



TUFFCRETE® 47

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

General Information

TUFFCRETE® 47 is a fire clay based low cement mix designed for vibration, pump casting, shotcreting, or self-flow installation. TUFFCRETE® 47 has excellent resistance to chemical attack (particularly alkalis). The mix is well suited for use in wood burning boilers, fire box wall and roofs, combustion chambers, ash drops, wet bottom ash, biomass boilers, kiln car tops, back-up linings for ladles, chain section and cold end of rotary kilns, ductwork, bottom ash hoppers for coal fired boilers, FCCU transfer lines, cyclones, air heaters, and as a general purpose castable.

Chemical Analysis

Al ₂ O ₃	47.1%	Maximum Use Temperature	1540°C (2800°F)
SiO ₂	46.5%	Material Required Vibration Cast	2.21 g/cm ³ (138 lb/ft ³)
CaO	2.1%	Material Required For Shotcreting	2.16 g/cm ³ (135 lb/ft ³)
TiO ₂	2.0%	Grain Size	5 mm (4 mesh) and finer
Fe ₂ O ₃	0.8%	Installation Methods	Vibration Cast, Pumping, Shotcrete
Alkalies	1.1%	Standard Packaging	25 kg (55 lb) multi-wall paper bags
Other	0.1%	Note:	Bulk bags available upon request

SHOTCRETE DATA

Temperature		Density		PLC*	CMOR		CCS		HMOR		Porosity	K-factor**		Abrasion Resistance
(°C)	(°F)	g/cm ³	lb/ft ³	%	MPa	psi	MPa	psi	MPa	psi	%	W·m ⁻¹ ·K ⁻¹	BTU·in ft ² ·hr ² ·F	cm ³
110	230	2.23	139.0	-	11.7	1700	79.9	11600	-	-	12	-	-	-
815	1500	2.16	135.0	-0.3	15.2	2200	82.7	12000	-	-	15	-	-	7 - 10
1100	2000	2.15	134.0	-0.6	12.4	1800	50.3	7300	-	-	17	-	-	-
1400	2550	2.11	132.0	0.3	14.5	2100	59.9	8700	-	-	17	-	-	-
1500	2732	2.05	128.0	0.7	11.7	1700	53.1	7700	-	-	14	-	-	-

*Permanent linear change after firing

**estimated

VIBRATION CAST DATA

Temperature		Density		PLC*	CMOR		CCS		HMOR		Porosity	K-factor**		Abrasion Resistance
(°C)	(°F)	g/cm ³	lb/ft ³	%	MPa	psi	MPa	psi	MPa	psi	%	W·m ⁻¹ ·K ⁻¹	BTU·in ft ² ·hr ² ·F	cm ³
110	230	2.31	144.0	-	17.0	2465	114.5	16615	-	-	12	-	-	-
815	1500	2.27	142.0	-0.2	18.4	2665	70.9	10290	-	-	17	-	-	4-5
1100	2000	2.31	144.0	-0.3	12.3	1780	97.4	14135	-	-	15	-	-	-
1400	2500	2.29	143.0	-0.3	12.1	1760	96.6	14025	-	-	15	-	-	-

*Permanent linear change after firing

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, 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. 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.

TUFC47
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