

दिनांक एवं हस्ताक्षर & DATE			संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी. - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)	FF06047 Rev 02 पृष्ठ का Page 1 of 4																				
SUPERSEDES INVENTORY NO सामग्री सूची संख्या को अधिकृतित करता		INSULATING RISER LINING MATERIALS & COMPATIBLE COVERING POWDER FOR USE IN FOUNDRIES																						
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		1. General: This specification covers the requirements of insulating riser lining materials and compatible covering powder for use in foundries. 2. Application: The insulating riser lining material shall be used for blanketing of risers/hot top to keep the liquid metal in it hot and molten for a longer time. The insulating covering powder shall be used for covering the liquid metal in the riser after pouring. 3. Compliance with national standard: There is no national standard comparable with this standard. 4. Physical and Chemical Properties: A. Insulating Riser Lining Material 4.1 Shape and Size: The insulating riser lining material shall be in form of cycloid elements (tiles). In general following sizes of tiles shall be required: 4.1.1 115/123 width x 300 HT x 30 TH 4.1.2 115/127 width x 300 HT x 45 TH 4.1.3 148/165 width x 300 HT x 65 TH Sizes other than above, if required, shall be specifically mentioned on the Enquiry/Purchase Order. Size variation in width and height is allowed upto 5 mm. Thickness mentioned is minimum value. 4.2 Chemical Composition: Minimum Al_2O_3 content (as per EN955-2) should be 35%. Fe_2O_3 should be maximum 1.8% 4.3 MEF value: Supplier shall ensure a Modulus Extension Factor of 1.45 minimum for the insulating tiles irrespective of riser modulus. The type of tile to be used for different riser modulus should be specified by vendor. 4.4 Cold Crushing Strength (to be measured as per EN1094-5): 1.95 MPa minimum 4.5 Thermal conductivity (EN993-14) (W/mK): At 600 °C – 0.30 max At 800 °C – 0.35 max. At 1000 °C – 0.45 max At 1200 °C – 0.55 max.																						
स्वत्वाधिकार 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 अधिकारक ही न किया जाए।		<table border="1"> <tr> <td>RMI</td> <td>SN GHOSH</td> <td>अनुवादक</td> <td>TRANSLATED BY</td> <td></td> </tr> <tr> <td>MPIC</td> <td>ANURAG KUSHWAHA</td> <td>निर्माणकर्ता</td> <td>WORKED BY</td> <td>L AGRAWAL</td> </tr> <tr> <td>CHAIRMAN CPSC</td> <td>VK AGARWAL</td> <td>जांचकर्ता</td> <td>CHECKED BY</td> <td>T DAVE</td> </tr> <tr> <td>सहमत विभाग AGREED DEPTT</td> <td>नाम NAME</td> <td>व्यक्ति एवं हस्ताक्षर DATE & SIGNATURE</td> <td>पर्यवेक्षणकर्ता APPROVED BY</td> <td>T DAVE</td> </tr> </table>			RMI	SN GHOSH	अनुवादक	TRANSLATED BY		MPIC	ANURAG KUSHWAHA	निर्माणकर्ता	WORKED BY	L AGRAWAL	CHAIRMAN CPSC	VK AGARWAL	जांचकर्ता	CHECKED BY	T DAVE	सहमत विभाग AGREED DEPTT	नाम NAME	व्यक्ति एवं हस्ताक्षर DATE & SIGNATURE	पर्यवेक्षणकर्ता APPROVED BY	T DAVE
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संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार)

PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)

FF 06047 Rev 02

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दिनांक एवं हस्ता-
SIGN & DATE

SUPERSEDES
INVENTORY NO.

सामग्री सूची संख्या
को अप्रतिष्ठित करना

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स्वत्वाधिकार एवं गोपनीयता
इस दस्तावेज़ में दी गई सूचना भारत भारती
है। इसका प्रयोग एवं प्रसारण के बिना
कंपनी के हित में हानिकारक हो न सके।

हस्ताक्षर एवं दिनांक
SIGN & DATE

सामग्री सूची
संख्या

4.6 The tiles shall be homogeneously bonded and shall be smooth and well finished in appearance. They shall be free from cracks, cavities, patches etc.

4.7 The tiles should not give off any gas at all during pouring of moulds and subsequent solidification. Material of tiles should not react with liquid metal chemically. During mould handling/closing, the tiles should not get dislodged from its position.

B. Insulating Covering Powder

4.8 The insulating powder for covering of risers shall be in form of powder/granules which sinters the material to form a porous but solid cover which insulates without causing thermal circulation. The powder should not get wetted with liquid steel. The properties of the powder should be compatible with the insulating tiles in maintaining the MEF.

The amount of powder to be added to the feeder in relation to the size of the riser should be specified by supplier.

5. Acceptance:

The acceptance of the material shall be on the basis of test certificate. However, to verify the MEF stated by the supplier, BHEL may go for conducting cube test on surveillance basis. The other parameters also may be verified by BHEL on surveillance basis.

6. Inspection, Deviation and Replacement:

6.1 BHEL reserves the right to inspect material at site before despatch. The supplier shall intimate in advance about readiness of material 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 being furnished is 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 elsewhere.

6.2 If the material received at CFFP is not found in accordance with the requirements, it shall be liable to be rejected and the supplier will have to replace it free of cost at the earliest.

6.3 For any deviation from the specification sought by the supplier, prior approval of BHEL must be obtained in writing.

निर्माणकर्ता
WORKED BY

L AGRAWAL

जांचकर्ता
CHECKED BY

T DAVE

David
25/2/15



संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार)

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7. Test Certificates:

7.1 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.

- BHEL PO No. with Date
- Specification No.
- Supplier reference / trade mark
- Identification No. / Batch No.
- Properties as per Clause 4
- Any other specific information which the supplier would like to convey.

7.2 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.

8. **Packing and Marking:**

8.1 Insulating tiles shall be suitably packed in wooden crates or any other form to avoid damage during transit. The packing shall be that of the original manufacturer.

8.2 The covering powder shall be packed in 5 kg polypacks. These polypacks shall be further packed in 50 kg polythene lined gunny bags. The packing of covering powder should also be in original manufacturer's packs.

8.2 The crates/gunny bags shall be clearly marked with the following:

Supplier' name/emblem/logo

Batch No.

Quantity

Name of the material alongwith size and quantity

Net weight

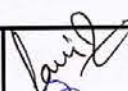
BHEL's PO No.

निर्माणकर्ता
WORKED BY

LAGRAWAL

जांचकर्ता
CHECKED BY

T DAVE

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सामग्री सूची SUPERSEDES INVENTORY NO		RECORD OF CHANGES					
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		01	2	Clause 7 & 8 modified to incorporate original manufacturer's Test certificate and Packing condition		20.8.09	
		02		Chemical composition, cold crushing strength, etc. added in properties		10.02.15	
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		RMI	✓				
		STANDARD SECTION	✓				
		MPIC	✓				
हस्ताक्षर एवं दिनांक SIGN & DATE		निर्माणकर्ता WORKED BY		L AGRAWAL			
सामग्री सूची संख्या		जांचकर्ता CHECKED BY		T DAVE			