



SAVAGE RAM 85

High Alumina Phosphate-Bonded Plastic Refractory - 3,300F (1,816C)

PRODUCT DESCRIPTION

Savage RAM 85 is a high-alumina, phosphate-bonded plastic refractory manufactured by **Mt. Savage Specialty Refractories**. With an alumina content of approximately **84 to 86%**, this product offers excellent high-temperature performance and superior dimensional stability. Designed to be rammed or pounded into place, it forms a dense monolithic structure ideal for applications requiring enhanced resistance to erosion, slag attack, and metal penetration. The phosphate bond develops strength progressively as temperature rises, providing excellent bonding between the refractory grains.

PHYSICAL PROPERTIES

Property	Value	Unit
Maximum Service Temperature	3,300F	1,816C
Alumina Content (as sold)	~86%	
Density (before drying)	185 lbs/cu.ft.	~2,963 kg/m ³
Material Required per Cu. Ft.	157 lbs/cu.ft.	
Bulk Density After Drying at 230F	141 lbs/cu.ft.	
Hot MOR at 1,500F	1,700 - 2,300 psi	
Hot MOR at 2,550F	500 - 1,000 psi	
Cold Crushing Strength After 1,500F	2,000 - 3,000 psi	
Permanent Linear Change - Dried at 230F	-0.3 to -0.7%	
Permanent Linear Change - Heated to 1,500F	+0.0 to +0.2%	
Permanent Linear Change - Heated to 2,550F	0.0 to +0.5%	

TYPICAL CHEMICAL ANALYSIS

Component	Content (% by weight)
Silica [SiO ₂]	9.2%
Alumina [Al ₂ O ₃]	84.0%
Iron Oxide [Fe ₂ O ₃]	1.0%

Component	Content (% by weight)
Phosphorous Pentoxide [P2O5]	3.4%
Titania [TiO2]	1.8%
Trace Minerals	0.6%

THERMAL CONDUCTIVITY (BTU/sq.ft./hr/F/in.)

Temperature	Thermal Conductivity
At 500F (260C)	10.0
At 1,500F (816C)	9.1
At 2,000F (1,093C)	9.0

CAN I USE THIS PRODUCT TO LAY BRICKS?

No - Savage RAM 85 is not a jointing mortar. It is a monolithic plastic refractory designed to be rammed, pounded, or trowelled into place to form a continuous wall section, not to bond individual bricks. For jointing bricks, use **Super Hi-Mul (3,100F)** (high-alumina compatible) or **Waterproof Mortar** for thicker joints. Savage RAM 85 is ideal for repairing or rebuilding entire sections of refractory lining, filling large cavities, or forming monolithic surfaces exposed to abrasion and high temperatures.

TYPICAL APPLICATIONS

- Repair and rebuilding of high-temperature refractory linings
- Industrial furnaces, reheat furnaces, and electric arc furnaces
- High-abrasion zones exposed to slag attack and metal penetration
- Furnace floors, walls, and roofs requiring superior strength
- Steel, cement, and non-ferrous melting industries
- Repair of ladles and metal transfer troughs
- Trowel application for surface patching (85T grade)

INSTALLATION INSTRUCTIONS

- Condition product between 50F and 80F (10-27C) prior to installation
- Ram or pound material in successive 2-3 inch (50-75 mm) layers
- Do NOT add water - product is supplied at optimum moisture content
- For trowelling grade (85T), apply with a trowel in thin layers
- Allow gradual air-dry cure before first firing to service temperature
- Avoid rapid heating - risk of steam spalling
- The phosphate bond develops full strength during initial firing

PACKAGING & STORAGE

Available in **50 lb (23 kg) boxes**. Store in a cool, dry location protected from freezing. Do not expose to temperatures below 32F (0C).

WARNING: This product contains crystalline silica, identified as a human carcinogen (IARC Group 1). Wear a NIOSH-approved respirator during installation and demolition. Safety glasses and impervious gloves are recommended.

NOTE: All data subject to reasonable deviation and should not be used for specification purposes. Source: Mt. Savage Specialty Refractories / Matériaux Réfractaires Direct Inc. - materiauxrefractairesdirect.com.