Plico Refractories
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Refractories Since 1914

Technical Data Sheet

Plico Shotcrete A-T 3100 Special KK

Product Number 15247 Date 2/10/2014

Product Description

A high strength, mullite based, non wetting, low cement castable designed for shotcrete application with excellent resistance to thermal shock/cycling.

Typical Aluminum Applications

Aluminum Melting and Holding furnaces: lower sidewall, division wall and jamb repairs. Rotary dross furnace linings.

Service limit -	3100 °F	*1704 °C*	
Al contact limit -	1800 °F	*982 °C*	
Density to place	148 pcf	*2,370 kg/m3*	
Density in service	148 pcf	*2,371 kg/m3*	
Min time before firing	16 hr		

Std. package 55 # / 25 kg Bag

Water range per std. package:

Casting		to	qts	*0.0 to*	*0.0 l*
Pumping	1.8 to	2.0	qts	*1.6 to*	*1.8 l*

Chemistry % (calcined)

Al_2O_3	58.7	P_2O_5	
SiO_2	35.3	Alk.	0.2
Fe_2O_3	0.9	MgO	0.1
CaO	3.3	SiC	
TiO_2	1.6	ZrO_2	
		Other	

Thermal Conductivity

	btu*in/hr*ft^2*°F	*w/m°C*
500F / 260C	10.7	*1.54*
1000F / 540C	11.3	*1.62*
1500F / 815C	12.0	*1.72*
2000F / 1090C	12.6	*1.81*

Abrasion Loss
per ASTM C 704
after 1500 F

9 cc

Coefficient of Thermal Expansion
(reversable)

3.6 x 10^-6 in/in F

6.4 x 10^-6 m/m C

Temperature per ASTM C113 / C865	Linear Change per ASTM C113 / C179	Cold MOR per ASTM C133 psi	Cold MOR per ASTM C133 *MPa*	CCS per ASTM C133 psi	CCS per ASTM C133 *MPa*	Hot MOR per ASTM C583 psi	Hot MOR per ASTM C583 *MPa*
230 F / 110 C	0.0%	1700	*11.7*	7000	*48*		
1000 F / 540 C	-0.2%	1900	*13.1*		*0*	2200	*15.2*
1500 F / 815 C	-0.3%	2300	*15.9*	8000	*55*	3400	*23.4*
			0.0		*0*		*0.0*
			0.0		*0*		*0.0*

Other Data

Heat Up Guide
Schedule AT AS or AT AS Linear

ASTM Class
C 401 Class F

Low Cement Castable

Note:

All data are averaged results of ASTM tests (where applicable) on laboratory shotcreted 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 / testing changes. Please consult your Plico representative to make sure you have the most current data.

Plico Refractories are manufactured by Plibrico Company LLC, USA.