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Technical Data Sheet Plicast Al-Tuff 80 C KK

Product # 3176

Available Internationally As: Plico Castable A-T 80 C KK

Product Description:

Plicast Al-Tuff 80 C KK has excellent aluminum non-wetting characteristics and physical properties with enhanced crack, impact, wear, and thermal cycling resistance due to the super coarse aggregate. Plicast Al-Tuff 80 C KK possesses versatile flow characteristics typical of low cement castable offerings and can be cast or pumped.

Standard Packaging: 1250 # / 568 kg Super Sack

Shelf Life: 6 months

Service Limit: 3100 °F 1700 °C

Contact Limit: 1700 °F 927 °C

Bulk Density - In Service: 170 pcf 2723 kg/m³

Bulk Density - To Place: 170 pcf 2723 kg/m³

Minimum Time To Firing: 16 hr

Abrasion Loss after 1500°F / 815°C
 per ASTM C704

5 cc

Chemistry (calcined) %					
Al ₂ O ₃	80.9	Alk	0.2	MgO	0.3
SiO ₂	12.1	TiO ₂	2.4	ZrO ₂	
CaO	2.8	P ₂ O ₅		Other	
Fe ₂ O ₃	1.2	SiC			

Water Range Per Standard Package		%	Quarts	Liters
Vib Casting	min	5.4	32.5	30.7
	max	6.0	36.1	34.1
Casting	min	6.0	36.1	34.1
	max	7.0	42.1	39.8
Pumping	min			
	max			

Coefficient of Thermal Expansion (reversible):	
4.3	x 10 ⁻⁶ in/in/°F / 7.7 x 10 ⁻⁶ mm/mm/°C

Thermal Conductivity	btu*in/hr*ft ² *°F	W/m°C
500°F / 260°C	14.1	2.0
1000°F / 540°C	13.6	2.0
1500°F / 815°C	13.6	2.0
2000°F / 1090°C	14.1	2.0

Temperature		Linear Change% per ASTM C113	CCS per ASTM C133		Cold MOR per ASTM C133		Hot MOR per ASTM C583	
°F	°C		psi	MPa	psi	MPa	psi	MPa
230	110	0.0	10000	69.0	2400	16.6		
1500	820	-0.2	10500	72.0	2500	17.2	3900	26.9
1800	980	-0.3			2400	16.6	3500	24.1

Other Data: Course aggregate mixing instructions if required: Per 50 lb package: mix one 44 lb bag with 6 lb of aggregate, per 500 lb package, mix on 440 lb bag with one 60 lb bag of aggregate. Any package larger than 500 lb will have the coarse aggregate inside of the bulk bag.

Release Date: 1 Aug 2019

Heat Up Guide: Schedule AT AS or AT AS

ASTM Class: C 401 Class F Low Cement Castable

Refractory material should be stored in a cool, dry environment.

Note: All data are averaged results of ASTM tests (where applicable) on laboratory specimens. Reasonable variations in data can be expected. Data is not to be used for specification purposes. Product data is periodically updated to reflect product, raw material, process and/or testing changes. Please consult your Plibrico representative to make sure you have the most current data.