



उत्पाद मैनुअल
पॉलियूरिथेन चमकरहित (दो पैक) - विशिष्टि
IS 16239 : 2021 के अनुसार

PRODUCT MANUAL
POLYURETHANE MATT FINISH (TWO PACK) - SPECIFICATION
ACCORDING TO IS 16239 : 2021

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम 2018 की स्कीम-I के तहत यह उत्पाद मैनुअल प्रमाणीकरण की संचालन रीति में सुसंगतता और पारदर्शिता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

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.	उत्पाद Product	:	IS 16239 : 2021
	शीर्षक Title	:	पॉलियूरिथेन चमकरहित (दो पैक) – विशिष्टि Polyurethane Matt Finish (Two Pack) - Specification
	संशोधनों की संख्या No. of amendments	:	0 Nil
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement
b)	समूहीकरण दिशा निर्देश Grouping Guidelines	:	NA
c)	नमूने का आकार Sample Size	:	3 x 500 ml (both the packs)
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex-A

4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	(i) Composition (ii) Consistency (iii) Pot Life (iv) Drying Time (v) Volume solids (vi) Flash Point (vii) Fineness of grind (viii) Mass in kg/ 10 litres (ix) Lead restriction		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	Licence is granted to use Standard Mark as per IS 16239 : 2021 with the following scope:		
	Name of the product	Polyurethane Matt finish (Two Pack)	

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
NEW DELHI-110002

ANNEX – A
TO PRODUCT MANUAL FOR
POLYURETHANE MATT FINISH (TWO PACK) - SPECIFICATION
ACCORDING TO IS 16239 : 2021

Major test equipment required to test as per the Indian Standard

Sl. No.	Test	Test Equipment
1.	Composition	Acetone, Hydrogen Peroxide
2.	Lead Restriction	Electrolysis Method - Evaporating dish, Weighing balance, Muffle Furnace, Dessicator, Conc. Nitric Acid, Ammonium Nitrate, Copper Sulphate, Platinum Gauze Anode, Drying Oven, Alcohol Molybdate Method - Weighing balance, Conc.Nitric Acid, Conc. Sulphuric Acid, Drying Oven, Ethyl Alcohol, Paper Pulp Pad, Dilute Sulphuric Acid, Ammonium Acetate, Glacial Acetic Acid, Ammonium Paramolybdate Solution, Muffle Furnace, Ammonium Nitrate Solution, Porcelain filtering crucible Sulphide Method - Ground Pigment after treatment of paint as prescribed in IS 101(Part 8/Sec 2), Aqueous Solution of Hydrochloric Acid containing 0.25 percent by mass of hydrogen chloride, Analytical Balance, Filter Papers, Water bath
3.	Consistency	Palette Knife or Metal Rod, Steel Panels of size 150 mm x 150 mm x 1.25 mm prepared as prescribed in 2 of IS 101 (Part 1/Sec 3)
4.	Drying time	Silver sand, IS sieve 150 and 300-micron, Brush (soft haired), Test Panel, Humidity chamber
5.	Finish	Mild Steel Panel, Brush, Panel Stand
6.	Colour	Reference colour standard, Test panels, Brush Panel stand, Thickness gauge, Color matching booth
7.	Dry film thickness	MS panels, emery cloth no. 180, Linen rag, Hydro carbon solvent, Dry film thickness meter working on magnetic flux/ eddy current principle
8.	Gloss	Glass plate (substrate), Film applicator, Gloss meter with working standards
9.	Volume solids	Analytical balance (LC 0.1 mg), SS disc, Weight box, Beaker, Mass per litre cup, Hot air oven.
10.	Flexibility and adhesion - Scratch hardness & Bend Test	Scratch hardness apparatus with needle, Loads, Test panels, Brush Panel stand, Oven, Humidity Chamber, Type 1 bend test apparatus with 6.25 mm dia. Mandrel, Fine silicon carbide paper, Hydrocarbon solvent
11.	Fineness of Grind	Fineness of grind gauge, Scrapper
12.	Pot Life	Flow Cup Method : Flow cup, Thermometer, Spirit level, Stand, Straight edge scrapper, Stop watch Or Cone & plate or concentric cylinder viscometer method : Cone & plate/ concentric cylinder/ immersion viscometer, Standard refined mineral oils, Thermometer Or Stromer Viscometer Method : Stromer viscometer, Beaker, Thermometer, Weights 5 – 1000 g.
13.	Mass in kg / 10 litre	Pyknometer, Analytical balance, Constant temperature bath, Thermometer (0.1 LC)

14.	Flash point	Test cup with stirrer & cover, Flame source, Thermometer, Constant temperature bath
15.	Accelerated tests	Mild Steel panels, Humidity chamber, Epoxy zinc phosphate primer, Dry Film Thickness meter, Emery paper no. 400, Epoxy surfacer, H ₂ SO ₄ , KOH, Mineral lubricating oil, Xylene, Ethanol, Acetone.
16.	Durability	Mild Steel panels, Humidity chamber, Epoxy zinc phosphate primer, Dry Film Thickness meter, Emery paper no. 400, Epoxy surfacer, Spatula, Paint brush, Caustic soda, HCL, Solvent Type paint remover, Thick Mineral oil or Petroleum jelly, Artificial weathering apparatus of Xenon arc type or UV condensation Type.

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

ANNEX – B
TO PRODUCT MANUAL FOR
POLYURETHANE MATT FINISH (TWO PACK) - SPECIFICATION
ACCORDING TO IS 16239 : 2021
SCHEME OF INSPECTION AND TESTING

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

1.1 The manufacturer shall prepare and implement 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. PACKING AND MARKING - The Standard Mark, as given in the Schedule of the licence shall be incorporated legibly and indelibly on each container provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and marking shall be done as per the provisions of IS 16239 : 2021. In addition, the following details shall be mentioned on each container/package :

- a) BIS Licence No. CML-----.
- b) BIS website details i.e. –“For details of BIS certification please visit www.bis.gov.in”.

4. CONTROL UNIT- For the purpose of this scheme, the Polyurethane Matt finish produced in a batch mixer (after completion of all other operations) at a time shall constitute a control unit.

5. LEVELS OF CONTROL :- The tests as indicate 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 records maintained in accordance with paragraph 2 above.

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

6. REJECTION - 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 (LEVELS OF CONTROL)
(Para 5 of Scheme of Inspection and Testing)

(1)				(2)	(3)		
Test Details				Test equipment requirement R:required (or) S: Sub- contracting permitted	Levels of Control		
Clause	Requirements	Test Method			No. of Samples	Frequency	Remarks
		Clause	Reference				
4.1	Composition	4.1	IS 16239	R	One	Each Control Unit	
4.2	Lead restriction	-	IS 101 (Part 8/Sec 5)	R	One	-do-	
4.3 & Table 1	i) Consistency	Annex C	IS 16239	R	One	-do-	
	ii) Drying Time Surface Dry Hard Dry Hard Dry, 70°C	-	IS 101(Part 3/Sec 1)	R	One	-do-	
	iii) Finish	-	IS 101(Part 3/Sec 4)	R	One	-do-	
	iv) Colour	-	IS 101(Part 4/Sec 2)	R	One	-do-	
	v) Dry film thickness	6.2.2.1	IS 101(Part 3/Sec 2)	R	One	-do-	
	vi) Gloss 60 ⁰		IS 101(Part 4/Sec 4)	R	One	-do-	
	vii) Volume solids	-	IS 101(Part 8/Sec 6)	R	One	-do-	
	viii) Flexibility and adhesion – a) Scratch hardness b) Bend test	3 2	IS 101(Part 5/Sec 2) IS 101(Part 5/Sec 2)	R R	One One	-do- -do-	

	ix) Fineness of grind		IS 101(Part 3/Sec 5)	R	One	Each Control Unit	
	x) Pot life	Annex D	IS 16239	R	One	- do-	
	xi) Mass Kg/ 10 Lt.		IS 101(Part 1/Sec 7)	R	One	- do-	
	xii) Flash point		IS 101(Part 1/Sec 6)	R	One	-do-	
	xiii) Accelerated Tests Resistance to acid Resistance to alkali Resistance to oil Resistance to solvents	Annex E	IS 16239	R	One	Once in a Month	
	xiv) Durability test						
	Out-door Exposure		Annex F	S	One	Once in three months	
	Accelerated Weathering Test		-do-	S	One	Once a year	
	Change in Gloss		-do-	S	One	Once in three months	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. 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.