

Product Description

Kaocrete 249C is a low cement monolithic designed for internal or external high frequency vibration placement. It provides excellent volume stability and load bearing characteristics for continuous operation of 1538°C (2800°F).

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 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 249C	
Region of Manufacture	Americas	
Bond type	Hydraulic	
Raw material base	Chamotte	
Method of installation	Cast	
Maximum grain size, mm	6	
Maximum service temperature, °C (°F)	1538 (2800)	
Net material requirement, kg/m ³ (pcf)	2211 (138)	
Water addition, % by weight		
	casting by vibrating	5.6-6.3
Packaging in bags, kg (lbs)	25 (50)	

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Kaocrete[®] 249C Monolithic

Product Data Sheet



Properties		Kaocrete 249C
Bulk Density, kg/m³ (pcf), ASTM C134		
	fired 5 hours @ 816°C (1500°F)	2147-2291 (134-143)
Modulus of Rupture, MPa (psi), ASTM C133		
	dried 24 hours @ 105°C (220°F)	5.5-8.3 (800-1200)
	fired 5 hours @ 816°C (1500°F)	5.5-9.0 (800-1300)
	fired 5 hours @ maximum service temperature °C (°F)	11.0-15.9 (1600-2300)
Cold Crushing Strength, MPa (psi), ASTM C133		
	dried 24 hours @ 105°C (220°F)	41.4-62.1 (6000-9000)
	fired 5 hours @ 816°C (1500°F)	44.8-65.5 (6500-9500)
	fired 5 hours @ maximum service temperature °C (°F)	62.1-89.7 (9000-13000)
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)	-0.2 to -0.6
Abrasion loss, cm³, ASTM C704		
	fired 5 hours @ 816°C (1500°F)	8 - 14
Chemical Analysis, %, Calcined Basis		
	Alumina, Al ₂ O ₃	50
	Silica, SiO ₂	46
	Ferric Oxide, Fe ₂ O ₃	0.8
	Titanium Oxide, TiO ₂	1.5
	Calcium Oxide, CaO	2.0
	Alkali as, K ₂ O+Na ₂ O	0.3
Thermal Conductivity, W/m·K (BTU·in/hr·ft²·°F), ASTM C417		
	260°C (500°F)	1.43 (9.9)
	538°C (1000°F)	1.50 (10.4)
	816°C (1500°F)	1.57 (10.9)
	1093°C (2000°F)	1.63 (11.3)

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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