



# TUFFCRETE® 70 X

VIBRATION CAST, PUMP-CAST, SHOTCRETE, SELF-FLOW

## General Information

TUFFCRETE® 70 X is a mullite-based, low-cement castable. This high strength product is designed for use in cement preheat towers, coolers, iron pelletization preheaters, wood burning boilers, biomass burning and other waste incineration, and as a general purpose 70% alumina castable.

## Chemical Analysis

		Maximum Use Temperature	1650°C (3000°F)
Al <sub>2</sub> O <sub>3</sub>	68.0%	Material Required Vibration Cast	2.63 g/cm <sup>3</sup> (164 lb/ft <sup>3</sup> )
SiO <sub>2</sub>	25.8%	Material Required For Shotcreting	2.56 g/cm <sup>3</sup> (160 lb/ft <sup>3</sup> )
CaO	2.2%	Grain Size	5 mm (4 mesh) and finer
TiO <sub>2</sub>	2.0%	Installation Methods	Vibration Cast, Pump-Cast, Shotcrete, Self-Flow
Fe <sub>2</sub> O <sub>3</sub>	0.8%		
Other	1.2%		

## SHOTCRETE DATA

Temperature		Density		PLC*	CMOR		CCS		HMOR		Porosity	K-factor**		Abrasion Resistance
(°C)	(°F)	g/cm <sup>3</sup>	lb/ft <sup>3</sup>	%	MPa	psi	MPa	psi	MPa	psi	%	W·m <sup>-1</sup> ·K <sup>-1</sup>	BTU·in ft <sup>2</sup> ·hr <sup>-1</sup> ·F	cm <sup>3</sup>
110	230	2.60	162	-	21.4	3100	112.3	16300	-	-	11	-	-	-
815	1500	2.56	160	-0.4	24.5	3550	90.3	13100	-	-	16	-	-	7 - 10
1100	2000	2.52	157	-0.2	18.9	2750	126.8	18400	-	-	17	-	-	-
1400	2550	2.50	156	0.4	22.4	3250	114.4	16600	-	-	18	-	-	-
1500	2732	2.44	152	1.2	24.1	3500	108.9	15800	-	-	19	-	-	-
1600	2910	2.34	146	2.7	18.6	2700	68.9	10000	-	-	19	-	-	-

\*Permanent linear change after firing

\*\*Estimated

## SET TIMES AND WATER REQUIREMENTS

	External Vibration	Internal Vibration	Pump/Shotcrete	Self-Flow
<b>Water Required</b>	4.8 - 5.4	5.0 - 5.4	5.2 - 6.4	6.0 - 6.8
<b>Working Time</b>	2 - 4 hr	2 - 4 hr	4 hours minimum	n/a
<b>Initial Set</b>	4 - 8 hr	4 - 8 hr	5 - 10 hr	6 - 12 hr
<b>Final Set</b>	5 - 10 hr	5 - 10 hr	6 - 18 hr	7 - 14 hr

Allied Mineral Products, Inc. supplies a complete line of monolithic refractories for industrial applications. For more information or a complete evaluation of your refractory requirements, please contact your local Allied representative.

Warning: Contains aluminum oxide, aluminosilicates, calcium aluminate cement, and silica. The International Agency for Research on Cancer (IARC) has classified crystalline silica inhaled in the form of quartz or cristobalite carcinogenic to humans. Refer to Material Safety Data Sheet for additional information and disposal instructions. Avoid breathing dust. Wear NIOSH approved respirator during installation, removal, and disposal of product to prevent inhalation of dust. Avoid contact with skin and eyes. Cement powder or freshly mixed castable may cause eye and skin irritation. Steam spalling, which can lead to personal injury, may result from improper drying and firing procedures for products that are installed wet. In case of eye contact, flush immediately and repeatedly with water and consult a physician. For safest use and optimum performance, proper practices must be followed.

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