

NORTH STAR BLUESCOPE STEEL LLC Material Specification

Process Area: Melt Shop EAF	Number: AL 34.09
Material: Slag-Mag (MgO)	Effective Date: 1/14/04
Authorized By: Rex McClanahan	Review Date: 1/14/05

1.0 Application:

1.1 Furnace addition to reduce gunning consumption.

2.0 Chemical Analysis and Material Properties: Dead Burnt MgO

	Absolute min.	Preferred min.	Preferred max.	Absolute max.
MgO	90%	91%	91.5%	95.0%
CaO			1.8%	2.2%
SiO ₂			3.8%	5.0%
Fe ₂ O ₃			1.0%	1.3%
Al ₂ O ₃			1.4%	1.5%
Loss on Ignition	.26% aim		0.4%	0.6%

3.0 Packaging:

3.1 Bulk pneumatic Truck - each shipment to be identified with lot number.

3.1 The North Star BlueScope Steel Raw Material Number must appear on all shipping and billing paperwork.

4.0 Sizing:

4.1 3/8" x Mesh

5.0 Certification and Control:

5.1 Each lot received to include statements of conformity and certification. These documents must be handed in at the scales and include:

- 1) Certification for SiO₂, MgO, Al₂O₃, and CaO. (May be Typical Chemistry)
- 2) Quantity
- 3) Name of Material
- 4) Lot Number

5.1 All chemical constituents not expressed but are contained in the subject material may not exceed 0.5% (except for Al) collectively. Any material lot exceeding 0.5% must have prior approval by purchasing before shipment is made and analysis included on certification.

5.2 Material is subject to inspection at North Star BlueScope Steel to test adherence to specification. All material supplied to this specification must be equivalent in all respects to the material on which approval was originally granted.

6.0 Relevant Industry Standards (e.g. ASTM): N/A

7.0 Hazardous Material:

7.1 If this material is hazardous or requires special handling or storage, this information must be clearly labeled on containers and shipping documents. MSDS Sheets must also be sent to purchasing manager for new materials.

8.0 Attachments/Reference Documents: N/A

Rev #	Date	Description of Change(s)	Reason for Change:
1	11/30/98	Section 2.0 Ranges	Updated min and max values.
2	04/28/99	Section 2.0 Ranges	Updated CaO Absolute min and Pref max.
3	10/21/99	Section 2.0 Ranges	Updated MgO Ab max, CaO Ab min SiO ₂ ab min
4	10/26/99	Section 2.0 Ranges	Updated CaO, SiO ₂ , Fe ₂ O ₃ , Al ₂ O ₃ absolute min. to reflect that MgO content is the key chemical unit of this product.
5	12/22/99	Under 3.0, added that NSBHP Raw Material Number must be on all shipping and billing paperwork	For clarification purposes
6	1/17/01	Reviewed and re-authorized	Annual Review
7	1/9/02	Reviewed and re-authorized	Annual review
8	1/8/03	Reviewed and re-authorized	Annual review

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9 1/14/04 Reviewed and re-authorized Annual review