

Product Description

Hicast 90TR is especially designed for high wear areas where abrasion resistance is important. Mixed with the appropriate amount of water Hicast 90 TR becomes a hand rammable mixture. The unique bonding system produces a lining with superb abrasion, mechanical impact and thermal shock. Hicast 90 TR porosity rivals that of a dense brick.

Instructions for using

Ramming: 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 ramming. Mixing should be done preferentially in a planetary style mixer (Hobart mixer) of sufficient energy and bowl size to meet the job placement requirements. After adding the recommended amount of water, wet mix for 5-6 minutes. At the correct consistency, it appears as a damp, sticky (putty-like) material. Place material within 20 minutes after mixing.

Hicast 90TR is designed to be hand rammed in place in thin sections around anchors using a rubber or leather coated mallet. Care must be taken that the hand rammed material is of a homogeneous nature and there are no voids around the anchors. Once installation is started, it should proceed quickly without interruption until the quantity of mixed material is completed. Do not slick down the hand rammed surface with a trowel as this will cause fines to come to the surface and potentially cause excessive surface cracking.

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 90TR
Region of Manufacture	Americas
Bond type	Hydraulic
Raw material base	Tabular Alumina
Method of installation	Hand Ram
Maximum grain size, mm	3
Maximum service temperature, °C (°F)	1760 (3200)
Net material requirement, kg/m ³ (pcf)	2867 (179)
Water addition, % by weight	
	casting by vibrating
	4.0-4.8
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.

Hicast[®] 90TR Monolithic

Product Data Sheet



Properties	Hicast 90TR
Bulk Density, kg/m³ (pcf), ASTM C134	
	fired 5 hours @ 816°C (1500°F) 2771-2963 (173-185)
Cold Crushing Strength, MPa (psi), ASTM C133	
	dried 24 hours @ 105°C (220°F) 75.9-131.0 (11000-19000)
	fired 5 hours @ 816°C (1500°F) 89.7-144.8 (13000-21000)
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 +0.5
Abrasion loss, cm³, ASTM C704	
	fired 5 hours @ 816°C (1500°F) 4 - 6
Chemical Analysis, %, Calcined Basis	
	Alumina, Al ₂ O ₃ 91
	Silica, SiO ₂ 5.9
	Iron Oxide, Fe ₂ O ₃ 0.2
	Lime, CaO 1.9
	Alkali as, Na ₂ O + K ₂ O 0.4

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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