# PRODUCT MANUAL FOR
# Ready Mixed Paint, Brushing, Bituminous, Black, Acid, Alkali and Heat Resisting
# ACCORDING TO IS 158:2015

***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.***

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|---|---|---|---|
| 1. | **Product** | : | IS 158:2015 |
| | **Title** | : | Ready Mixed Paint, Brushing, Bituminous, Black, Acid, Alkali and Heat Resisting |
| | **No. of Amendments** | : | Nil |
| | | | |
| 2. | **Sampling Guidelines:** | | |
| a) | **Raw material** | : | No specific requirement |
| b) | **Grouping guidelines** | : | NA – No varieties of paint are specified in the Indian Standard |
| c) | **Sample Size** | : | 4 x 500 ml |
| | | | |
| 3. | **List of Test Equipment** | : | Please refer ANNEX – A |
| | | | |
| 4. | **Scheme of Inspection and Testing** | : | Please refer ANNEX – B |
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| 5. | **Possible tests in a day :** | | |
| | (i) Consistency<br>(ii) Wet opacity<br>(iii) Drying time<br>(iv) Volatile content<br>(v) Mass in kg per 10 | | |
| 6. | **Scope of the Licence :** | | |
| | "Licence is granted to use Standard Mark as per IS 44:1991 with the following scope: | | |
| | Name of the Product | | Ready Mixed Paint, Brushing, Bituminous, Black, Acid, Alkali and Heat Resisting |

## ANNEX A

## 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 | Drying Time, 4.3 | Ballotini (Small Transparent Glass Spheres)<br>Soft Haired Brush<br>Stopwatch<br>Paint Brush<br>Power Cable Paper<br>(IS 101 Part 3 / Sec 1: 1986) |
| 2 | Consistency, 4.3 | Palette Knife<br>Glass Panels |
| 3 | Finish, 4.3 | Mild Steel/Concrete/Wood Panel<br>Brush or Sprayer<br>Arrangement for drying panel in vertical position in dust free atmosphere<br>(IS 101 Part 3/Sec 4:1987) |
| 4 | Wet Opacity, 4.3 | Substrate<br>Film Applicators<br>Reflectometer<br>(IS 101 Part 4/Sec 1: 1988) |
| 5 | Colour, 4.3 | Natural Daylight or Colour Matching Booth<br>Test Panels and Reference Standards<br>(IS 101 Part 4/Sec 2: 1989) |
| 6 | Mass in kg/10 litre, 4.3 | Metal or glass pycnometer<br>Analytical Balance with LC of 1 mg<br>Thermometer with LC of 0.2°C<br>Temperature controlled chamber or Water Bath<br>(IS 101 Part 1: Sec 7:2020) |
| 7 | Water content, 4.3 | Karl Fischer Titrator with end point detection (as per 6 of IS 2362)<br>Electrically operated oven (capable of being controlled at 130°C)<br>Dessicator and dessicant (granulated aluminium sodium silicate, anhydrous)<br>Karl Fischer reagent as prescribed in 5.7 of IS 2362<br>Laboratory glassware and reagents as per IS 2362<br>(IS 101 : Part 2 : Sec 1 : 2018) |

| | | |
|---|---|---|
| 8 | Flexibility and Adhesion, Bend Test, 4.3 | Bend Test Apparatus as per Type 1 or 2<br>Controlled Temperature Chamber<br>Test Panels<br>(IS 101 Part 5/Sec 2: 1988) |
| 9 | Stripping test, 4.3 | Scratch hardness test apparatus as prescribed in 3.2.2 of IS 101(Part 5/ Sec 2) |
| 10 | Protection against corrosion under conditions of condensation, 4.3 | Metal Panels<br>Corrosion Cabinet<br>(IS :101 (Part 6/Sec 1) : 1988) |
| 11 | Volatile Matter, 4.3 | Flat bottomed dish of glass, aluminium or tinplate<br>Thin glass rod of 100 mm approx.<br>Air oven (capable of 105 ±2°C)<br>Dessicator<br>Analytical Balance (1 mg LC)<br>(IS 101 Part 2/Sec 2:1986) |
| 12 | Resistance to acid, 4.3 | Glass panels of sizes 150 mm × 100 mm as prescribed in 5 of IS 101 (Part 1/Sec 3)<br>Paint Brush<br>Wax<br>Dilute Sulphuric Acid – 1:20 (v/v)<br>Test Vessel<br>Conditioning Chamber |
| 13 | Resistance to Alkali, 4.3 | Glass panels of sizes 150 mm × 100 mm as prescribed in 5 of IS 101 (Part 1/Sec 3)<br>Paint Brush<br>Wax<br>5% anhydrous sodium carbonate in water (m/v)<br>Test Vessel<br>Conditioning Chamber |
| 14 | Resistance to Heat, 4.3 | Mild steel panels of sizes 150 mm × 100 mm × 0.8 mm as prescribed in 2 of IS 101 (Part 1/Sec 3)<br>Paint Brush<br>Electric Furnace (capable of attaining 900°C) |
| 15 | Flash point, 4.3 | Test Cup<br>Bath<br>Thermometers<br>Support (to hold test cup in bath)<br>(IS 101 Part 1/Sec 6: 1987) |
| 16 | Keeping Properties, 4.3 | Spatula<br>Nylon Paintbrush<br>Test Surface: smooth surface paper chart coated with varnish or lacquer |

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| | | (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 Licence shall be stencilled or printed on each container of the paint or on a label applied to the container, provided always that the product thus marked conforms to every requirement of the Indian Standard.

3.1 Packing and Marking shall be done as per the provisions of the Indian Standard. In addition, the following shall be marked on each container of paint or on a label applied to the container:

i. BIS licence no: CM/L-
ii. Details of BIS website i.e. “for details of BIS certification please visit www.bis.gov.in”

**4. CONTROL UNIT –**The total quantity of the paint manufactured in a batch mixer at a time 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: LEVELS OF CONTROL

| (1) | | | | (2) | (3) | | |
|---|---|---|---|---|---|---|---|
| **Test Details** | | | | **Test equipment requirement**<br>**R: required (or)**<br>**S: Sub-contracting permitted** | **Level of Control** | | |
| **Clause** | **Requirement** | **Test Method** | | | **No. of Sample** | **Frequency** | **Remarks** |
| | | **Clause** | **Reference** | | | | |
| 4.1 | Composition | 4.1 | IS 158:2015 | R | One | Each Control Unit | |
| 4.2.1 | Lead Restriction | - | IS: 101(Part 8/Sec 5) | R | One | -do- | |
| **4.3 & Table 1** | | - | | | | | |
| I | Drying time, hard dry | - | IS: 101(Pt 3/ sec 1) | R | One | -do- | |
| Ii | Consistency | Annex B | IS 158:2015 | R | One | -do- | |
| iii | Finish | - | IS: 101 (Pt 3/ Sec 4) | R | One | -do- | |

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|---|---|---|---|---|---|---|---|
| | | | | | | | |
| iv | Wet opacity | - | IS: 101 (Pt 4/ Sec 1) | R | One | -do- | |
| v | Colour | - | IS: 101 (Pt 4/ Sec 2) | R | One | -do- | |
| vi | Mass in kg/10 litre | - | IS: 101 (Pt 1/ Sec 7) | R | One | -do- | |
| vii | Water content | - | IS: 101 (Pt 2/ Sec 1) | R | One | -do- | |
| viii | Flexibility and adhesion, test with 6.25 mmdia mandrel and type 1 apparatus | 2 | IS: 101 (Pt 5/ Sec 2) | R | One | -do- | |
| ix | Stripping test | Annex C | IS 158:2015 | R | One | -do- | |
| x | Protection against corrosion under conditions of condensation | 2 | IS: 101 (Pt 6/ Sec 1) | R | One | -do- | |
| xi | Volatile matter, percent by mass | - | IS 101(Pt 2/Sec2) | R | One | -do- | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| xii | Resistance to acid | Annex D | IS 158:2015 | R | One | -do- | |
| xiii | Resistance to alkali | Annex E | IS 158:2015 | R | One | -do- | |
| xiv | Resistance to heat | Annex F | IS 158:2015 | R | One | -do- | |
| | | | | | | | |
| xv | Flash point | | IS: 101 (Pt 1/ Sec 6) | R | One | -do- | |
| xvi | Keeping properties | | IS: 101 (Pt 6/ Sec 2) | R | One | -do- | |

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 for approval to BO head.