

### Product Description

Kaocrete 250C is a high-density, high-strength 1760°C (3200°F) low cement monolithic with excellent thermal shock and abrasion resistance and good volume stability. Its low iron content and high hot strengths provide excellent performance in extreme service conditions.

### Instructions for using

**Casting:** Highest strength is obtained with monolithic refractory by using the least amount of clean mixing water that will allow thorough working of material into place by vibration. A mechanical mixer is required for proper placement (paddle type mortar mixers are best suited). After adding the recommended amount of water, wet mix for 5-6 minutes. Place material within 20 minutes after mixing.

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 –48 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) until it has taken a firm set and wet curing is complete. 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 250C
Region of Manufacture		Americas
Bond type		Hydraulic
Raw material base		Mullite
Method of installation		Cast
Maximum grain size, mm		7
Maximum service temperature, °C (°F)		1760 (3200)
Net material requirement, kg/m <sup>3</sup> (pcf)		2403 (150)
Water addition, % by weight		
	casting by vibrating	5.6-6.2
Packaging in bags, kg (lbs)		25 (55)

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# Kaocrete<sup>®</sup> 250C Monolithic

## Product Data Sheet



Properties	Kaocrete 250C
<b>Bulk Density, kg/m<sup>3</sup> (pcf), ASTM C134</b>	
fired 5 hours @ 816°C (1500°F)	2291-2499 (143-156)
<b>Modulus of Rupture, MPa (psi), ASTM C133</b>	
dried 24 hours @ 105°C (220°F)	11.0-17.9 (1600-2600)
fired 5 hours @ 816°C (1500°F)	14.5-25.5 (2100-3700)
fired 5 hours @ maximum service temperature °C (°F)	20.7-31.0 (3000-4500)
<b>Cold Crushing Strength, MPa (psi), ASTM C133</b>	
dried 24 hours @ 105°C (220°F)	55.2-82.8 (8000-12000)
fired 5 hours @ 816°C (1500°F)	58.6-86.2 (8500-12500)
fired 5 hours @ maximum service temperature °C (°F)	48.3-86.2 (7000-12500)
<b>Permanent Linear Change, %, ASTM C113</b>	
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)	-2.5 to -3.5
<b>Abrasion loss, cm<sup>3</sup>, ASTM C704</b>	
fired 5 hours @ 816°C (1500°F)	5 - 11
<b>Chemical Analysis, %, Calcined Basis</b>	
Alumina, Al <sub>2</sub> O <sub>3</sub>	65
Silica, SiO <sub>2</sub>	30
Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	0.8
Titanium Oxide, TiO <sub>2</sub>	2.2
Calcium Oxide, CaO	1.8
Alkali as, K <sub>2</sub> O+Na <sub>2</sub> O	0.3
<b>Thermal Conductivity, W/m•K (BTU•in/hr•ft<sup>2</sup>•°F), ASTM C417</b>	
260°C (500°F)	1.82 (12.6)
538°C (1000°F)	1.75 (12.1)
816°C (1500°F)	1.73 (12.0)
1093°C (2000°F)	1.77 (12.3)

### 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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