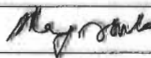

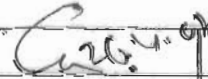
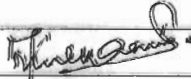


**GOVERNMENT OF INDIA
(Ministry of Railways)**

**SPECIFICATION FOR
HIGH ALUMINA 80% ARCH BRICKS
FOR LADLE SIDE WALL LINING**

**MECHANICAL DRAWING OFFICE
RAIL WHEEL FACTORY
YELAHANKA, BANGALORE-560 064
INDIA**

**Issued by
SSE/D**

			
CME	CWE/Mfg.	Dy. CME/Mfg.	WM/WP
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SPECIFICATION FOR H.A. 80 % ARCH BRICKS FOR LADLE SIDE WALL LINING

1.0 SCOPE

The specification covers the manufacture and supply of the HA 80% bricks for ladle side wall lining to Rail Wheel Factory, Yelahanka, Bangalore 560 064, Karnataka state.

2.0 GENERAL DESCRIPTION

Two sizes of High Alumina Bricks are used for lining the sidewalls of the ladle in which molten metal is poured from the Electric Arc Furnace at temperature upto 1715°C.

3.0 MATERIAL

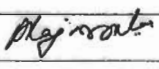
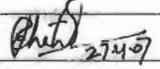
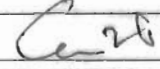
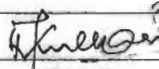
The following specification is common for the bricks.

a) CHEMICAL COMPOSITION

- 1) Al₂O₃ : 80% Minimum.
- 2) Fe₂O₃ : 1.5% Maximum.
- 3) Alkalis : 1.0% Maximum.

b) PHYSICAL PROPERTIES

- i) Pyrometric Cone Equivalent (PCE) : +38
(as per ASTM Std. Pyrometric cone.)
- ii) Cold Crushing Strength (CCS) : 600 Kgs/cm² (Min.)
- iii) Apparent porosity (AP) : 18% (Max.)
- iv) Permanent Linear Change (PLC) : +3.5% max. after heating for 5 hours at 1600°C. No negative values permitted.
- v) Size Tolerance (Covering both warpage and shrinkage) : ±1.5% or ±2.0 mm, whichever is greater.
- vi) Refractoriness Under Load(RUL) : 1600 °C (Min.)
- vii) Bulk Density (BD) : 2.8 gm/cc (Min.)

			
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c) SIZE

The general size for the two types of bricks used is as follows:

- i) High Alumina 80 : 230 X 115 X 76/65 S.A.
- ii) High Alumina 80 : 230 X 115 X 76/70 S.A.

4.0 REFRACTORY PARTICLE SIZE

Bricks should be compact having close grains. The raw material should not have more than 3 mm size refractory particles. When bricks are cut either for sampling or for lining purpose, they should not show any signs of lamination or refractory particle loosening due to large grains or inadequate bonding.

5.0 TESTING FACILITIES

The firm should have complete testing facilities to check the material as per the specification given above.

6.0 INSPECTION NORM**a. SAMPLING NORM**

IS1528 Pt. VII: 1974

b. ACCEPTANCE CRITERIA

IS1528 Pt. VII: 1974.

7.0 PACKING

The bricks shall be packed in disposable wooden base and top pallets of 1 to 1.5 M/T capacity, capable of being handled by 3 Ton Forklifts as shown in Annexure-I. The edges of the bricks should be protected with cardboard paper and strapped on to the base and top pallets. Additional corrugated cardboard of adequate thickness has to be used on all faces to avoid damage to brick edges due to strapping force.

<i>Mojiranta</i>	<i>Chet</i> 27.4.07	<i>Chet</i>	<i>Chet</i>
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8.0 TRANSPORT

The bricks should be transported to RWF stores by road directly from the firm's premises to avoid any damages to the bricks.

9.0 STORAGE

The supplier should have arrangement to store the subject item under covered accommodation to protect them from water. Utmost care should be taken during the transportation of these bricks by adequately covering them with tarpaulin, etc to avoid bricks getting exposed to rain water during transit.

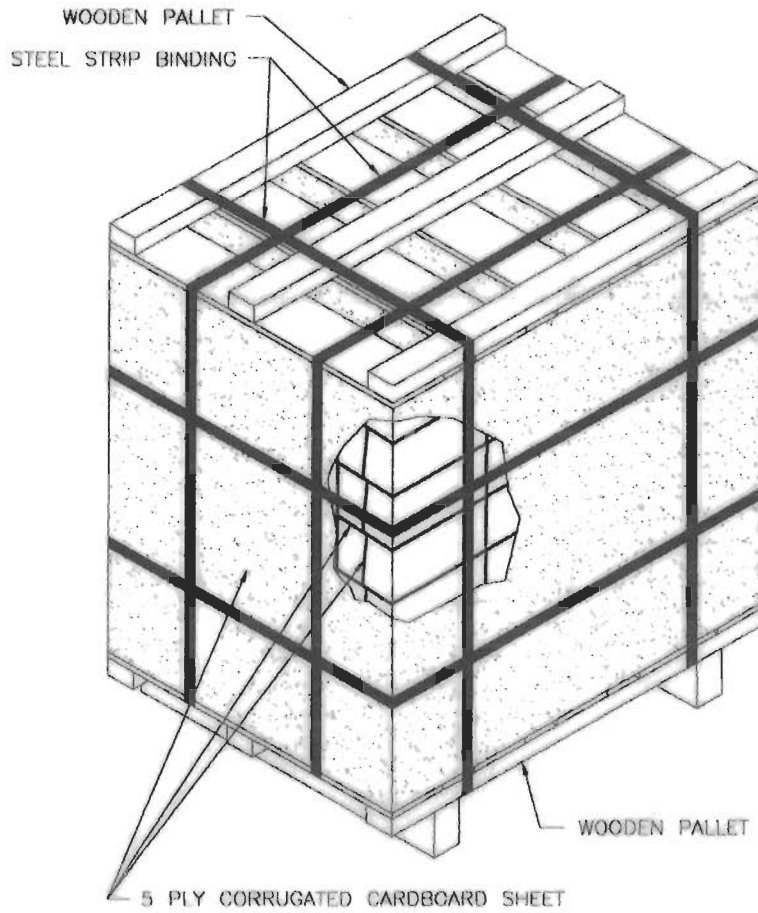
10.0 HANDLING

Special care should be taken by the supplier to ensure that the edges do not get chipped off during manufacturing and subsequent handling. The bricks that are chipped off are liable to be rejected and would have to be replaced by the firm at their expense.

<i>Mgrrale</i>	<i>Chet 27.4.07</i>	<i>Carl 4.07</i>	<i>Hines</i>
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ANNEXURE-1

PACKING ARRANGEMENT FOR HA80 BRICKS



NOTE: USE CORRUGATED CARDBOARD SHEETS FOR PACKING ALL FACES.

<i>[Signature]</i>	<i>[Signature]</i> 25.4.07	<i>[Signature]</i> 26.4.07	<i>[Signature]</i>
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