



# CORPORATE PURCHASING SPECIFICATION

AA53303

Rev No.01

PREFACE SHEET

## REFRACTORY BRICKS - HIGH ALUMINA

FOR INTERNAL USE ONLY

REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

### Equivalent/ Comparable Standards

### Suggested/ Probable Suppliers and Grades

As per respective Plant's PMD

### User Plant and Replaced Plant Specifications/ References:

- |                   |   |         |
|-------------------|---|---------|
| 1) BHOPAL         | : | -       |
| 2) CFFP, HARIDWAR | : | FF02042 |
| 3) EPD, BANGALORE | : | -       |
| 4) HYDERABAD      | : | -       |

Revisions:  
Clause No 25.03 of MOM of MRC – FN

**APPROVED:**  
INTERPLANT MATERIAL RATIONALISATION  
COMMITTEE – MRC(FN)

Rev No.01	Amd No.	Reaffirmed	Prepared	Issued	Dt. of 1 <sup>st</sup> Issue
Dt:19-03-2014	Dt:	Year:	CFFP, Haridwar	Corp.R&D	01-05-1994

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## REFRACTORY BRICKS - HIGH ALUMINA

### 1.0 GENERAL:

This specification governs the quality requirements of High Alumina Bricks for the roofs of Electric Arc Furnaces and for Lining of ladles in steel melting shop.

### 2.0 APPLICATION:

Used for making the roof of Electric Arc Furnaces and lining of ladles in steel melting shops.

### 3.0 CONDITION OF DELIVERY: As per IS: 1387

### 4.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no National Standard covering this type of material.

### 5.0 DIMENSIONS AND TOLERANCES:

#### 5.1 Shape and Size: As per BHEL drawing.

#### 5.2 Tolerances: $\pm 1.5\%$ or 1.5 mm whichever is greater.

### 6.0 FREEDOM FROM DEFECTS:

The refractories shall be free from cracks and broken corners and edges. They shall be of homogenous texture and shall have good surface finish.

### 7.0 TEST SAMPLE: As per IS: 1528

### 8.0 CHEMICAL COMPOSITION

The material, when analysed in accordance with IS: 1335, shall have the following composition.

Al <sub>2</sub> O <sub>3</sub>	70% minimum
Fe <sub>2</sub> O <sub>3</sub>	3% maximum

### 9.0 PROPERTIES:

The material, when tested as per the relevant parts of IS: 1528 shall show the following properties.

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9.1	Pyrometric Cone Equivalent (PCE) (Part 1)	:	37 Ortons minimum
9.2	Refractoriness Under Load (Part 2)	:	1500 ta°C, minimum
9.3	Cold Crushing strength (Part 4)	:	40 N/mm <sup>2</sup> , minimum
9.4	Permanent Linear Change At 1600°C for 1 Hour (Part 6)	:	3.5% maximum
9.5	Apparent Porosity (Part 8)	:	23%, maximum
9.6	Bulk Density (Part 12)	:	2.6 to 2.8 g/cc
9.7	Thermal Shock Resistance	:	25 cycles minimum

## 10.0 INSPECTION AT SUPPLIER'S WORKS:

- 10.1 BHEL reserves the right to witness the testing of the material at supplier works and therefore the supplier shall notify the readiness of the material in advance.
- 10.2 BHEL may also opt for third party inspection. If so, BHEL may either specify a third party or else give a list of third party inspection agencies, out of which supplier may select one of his choice.
- 10.3 The supplier shall offer BHEL's representative all reasonable 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 tests elsewhere.
- 10.4 BHEL may, at its discretion, test the material after receipt and acceptance of the material will be based on the BHEL's test results.
- 10.5 Supplier shall ensure that the material is free from extraneous material. The material shall be rejected if it is not free from extraneous material.
- 10.6 For result of analysis and properties of material the decision of BHEL shall be final and binding on the supplier.
- 10.7 If the material received is not found suitable according to the requirements, it shall be replaced free of cost by the supplier.
- 10.8 For any deviation, demanded by the supplier from the specification, prior approval of BHEL must be obtained.

## 11.0 TEST CERTIFICATES:

Unless and otherwise stated, one original and three copies of certificates from the original manufacturer shall be supplied along with each consignment.

In addition the supplier shall ensure to enclose one copy of test certificate along with the despatch documents to facilitate quick clearance of the material.

Manufacturer supplying material directly to BHEL should include BHEL PO No. in the Test Certificate. Any other supplier should provide a covering letter along with original manufacturer Test Certificate as above mentioning BHEL PO No.

The test certificates shall bear the followings information:

AA53303: REFRACTORY BRICKS - HIGH ALUMINA

BHEL Order No.

Manufacturer's/ Supplier's Name.



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Batch/ Lot No.

Quantity Supplied.

Date of manufacture

Dimensional inspection as per clause 5.

Test Results of clauses 8 and 9.

## 12.0 PACKING AND MARKING:

The material shall be suitably packed to avoid damage during transit. Each consignment shall be legibly marked or labelled with the following information.

AA53303: REFRACTORY BRICKS - HIGH ALUMINA

BHEL Order No.

Manufacturer's/ Supplier's Name.

Trade mark, if any.

Batch/ Lot No.

Sizes and Quantity supplied

Date of manufacture

## 13.0 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 all the commercial terms and conditions.

## 14.0 Referred Standards (Latest publications including amendments):

- 1) IS: 1387      2) IS: 1528      3) IS: 1335