

Product Description

Hicast Super is a high strength 1538°C (2800°F) rated low cement monolithic. It is designed for internal or external high frequency vibration only.

The densely packed structure produces low permeability and excellent abrasion resistance. Hicast Super has excellent resistance to alkali attack.

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	Hicast [®] Super
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)	2243 (140)
Water addition, % by weight	
	casting by vibrating
	5.4-6.2
Packaging in bags, kg (lbs)	25 (55)

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Hicast[®] Super Monolithic

Product Data Sheet



Properties		Hicast [®] Super
Bulk Density, kg/m³ (pcf), ASTM C134		
	fired 5 hours @ 816°C (1500°F)	2147-2307 (134-144)
Modulus of Rupture, MPa (psi), ASTM C133		
	dried 24 hours @ 105°C (220°F)	8.3-13.8 (1200-2000)
	fired 5 hours @ 816°C (1500°F)	8.3-13.8 (1200-2000)
Cold Crushing Strength, MPa (psi), ASTM C133		
	dried 24 hours @ 105°C (220°F)	55.2-75.9 (8000-11000)
	fired 5 hours @ 816°C (1500°F)	58.6-89.7 (8500-13000)
	fired 5 hours @ maximum service temperature °C (°F)	69.0-96.6 (10000-14000)
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)	-0.5 to -1.5
Abrasion loss, cm³, ASTM C704		
	fired 5 hours @ 816°C (1500°F)	8 -12
Chemical Analysis, %, Calcined Basis		
	Alumina, Al ₂ O ₃	50
	Silica, SiO ₂	45
	Ferric Oxide, Fe ₂ O ₃	0.9
	Titanium Oxide, TiO ₂	1.6
	Calcium Oxide, CaO	2.0
	Alkali as, K ₂ O+Na ₂ O	0.5
Thermal Conductivity, W/m•K (BTU•in/hr•ft²•°F) , ASTM C417 _		
	260°C (500°F)	1.63 (11.3)
	538°C (1000°F)	1.67 (11.6)
	816°C (1500°F)	1.72 (11.9)
	1093°C (2000°F)	1.75 (12.1)

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 6 months from date of manufacture when properly stored.

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