













RFF	COMP. drg	<div><div>बीएचईएल</div><div>BHEL</div></div>	TITLE: - TWO COMPONENT, HIGH BUILD, RAPID RECOAT EPOXY WITH LAMELLAR MIO PIGMENT		TRE/167	
					6 पृष्ठों में1	PAGE 1 OF 6
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>1.0 GENERAL This specification deals with the requirement of high build two pack epoxy based rapid re coatable air / oven drying intermediate coat pigmented with lamellar micaceous iron oxide. The paint should provide excellent chemical, water, heat and abrasion resistance and good durability in industrial and humid atmosphere.</p> <p>2.0 APPLICATION The paint shall be used as an intermediate on epoxy or zinc rich primed surface.</p> <p>Suitable for applications by brushing or spraying and force drying at 90 ± 10⁰ C for 1 Hrs after flash off time of min. 30 minutes.</p> <p>Suitable for vapour phase drying operation of Transformer in solvent Shellsol – H at 130⁰ C FOR 96 Hrs on composite paint system.</p> <p>3.0 COMPOSITION The Paint consist of two component i.e. base and hardener / accelerator. The base contains epoxy binder suitably pigmented with lamellar micaceous iron oxide and extenders. The hardener is Polyamide solution.</p> <p>The paint shall confirm to the all requirements of ISO 14001 and shall be free from lead/ lead components.</p> <p>4.0 MIXING RATIO As recommended in the product data sheet supplied by the manufacturer of the paint.</p> <p>5.0 COLOUR & GLOSS Brown/ Gray & Smooth</p> <p>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 ± 10⁰ C for 1 hour.</p> <p>7.0 SAMPLING: As per IS: 101.</p>				
		पुनः Rev. 02 Dt. 30.0 1.19	Specification revised and updated <div><div>Signature</div><div>3364</div></div> <div>NKM AKD</div>		सं.	CHECKED & APPROVED S.G.Bokade तैयार किया PREPD. Amulya Deota

RFI	COMP. dng	<div><div>बीएसईएल</div><div>BHEL</div></div>	TITLE: - TWO COMPONENT, HIGH BUILD, RAPID RECOAT EPOXY WITH LAMELLAR MIO PIGMENT		TRE/167	
					6 पृष्ठों में2	PAGE 2 OF 6
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		8.1 Mass per 10 litres: (IS 101Part 1, Sec 7/87) 16 kg per 10 litres, minimum				
		8.2 Consistency: (IS 101 Part 1 Sec 5/89) Smooth & Uniform suitable for brush or spray application by thinner addition Mix Viscosity : Min 250 gm @30 ⁰ C by Stormer Thinner Intake (By Volume) Air Spray : 5-25 % Air less Spray : 5-10%				
		8.3 Drying time at 30⁰ C (IS 101Part3, Sec 1/86) Surface Dry : 90 Minutes (Max) Hard Dry : 16 Hr (Max) 1 Hour maximum in oven at 90 ± 10 ⁰ C after flash off time of 30 minutes at room temp.				
		8.4 Non Volatile matter, percent by mass: (IS 101Part 8, Sec 2/90) 80 % ± 3%				
		8.5 Pigment content, percent by mass: (IS 101Part 8, Sec 2/90) 60 % ± 5%				
		8.6 Volume solids, percent: (IS 101Part 8, Sec 6/93-NVM & disc to be air dried for 24 hrs) 60 % ± 3%				
		8.7 Dry film thickness: (IS 101Part 3, Sec 2/89) 75-125 micron / coat				
		8.8 Flash point: (IS 101Part 1, Sec 6/87) Not below 25 ⁰ C				
		8.9 Pot life at 30⁰ C: (Appendix I) 5 Hour (Min.)				
		8.10 Cured Epoxy on Paint: (To be determined by taking the difference of NVM and pigmentation on paint) 20 % ± 3%				
		8.11 Scratch Hardness (IS: 101, Part 5/Sec. 1): Min. 2000 gm when applied at 125 micron DFT on burnished MS panel and tested after 7 days air drying.				
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RFI	COMP. dng		TITLE: - TWO COMPONENT, HIGH BUILD, RAPID RECOAT EPOXY WITH LAMELLAR MIO PIGMENT		TRE/167	
					6 पृष्ठों में3	PAGE 3 OF 6
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>8.12 Adhesion by pull off using UTM adhesion tester (ISO 4624) Minimum 8 MPA when applied at 125 micron DFT on Epoxy Primed Surface applied on 2 mm blasted dolly.</p> <p>8.13 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.</p> <p>8.14 Adhesion Cross Cut (ISO 2409) It should pass with classification 0 when applied over Epoxy Primed surface.</p> <p>8.15 Impact (ASTM D2794) Direct Impact resistance should pass minimum 4 Joules when applied at 125 micron DFT on Sa 2.5 Blasted MS Panel and tested after 7 days air drying</p> <p>8.16 Pencil Hardness (ASTM D3359) It should pass minimum 3H @ 125 Micron DFT on Sa 2.5 blasted surface and tested after 7 days air drying.</p> <p>8.17 Flexibility (ASTM D522) It should pass minimum 12% elongation @ 125 micron on burnished MS panel and tested after 48 hours air drying. The film shall not show sign of damage detachment or cracking.</p> <p>8.18 Salt spray resistance (ASTM B117) It should pass minimum 2000 hours at 125 micron DFT without any film defect and < 2 mm scribe line corrosion when applied on 75 micron DFT Epoxy Primed Surface.</p> <p>8.19 Over Coating Interval Minimum : 3-4 hour by spray application. Maximum : Unlimited, provided the surface is dry and clean from all contaminants.</p> <p>8.20 Resistance to Condensation (IS: 101, Part 6/Sec. 8): It should pass minimum 2000 hours at 125 micron DFT without any film defect when applied on 75 micron DFT Epoxy Primed Surface (Substrate : Sa 2.5 blasted MS panel)</p> <p>8.21 Resistance to modified salt spray or prohesion test (ASTM G85) It should pass minimum 2000 hours at 125 micron DFT without any film defect and < 5 mm scribe line corrosion when applied on Epoxy Primed Surface. (Substrate : Sa 2.5 blasted MS panel)</p>				
पुनः Rev. 02 Dt. 30.0 1.19	Specification revised and updated		सं.	CHECKED & APPROVED	S.G.Bokade	
	 NKM	 AKD		तैयार किया PREPD. Amulya Deota		दिनांक DATE 15.05.09

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					6 पृष्ठों में 4	PAGE 4 OF 6
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		9.0 TYPE APPROVAL Validity of type test certificate shall be three years from the date of test.				
		Chemical Composition of paint shall be confirmed by IR spectrography / thin layer chromatography by supplier and report should be provided.				
		9.1 Accelerated Test, Type Test Panels prepared and tested as per clause 10.2.1 of latest revision of TRE 165.				
		10.0 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/167: High Build, Rapid Recoat Epoxy with Lamellar MIO Pigment Manufacturers/suppliers Name : Trade name/mark, if any : Batch/Lot No.: Quantity supplied : Date of manufacture & expiry : Test results : Mixing ratio :				
		11.0 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.				
	पुनः Rev. 02 Dt. 30.0 1.19	Specification revised and updated  NKM	 AKD	सं.	CHECKED & APPROVED तैयार किया PREPD. Amulya Deota	S.G.Bokade दिनांक DATE 15.05.09

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					6 पृष्ठों में 5	PAGE 5 OF 6
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.		12.0 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.				
		13.0 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: Two component, high build, rapid recoat epoxy with lamellar MIO pigment BHEL Order No. Manufacturer's/Supplier's Name. Trade Mark, if any. Batch No. Date of Manufacture and Expiry				
		14.0 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 not withstanding 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.				
पुनः Rev. 02 Dt. 30.0 1.19	Specification revised and updated  NKM	 AKD	सं.	CHECKED & APPROVED तैयार किया PREPD. Amulya Deota	S.G.Bokade	दिनांक DATE 15.05.09

RF#	COMP. dng		TITLE: - TWO COMPONENT, HIGH BUILD, RAPID RECOAT EPOXY WITH LAMELLAR MIO PIGMENT		TRE/167	
				6 पृष्ठों में6	PAGE 6 OF 6	
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.		<div>APPENDIX- I</div> <div>DETERMINATION OF POT LIFE (Clause 8.9)</div> <p>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 5 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.</p>				
	पुनः Rev. 02 Dt. 30.0 1.19	Specification revised and updated  NKM	 AKD	सं.	CHECKED & APPROVED तैयार किया PREPD. Amulya Deota	S.G.Bokade दिनांक DATE 15.05.09