

Description: High-Alumina, Phosphate-Bonded, Plastic Refractory

- Features:**
- Bauxite based.
 - Excellent strength.
 - Outstanding slag resistance.
 - Good resistance to alkali attack.
 - Volume stability at high temperatures.
 - Extended shelf life of 9 months results in less waste, especially for large projects.
 - Stable workability, with less than 10% change in workability over shelf life.
 - Excellent pliability enables less time to install.
 - Available in Soft, Standard, and Firm consistencies.
 - Incorporates HWI PLUS technology and can be fast-fired.

- Uses:**
- Linings for incinerators and afterburners.
 - Aluminum contact applications, such as sidewalls and ramps.
 - Steel contact applications, such as ladles, bottoms, and lip rings.
 - Iron contact applications, such as ladles.
 - Metal contact applications for brass, bronze, and zinc.
 - Metal reheat furnaces.

Chemical Analysis: Approximate (Calcined Basis)

Silica (SiO ₂)	7.7%
Alumina (Al ₂ O ₃)	84.0%
Iron Oxide (Fe ₂ O ₃)	1.0%
Titania (TiO ₂)	2.3%
Lime (CaO)	0.2%
Magnesia (MgO)	0.3%
Alkalies (Na ₂ O+K ₂ O)	0.1%
Phosphorus Pentoxide (P ₂ O ₅)	4.4%

Physical Data (Typical)

Maximum Service Temperature	3100°F (1704°C)
Material Required	178 lb/ft ³ (2.85 g/cm ³)
Bulk Density	lb/ft ³ (g/cm ³)
After 650°F (343°C)	160 (2.56)
After 2550°F (1400°C)	159 (2.55)
Modulus of Rupture	lb/in. ² (MPa)
After 650°F (343°C)	2,000 (13.8)
After 2550°F (1400°C)	2,700 (18.6)
Hot Modulus of Rupture	lb/in. ² (MPa)
At 2550°F (1400°C)	500 (3.4)
Cold Crushing Strength	lb/in. ² (MPa)
After 650°F (343°C)	5,300 (36.5)
After 2550°F (1400°C)	8,200 (56.5)
Permanent Linear Change	
After 650°F (343°C)	-1.0%
From 650°F (343°C) to 2550°F (1400°C)	+0.2%

Product Data

Abrasion Loss

After 1500°F (816°C)	5.5 cc
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Thermal Conductivity

Btu·in/hr·ft²·°F (W/m·°C)

At 800°F (425°C)	14.7 (2.12)
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At 1200°F (650°C)	14.4 (2.08)
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At 1600°F (870°C)	14.1 (2.03)
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At 2000°F (1095°C)	14.5 (2.09)
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Note: The data given above are based on averages of the results of a small number of test specimens made in the laboratory. Variation from the above data may occur in individual tests and in large-scale plant production. The test data cannot be taken as minimum or maximum values for specification purposes. ASTM test procedures used when applicable.

Mixing and Using Information

Material is supplied ready to use.

Heatup/Dryout Schedule

See HWI Dryout Schedule 6—PLUS Rated Plastics and Rams.

Installation Guidelines

See HWI Installation Guidelines P-1—Plastics.

Shelf Life (Under Proper Storage Conditions)	270 days
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