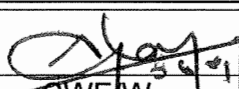
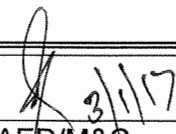
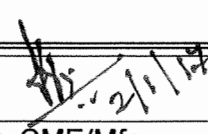
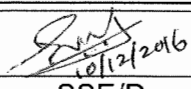


**GOVERNMENT OF INDIA
(Ministry of Railways)**

**SPECIFICATION FOR
MAGNESITE WET RAMMING MASS
(PL No. 84981556)**

Issued by

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

			
CWEW APPROVED	AED/M&C REVIEWED	Dy. CME/Mfg. VERIFIED	SSE/D PREPARED

SPECIFICATION FOR MAGNESITE WET RAMMING MASS

1.0 PURPOSE AND SCOPE

This Specification covers supply of Magnesite Wet Ramming Mass to be used for side patching at the slag door bed of Electric Arc Furnace and ladle lining in the manufacture of Railway cast steel wheels at Rail Wheel Factory, Yelahanka, Bangalore - 560 064, Karnataka State, India

2.0 JOB DESCRIPTION

Magnesite Wet Ramming Mass is intended for use in ultra high power Electric Arc Furnaces for building the slag door bed, ladle lining and other related works. The material should withstand all the working abuses like temperature $>1750^{\circ}\text{C}$.

3.0 TECHNICAL REQUIREMENTS

3.1 The Magnesite Wet Ramming Mass to be manufactured from sintered dead burnt magnesite with inorganic and organic binders and fluxes capable of sintering at lower temperatures at around 1400 degree centigrade and withstand at 1750°C in the different area applications as per RWF requirements.

4.0 CHEMICAL COMPOSITION

(When analysed as per IS 1760-1992 Part 2&3 Reaffirmed in 2001 or latest)

4.1	Magnesium Oxide (MgO)	: 85% min.
4.2	Silica (SiO ₂)	: 6.5% max.
4.3	Calcium Oxide (CaO)	: 2.0% max.
4.4	Iron Oxide (Fe ₂ O ₃)	: 1.0% max.
4.5	Alumina (Al ₂ O ₃)	: 1.0% max
4.6	Carbon Content	: 0.2% max. by Leco Apparatus or any other equivalent apparatus
4.7	Chromium Oxide (Cr ₂ O ₃)	: Nil

4.8 SIZE

The size range shall be from 0 - 5.6 mm however particle size shall be uniformly distributed to achieve uniform cross-linking during application

4.9 COLOUR

The material shall be uniform in colour from bag to bag.

5.0 SAMPLING NORM AND ACCEPTANCE CRITERIA

For each lot of wet ramming mass, the number of bags selected to collect samples are indicated below:

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Lot weight	No. of bags selected for sampling
Up to 1 MT	02
Over 1 and less than/ equal to 4 MT	04
Over 4 and including 25 MT	10

From each lot as indicated in the table above, with the help of suitable sampling instrument about 0.5 kg of material shall be drawn from each selected bag. It shall be mixed to form a composite sample by successive coning and quartering division method, the composite sample shall be reduced and given a final test sample of 0.5 kg for the chemical composition and size (clause 5.0 to 5.8). If the composite sample fails to meet the above requirements then two more composite samples may be drawn from the lot as per above sampling norms and shall be tested for the chemical composition and size and if any of the composite sample fails to meet the requirement then the entire lot stands rejected.

6.0 TEST CERTIFICATE

The test certificate indicating all tested properties like physical and chemical composition of the product to be enclosed along with the supply.

7.0 PACKING

Enough care shall be taken to pack the material to avoid the ingress of moisture available in ambient conditions and sea and coastal geographic conditions as sintered Magnesite products are susceptible for water (high humidity) absorption causing damage to Wet Ramming Mass. Each packet shall contain 25kg of wet ramming mass and bear the supplier's name, quantity and product name, date of manufacturing and date of expiry. Use eco-friendly biodegradable packing material.

8.0 SHELF LIFE

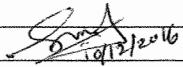
Magnesite wet ramming mass should possess a shelf life period of 1 year minimum from the date of manufacturing.

9.0 QUALITY ASSURANCE PLAN (QAP)

The supplier shall submit their Quality Assurance Plan (QAP) along with their bid for approval by RWF, which will be followed in the processing of Magnesite wet ramming mass to satisfy the technical requirement as required under this specification. Supplier shall get their QAP approved from RWF in advance, unless a waiver is given to this effect.

10.0 TRIAL OF THE SUPPLY

The material for trial shall necessarily meet all the requirements mentioned elsewhere in this specification prior to shop floor trial. Only after this, the material will be taken up for shop floor trial by RWF as per trial scheme at Annexure-1 and the corresponding trial report shall be prepared as per Annexure-2.


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TRIAL SCHEME OF MAGNASITE WET RAMMING MASS

1	Trial scheme No.	RWF/M/SPECN-1/059/1988 alt --- / Trial Scheme PL NO.....
2	Objective of Trial	To establish the suitability of Magnesite wet ramming mass as per above specification.
3	Description of Material PO Number & PO date PO Qty. Supplier	Magnesite wet ramming mass
4	IDN Number & Date IDN Qty.
5	Authority for conducting Trial	Dy. CME/ Mfg
6	Earlier trial details	First Time Supply/ Second time/ Third time/...../.....
7	Trial Parameters	As mentioned in Trial Scheme.
8	Specification	RWF/M/SPECN-1/059/1988 alt ---
9	Pre-trial Testing details	Met. Lab Report & MTC
10	Trial qty	Full IDN Qty/ 5% of the tendered quantity
11	Equipment / Station process	EAF A,B,C

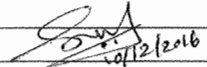
(..... to be filled by Team Members)

Trial Parameters:

1. Total quantity of Magnesite wet ramming mass to be drawn and trial conducted on the entire quantity under the purchase order/5% of the tendered quantity, whichever is less.
2. Inspection & testing by shop and whenever required by laboratory completely in line (not in part) with the specification. Sampling for inspection as per specification.
3. Examination of MTC (Manufacturer's Test Certificate) and comments on its suitability

Specific Requirements:

The quality of sintering after first heat shall be comparable with established makes in matching number of other makes by ensuring same process parameter during use and in the same period (or just preceding/succeeding period)


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TRIAL REPORT OF MAGNESITE WET RAMMING MASS

1	Trial No.	RWF/M/SPECN-1/059/1988 alt --- / Trial Scheme PL NO.....
2	Objective of Trial	To establish the suitability of Magnesite wet ramming mass as per above specification.
3	Description of Material PO Number & PO date PO Qty. Supplier	Magnesite wet ramming mass
4	IDN Number & Date IDN Qty.
5	Authority for conducting Trial	Dy. CME/ Mfg
6	Earlier trial details	First Time Supply/ Second time/ Third time/...../.....
7	Trial Parameters	As mentioned in Trial Scheme
8	Specification	RWF/M/SPECN-1/059/1988 alt ---
9	Pre-trial Testing details	Met. Lab Report & MTC
10	Trial qty	Full IDN Qty/ 5% of the tendered quantity
11	Equipment / Station process	EAF - A,B,C
12	Nominated Officers	ACMT/W & AWM/SMS

(..... to be filled by Team Members)

Application Test: Shop Floor test conducted from date ____ to date ____ & H. No. ____

Trial Parameters:

- Total quantity of Magnesite wet ramming mass to be drawn and trial conducted on the entire quantity under the purchase order/5% of the tendered quantity, whichever is less.

Comments:

- Inspection & testing by shop and whenever required by laboratory completely in line (not in part) with the specification. Sampling for inspection as per specification.

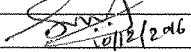
Enclosure Details:

- Examination of M Lab report & MTC (Manufacturer's Test Certificate) and comments on its suitability

Comments :

Specific Requirements:

The quality of sintering after first heat shall be comparable with established makes in matching number of other makes by ensuring same process parameter during use and in the same period (or just preceding/succeeding period).


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Observations:

AWM/WM

ACMT/W

SSE/SMS

WM/W


Remarks of Dy CME/Mfg.

Remarks of AED/M&C

CWE/W

<i>S. A.</i> 12/12/2016
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AMENDMENT SHEET

Alt. 'e' Clause No.	Alt. 'f' Clause No.	Description	Job No.	Sign
--	9	Clause added: 9.0 QUALITY ASSURANCE PLAN (QAP) The supplier shall submit their Quality Assurance Plan (QAP) along with their bid for approval by RWF, which will be followed in the processing of Magnesite Wet Ramming mass to satisfy the technical requirement as required under this specification. Supplier shall get their QAP approved from RWF in advance, unless a waiver is given to this effect.	6895	
--	10	Clause added: 10.0 TRIAL OF THE SUPPLY The material for trial shall necessarily meet all the requirements mentioned elsewhere in this specification prior to shop floor trial. Only after this, the material will be taken up for shop floor trial by RWF as per trial scheme at Annexure-1 and the corresponding trial report shall be prepared as per Annexure-2.		
--	Annexure-1	Added Annexure-1 TRIAL SCHEME OF MAGNESITE WET RAMMING MASS		
--	Annexure-2	Added Annexure-2 TRIAL REPORT OF MAGNESITE WET RAMMING MASS		


10/12/2016
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