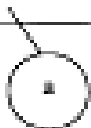


SUPERSEDES THE EARLIER STANDARD UNDER THE SAME NUMBER

CURING AGENT Z



1.0 GENERAL :

This specification covers the technical requirement of curing agent z (poly isocyanate) of reddish brown colour used in combination with a resin E8702 to specification No. HW29946 for the preparation of polyurethane based coating system.

2.0 APPLICATION :

The coating resin system is applied by brush at various location in electrical machines e.g. on the overhang portion of stator winding of turbogenerator to provide a elastic, uniform and high glossy layer.

3.0 COMPLIANCE WITH NATIONAL STANDARDS AND BASIS :

There is no National standard covering this type of material. However, this standard is based on BHEL experience.

4.0 PROPERTIES : (For reference only)


- 4.1 Appearance and colour : Reddish brown viscus liquid
- 4.2 Specific gravity at 27 ± 2°C : 1.26 (after mixing with resin E8702 to spec. No. HW29946)
- 4.3 Flash point : ≥ 200°C
- 4.4 The mixture of resin E8702 and curing agent Z in ratio 100:30 (by weight) should meet the following properties :
 - 4.4.1 Pot life at 25°C : 35 min. (as per test method indicated in Annex. -1)
 - 4.4.2 Curing time at 25°C : 20 hrs. (as per test method indicated in Annex. -1)
 - @ 50°C : 08 hrs. (as per test method indicated in Annex. -1)



TSA	D.L. GERRAJ	[Signature]	[Signature]	[Signature]	[Signature]
TGR	B. SINGH	[Signature]	[Signature]	[Signature]	[Signature]
SA	M. SHAR	[Signature]	[Signature]	[Signature]	[Signature]
AGREED DEPT.	NAME	DATE & SIGNATURE	SUPERVISED BY	V.C. GOYAL	[Signature]



REV-02	REAFFIRMED	संस्थान मानक समिति APPROVED: PLANT STANDARDS COMMITTEE	पृष्ठ संख्या 2.71
DT: 29-08-11		तैयार : ISE & CPL	संस्थान मानक विभाग DATE : 27-09-2002

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P-3638
 [Signature]

दिनांक पर प्रमाण SIGN & DATE		संस्थान क्रय विनिर्देश (HEEP - हार्डवेयर) PLANT PURCHASE SPECIFICATION (HEEP - HARDWAR)	HW29978 पृष्ठ का Page 02 of 04												
मालिक को सूचित at design stage : (व्यक्तिगत रूप से)	SUPERVISOR (व्यक्तिगत रूप से)	<div style="border: 1px solid black; padding: 5px; text-align: center;"> SUPERSEDES THE EARLIER STANDARD UNDER THE SAME NUMBER. </div> <p>5.0 ACCEPTANCE CRITERIA :</p> <p>The material shall be accepted on the basis of test / compliance certificate furnished by the supplier.</p> <p>6.0 TEST / COMPLIANCE CERTIFICATE :</p> <p>Four copies of test / compliance certificates shall be supplied with each consignment, indicating the following information :</p> <p>Curing Agent Z</p> <p>BHEL Specification No. HW29978</p> <p>BHEL Order No.</p> <p>Supplier's Name and Grade</p> <p>Quantity</p> <p>Date of manufacture</p> <p>Shelf life at $\leq 25^{\circ}\text{C}$</p> <p>Batch / Lot No.</p> <p>7.0 STORAGE :</p> <p>The material shall be stored in sealed original containers at RT ($\leq 25^{\circ}\text{C}$) and shall have shelf life of min. 6 months at temperature $\leq 25^{\circ}\text{C}$.</p> <p>8.0 PACKING :</p> <p>8.1 Material shall be packed in sealed air tight standard containers of suitable size or as stated in the purchase order.</p> <p>8.2 The containers shall be suitably packed so that there shall not be any damage during transportation, handling and storage.</p>													
कॉपीराइट और कॉन्फिडेंशियल <small>The information contained herein is the property of Bharat Heavy Electricals Limited. It shall not be used or disclosed in any way without the prior written approval of the company.</small>	कॉन्फिडेंशियल <small>Information is for internal use only. It shall not be disclosed to any other person without the prior written approval of the company.</small>														
प्रमाणित दिनांक SIGN & DATE <i>28/11/22</i>															
प्रमाणित संख्या PURCHASE NO. <i>P-3638</i>	<i>REV. No-02</i>		<table border="1"> <tr> <td>Prepared</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Worked by</td> <td>U.K. SHARMA</td> <td><i>U.K. Sharma</i></td> <td>2-2-22</td> </tr> <tr> <td>Checked by</td> <td>V. KUMAR</td> <td><i>V. Kumar</i></td> <td>2-2-22</td> </tr> </table>	Prepared				Worked by	U.K. SHARMA	<i>U.K. Sharma</i>	2-2-22	Checked by	V. KUMAR	<i>V. Kumar</i>	2-2-22
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संस्था का लोगो 	संस्थान काय विनिर्देश (शीट - इतिहास) PLANT PURCHASE SPECIFICATION (HEEP - HARDWARE)	HW29978 पृष्ठ का Page 03 of 04								
संस्था का नाम BHEL, BHOPAL	संस्था का पता BHEL, BHOPAL	<div style="border: 1px solid black; padding: 5px; text-align: center;"> SUPERSEDES THE EARLIER STANDARD UNDER THE SAME NUMBER </div> <p>9.0 MARKING : Each container shall be marked with the following information :</p> <p style="text-align: center;">a</p> <p>Curing Agent Z BHEL Spec. No. HW29978 Supplier's name and grade Date of manufacture Quantity BHEL Order No. Shelf life at $\leq 25^{\circ}\text{C}$ Batch / Lot No.</p>								
कॉपीराइट और कॉन्फिडेंटियल This information is to be used for the purpose of these only. It is not to be distributed outside the organization.	10.0 ENVIRONMENTAL REQUIREMENTS : The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply. Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.	11.0 REJECTION : BHEL reserves the right to reject the entire lot of the material, if found not to comply with these requirements. Parts of the lot which are found to be defective or not complying with these requirements can also be rejected at a later stage.								
संस्था का नाम BHEL, BHOPAL	12.0 LIST OF CROSS REFERRED DOCUMENTS : HW29946									
संस्था का लोगो 	संस्था का पता BHEL, BHOPAL									
संस्था का नाम BHEL, BHOPAL P-3638	संस्था का पता BHEL, BHOPAL REV-NO-02	<table border="1"> <tr> <td>Prepared by</td> <td>U.L. GARGOLA</td> <td><i>[Signature]</i></td> <td>22-07</td> </tr> <tr> <td>Checked by</td> <td>V. KUMAR</td> <td><i>[Signature]</i></td> <td>22-07</td> </tr> </table>	Prepared by	U.L. GARGOLA	<i>[Signature]</i>	22-07	Checked by	V. KUMAR	<i>[Signature]</i>	22-07
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Checked by	V. KUMAR	<i>[Signature]</i>	22-07							

Revision of contract SERIAL DATE		संस्थान कक्ष विनिर्देश (जीम - गरिदार) PLANT PURCHASE SPECIFICATION (HEEP - HARDWAR)	HW29978								
Part name as indicated in I.P.	Part number as indicated in I.P.		पृष्ठ का Page 04 of 04								
<p style="text-align: center;">COPYRIGHT AND CONFIDENTIAL</p> <p style="text-align: center;"><small>This document is the property of Hindustan Machine Tools (HMT) and its contents shall not be disclosed to any third party without the written permission of HMT.</small></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> SUPERSEDES THE EARLIER STANDARD UNDER THE SAME NUMBER. </div> <p style="text-align: right; margin-right: 50px;">  </p> <p style="text-align: right;">ANNEXURE -1</p> <ol style="list-style-type: none"> Determination of pot life (clause 4.4.1) <p>A sample of 100 gms is prepared by mixing the resin (E8702) and hardener (curing agent 2) components in ratio 100:30 respectively and kept at 25°C (approx.). The mixture is checked at convenient intervals by means of a rod / strip till gelation of the resin system takes place i.e. when it is no longer possible to draw strings out of the mixture or it is no longer soluble in MEK / Acetone thinner. The time for gelation is noted by means of stop watch. The two third of the gelation time is taken as a pot life of the resin system.</p> Determination of curing time (clause 4.4.2) <p>About 30-40 gram of the resin system is taken in the aluminum foil boxes 45 x 45 x 20 mm (approx.) and subjected to curing at the specified temperature for specified time. The state of the material is checked at ambient temperature in respect of uniform curing. The material is considered to have cured satisfactorily when there is no more stickiness and it has become sufficiently hard when checked by feel. The cured mass shall not dissolve in MEK.</p> 											
Revision of contract REV. S. DATE	Revision of contract REV. S. DATE <i>02/01/10</i>										
Revision of contract REV. S. DATE P-3638		REV. No-02	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%;">Prepared</td> <td style="width: 20%;">L. L. GABOLA</td> <td style="width: 20%;"><i>L. L. G.</i></td> <td style="width: 20%;">2007</td> </tr> <tr> <td>Checked by</td> <td>V. KUMAR</td> <td><i>V. K.</i></td> <td>2-2-12</td> </tr> </table>	Prepared	L. L. GABOLA	<i>L. L. G.</i>	2007	Checked by	V. KUMAR	<i>V. K.</i>	2-2-12
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