



TITLE: - **HIGH BUILD MICACEOUS IRON OXIDE PAINT**

**TRE/167**

4 पृष्ठों में

PAGE 1 OF 4

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### 1.0 GENERAL

This specification covers the technical and quality requirements of air / oven drying two pack high build micaceous iron oxide pigmented epoxy composition Paint which gives high film thickness in a minimum number of coats with excellent chemical, water, heat and abrasion resistance and good durability in industrial and humid atmosphere.

### 2.0 APPLICATION

Used as an intermediate or finish coat on epoxy or zinc rich primed surface.  
Suitable for applications by brushing or spraying on Transformers to provide protection against chemical & humid atmosphere.  
Suitable for vapour phase drying operation of Transformer in solvent Shellsol – H at 130<sup>0</sup> C and oven drying at 90 ± 10<sup>0</sup> C.

### 3.0 COMPOSITION

Polyamide cured Micaceous Iron Oxide pigmented Epoxy Resin.

### 4.0 MIXING RATIO

As recommended in the product data sheet supplied by the manufacturer of the paint.

### 5.0 COLOUR & GLOSS

Brown/ Gray & Smooth

### 6.0 FREEDOM FROM DEFECTS

The base of the paint system shall remain free from defects like hard setting of pigments, skinning and livering when kept in close container till its shelf life. The dried paint film shall be free from defects like bittyness, floating of pigments, surface haze, orange peeling, colour fading, wrinkles, etc. when dried in oven at 90 ± 10<sup>0</sup> C for 1 hour and subjected to vapour phase operation at 130<sup>0</sup> C in Shellsol – H solvent for 72 hour.

### 7.0 PROPERTIES ON BASE & CATALYST MIX

Unless otherwise specified, the sample (mixed paint) shall be tested in accordance with IS: 101.

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**TITLE: - HIGH BUILD MICACEOUS IRON  
OXIDE PAINT**

**TRE/167**

4 पृष्ठों में 2

PAGE 2 OF 4

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**7.1 CONSISTENCY**

Paint shall be mixed so that it produces a smooth and uniform paint suitable for application.

**7.2 DRYING TIME**

Surface dry : 4 - 6 Hours at 30 degree centigrade  
Hard dry : 16 Hours at 30 degree centigrade  
Oven dry : 1 Hour at 90 ± 10 degree centigrade

**7.3 POT LIFE ( Appendix -II)**

4 - 12 Hour

**7.4 FLASH POINT**

Not below 25 degree centigrade

**7.5 DRY FILM THICKNESS**

75-100 microns

**7.6 Flexibility and Adhesion**

The paint film shall not show sign of damage, detachment or cracking when tested after 7 days curing at ambient temperature.

**7.7 Resistance to Salt Spray (CI.5.2.IS;2074)**

The panel prepared from the material shall show no signs of corrosion after continuous exposure for 4 days in Salt Spray Cabinet.

**7.8 Resistance to transformer oil at 90 deg.C ± 2 degree C for 48 hrs**

Shall not show any sign of deterioration.

**7.9 Chemical and Thermal Resistance Test (Appendix -I) Type Test**

Panels prepared and tested in accordance with Appendix-1 to this specification, when kept in the SHELLSOL-H (or equivalents) vapour at 130° C for 72 hours, shall not show any sign of deterioration.

**8.0 TYPE APPROVAL:**

**8.1 Samples**

Samples for Type Approval testing shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.

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**TRE/167**

4 पृष्ठों में 3

PAGE 3 OF 4

RRF

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**8.2 Type Test:**

**8.2.1 Outdoor durability test (Annexure-D.IS 2932-1993)**

Painted panels prepared as per Annexure D, but with the primer and finish paints as per this specification and tested as per D-3 of IS:2932-1993 shall satisfy the requirements laid down D 3.3 for at least 12 months after painting.

**9.0 TEST CERTIFICATES**

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment giving following information In addition, the supplier shall ensure to send one copy of test certificate along with the dispatch documents to facilitate quick clearance of the materials.

- BHEL order
- TRE/167: High build micaceous iron oxide Paint
- Manufacturers/suppliers Name :
- Trade name/mark, if any :
- Batch/Lot No.:
- Quantity supplied :
- Date of manufacture & expiry :
- Test results :
- Mixing ratio :

**10.0 KEEPING PROPERTY**

When stored in covered dry place in the original sealed containers under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture, which shall be subsequent to the date of placement of BHEL order.

**11.0 INSPECTION AT SUPPLIER'S WORKS:**

Whenever specified, tests and inspections are to be conducted in the presence of BHEL's representative. The supplier shall offer BHEL's representative all reasonable facilities, without charge to satisfy the later that the material is being furnished in accordance with this specification. The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises.

If facilities are not available at his works, the supplier shall make necessary arrangements for carrying out the prescribed tests else- where. The supplier shall notify BHEL in advance about the readiness of the material for inspection and testing. BHEL reserves the right to test the material at BHEL's works and the final acceptance of the material shall be based on these test results.

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**TRE/167**

4 पृष्ठों में 4

PAGE 4 OF 4

**12.0 PACKING AND MARKING:**

Unless otherwise stated, base and accelerator shall be packed separately in steel containers of appropriate capacities. Each container shall bear the following information:

TRE/167: High build micaceous iron oxide Paint

BHEL Order No.

Manufacturer's/Supplier's Name.

Trade Mark, if any.

Batch No.

Date of Manufacture and Expiry

**13.0 REJECTION AND REPLACEMENT:**

If the material does not comply with the requirements of this specification during receipt inspection at BHEL or if any defect is found during further processing of the material, BHEL reserves the right to reject the whole consignment notwithstanding any previous certification of satisfactory testing and/or inspection. The supplier shall undertake to replace the rejected material at his own cost and the rejected material shall be taken back by the supplier after fulfilling the entire commercial terms and conditions.

**APPENDIX -I**

**CHEMICAL AND THERMAL RESISTANCE TESTS (Clause 7.9)**

Take a panel of 150 x 150 mm mild Steel, emery and degrease with xylol to remove dirt, oil and grease, if any. Apply a coat of epoxy finishing paint and allow to oven dry at  $90 \pm 10^{\circ}\text{C}$ . Apply a second coat of epoxy paint to get uniform coating and allow to dry for 72 hours. Weight the painted panel and expose the panel in the chamber of SHELLSOL-H vapours at 130 deg.C under vacuum for 72 hrs. At the end of 72 hrs takeout the panel from the chamber and observe for any deterioration in paint film i.e .blisters, paint film softening and colour change etc. and weight the panel again.

The paint passes the test if no discolouration, softening , blistering in paint film takes place and weight loss is not more than 50 mg.

**APPENDIX- II**

**DETERMINATION OF POT LIFE (Clause 7.3)**

About 100 ml of the mixed paint prepared by mixing the base and accelerator in the recommended proportions is taken in a beaker. The paint shall be such that it should be usable by brush under a specified pot life of 8-24 hours at room temperature. In order to see if the paint has gelled or not, a small quantity of the mixed paint is dissolved in the recommended thinner. It should not dissolve if the paint has gelled and vice-versa.

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