



उत्पाद मैनुअल
आई एस 3499 (Part 2): 1985 के अनुसार
कार्यालय परिसर के लिए धातु की कुर्सी:
रिवॉल्विंग एवं टिल्टिंग के लिए

दस्तावेज संख्या - पी एम/ आई एस 3499 (भाग 2)/ 1/ जनवरी 2021

भारतीय मानक ब्यूरो की स्कीम-1 (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिशिष्ट की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/ प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR
METAL CHAIRS FOR OFFICE PURPOSES:
REVOLVING AND TILTING
ACCORDING TO IS 3499 (Part 2): 1985

Document No.- PM/ IS 3499 (Part 2)/ 1/ Jan 2021

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.

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, ९, बहादुर शाह ज़फ़र मार्ग
Manak Bhawan, 9, Bahadur Shah Zafar Marg
नई दिल्ली- ११०००२
New Delhi – 110002



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1.	Product	:	IS 3499 (Part 2):1985
	Title	:	METAL CHAIRS FOR OFFICE PURPOSES: REVOLVING AND TILTING
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	Please refer ANNEX – A
b)	Grouping guidelines	:	Please refer ANNEX – B
c)	Sample Size	:	• 1 Metal Chair - for Dimensions, Fabrication, Assembly and Finish tests (except tests for phosphating treatment as per Cl 6.1.2) • 5 pcs – 150 mm X 150 mm and 5 pcs – 50 mm X 100 mm - Phosphated steel panels & 5 pcs – 150 mm X 150 mm and 5 pcs – 50 mm X 100 mm - Painted (after phosphating) Steel panels– for phosphating treatment test as per Cl 8.1.2. • 10 pcs – 150 mm X 50 mm X 0.315 mm and 2 pcs – 150 mm X 100 mm X 1.25 mm - Painted mild steel panels– for “Performance requirements of finish” Tests as per Cl 7
3.	List of Test Equipment	:	Please refer ANNEX – C
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – D
5.	Possible tests in a day:		
	Dimensions (Cl 3) Fabrication (Cl 4) Assembly (Cl 5) Finish (except Cl 6.1.2) Pressure Test (Cl 7.2)		
6.	Scope of the Licence:		
	Please refer ANNEX - E		

ANNEX – A**RAW MATERIALS**

Raw Material	Indian Standard
Aluminium Tubes	IS 1285
Electrodes	IS 1278, IS 814, IS 4972
French Polish	IS 348
Wax Polish	IS 8541
Mild Steel Sheets	IS 513 (Part 1)/ IS 1079
Steel Tubes	IS 7138
Screws	IS 1365
Wood	IS 399
Enamels	IS 151/ IS 2932 (Part 1)/ IS 2933 (Part 1)
Putty	IS 110
Aluminium Primer	IS 11883

ANNEX B

Grouping Guidelines

1. Metal Chairs for Office Purposes: Non-Revolving and No-Tilting as per IS 3499 (Part 2) are classified as given below:
 - (a) Base : Steel/ Aluminium/ Mild Steel
 - (b) Frame : Steel/ Aluminium
2. Considering the above, the guidelines given below shall be followed for GoL/ CSoL:

Metal Chairs of each type of base and frame material shall be tested for all requirements to cover metal chairs of that particular variety tested.
3. The Firm shall declare the varieties of metal chairs 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 varieties covered in the Licence are tested in rotation, to the extent possible.

ANNEX- C**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	Dimensions and Tolerance (Cl 3), Fabrication (Cl 4) and Assembly (Cl 5)	- Micrometer, Vernier caliper - Measuring tape - Steel scale - Weights for applying uniform load on seat
2	Finish (Cl 6)	- Steel Wool - Blunt Knife - Sharp Blade - Sodium Chloride - Weighing Balance - Permanent Marker - Trichloroethylene Vapour/ clean mineral spirits - Dessicator and arrangement for drying - Conc. Hydrochloric Acid - Antimony Trioxide - Stripping Bath with temperature control and Sensor (or Thermometer) - Stop Watch - Soft Wet Brush - Clean absorbent material (lambs wool) - Closed vessel with layer of water at bottom
3	Scratch Hardness Test (Cl 7.1) and Stripping Test (Cl 7.4)	- Mechanized/ Hand Operated Scratch Hardness Test Apparatus - Needle - Slotted Weights - Provision of drying test panels - Conditioning Chamber - 30X Magnification lens - Steel Scale
4	Pressure Test (Cl 7.2)	- Pressure Test Apparatus [fig 8 of IS 101 (Pt 5/ Sec 1)] - Steel Ball

		- Plunger Arrangement - Weight on plunger (1.81 kg) - Provision of cutting test pieces - Vernier Caliper
5	Flexibility and Adhesion test (Cl 7.3)	- Bend Test apparatus - Cylindrical Mandrels of various diameters - 10X Magnifying Glass with light source - Coating Thickness Gauge - Vernier Caliper - Micrometer - Protractor - Humidity Chamber - Cupping Test Apparatus - with Die and Retaining ring, Measurement device resolution - 0.01 mm - Hardened Polished Steel Indenter of 20 mm diameter - Pull off Test apparatus - Automatic Test Equipment with tensile testing machine (Tensile stress rate 1 MPa/s, max.) - As per IS 101 (Part 5/Sec 2):1988 - Test cylinder diameter 20 mm - Cutting Device - Centering Device - Adhesive - Sharp razor blade, scalpel, knife or other cutting edges - Cutting guide steel straight edge - Eraser - Pressure sensitive tape
6	Test for Protection against Corrosion under conditions of condensation (Cl 7.5)	- Corrosion Cabinet [as per Cl 2.1.2 of IS 101 (Part 6/ Sec 1)] - Thermometer - Suitable protective composition with melting point > 50°C (preferably 3 parts by weight of paraffin wax & 1 part by weight of Carnabua wax)
7	Panel Conditioning	- Humidity Chamber
8	Lab Temperature Maintenance	- Air Conditioner
9	Lab condition monitoring	- Thermo Hygrometer
10	Panel Painting	- Spray Gun with Compressor

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

ANNEX D

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 equipment.

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 3499 (Part 2):1985.

4. 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 2.0 above.

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

5. 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:Subcontracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
2 & 6	Materials			S	One	Each Consignment	Raw material/Components which are covered under mandatory certification of BIS shall be ISI marked and received along with manufacturers test certificate. For other raw materials/ components, no further testing is required, if material received with test certificate or ISI Marked
	a) Aluminium Tubes	2.1					
	b) Electrodes	2.2					
	c) French Polish	2.3					
	d) Wax Polish	2.4					
	e) Mild Steel Sheets	2.5					
	f) Steel Tubes	2.6					
	g) Screws	2.7					
	h) Wood	2.8					
	i) Enamels	6.1.3					
	j) Putty	6.1.2 (Note)					
	k) Aluminium Primer						
3	Dimensions	3	IS 3499 (Part 2)	R	Each metal chair	-	-
4	Fabrication	4	IS 3499 (Part 2)	R	Each metal chair	-	
5	Assembly	5	IS 3499 (Part 2)	R	Each metal chair	-	-

7	Finish						
6.1.1, 6.1.3 6.3	Metal Components and Wooden Arms	6.1.1, 6.1.3 6.3	IS 3499 (Part 2)	R	One	From each batch of materials/ components treated at the same time	
6.1.2	Phosphating Treatment						
	Freedom from Defects	7.1	IS 3618	R	One	From each batch of materials/ components treated at the same time	
	Visual Tests	7.2	IS 3618	R	One		
	Test for Weight of Coating	7.3	IS 3618	R	One		
	Test for Corrosive Residues	6.4	IS 3618	S	One	Once in six months	
	Test for Resistance to Corrosion	6.5	IS 3618	S	One	Once in six months	
7.	Performance Requirements of Finish						
7.1	Scratch hardness test	7.1	IS 3499 (Part 2)	R	One	Once in a week	If any sample fails in any of the requirements, corrective actions shall be taken and next five batches shall be tested for that requirement. Original frequency may be restored only on conformity of samples from these batches.
7.2	Pressure Test	7.2	IS 3499 (Part 2)	R	One	Once in a week	
7.3	Flexibility and Adhesion Test	7.3	IS 3499 (Part 2)	R	One	Once in a week	
7.4	Stripping Test	7.4	IS 3499 (Part 2)	R	One	Once in a week	
7.5	Test for Protection Against Corrosion Under Conditions of Condensation	7.5	IS 3499 (Part 2)	S	One	Once in six months	-

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-E**SCOPE OF LICENCE**

Licence is granted to use Standard Mark as per IS 3499 (Part 2): 1985 with the following scope:	
Name of the product	Metal Chairs for Office Purposes: Revolving and Tilting
Classification	Base - Steel/ Aluminium/ Mild Steel
	Frame - Steel/ Aluminium