

WAP / M / SPEC N - 1 / 053 / 1994

ALT	DATE	JOB No	SIGN.
(a)	14 - 6 - 94	-	Ghurali
(b)	6 - 7 - 94	23 12	Ghurali
(c)	5 - 8 - 95	2638	[Signature] 8.8.95

GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS

SPECIFICATION FOR  
BROWN TABULAR ALUMINA [BTA]  
BASED BRICK - LADLE LINING

Issued by

MECHANICAL DRAWING OFFICE  
WHEEL AND AXLE PLANT YELAHANKA  
BANGALORE

[Signature]	[Signature]	[Signature] 8.8.94
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SPECIFICATION FOR BROWN TABULAR ALUMINA (BTA) BASED BRICKS  
FOR LADLE LINING

1.0 SCOPE :

The specification covers the manufacture and supply of Brown Tabular Alumina based bricks for ladle side wall lining to Wheel & Axle Plant, Yelahanka, Bangalore, Karnataka State, India as per the instruction and tender papers.

2.0 GENERAL DESCRIPTION :

- a) Brown Tabular Alumina base 85 - 230X115X76/65 - SA  
b) Brown Tabular Alumina base 85 - 230X115X76/70 - SA  
for ladle wall lining.

3.0 SPECIFICATION :

3.1 PROPERTIES :

B.D gm/cc (min)	-	2.75	
A.P % (max)	-	18	
C.C.S kg/cm <sup>2</sup> (min)	-	700	
Th.Shock resistance	-	25 cycle (water quench)	[Manufacturer should issue a certificate.]
	-	80 cycle (air quench)	
PCE	-	+38 orton	
PLC% at 1550°C for 2 hrs	-	0 to +1.5	
RUL	-	1540°C	

3.2 Tolerance on size :

Variations from specified dimensions, covering both warpage and shrinkage shall be followed to the extent of  $\pm 1.5$  percent or  $\pm 1$  mm whichever is greater.

3.3 CHEMICAL ANALYSIS : (typical)

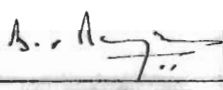
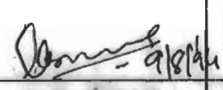
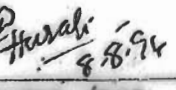
Al <sub>2</sub> O <sub>3</sub> (min)	-	85+1%
SiO <sub>2</sub> (max)	-	10%
Fe <sub>2</sub> O <sub>3</sub> (max)	-	1.5%

4.0 TESTING FACILITIES :

- 4.1 The firm should have complete facilities to check the material as per specifications given above and should also be equipped to perform spalling resistance test as per IS 1528 Part-3 to its latest revision.

5.0 INSPECTION :

- 5.1 Sampling plan & procedures for inspection of bricks shall be as per IS 1528 to its latest revision.

		
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6.0 PERFORMANCE STANDARD EXPECTED:

6.1 WAP expects that the bricks conforming to the above specification will last for about 20-25 heats when used under prevailing operating conditions. The Tenderers are welcome to visit WAP and study the ladle preparation and steel melting operations in order to gain a first hand knowledge of the functional requirements.

6.2 The working conditions of the Arc Furnace are as under:-

- (i) Type of furnace : GEC 20T Arc Furnace Model 13.
- (ii) Tapping temperature : 1700 to 1730°C.
- (iii) Flux used : Lime stone/calcined lime.
- (iv) Slag basicity : 1.5 to 2.5
- (v) Casting technique : Special bottom pressure pouring technique.
- (vi) Product : Railway cast steel wheel of Carbon percentage varying from 0.45% to 0.7% Carbon, 0.7% Manganese, 0.5% Silicon, S&P below 0.05%.
- (vii) Cyclic operation : Mean interval between heats is expected to be 1-2 hours.

<i>B. L. G.</i>	<i>Com...</i>	<i>Head...</i>
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