

**NORTH STAR BLUESCOPE STEEL LLC****Material Specification**

Process Area: LMF	Number: AL 06.16
Material: Silicomanganese (SiMn)	Effective Date: 12/07/11
Authorized By: John Ruf	Review Date: 12/07/12

**1.0 Application:**

Ladle addition for alloying purposes.

**2.0 Chemical Analysis and Material Properties:**

Element	Absolute min.	Preferred min.	Preferred max.	Absolute max.
Manganese	65.0%			68.0%
Silicon	16.0%			18.5%
Carbon			1.5%	2.0%
Phosphorous				0.20%
Sulfur				0.04%
Chromium				0.5
Lead				0.030%

**3.0 Packaging:**

- 3.1 Bulk Dump Truck, - each shipment to be identified with lot number. To be tarped and kept dry.
- 3.2 The North Star BlueScope Steel Raw Material Number must appear on all shipping and billing paperwork.

**4.0 Sizing:**

3in. by 1in. with 10% max retained on 3" screen (not to be larger than 4") and less than 10% passing ½" screen.

**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:
  - Certification for Manganese, Carbon, Silicon, Phosphorous, Chromium and Sulfur.
  - 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% (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.
- 5.3 Material is subject to inspection at North Star BlueScope Steel to test adherence to specification.
- 5.4 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):**

ASTM A483 Grade B

**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

Rev	Date	Description of change	Reason for change
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16	08/09/07	Reviewed and reauthorized.	Annual review.
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Prepared by: Kevin Jessing	Page 1 of 2
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11/14/08 Reviewed and reauthorized.

Annual review.

11/17/09 Reviewed and reauthorized.

Annual review.

12/02/10 Reviewed and reauthorized.

Annual review.

12/07/11 Reviewed and reauthorized.

Annual review.