

1.0 GENERAL:

This specification deals with the quality requirements of two pack Epoxy based rapid re-coatable air drying / oven drying chemical resistant primer pigmented with anticorrosive Zinc Phosphate.

2.0 APPLICATION:

The paint shall be used as a primer in the painting system for protection of steel work, both under marine and inland outdoor conditions.

The paint shall be used as a high performance primer for application by brush / spray on Sa 2.5 prepared steel and suitable for force drying at 90 ± 10^0 C for 1 Hr after flash off time of min. 30 minutes.

It should also be suitable for vapour phase drying operation of Transformer in Solvent Shellsol – H at 130⁰ C for 96 hours.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no national standard covering this material. However, assistance has been taken from the following national standards for preparation of this specification:

i) IS: 14506 - 1998 : Epoxy red oxide zinc phosphate weldable primer, two component.

4.0 COMPOSITION:

The paint consists of two components i.e. base and accelerator. The base contains epoxy binder suitably pigmented with zinc phosphate, TiO₂ and extenders. The hardener is polyamide solution to cure the base.

The paint shall confirm to the all requirements of ISO 14001 and shall be free from lead/ lead components.

5.0 MIXING RATIO:

The components of paint are to be mixed as recommended in the product data sheet supplied by the manufacturer of the paint: The type and content of the binding material as determined by infra-red spectroscopy or thin layer chromatography shall be strictly adhered to the "Type approved sample".

6.0 COLOUR: Grey / Red oxide.




7.0 FINISH: Smooth and matt.

8.0 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 closed 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 ± 10^0 C for 1 hour and subjected to vapour phase operation at 130^0 C in Shellsol – H solvent for 96 hour after composite paint system.

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	NKM	AKD		तैयार किया PREPD.		दिनांक DATE 15.05.09

RF#	COMP. dng		TITLE: - CHEMICAL RESISTANT EPOXY BASED,RAPID RECOATING ZINC PHOSPHATE PRIMER		TRE/166	
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COPYRIGHT AND CONFIDENTIAL The Information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED. It must not be used directly or indirectly in any way detrimental to the interest of the Company.		<p>9.0 SAMPLING: As per IS: 101.</p> <p>10.0 TECHNICAL REQUIREMENTS: Unless otherwise specified, the sample (mixed paint) shall be tested in accordance with IS 101.</p> <p>10.1 Mass per 10 litres: (IS 101Part 1, Sec 7/87) 14 kg per 10 litres, minimum</p> <p>10.2 Consistency: (IS 101 Part 1 Sec 5/89) Smooth & Uniform suitable for brush or spray application by thinner addition Mix Viscosity : Min 250 gm @30⁰ C by Stormer Thinner Intake (By Volume) By Brush : 0-15% Air Spray : 10-30 % Air less Spray : 5-20%</p> <p>10.3 Drying time at 30⁰ C (IS 101Part3, Sec 1/86) Surface Dry : 3/4 Hr (Max) Hard Dry : 4 Hr (Max) 1 Hour maximum in oven at 90 ± 10⁰ C after flash off time of 30 minutes at room temp.</p> <p>10.4 Volatile matter, percent by mass: (IS 101Part 8, Sec 2/90) 25.0 maximum.</p> <p>10.5 Pigment content, percent by mass: (IS 101Part 8, Sec 2/90) 50 % ± 5%</p> <p>10.6 Volume solids, percent: (IS 101Part 8, Sec 6/93-NVM & disc to be air dried for 24 hrs) 63 % ± 3%</p> <p>10.7 Dry film thickness: (IS 101Part 3, Sec 2/89) 40.0-75.0 microns / coat</p> <p>10.8 Flash point: (IS 101Part 1, Sec 6/87) Not below 24⁰ C.</p> <p>10.9 Pot life at 30⁰ C: (IS 13213:91 Ann.E) 4.0 hours, minimum.</p> <p>10.10 Zinc phosphate, percent by mass on pigment: 16 percent, minimum.</p>				
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REF	COMP. dng	<div>वीएचईएल</div> <div>BHEL</div>	TITLE: - CHEMICAL RESISTANT EPOXY BASED,RAPID RECOATING ZINC PHOSPHATE PRIMER		TRE/166	
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<div>10.11 Scratch Hardness (IS: 101, Part 5/Sec. 1): After the film @75 microns DFT is cured for 7 days air drying and tested under load of minium 2000 gm on MS Panel, no such scratch as to show the bare metal shall be produced</div> <div>10.12 Adhesion by pull off using portable adhesion tester (ISO 4624) Min. 8MPA on 2 mm Sa2.5 blasted MS panel when applied at 75 micron DFT after 7 days air drying.</div> <div>10.13 Abrasion (ASTM D4060) Max. 200 mg weight loss per 1000 cycle using CS 10 Wheels and 1 Kg loading @75 micron DFT on Sa 2.5 blasted MS panel and tested after 7 days air drying.</div> <div>10.14 Adhesion Cross Cut (ISO 2409) It should pass with classification 0 on Sa 2.5 blasted MS panel and tested after 48 hours air drying.</div> <div>10.15 Impact (ASTM D2794) Direct Impact resistance should pass min. 7 Joules on Sa 2.5 Blasted MS Panel and tested after 48 hours air drying.</div> <div>10.16 Pencil Hardness (ASTM D3359) It should pass minimum 2H @ 75 Micron DFT and tested after 7 days air drying.</div> <div>10.17 Flexibility (ASTM D522) It should pass minimum 12% elongation when applied at 75 micron DFT on tin panels and tested after 48 hours air drying.</div> <div>10.18 Salt spray resistance (ASTM B117) It should pass minimum 1000 hours without any scribe line corrosion or, film defect when applied at 75 micron DFT on Sa 2.5 blasted steel.</div> <div>10.19 Over Coating Interval Min 2 hour by spray & 4 hour by brush. Max. 12 months, provided the surface is dry and clean from all contaminants.</div> <div>10.20 Resistance to Condensation (IS: 101, Part 6/Sec. 8): It should pass minimum 2000 hours without any defect when applied at 75 micron DFT on Sa 2.5 blasted steel.</div> <div>10.21 Resistance to modified salt spray or prohesion test (ASTM G85) It should pass minimum 2000 hours without any defect when applied at 75 micron DFT on Sa 2.5 blasted steel.</div>						
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	<div><div>निर्माण</div><div>3364</div></div> <div>NKM AKD</div>			तैयार किया PREPD.		दिनांक DATE 15.05.09
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COPYRIGHT AND CONFIDENTIAL The Information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED. It must not be used directly or indirectly in any way detrimental to the interest of the Company.		<p>10.22 Resistance to Cyclic Corrosion (ASTM D5894) It should pass minimum 2000 hours without any defect when applied at 75 micron DFT on Sa 2.5 blasted steel.</p> <p>10.23 Resistance to Immersion - Deionised & Demineralised Water (ISO 2812, Part1) It should pass minimum 2500 hours without any defect when applied at 75 micron DFT on Sa 2.5 blasted steel.</p> <p>10.24 Self Life (IS: 101, Part 6/Sec. 2/89) Minimum 12 Months</p> <p>11.0 TYPE APPROVAL: Validity of type test certificate shall be three years from the date of test.</p> <p>Chemical Composition of paint shall be confirmed by IR spectrography / thin layer chromatography by supplier and report should be provided.</p> <p>11.1 Accelerated Tests (IS: 13213): Panels prepared and tested as per clause 10.2.1 of latest revision of TRE 165</p> <p>12.0 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 No : TRE/166 : Chemical Resistant Epoxy Based Rapid Recoating Zinc Phosphate Primer Manufacturers/suppliers Name: Trade name/mark, if any: Batch/Lot No : Quantity supplied: Date manufacture & expiry: Test results of clause 10 & 11: T.C. No & date : Mixing ratio :</p> <p>13.0 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 not less than 12 months after the date of manufacture, which shall not be earlier than one month of the scheduled delivery date mentioned in BHEL order.</p>				
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COPYRIGHT AND CONFIDENTIAL The Information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED. It must not be used directly or indirectly in any way detrimental to the interest of the Company.		14.0 PACKING AND MARKING Unless otherwise stated, base and hardener shall be packed separately in steel containers of appropriate capacities. Each container shall bear the following information: TRE/166 : Chemical Resistant Epoxy Based Rapid Recoating Zinc Phosphate Primer BHEL Order No.: Manufacturers/ Supplier's name: Trade name / Mark, if any: Batch/Lot No.: Mixing ratio: Quantity supplied: Date of manufacture & expiry:					
		15.0 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.					
		16.0 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.					
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