Morflo™ 170 Monolithic

Product Data Sheet

Product Description

Morflo 170 is a 1700°C (3092°F) grade, low cement monolithic with exceptionally high fluidity allowing installation of the most intricate shapes with minimal water.

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 30 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	Morflo 170
Region of Manufacture	Americas
Bond type	Hydraulic
Raw material base	Bauxite
Method of installation	Cast
Maximum grain size, mm	7
Maximum service temperature, °C (°F)	1700 (3092)
Net material requirement, kg/m^3 (pcf)	2851 (178)
Water addition, % by weight	
casting by vibrating	5.0-6.0
Packaging in bags, kg (lbs)	25 (55)

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Properties	Morflo 170
Bulk Density, kg/m^3 (pcf), ASTM C134	
fired 5 hours @ 816°C (1500°F)	2787-2979 (174-186)
Cold Crushing Strength, MPa (psi), ASTM C133	
dried 24 hours @ 105°C (220°F)	75.9-103.4 (11000-15000)
fired 5 hours @ 816°C (1500°F)	82.8-124.1 (12000-18000)
fired 5 hours @ 1000°C (1832°F)	89.7-137.9 (13000-20000)
fired 5 hours @ 1600°C (2912°F)	103.4-151.7 (15000-22000)
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 @ 1000°C (1832°F)	-0.1 to -0.4
fired 5 hours @ 1600°C (2912°F)	-0.5 to -1.5
Abrasion loss, cm^3, ASTM C704	
fired 5 hours @ 816°C (1500°F)	5-11
Chemical Analysis, %, Calcined Basis	
Alumina, Al_2O_3	82
Silica, SiO_2	11
Ferric Oxide, Fe_2O_3	1.2
Titanium Oxide, TiO_2	3.2
Calcium Oxide, CaO	1.7
Alkali as, K_2O+Na_2O	0.5
Thermal Conductivity, W/m•K (BTU•in/hr•ft^2•°F) , ASTM C417	
600°C (1112°F)	2.30 (15.9)

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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