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Technical Data Sheet Pli-Shot Si-Bond M AL

Product # 15416

Available Internationally As: Plico Shotcrete Si-Bond M AL

Product Description:

Pli-shot Si-Bond M AL is a mullite based, cementless castable enhanced for resistance to aluminum reaction and flux attack and has been modified for shotcrete application. Product benefits include excellent resistance to aluminum attack and corundum growth, consistent hot strength from the aluminum melt range to high temperature greater than 2300°F, and enhanced mineralogy.

Standard Packaging: 55 # / 25 kg Bag

Shelf Life: 4 months

Service Limit: 2800 °F 1540 °C

Contact Limit: 2000 °F 1093 °C

Bulk Density - In Service: 150 pcf 2403 kg/m³

Bulk Density - To Place: 150 pcf 2403 kg/m³

Minimum Time To Firing: 4 hr

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

10 cc

Chemistry (calcined) %					
Al ₂ O ₃	55.8	Alk	0.5	MgO	
SiO ₂	32.9	TiO ₂	1.5	ZrO ₂	
CaO	0.1	P ₂ O ₅		Other	7.9
Fe ₂ O ₃	0.8	SiC			

Water Range Per Standard Package		%	Quarts	Liters
Vib Casting	min			
	max			
Casting	min			
	max			
Pumping	min	6.0	1.6	1.5
	max	7.2	1.9	1.8

Coefficient of Thermal Expansion (reversible):

3.5 x 10⁻⁶ in/in/°F / 6.3 x 10⁻⁶ mm/mm/°C

Thermal Conductivity	btu*in/hr*ft ² *°F	W/m°C
500°F / 260°C	9.5	1.4
1000°F / 540°C	9.8	1.4
1500°F / 815°C	10.0	1.4
2000°F / 1090°C	10.1	1.5

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	5000	34.0	1000	6.9		
1500	820	-0.2	8000	55.0	2000	13.8	3000	20.7
1800	980	-0.2			2400	16.6	3200	22.1
2300	1260	-0.4			2000	13.8	3200	22.1

Other Data:

Release Date: 1 Aug 2019

Heat Up Guide: Schedule R-PS-SB

ASTM Class: C 401 Class D No 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.