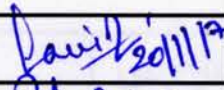
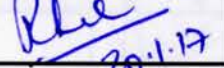
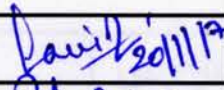
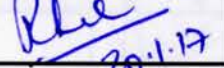
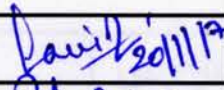
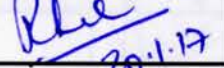


दिनांक एवं हस्ताक्षर SIGN & DATE			संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी. - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)		FF06025 Rev03 पृष्ठ का Page 1 of 5	
	सामग्री सूची संख्या को अधिकृत करता है SUPERSEDES INVENTORY NO.		ALKALINE PHENOL FORMALDEHYDE RESIN AND CATALYST SYSTEM			
1. General This specification governs the technical requirements of Alkaline Phenol Formaldehyde resin and catalyst used in Foundries.						
2. Application 2.1. The resin and catalyst shall be used as binder to prepare sand mix (silica or chromite) for making mould and core making in Foundries. 2.2. The resin and catalyst are to be procured from same source as a system. The supplier shall stand guarantee for the performance of combination and ensure the compatibility of resin and catalyst with sand.						
3. Compliance with national standard There is no national standard in compliance with above standard.						
4. Appearance 4.1. The resin shall be clear liquid, reddish brown or dark red in colour, free from dust and other visible impurities. 4.2. The catalyst shall be colourless to pale yellow clear liquid, free from any suspended matter. 4.3. During storage, separate layer at top and sedimentation at the bottom should not be formed within the stipulated shelf life.						
5. Properties 5.1 RESIN: The resin when tested shall have the following properties:						
हस्ताक्षर एवं दिनांक	RMI	Arun Agarwal	अनुवादक	TRANSLATED BY		
	MPIC	Rohit Varshney	निर्माणकर्ता	WORKED BY	L Agrawal	
	CHAIRMAN CPSC	VK Agarwal	जाँचकर्ता	CHECKED BY	R Lakra	
सामग्री सूची संख्या INVENTORY NO.	सहमत विभाग AGREED DEPTT	नाम NAME	दिनांक एवं हस्ताक्षर DATE & SIGNATURE	पर्यवेक्षणकर्ता SUPERVISED BY	Tushar Dave	
				स्वीकृति : संस्थान मानक समिति APPROVED : PLANT STANDARDS COMMITTEE		
				निर्माण : PREPARED : FOUNDRY TECH	जारी : फाउण्ड्री टेक्नालॉजी ISSUED : FOUNDRY TECHNOLOGY	दिनांक : DATE 20.01.17

COPYRIGHT AND CONFIDENTIAL
 The information on this documents is the property of Bharat Heavy Electrical Limited It must not be used directly or indirectly in any way detrimental to the interest of the company

स्वतंत्रताधिकार एवं गोपनीयता
 इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए ।

दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR).	FF06025 Rev 03 पृष्ठ का Page 2 of 5														
सामग्री सूची संख्या को अधिकृतित करता	SUPERSEDES INVENTORY NO.	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Viscosity at 30⁰ C</td> <td style="width:50%;">30-50 secs</td> </tr> <tr> <td>Density at 25⁰ C</td> <td>1.2 to 1.3 gms/cm³</td> </tr> <tr> <td>Nitrogen content</td> <td>Traces</td> </tr> <tr> <td>Permission Free Phenol</td> <td>0.5% max</td> </tr> <tr> <td>Permission Free Formaldehyde (Formalene)</td> <td>0.2% max.</td> </tr> <tr> <td>Solid Content</td> <td>50-60% - to be measured by heating up resin at 150 °C for 1 hour on a petridish</td> </tr> <tr> <td>Shelf Life</td> <td>Minimum 8 weeks from date of receipt in CFFP when stored at temperature upto 20 °C max.</td> </tr> </table>		Viscosity at 30 ⁰ C	30-50 secs	Density at 25 ⁰ C	1.2 to 1.3 gms/cm ³	Nitrogen content	Traces	Permission Free Phenol	0.5% max	Permission Free Formaldehyde (Formalene)	0.2% max.	Solid Content	50-60% - to be measured by heating up resin at 150 °C for 1 hour on a petridish	Shelf Life	Minimum 8 weeks from date of receipt in CFFP when stored at temperature upto 20 °C max.
Viscosity at 30 ⁰ C	30-50 secs																
Density at 25 ⁰ C	1.2 to 1.3 gms/cm ³																
Nitrogen content	Traces																
Permission Free Phenol	0.5% max																
Permission Free Formaldehyde (Formalene)	0.2% max.																
Solid Content	50-60% - to be measured by heating up resin at 150 °C for 1 hour on a petridish																
Shelf Life	Minimum 8 weeks from date of receipt in CFFP when stored at temperature upto 20 °C max.																
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited It must not be used directly or indirectly in any way detrimental to the interest of the company		5.2 CATALYST Catalyst shall be ester material and when used with the resin supplied, will give the properties as per Clause 5.3. The shelf life of the catalyst should be at least one year from the date of receipt of material in CFFP. 5.3 SAND MIX: 5.3.1 The sand mix prepared as per clause 5.0 shall be tested for compression strength, bench life and following requirement shall be met. <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Time after making of AFS standard specimen</td> <td colspan="2">Minimum compression strength at ambient temperature of 25-30⁰ C</td> </tr> <tr> <td rowspan="2">A</td> <td style="width:30%;">4 Hour</td> <td style="width:40%;">12 Kg/cm²</td> </tr> <tr> <td>24 Hour</td> <td>24 Kg/cm²</td> </tr> <tr> <td colspan="3">In winter, when the development of strength becomes slow, strength development after 24 hours is to be considered.</td> </tr> <tr> <td>B</td> <td>Bench life</td> <td>10 minutes minimum</td> </tr> </table> 5.3.2 Gas emission during pouring of the mould: The fumes generated during sand preparation and mould/core making shall not be excessive which inhibit working on the shop floor.		Time after making of AFS standard specimen	Minimum compression strength at ambient temperature of 25-30 ⁰ C		A	4 Hour	12 Kg/cm ²	24 Hour	24 Kg/cm ²	In winter, when the development of strength becomes slow, strength development after 24 hours is to be considered.			B	Bench life	10 minutes minimum
Time after making of AFS standard specimen	Minimum compression strength at ambient temperature of 25-30 ⁰ C																
A	4 Hour	12 Kg/cm ²															
	24 Hour	24 Kg/cm ²															
In winter, when the development of strength becomes slow, strength development after 24 hours is to be considered.																	
B	Bench life	10 minutes minimum															
स्वतंत्राधिकार एवं गोपनीयता इस प्रलेख में की गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए ।	दिनांक SIGN & DATE	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">निर्माणकर्ता WORKED BY</td> <td style="width:30%;">Lavin Agrawal</td> <td style="width:40%; text-align: center;">  20.11.17 </td> </tr> <tr> <td>जांचकर्ता CHECKED BY</td> <td>R Lakra</td> <td style="text-align: center;">  20.11.17 </td> </tr> </table>		निर्माणकर्ता WORKED BY	Lavin Agrawal	 20.11.17	जांचकर्ता CHECKED BY	R Lakra	 20.11.17								
निर्माणकर्ता WORKED BY	Lavin Agrawal	 20.11.17															
जांचकर्ता CHECKED BY	R Lakra	 20.11.17															

दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)		FF06025 Rev 03 पृष्ठ का Page 3 of 5	
सामग्री सूची संख्या को अधिकृतित करता	SUPPERSEDES INVENTORY NO.	5.4 Sampling and method of preparation of sand mix 5.4.1 Sampling The composite samples of resin and catalyst shall be drawn from each batch of the consignment on random basis. 5.4.2 Preparation of sand mix Testing shall be done for both chromite and silica sand mixes. The high silica sand or chromite to be used for determining the properties of the sand mix should be absolutely dry (max. 0.5% moisture) and clay content not more than 0.20%. Silica sand (AFS 40-50) / Chromite sand (AFS 45-55) - 100 parts Alkaline Phenolic Resin - 2.4% of sand Catalyst - 22% of resin.			
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		6 Submission of Sample Vendors who are not qualified/registered for this product in CFFP or who have not supplied this material to CFFP in last 5 years from tender opening date, should submit a sample of 10 kg resin and 3 kg catalyst, free of cost, alongwith their technical bid during tender enquiry stage. Laboratory test shall be done based on clauses 4.1, 4.2, 5.1, 4.3.1, 5.1, 5.2 and 5.3.1 Offers of those vendors shall be considered technically acceptable if they confirm all conditions of this specification and the lab results are in conformance to values as stated in this specification.			
		7 Acceptance Test 7.1 The supplier shall offer the material, batchwise to CFFP only after evaluating the suitability with respect to the properties in Clause 4 and 5. 7.2 CFFP shall however re-evaluate the properties as per Clause 5.3 for each batch of consignment. The properties as per Clause 5.1 will be checked on surveillance basis. 7.3 Within shelf life, if the binder does not meet the property requirements as per clause no. 5 and 6 of this specification, it shall be rejected irrespective of its previous acceptance. The supplier shall be liable for replacing such material free of cost. 7.4 The material shall be judged on shop floor during use for pungency of fumes. If it is found to be excessive and creating difficulties in working, the same shall be rejected.			
दिनांक एवं हस्ताक्षर SIGN & DATE				निर्माणकर्ता WORKED BY L Agrawal	जांचकर्ता CHECKED BY R Lakra
सामग्री सूची संख्या					20/1/17

दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)	FF06025 Rev 03 पृष्ठ का Page 4 of 5	
सामग्री सूची संख्या को अधिकृत करता	SUPERSEDES INVENTORY NO	8 Inspection, Deviation and Replacement 8.1 BHEL reserves the right to inspect material at site before despatch. The supplier shall intimate in advance enclosing a copy of test certificate of the material offered for inspection. However, inspection at BHEL shall be final. The supplier shall offer BHEL representative all reasonable test facilities without charge to satisfy the latter 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 test elsewhere. 8.2 If the material received is not found in accordance with the requirements, it shall be rejected and the supplier will have to replace it free of cost at the earliest.		
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		9 Test Certificates 9.1 Unless otherwise specified, one original and three copies of original manufacturer's test certificates shall be supplied with each consignment bearing the following information. In order to facilitate quick clearance of material, the supplier shall ensure to send a copy of test certificate along with despatch document. a. BHEL PO No. with Date b. Specification No. c. Supplier reference d. Identification No. / Batch No. e. Date of manufacture f. Date of expiry g. Test results as per Clause 4 and 5 h. Any change in addition level recommended i. Storage system for resin and catalyst j. Any other specific information which the supplier would like to convey. 9.2 Suppliers other than the original manufacturer shall ensure providing original manufacturer's test certificates with linkage to supplier's invoice stating the batch No., lot No, etc. of the supply.		
स्वत्वाधिकार एवं गोपनीयता इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रयोग एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	स्वत्वाधिकार एवं गोपनीयता	10 Packing and Marking The resin and catalyst should be supplied in sealed containers. Resin should be in packing of 100-200 kg. Corresponding packing for catalyst should be 25% of resin packing weight. The packing shall be that of original manufacturer's. The material of the container should be such that it will not have any effect on the quality of resin and catalyst. Each container shall have the following marking. (a) Supplier's name and trade mark, if any. (b) Name of the product (c) Date of manufacture and date of expiry (d) Batch No. (e) Net Weight & Gross Weight		
हस्ताक्षर एवं दिनांक SIGN & DATE				
सामग्री सूची संख्या			निर्माणकर्ता WORKED BY L Agrawal जांचकर्ता CHECKED BY R Lakra	 

दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार)		FF06025 Rev 03		
		PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)		पृष्ठ का Page 5 of 5		
सामग्री सूची SUPERSEDES INVENTORY NO	RECORD OF CHANGES					
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	REV CODE	NO. OF CHANGES	Nature of change	SHEET NO.	SIGN	DATE
	01	1	Clause No. 5.1 and 6.2, 7.2, 7.3, 9 modified Clause 6.4, 7.4 added	1,2,3		27.2.07
	02	2	Clause Nos. 9 & 10 modified to incorporate original manufacturer's test certificates and packing.	3, 4		18.7.09
	03	3	Clause 6 - criteria for sample submission added. Other clauses renumbered. Testing for chromite sand mix added. Packing clause modified to give weight of packing.	2, 3, 4		20/1/17
DISTRIBUTION OF PRINTS						
स्वत्वाधिकार एवं गोपनीयता इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रयोग एवं प्रसारण के बिना बिना किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	RMI					
	STANDARD SECTION					
	MPIC					
दिनांक एवं हस्ताक्षर SIGN & DATE				निर्माणकर्ता WORKED BY	L Agrawal	
सामग्री सूची संख्या				जांचकर्ता CHECKED BY	R Lakra	