



**PRODUCT MANUAL FOR
STEEL DOOR FRAMES
ACCORDING TO IS 4351: 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.	Product	:	IS 4351: 2003
	Title	:	Steel Door Frames
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl. 5, Table 1 & Clause 10.1.4 of IS 4351: 2003
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	Qty – 1 No
3.	List of Test Equipment	:	Please refer ANNEX – B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – C
5.	Possible tests in a day	:	All tests except finish
6.	Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 4351: 2003 with the following scope:		
	Name of the product	Steel Door Frames	
	Designation		
	Finish		

ANNEX A

Grouping Guidelines

1. IS 4351: 2003 covers Steel Door Frames which are categorized as given below:
 - a) Modular sizes: (in mm)

790 x 1990 (8Px20), 890 x 1990 (9Px20), 990 x 1990 (10Px20), 1190 x 1990 (12Px20)
790 x 2090 (8Px21), 890 x 2090 (9Px21), 990 x 2090 (10Px21), 1190 x 2090 (12Px21)

(P - Pressed steel door frame and x – Profile type)
 - b) Non-modular sizes: Door frames of any size and type other than those given above are permitted as agreed to between the manufacturer and the purchaser.
 - c) Profile type (x) - A, B, C, D and E
 - d) Finish – Painting/Powder coating
2. Considering the above, following grouping guidelines is developed for GoL/CSoL:
 - a) One sample of door frame of maximum size from each profile shall be tested for all requirements to cover all sizes of door frame upto and including the size tested for that particular profile type.
 - b) Door frame with each finish i.e. painted/powder coated shall be tested separately to cover that finish in the scope of the licence.
3. The Firm shall declare the varieties intended to be covered 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*

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Material (Clause 5)	- Micrometer
2	Standard size, tolerance and Designation (Clause 6) Profile (Clause 7)	- Steel tape - Steel scale
3	Base plate (Clause 9) Fixing lungs (Clause 10.1)	- Vernier caliper - Steel tape - Steel scale
4	Hinges (Clause 10.2)	- Steel tape - Micrometer - Screw of size M5 x 20 CSK
5	Mortar guard (Clause 10.3) Shock absorber (Clause 10.6)	- Micrometer
6	Finish (Clause 11) (Painting/Coating thickness)	- Coatmeter

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 requirement of IS 4351: 2003.

4. CONTROL UNIT - Door Frames of same size and designation manufactured from the same batch of raw material in an eight-hour shift shall constitute a control unit.

5. LEVELS OF CONTROL - The tests, as indicated in column 1 of Table 1 attached 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	Material			-	-	-	Material received shall be ISI marked and received with manufacturers test certificate
	Mild steel sheet (Cold rolled)	5, Table 1	IS 4351 IS 513				
	Galvanized steel sheet	5, Table 1	IS 4351 IS 277				
	Stainless steel	5, Table 1	IS 4351 IS 6911				
6	Standard Sizes, Tolerances and Designation	6.1, 6.2, 6.3	IS 4351	R	Three	Each control unit	In case of failure of any sample, all door frames from the control unit shall be checked and only conforming frames shall be marked.
7	Profile	7, 7.1, Table 2	IS 4351	R	Three	Each control unit	-
8	Construction	8	IS 4351	-	Each Door Frame		-
9	Base ties	9	IS 4351	R	Three	Each control unit	-
10	Fittings						
10.1	Fixing lugs (Holdfasts)	10.1	IS 4351	R	Three	Each control unit	-
10.2	Hinges	10.2	IS 4151	S	One	Each consignment	Further testing is not required if hinges received with test certificate or ISI marked
		10.2.1 to 10.2.4	IS 4151	R	One	Each control unit	-
10.3	Mortar Guards	10.3	IS 4351	R	One	Each control unit	-
10.4	Aldrops, sliding bolts and tower bolts	10.4	IS 4351	-	Each door frame		-
10.5	Lock strike plate	10.5	IS 4351	-	Each door frame		-
10.6	Shock absorbers	10.6	IS 4351	-	Each door frame		-

11		Finish					
11.1	Pretreatment and phosphating	11.1	IS 4351 IS 1477 (Pt 1)	-	Each frame	-	-
11.2	Painting	11.2	IS 4351 IS 1477 (Pt 2)	R	One	Each control unit	-
11.3		Powder coating					
	Dry film thickness	Table 1	IS 13871	R	One	Every ten frames	Additional sample shall be tested whenever there is change in composition of coating material/ process of coating.
	Finish	Table 1	IS 13871	S	One	Once in a month	
	Gloss 60 °				One		
	Scratch Hardness 3000 g				One		
	Flexibility 6.25 mm mandrel				One		
	Cross cut adhesion				One		
	Erichsen test mm				One		
	Impact resistance (directive/reverse)				One		
	Protection against corrosion, 1000 h				One	Once in six month	
	Protection against humidity				One		
	Resistance to boiling water ½ h at 100 °C				One	Once in three month	
	Resistance to lubricating oil, SAE 30				One		
	Resistance to petrol				One		
	Resistance to heat double bake schedule				One		
	Resistance to bleeding	One					
	Resistance to detergent	One					
	Resistance to acid/alkali	One					

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.