

Product Description

Kaolite 2000LI is a low iron cast 1093°C (2000°F) monolithic traditionally used to reduce the amount of supporting furnace steel work required and provide more insulation with a thinner lining. This ultra-light weight insulating castable has good strengths and low thermal conductivity.

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). Mix for 3 minutes to achieve a ball-in-hand consistency. Place material within 30 minutes after mixing.

Precautions: 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 under damp conditions 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 wet curing is completed. New monolithic installations must be heated slowly the first time.

Freshly placed lightweight monolithics are sometimes prone to a deteriorating condition called alkali hydrolysis when they are kept in a non-dried state for a sustained period of time. Under these conditions, the monolithics should be force dried soon after placement to help retard the possible deterioration.

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

Properties	Kaolite 2000LI
Region of Manufacture	Americas
Bond type	Hydraulic
Raw material base	Perlite
Method of installation	Cast
Maximum grain size, mm	3
Maximum service temperature, °C (°F)	1093 (2000)
Net material requirement, kg/m ³ (pcf)	609 (38)
Water addition, % by weight	
	casting by vibrating
	78-90
Packaging in bags, kg (lbs)	9 (20)

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Kaolite[®] 2000LI Monolithic

Product Data Sheet



Properties		Kaolite 2000LI
Bulk Density, kg/m³ (pcf), ASTM C134		
dried 24 hours @ 105°C (220°F)		577-753 (36-47)
fired 5 hours @ 816°C (1500°F)		497-673 (31-42)
Modulus of Rupture, MPa (psi), ASTM C133		
dried 24 hours @ 105°C (220°F)		0.41-0.83 (60-120)
fired 5 hours @ 816°C (1500°F)		0.38-0.76 (55-110)
fired 5 hours @ maximum service temperature °C (°F)		0.52-1.03 (75-150)
Cold Crushing Strength, MPa (psi), ASTM C133		
dried 24 hours @ 105°C (220°F)		1.55-2.76 (225-400)
fired 5 hours @ 816°C (1500°F)		1.21-2.41 (175-350)
fired 5 hours @ maximum service temperature °C (°F)		1.38-2.59 (200-375)
Permanent Linear Change, %, ASTM C113		
dried 24 hours @ 105°C (220°F)		0 to -0.2
fired 5 hours @ 816°C (1500°F)		-0.6 to -1.3
fired 5 hours @ maximum service temperature °C (°F)		-1.5 to -3.0
Chemical Analysis, %, Calcined Basis		
Alumina, Al ₂ O ₃		30
Silica, SiO ₂		46
Ferric Oxide, Fe ₂ O ₃		1.4
Titanium Oxide, TiO ₂		1
Calcium Oxide, CaO		16
Magnesium Oxide, MgO		0.5
Alkali as, K ₂ O+Na ₂ O		4.5
Thermal Conductivity, W.m•K (BTU•in/hr•ft²•°F) , ASTM C417		
260°C (500°F)		0.14 (1.1)
538°C (1000°F)		0.19 (1.3)
816°C (1500°F)		0.22 (1.5)

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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