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Technical Data Sheet Plicast Al-Tuff 3100 KK

Product # 14267

Available Internationally As: Plico Castable A-T 3100 KK

Product Description:

An 80% alumina bauxite based, non-wetting low cement castable.

Standard Packaging: 55 # / 25 kg Bag

Shelf Life: 6 months

Service Limit: 3100 °F 1700 °C

Contact Limit: N/A °F N/A °C

Bulk Density - In Service: 168 pcf 2691 kg/m³

Bulk Density - To Place: 168 pcf 2691 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	77.5	Alk	0.2	MgO	0.1
SiO ₂	16.9	TiO ₂	1.4	ZrO ₂	
CaO	2.6	P ₂ O ₅		Other	
Fe ₂ O ₃	1.3	SiC			

Water Range Per Standard Package		%	Quarts	Liters
Vib Casting	min	5.4	1.4	1.4
	max	6.0	1.6	1.5
Casting	min	6.0	1.6	1.5
	max	6.7	1.8	1.7
Pumping	min	6.5	1.7	1.6
	max	7.1	1.9	1.8

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	2300	15.9		
1000	540	-0.1			2200	15.2	3200	22.1
1500	820	-0.2	11000	75.9	2800	19.3	4000	27.6
1800	980	-0.3			2900	20.0	3800	26.2

Other Data:

Release Date: 1 Aug 2019

Heat Up Guide: Schedule AT AS or AT AS Linear

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.