

Product Description

Kao-Tuff CV is an abrasion resistant monolithic. Kao-Tuff CV has easy flow capability under vibration. The high strength material consistently produce abrasion losses in range of 6-15 cc's.

Instructions for Using

Casting: Highest strength is obtained with a monolithic refractory by using the least amount of clean mixing water which will allow thorough working of material into place by vibrating or rodding. A mechanical mixer is required for proper placement (paddle type mortar mixer best suited). After adding the recommended amount of water to achieve a ball-in-hand consistency, wet mix for 4-6 minutes. 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 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 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	Kao-Tuff CV
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
	7.5-9.0
Packaging in bags, kg (lbs)	25 (55)

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Kao-Tuff™ CV Monolithic

Product Data Sheet



Properties		Kao-Tuff CV
Bulk Density, kg/m³ (pcf), ASTM C134		
	dried 24 hours @ 105°C (220°F)	2227-2403 (139-150)
	fired 5 hours @ 816°C (1500°F)	2114-2291 (132-143)
Modulus of Rupture, MPa (psi), ASTM C133		
	dried 24 hours @ 105°C (220°F)	8.3-15.2 (1200-2200)
	fired 5 hours @ 816°C (1500°F)	6.6-10.3 (950-1500)
	fired 5 hours @ maximum service temperature °C (°F)	10.3-20.7 (1500-3000)
Cold Crushing Strength, MPa (psi), ASTM C133		
	dried 24 hours @ 105°C (220°F)	48.3-75.9 (7000-11000)
	fired 5 hours @ 816°C (1500°F)	48.3-75.9 (7000-11000)
	fired 5 hours @ maximum service temperature °C (°F)	58.6-96.6 (8500-14000)
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)	-1.0 to -2.0
Abrasion loss, cm³, ASTM C704		
	fired 5 hours @ 816°C (1500°F)	6-13
Chemical Analysis, %, Calcined Basis		
	Alumina, Al ₂ O ₃	60
	Silica, SiO ₂	32
	Iron Oxide, Fe ₂ O ₃	0.8
	Titania, TiO ₂	1.3
	Lime, CaO	5.4
	Magnesia, MgO	0.2
	Alkali as, Na ₂ O + K ₂ O	0.3
Thermal Conductivity, W.m·K (BTU·in/hr·ft²·°F), ASTM C417		
	260°C (500°F)	1.30 (9.0)
	538°C (1000°F)	1.33 (9.2)
	816°C (1500°F)	1.30 (9.0)
	1093°C (2000°F)	1.27 (8.8)

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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