

**Plico Castable A-S 75B KK**

Product Number 14925

Date 2/10/2014

**Product Description**

An aluminum resistant, high strength, low cement, bauxite based castable for both aluminum furnace contact and non-contact applications. Maintains hot strength at elevated temperature and has good thermal shock resistance.

**Typical Aluminum Applications**

Furnace lower & upper sidewalls, hearths, ramps, & sills. Transfer & OTR ladles. Troughs & launders.

**Service limit -** 3000°F 1648 °C

**Std. package** 55 # / 25 kg Bag

**Al contact limit -** 2000 °F 1093°C

**Water range per std. package:**

**Density to place** 175 pcf 2,803 kg/m<sup>3</sup>

**Casting** 1.6 to 1.8 qts 1.5 to 1.7 l

**Density in service** 175 pcf 2,804 kg/m<sup>3</sup>

**Pumping** 1.8 to 2.0 qts 1.6 to 1.9 l

**Min time before firing** 16 hr

**Chemistry % (calcined)**

|                                |      |                               |     |
|--------------------------------|------|-------------------------------|-----|
| Al <sub>2</sub> O <sub>3</sub> | 73.9 | P <sub>2</sub> O <sub>5</sub> | 0.1 |
| SiO <sub>2</sub>               | 14.1 | Alk.                          | 0.2 |
| Fe <sub>2</sub> O <sub>3</sub> | 1.3  | MgO                           | 0.1 |
| CaO                            | 1.6  | SiC                           |     |
| TiO <sub>2</sub>               | 1.3  | ZrO <sub>2</sub>              |     |
|                                |      | Other                         | 7.5 |

**Thermal Conductivity**

|                      | btu*in/hr*ft <sup>2</sup> *°F | w/m°C |
|----------------------|-------------------------------|-------|
| <b>500F / 260C</b>   | 16.7                          | 2.4   |
| <b>1000F / 540C</b>  | 16.3                          | 2.34  |
| <b>1500F / 815C</b>  | 15.8                          | 2.27  |
| <b>2000F / 1090C</b> | 16.5                          | 2.37  |

**Abrasion Loss**

per ASTM C 704  
after 1500 F

9 cc

**Coefficient of Thermal Expansion**

(reversible)

4.2 x 10<sup>-6</sup> in/in F

7.5 x 10<sup>-6</sup> m/m C

| Temperature<br>per<br><u>ASTM C113 / C865</u> | Linear Change<br>per<br><u>ASTM C113 / C179</u> | Cold MOR                    |            | CCS                         |            | Hot MOR                     |            |
|---|---|-----------------------------|------------|-----------------------------|------------|-----------------------------|------------|
|   |   | per ASTM C133<br><u>psi</u> | <u>MPa</u> | per ASTM C133<br><u>psi</u> | <u>MPa</u> | per ASTM C583<br><u>psi</u> | <u>MPa</u> |
| 230 F / 110 C                                 | 0.0%  | 1100                        | 7.6        | 5000                        | 34         |                             |            |
| 1500 F / 815 C                                | -0.2%   | 1050                        | 7.2        | 5500                        | 38         | 2800                        | 19.3       |
| 1800 F / 980 C                                | -0.3%   | 1700                        | 11.7       |                             | 0          | 3200                        | 22.1       |
| 2000 F / 1090 C                               | -0.4%   | 1700                        | 11.7       |                             | 0          | 2700                        | 18.6       |
| 2300 F / 1260 C                               | -0.3%   | 2400                        | 16.6       |                             | 0          | 1500                        | 10.3       |

**Other Data**

**Heat Up Guide**

Schedule AT AS or AT AS Linear

**ASTM Class**

C 401 Class E

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 Plico representative to make sure you have the most current data.

*Plico Refractories are manufactured by Plibrico Company LLC, USA.*