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Mazdoor Kisan Shakti Sangathan

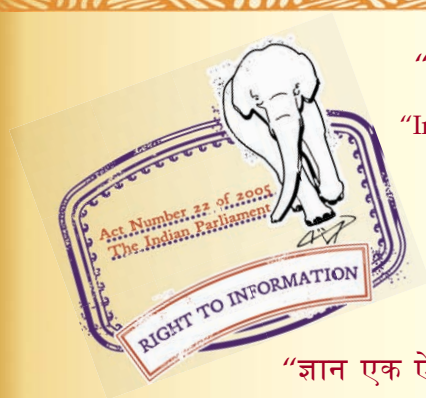
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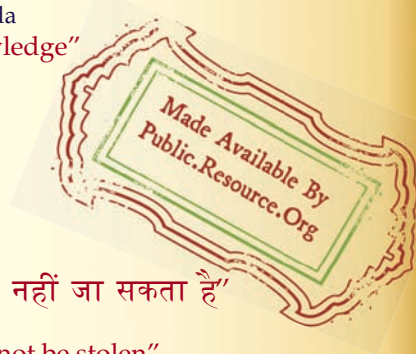
IS 13184 (1991): Mastic Filler, Epoxy Based [CHD 20: Paints, Varnishes and Related Products]



“ज्ञान से एक नये भारत का निर्माण”

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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

मस्तगी पूरक, एपॉक्सी आधारित — विशिष्ट

Indian Standard

**MASTIC FILLER, EPOXY BASED —
SPECIFICATION**

UDC 667.622.5

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

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Paints (Other than Industrial Paints) and Allied Products Sectional Committee had been approved by the Chemical Division Council.

This standard is one of the series of epoxy based painting material. This material will be used at last with the polyurethane full gloss enamel and the total system is designed not only to ward off the corrosion but also to fortify the steel against chemical attack and physical damage.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

MASTIC FILLER, EPOXY BASED — SPECIFICATION

1 SCOPE

This standard prescribes the requirements and the methods of test and sampling of two pack epoxy based mastic filler, intended to be used over epoxy based zinc chromate/zinc phosphate primer in the painting of steel structure like exteriors of railway coaches, diesel and electric locomotives for protection, against atmospheric corrosion.

2 REFERENCES

The Indian Standards listed below are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
101	Methods of sampling and test for paints, varnishes and related products
(Part 1/Sec 1)	Tests on liquid paints (general and physical), Section 1 Sampling (<i>third revision</i>)
(Sec 3)	Preparation of panels (<i>third revision</i>)
(Sec 5)	Consistency
(Sec 6)	Flash point (<i>third revision</i>)
(Part 3/Sec 1)	Tests on paint film formation, Section 1 Drying time (<i>third revision</i>)
(Sec 2)	Film thickness (<i>third revision</i>)
(Sec 4)	Finish (<i>third revision</i>)
(Part 4/Sec 2)	Optical test, Section 2 Colour
(Part 6/Sec 2)	Durability test on paint films, Section 2 Keeping properties
1070 : 1977	Water for general laboratory use (<i>second revision</i>)
1303 : 1983	Glossary of terms relating to paints (<i>second revision</i>)
1407 : 1980	Round paint tins (<i>second revision</i>)
2552 : 1979	Steel drums (galvanized and ungalvanized) (<i>second revision</i>)
5083 : 1988	Knifing stopper (<i>second revision</i>)
9162 : 1979	Methods of test for epoxy resins, hardeners and epoxy resin composition for floor topping

3 TERMINOLOGY

3.0 For the purpose of this standard, the definitions given in IS 1303 : 1983, 2 of IS 9162 : 1979 and the following shall apply.

3.1 Pack

The ingredients of each of the two packs of the paint which when mixed together, form an epoxy based mastic filler.

3.2 Paint

The mixture of the two packs in the proportion recommended by the manufacturer.

4 REQUIREMENTS

4.1 Composition

The filler shall consist essentially of two components, base and hardner. The mixing ratio of the two shall be in simple ratio preferably by volume as recommended by the manufacturer.

4.1.1 Base

It shall consist of epoxy resin of epoxide equivalent 400 to 600, pigment and other suitable additives. The epoxy resin of the grade conforming to IS 9162 : 1979 shall be used.

4.1.1.1 The material shall be of such a composition as to satisfy the requirements of this standard.

4.1.2 Hardner

It shall consist of an aliphatic amine, an aliphatic or aromatic amine adduct, a polyamide or amidopolyamine or any other suitable hardner. It shall react with epoxy resin at normal ambient temperature.

4.1.3 The mixture of base and hardner shall be allowed to mature for 10 min at $27 \pm 2^\circ\text{C}$. The mixture must be consumed within 2 hours after mixing.

4.2 The material shall also comply with the requirements given in Table 1.

5 TESTS

5.1 Unless specified otherwise, tests shall be conducted as prescribed in IS 101. References to the relevant clauses of that standard are given in col 4 of Table 1.

5.2 The preparation of metal panels shall be according to IS 101 (Part 1/Sec 3) : 1986.

Table 1 Requirements for Epoxy Based Mastic Filler (Two-Pack)(*Clauses 4.2 and 5.1*)

Sl No.	Characteristic	Requirements	Methods of Test	
			Ref to IS No.	Annex
(1)	(2)	(3)	(4)	(5)
i)	Drying time		101 (Part 3/Sec 1)	—
	a) Surface dry, <i>Max</i>	4 hours		
	b) Hard dry, <i>Max</i>	8 hours		
ii)	Consistency	Smooth and uniform and suitable for knife application	101 (Part 1/Sec 5)	—
iii)	Finish	Smooth and matt to egg shell flat	101 (Part 3/Sec 4)	—
iv)	Colour	Grey and any colour as agreed to	101 (Part 4/Sec 2)	—
v)	Dry film thickness, <i>Min</i>	300 microns	101 (Part 3/Sec 2)	—
vi)	Flash point (for both packs)	Above 20°C	101 (Part 1/Sec 6)	—
vii)	Keeping properties	Not less than 6 months	101 (Part 6/Sec 2)	—
viii)	Rubbing properties	Shall not show defects, namely, roughness, scratches, cracks, pin-holes	Appendix B of IS 5083 : 1988	—
ix)	Hold out properties	Shall have uniform finish and equal absorption	Appendix C of IS 5083 : 1988	—
x)	Adhesion and compatibility	Shall have uniform finish and good adhesion with primer and finish coat	Appendix D of IS 5083 : 1988	—
xi)	Pot life, 27 ± 2°C, <i>Min</i> <i>Max</i>	2 hour 16 hour	—	A

5.3 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070 : 1977) shall be employed.

5.4 The two components of mastic filler shall be mixed in the ratio recommended by the manufacturer before carrying out the tests.

6 PACKING AND MARKING**6.1 Packing**

Unless otherwise agreed to between the purchaser and the supplier, the material shall be packed in metal containers conforming to IS 1407 : 1980 and IS 2552 : 1979.

6.1.1 Each component as delivered shall be free of gel, coarse particles, skins, foreign matter and sediments. Any sediment that does form should be mixed with power driven stirrer in order to give a homogeneous paint.

6.2 Marking

Each container shall be marked with the following:

- a) Name of the material with component's name and induction time,

- b) Indication of the source of manufacture,
- c) Mass of the material,
- d) Month and year of manufacture,
- e) Safe storage period,
- f) Mixing proportion recommended for use, and
- g) Other instructions for safety handling and use of the material.

7 SAMPLING

7.1 Representative samples of the material shall be drawn according to 6 of IS 101 (Part 1/ Sec 1) : 1986.

7.2 Criteria for Conformity

7.2.1 Drying time shall be tested on at least 2 samples taken from 2 different containers selected according to 7.1. For lot size above 1 000 kg, this shall be minimum 3. For the rest of the characteristics, tests shall be conducted on one composite sample prepared from individual samples taken from different containers in the sample.

7.2.2 There shall be no failure in respect of any test if the lot is to be considered conforming to the requirements of this specification.

ANNEX A

[Table 1, Sl No. (xi)]

DETERMINATION OF POT LIFE**A-1 GENERAL**

The time taken to reach to end of working life from the original viscosity shall be considered as the pot life of the material.

A-2 PROCEDURE

A-2.1 Condition the components of the coating for one hour at 27°C and mix immediately in the proper ratio to fill the can to be approximately 1 cm of the top. The lid should be loosely placed on the can.

A-2.2 Measure the viscosity initially and every hour thereafter, as prescribed in IS 101 (Part 1/ Sec 5).

NOTE — The interval may be shortened, if desired.

A-2.3 Near the end of the coating's working life, the viscosity builds up rapidly. When it appears that the coating may be too viscous to spray, remove a small portion and add the appropriate thinner. If the paint can still be thinned, the end of the working life has not been reached.

A-2.4 The end of the working life is reached when the paint gels, becomes stringy or cannot be thinned for application.

A-2.5 Report the working life as pot life of the period.

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