

## NORTH STAR BLUESCOPE STEEL LLC Material Specification

Process Area: LMF	Number: AL 28.24
Material: High Calcium Ladle Lime	Effective Date: 01/16/18
Authorized By: Jim Fox	Review Date: 01/16/19

### **1.0 Application:**

Ladle addition for alloying purposes.

### **2.0 Chemical Analysis and Material Properties:**

Element	Absolute min.	Preferred min.	Preferred max.	Absolute max.
CaO Total	95%			
CaO Available	91%			
Al <sub>2</sub> O <sub>3</sub>				1.0%
MgO				3.0%
FeO				0.50%
SiO <sub>2</sub>				1.0%
S				0.05%
Loss on Ignition			0.8%	1.0%
<b>OR</b> Co <sub>2</sub>			0.6%	0.8%

### **3.0 Packaging:**

- 3.1. **Bulk Dump, Framed trailer** (Frameless trailer rear bumper does not clear minimum height to dump into vibratory hopper – can be unloaded for an emergency, but tailgate must not hang over the hopper lip because the tailgate drops down to 12” below the lip of the hopper by the end of the dump), **controlled flow**, (covered) when ordered this way – each shipment to be identified with lot number.
- 3.2. Bulk pneumatic Truck when ordered this way - each shipment to be identified with lot number.
- 3.3. Supersack - one 2200lb.per pallet when ordered this way - must be shrunk wrapped with plastic and shipped on flatbed truck - each shipment to be identified with lot number
- 3.4. Supersack –Two 1000lb super sacks per pallet when ordered this way - must be shipped on flatbed truck - each shipment to be identified with lot number
- 3.5. The North Star BlueScope Steel Raw Material Number must appear on all shipping and billing paperwork.

### **4.0 Sizing:**

2” X 3/8” (Screen % > 1/4” 90% minimum at point of loading)

### **5.0 Certification and Control:**

- 5.1 Each lot received to include statements of conformity and certification. During weekdays certification must be presented at time of delivery with weekends submitted / faxed Monday morning. (labs are not currently operating at these times) These documents must be handed in or faxed to the scales and include:
  - Certification for Sulfur, LOI **or** CO<sub>2</sub> and % >1/4”
  - Quantity
  - Name of Material
  - Lot Number
- 5.2 All chemical constituents not expressed but are contained in the subject material may not exceed 0.5% collectively. Any material lot exceeding 0.5% must have prior approval by purchasing before shipment is made and analysis included on certification.
- 5.3 Material is subject to inspection at North Star BlueScope Steel to test adherence to specification. Material submitted must undergo laboratory testing and operating trials prior to approval. 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):**

Prepared by: Kevin Jessing	Page 1 of 2
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N/A

### **7.0 Hazardous Material:**

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

<b>Rev</b>	<b>Date</b>	<b>Description of change</b>	<b>Reason for change:</b>
	12/07/11	Reviewed and reauthorized	Annual review
	12/14/12	Reviewed and reauthorized	Annual review
	12/17/13	Reviewed and reauthorized	Annual review
	11/20/14	Reviewed and reauthorized	Annual review
	10/22/15	Reviewed and reauthorized	Annual review
	01/04/17	Reviewed and reauthorized	Annual review
	01/16/18	Reviewed and reauthorized	Annual review