- Dial Gauge</li> <li>- Hot Air Oven temperature controller</li> </ul>

*The above list is indicative only and may not be treated as exhaustive.*

**ANNEX C**

**Scheme of Inspection and Testing**

**1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

**1.1** The manufacturer shall prepare a calibration plan for the test equipments.

**2. TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.

**3. LABELLING AND MARKING** – As per the requirements of IS 15380 : 2003

**4. CONTROL UNIT** – Moulded Raised High Density Fibre (HDF) Panel Doors of same type, size and construction manufactured in a week from a lot of adhesive, under similar conditions of manufacturing shall constitute a control unit.

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

**5.1** All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

**6. REJECTIONS** – 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**

		(1)		(2)	(3)		
		Test Details		Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
5	Sizes	5.1, 5.2	IS 15380	R	Each door panel		-
6.1	Timber	6.1.1, 6.1.2, 6.1.3, 6.1.4	IS 15380	R	One	Each consignment	-
6.2	Raised Fibre Board Skin	6.2, Table 2	IS 15380 IS 2380 (Part 3, 4, 5, 16, 17) IS 13745	R	One	Each consignment	No further testing is required, if material received with test certificate or ISI Marked.
6.3	Adhesive	6.3	IS 15380 IS 848	R	One	Each consignment received or Each batch manufactured	
7	Construction	7.1 to 7.6	IS 15380	-	Each door panel		-
8	Fittings	8.1	IS 15380	-	-	-	As agreed between manufacturer and supplier
9	Workmanship and finish	9.1, 9.2	IS 15380	-	Each door panel		-

<b>10.1.1 Acceptance Tests</b>							
a)	Dimensions and Squareness test	11.1	IS 15380 IS 4020 (Part 2)	R	Four	Daily from panel doors of each type, size and construction	Sample shall be drawn at regular intervals. In case of failure, all panels produced in the day shall be tested and only those panels which are conforming to the requirements shall be marked.
b)	General flatness test	11.2	IS 15380 IS 4020 (Part 3)	R	Four		
c)	Local planeness test	11.3	IS 15380 IS 4020 (Part 4)	R	Four		
d)	End immersion test	11.12	IS 15380 IS 4020 (Part 13)	R	Two	Each control unit	-
e)	Glue adhesion test	11.13	IS 15380 IS 4020 (Part 15)	R	Two		-
f)	Slamming test	11.9	IS 15380 IS 4020 (Part 10)	R	One		-
<b>10.1.2 Type tests</b>							
a)	Impact indentation test	11.4	IS 15380 IS 4020 (Part 5)	S	One	Every 1000 panel doors or part thereof from same type, size and construction. manufactured in six months .	#
b)	Flexure test	11.5	IS 15380 IS 4020 (Part 6)	S	One		
c)	Edge loading test	11.6	IS 15380 IS 4020 (Part 7)	S	One		



d)	Buckling Test	11.8	IS 15380 IS 4020 (Part 9)	S	One	Once in a year from panel doors of each type, size and construction	#
e)	Shock resistance test	11.7	IS 15380 IS 4020 (Part 8)	S	One		
f)	Misuse Test	11.10	IS 15380 IS 4020 (Part 11)	S	One		
g)	Screw withdrawal resistance test	11.14	IS 15380 IS 4020 (Part 16)	S	One		
h)	Varying Humidity test	11.11	IS 15380 IS 4020 (Part 12)	S	One		

# These tests shall also be conducted for every change in construction. In case of failure, marking shall be stopped and reasons for failure shall be investigated. The marking shall be resumed only after two samples pass in the requirements in which failure occurred.

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

**ANNEX – D**  
**Scope of the licence**

“Licence is granted to use Standard Mark as per IS 15380 : 2003 with the following scope:	
Name of the product	MOULDED RAISED HIGH DENSITY FIBRE (HDF) PANEL DOORS
Types	Heavy Duty / Light duty
Size and Thickness	- Width and Height - Thickness