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Plico Refractories

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Technical Data Sheet

Plico Castable A-S 3223 C KK

Product Number 3223

Date 10/7/2016

Product Description

A coarse grain aluminum resistant castable with high hot strength and good fracture resistance. Preliminary data.

Service limit - 2700°F 1480°C

Std. package 500 # / 227 kg Super Sack

Al contact limit - 2000°F 1090°C

Water range per std. package:

Density to place 170 pcf 2723 kg/m³

Vib Cast 12.0 to 13.2 qts 11.4 to 12.5 / 5.0% to 5.5%

Density in service 170 pcf 2723 kg/m³

Casting 13.9 to 15.6 qts 13.2 to 14.8 / 5.8% to 6.5%

Min time before firing 16 hr

Chemistry % (calcined)

| | | | |
|--------------------------------|------|-------------------------------|-----|
| Al ₂ O ₃ | 61.7 | P ₂ O ₅ | |
| SiO ₂ | 19.8 | Alk. | 0.1 |
| Fe ₂ O ₃ | 1.0 | MgO | 0.1 |
| CaO | 1.8 | SiC | |
| TiO ₂ | 1.4 | ZrO ₂ | 6.5 |
| | | Other | 7.6 |

Thermal Conductivity

| | btu*in/hr*ft ² * F | w/m°C |
|---------------|-------------------------------|-------|
| 500F / 260C | 12.3 | 1.8 |
| 1000F / 540C | 13.3 | 1.9 |
| 1500F / 815C | 14.2 | 2.0 |
| 2000F / 1090C | 15.0 | 2.2 |

Abrasion Loss

per ASTM C 704
after 1500 F

5 cc

Coefficient of Thermal Expansion

(reversible)

3.5 x 10⁻⁶ in/in F

6.3 x 10⁻⁶ m/m C

| Temperature per ASTM C113 / C865 | Linear Change per ASTM C113 / C179 | Cold MOR | | CCS | | Hot MOR | |
|--|--|----------------------|-----|----------------------|-----|----------------------|-----|
| | | per ASTM C133 psi | MPa | per ASTM C133 psi | MPa | per ASTM C583 psi | MPa |
| 230 F / 110 C | 0.0% | 1850 | 13 | 7500 | 52 | | |
| 1500 F / 815 C | -0.2% | 2000 | 14 | 8500 | 59 | 3800 | 26 |
| 1800 F / 980 C | -0.2% | | | | | 3500 | 24 |
| 2000 F / 1090 C | -0.3% | | | | | 2800 | 19 |
| 2300 F / 1260 C | | | | | | | |

Other Data

Heat Up Guide

Schedule AT AS or AT AS Linear

ASTM Class

C 401 Class D

Low Cement Castable

Note:

All data are averaged results of ASTM tests (where applicable) on laboratory cast 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 Plibrico representative to make sure you have the most current data.