Kaocrete® HS Gun Monolithic

Product Data Sheet

Product Description

Kaocrete HS Gun is a high strength monolithic service up to 1427°C (2600°F). It incorporates an intermediate purity calcium-aluminate cement which produces high strength and good abrasion resistance.

Instructions for Using

Gunning: Use suitable gunite equipment. Material should be pre-dampened uniformly with approximately 3-4% by weight of clean water in a mechanical mixer before placing into gun. This will reduce rebound and dust. Add required water at nozzle for effective placement. Suggested air pressure at the nozzle is 2.5 to 3.5 bar (35 to 50 psi).

Watertight forms must be used when placing material. All porous surfaces that will come in contact with the material must be waterproofed with a suitable coating or membrane. For maximum strength, cure 24 hours in a damp condition before initial heat-up. Keep freshly placed monolithic warm during cold weather, ideally between 16°C and 27°C (60°F and 80°F) during wet curing process. New monolithic installations must be heated slowly the first time.

For detailed installation instructions and commissioning schedules, please contact your Morgan Advanced Materials-Thermal Ceramics representative.

Properties	Kaocrete HS Gun
Region of Manufacture	Americas
Bond type	Hydraulic
Raw material base	Chamotte
Method of installation	Gun
Maximum grain size, mm	6
Maximum service temperature, °C (°F)	1427 (2600)
Net material requirement, kg/m^3 (pcf)	2002 (125)
Packaging in bags, kg (lbs)	25 (55)

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Properties	Kaocrete HS Gun
Bulk Density, kg/m^3 (pcf), ASTM C134	
fired 5 hours @ 816°C (1500°F)	1858-2050 (116-128)
Modulus of Rupture, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	4.1-6.9 (600-1000)
fired 5 hours @ 816°C (1500°F)	2.4-4.1 (350-600)
Cold Crushing Strength, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	22.1-34.5 (3200-5000)
fired 5 hours @ 816°C (1500°F)	18.6-31.0 (2700-4500)
Permanent Linear Change, %, ASTM C113	
dried 24 hours @ 105°C (220°F)	0 to -0.2
fired 5 hours @ 816°C (1500°F)	-0.1 to -0.3
fired 5 hours @ maximum service temperature °C (°F)	-0.4 to -1.2
Chemical Analysis, %, Calcined Basis	
Alumina, Al_2O_3	48
Silica, SiO_2	40
Iron Oxide, Fe_2O_3	1.1
Titania, TiO_2	1.9
Lime, CaO	8.4
Magnesia, MgO	0.3
Alkali as, $Na_2O + K_2O$	0.2
Thermal Conductivity, W.m•K (BTU•in/hr•ft^2•°F), ASTM C417	
260°C (500°F)	0.81 (5.6)
538°C (1000°F)	0.86 (6.0)
816°C (1500°F)	0.91 (6.3)
1093°C (2000°F)	0.92 (6.4)

Storage and Shelf Life

- Monolithics should be stored in a dry, well-ventilated area and held off the ground on pallets ideally with the original packaging intact. Keep out of rain and damp conditions.
- Normal shelf life is 12 months from date of manufacture when properly stored.

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