Kaolite® 2300LI AHR Monolithic

Product Data Sheet

Product Description

Kaolite 2300LI AHR is a low iron, lightweight monolithic with a special formulation to prevent alkali hydrolysis.

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 3-6 minutes to achieve a good ball-in-hand consistency. Place material within 20 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 installation must be heated slowly the first time.

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

Properties	Kaolite 2300LI AHR
Region of Manufacture	Americas
Bond type	Hydraulic
Raw material base	Insulating Aggregate
Method of installation	Cast
Maximum grain size, mm	6
Maximum service temperature, °C (°F)	1260 (2300)
Net material requirement, kg/m^3 (pcf)	1009 (63)
Water addition, % by weight	
casting by vibrating	42-47
Packaging in bags, kg (lbs)	18 (40)

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Properties	Kaolite 2300LI AHR
Bulk Density, kg/m^3 (pcf), ASTM C134	
dried 24 hours @ 105°C (220°F)	993-1169 (62-73)
fired 5 hours @ 816°C (1500°F)	881-1121 (55-70)
Modulus of Rupture, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	1.38-2.76 (200-400)
fired 5 hours @ 816°C (1500°F)	1.03-1.52 (150-220)
fired 5 hours @ maximum service temperature °C (°F)	1.38-2.41 (200-350)
Cold Crushing Strength, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	6.89-10.34 (1000-1500)
fired 5 hours @ 816°C (1500°F)	3.45-6.90 (500-1000)
fired 5 hours @ maximum service temperature °C (°F)	4.83-10.34 (700-1500)
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 -0.6
fired 5 hours @ maximum service temperature °C (°F)	-1.0 to -2.0
Chemical Analysis, %, Calcined Basis	
Alumina, Al_2O_3	40
Silica, SiO_2	44
Ferric Oxide, Fe_2O_3	0.4
Titanium Oxide, TiO_2	0.8
Calcium Oxide, CaO	12 (4)
Magnesium Oxide, MgO	0.2
Alkali as, K_2O+Na_2O	1.2
Thermal Conductivity, W.m•K (BTU•in/hr•ft^2•°F) , ASTM C417	
260°C (500°F)	0.28 (1.96)
538°C (1000°F)	0.29 (2.01)
816°C (1500°F)	0.31 (2.15)
1093°C (2000°F)	0.32 (2.23)
Chemical Analysis % for CaO in parentheses indicates the % of reactive CaO present if less than the total. The balance is Calcia from the anorthite aggregate.	

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 9 months from date of manufacture when properly stored.

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