



# ALL-AMERICAN SUPPLY

*High-Tech Materials From The Outer Reaches  
Of Space to the Depths of the Ocean*

Solar-Aero Space-Weapons-Nuclear  
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## 90-RAM® HS PLASTIC

**90-RAM® HS Plastic** is a phosphate bonded extra high alumina refractory plastic that exhibits high strength at all temperature ranges. It also has excellent erosion, impact and abrasion resistance. This high green strength version eliminates the need for forming where anchors are present except for roof and arch construction.

**TEMPERATURE CLASSIFICATION: 800-3200°F**

**MATERIAL REQUIRED PER CUBIC FOOT: 192 LBS.**

**EROSION LOSS(ASTM C-704): 3-6 Cubic Centimeters\***

### PHYSICAL PROPERTIES:

Test Temp (°F)	Bulk Density(pcf)	Modulus of Rupture (psi)	Cold Crushing Strength (psi)	Permanent Linear Change (%)	Thermal Conductivity (Btu in./hr.sqft/°F)
230	180	1080	--	--	19.8@500°F
1000	--	--	--	-0.6	15.6
1500	176	2550	7000-12500	-0.3	14.9
2550	--	2675	--	-0.6	--
3000	--	2730	--	--	--

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### CHEMICAL ANALYSIS – CALCINED BASIS (Wt %):

Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	Fe <sub>2</sub> O <sub>3</sub>	P <sub>2</sub> O <sub>5</sub>	Alk	Other
93.3	2.6	0.2	3.4	0.3	0.2

\*Values obtained after 6 day air cure prior to firing.

Manufactured by Vesuvius USA.