

## Product Description

Morflo 160 is a 1600°C (2912°F) grade, low cement monolithic with 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 160
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)	1600 (2912)
Net material requirement, kg/m <sup>3</sup> (pcf)	2419 (151)
Water addition, % by weight	
	casting by vibrating
	5.5-6.5
Packaging in bags, kg (lbs)	25 (55)

Whilst the values and application information in this datasheet are typical, they are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials - Thermal Ceramics.

# Morflo™ 160 Monolithic

## Product Data Sheet



Properties		Morflo 160
<b>Bulk Density, kg/m<sup>3</sup> (pcf), ASTM C134</b>		
	fired 5 hours @ 816°C (1500°F)	2339-2515 (146-157)
<b>Cold Crushing Strength, MPa (psi), ASTM C133</b>		
	dried 24 hours @ 105°C (220°F)	55.2-89.7 (8000-13000)
	fired 5 hours @ 816°C (1500°F)	62.1-96.6 (9000-14000)
	fired 5 hours @ 1000°C (1832°F)	75.9-110.3 (11000-16000)
	fired 5 hours @ 1600°C (2912°F)	82.8-117.2 (12000-17000)
<b>Permanent Linear Change, %, ASTM C113</b>		
	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
<b>Abrasion loss, cm<sup>3</sup>, ASTM C704</b>		
	fired 5 hours @ 816°C (1500°F)	8-13
<b>Chemical Analysis, %, Calcined Basis</b>		
	Alumina, Al <sub>2</sub> O <sub>3</sub>	56
	Silica, SiO <sub>2</sub>	39
	Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	0.8
	Titanium Oxide, TiO <sub>2</sub>	1.9
	Calcium Oxide, CaO	1.9
	Alkali as, K <sub>2</sub> O+Na <sub>2</sub> O	0.5
<b>Thermal Conductivity, W/m•K (BTU•in/hr•ft<sup>2</sup>•°F), ASTM C417</b>		
	600°C (1112°F)	1.66 (11.5)

### 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 9 months from date of manufacture when properly stored.

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