



**PRODUCT MANUAL
FOR READY MIXED PAINT FOR ROAD MARKING
ACCORDING TO IS 164: 2015**

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 164 : 2015
	Title	:	READY MIXED PAINT FOR ROAD MARKING
	No. of Amendments	:	NIL
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement
b)	Grouping guidelines	:	There are no different varieties mentioned in the Indian Standard, so no grouping guidelines required.
c)	Sample Size	:	3x500ml
3.	List of Test Equipment	:	Please refer ANNEX – A
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – B
5.	Possible tests in a day :		
	(i) Mass in kg/10 ltr (ii) Drying time (iii) Surface dry (iv) Hard dry (v) Wet capacity (vi) Test of bleeding		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 164:2015 with the following scope:		
	Name of the product	READY MIXED PAINT FOR ROAD MARKING	
	Grade	Grade 1 or 2	

ANNEX A

List of Test Equipment

Major test equipment required to test as per the Indian Standard

<u>S. No</u>	Tests used in with Clause Reference	Test Equipment/Chemicals
1.	Application, 5.2	Flat Brush (as per IS 384) Spray Gun with adjustable size nozzle cap Thermometer (Annex B of IS 164:2015)
2.	Durability, 5.3	Standard Bituminous Surface prepared as prescribed in 7.2.3 and 7.2.3.2 Rubber Hose, Pressure Gauge (Annex C of IS 164:2015)
3.	Lead Restriction, 5.4	Reagents: Dilute Nitric Acid, Ammonium Acetate Solution (lead free), Dilute Sulphuric Acid, Conc. Sulphuric Acid, Ammonium Acetate- Solid (lead free), Hydrogen Sulphide Gas, Hydrogen Sulphide Water, Copper Sulphate solution, Hydrochloric Acid, Alcohol and other lab reagents Equipment: Silica Basin, Muffle Furnace (for ashing the paint), Weighing Balance, Water Bath, No. 42 Whatman Filter Paper, 500 ml evaporating basin, sand-bath, Kipp's apparatus (for evolving H ₂ S gas), Drying/Air Oven, beakers and other laboratory glassware For Electrolysis Method – Electrolysis apparatus with platinum gauze anode (IS 101 Part 8 /Sec 5)
4.	Drying Time, 5.5	Ballotini (Small Transparent Glass Spheres) Soft Haired Brush Stopwatch Paint Brush Power Cable Paper (IS 101 Part 3 / Sec 1: 1986)
5.	Consistency, 5.5	Palette Knife/Metal Rod Glass Panels Bituminous Surface (7.2 of IS 164)
6.	Finish, 5.5	Mild Steel/Concrete/Wood Panel Brush or Sprayer Arrangement for drying panel in vertical position in dust free atmosphere (IS 101 Part 3/Sec 4:1987)
7.	Colour, 5.5	Natural Daylight or Colour Matching Booth Test Panels and Reference Standards

		(IS 101 Part 4/Sec 2: 1989)
8.	Wet Opacity, 5.5	Substrate Film Applicators Reflectometer (IS 101 Part 4/Sec 1: 1988)
9.	Resistance to bleeding, 5.5	Metal panels of sizes 150 mm x 100 mm x 0.8 mm as prescribed in 2 of IS 101 (Part 1/Sec 3) Paint Brush/Sprayer Silicon Carbide Paper, Grade 400 Black and White Charts Agreed Medium White Overcoating Composition
10.	Recoating Property, 5.5	Standard bituminous surface Paint Brush/Sprayer
11.	Resistance to Wear, 5.5	Apparatus for determination of resistance to wear as per Fig 2 of Annex F Standard bituminous surface Paint Brush/Sprayer 300 diameter disc of suitable base
12.	Residue on sieve, 5.5	Sieve – 63 micron Camel Hair Brush Oven capable of being maintained at 105±5°C Analytical Balance accurate to 1 mg Dessicator containing efficient dessicant (IS 101 Part 8/Sec 1: 1989)
13.	Flash point, 5.5	Test Cup Bath Thermometers Support (to hold test cup in bath) (IS 101 Part 1/Sec 6: 1987)
14.	Mass in kg/10 litre, 5.5	Metal or glass pycnometer Analytical Balance with LC of 1 mg Thermometer with LC of 0.2°C Temperature controlled chamber or Water Bath (IS 101 Part 1: Sec 7:2020)
15.	Keeping Properties, 5.5	Spatula Nylon Paintbrush Test Surface: smooth surface paper chart coated with varnish or lacquer (IS 101 Part 6/Sec 2: 1989)

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

Annex- B
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. PACKING AND MARKING–The Standard Mark, as given in the Schedule of the license shall be printed on each container and on the label applied to the container; provided always that the material in each container on which this Mark is thus applied conforms to every requirement of the specification.

3.1 Packing and Marking shall be done as per the requirements of the standard. In addition, the following details shall be marked on labels affixed to each container:

i) Licence No. (CM/L.....)

ii) BIS website details: 'For BIS certification details please visit www.bis.gov.in' .

4. CONTROL UNIT – For the purpose of this scheme, the entire quantity of the paint of the same colour and grade produced in a batch mixer at a time shall constitute a control unit.

5. LEVELS OF CONTROL- The test and inspection as indicated in Table 1 and at the levels of control specified therein, shall be carried out on the whole production of the factory which is covered by this Scheme of testing and appropriate records and charts maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standard and covered by this license shall be marked with the BIS Standard Mark.

7. 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 and shall be made as per relevant provisions of the extant law for disposal of such products. A separate record shall be maintained giving information on quantity and control unit number, relating to all such rejections/defective/sub-standard material of the production not conforming to the requirements of the Specification and the method of its disposal. Such material shall in no case be stored together with that conforming to the Specification. The Standard Mark (if already applied) on rejected material should be defaced.

TABLE 1 LEVELS OF CONTROL
(Cl.5 of Scheme of Testing and Inspection)

Test Details				Level of Control			
Clause	Requirement	Test Method		Test equipment requirement R: required (or) S: Sub-contracting permitted	No. of Samples	Frequency	Remarks
		Clause	Reference				
5.1	Composition	5.1	IS 164:2015	R	One	Each Control Unit	
5.2	Applications	5.2 & Annex B	-do-	R	-do-	-do-	
5.3	Durability	5.3 & Annex C	-do-	R	-do-	-do-	
5.4	Lead Restriction	-	IS: 101 (Part 8/Sec 5)	R	-do-	-do-	
5.5 & table 1	i) Drying time	-		R			
	a) surface dry b) Hard dry		IS 101 (Part 3/Sec 1) -do-		One One	-do- -do-	
	ii) Consistency	Annex D	IS 164:2015	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) Wet Opacity	-	IS101(Part 4/sec 1)	R	One	-do-	
	vi) Resistance to bleeding	-	IS 101(Part 7/Sec 4)	R	One	-do-	
	vii) Recoating property	Annex E	IS 164:2015	R	One	-do-	

	viii) Resistance to wear	Annex F	-do-	R	One	-do-	
	ix) Residue on sieve percent by mass	-	IS 101 (Part 8/Sec 1)*	R	One	-do-	The working solvent shall, however, be same as that used in manufacture of the material and declared on the container
	x) Flash point	-	-IS 101(Part 1/Sec 6)	R	One	-do-	
	xi) Mass in kg/10 liter	-	IS 101(Part 1/Sec 7)	R	One	-do-	
	xii) Keeping properties	-	IS 101(Part 6/Sec 2)	R	One	Once in six 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 empaneled 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 to the Head BO.

