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# Technical Data Sheet

# Plicast Al-Shield GHC 7 KK

Product # 14911

Available Internationally As: Plico Castable A-S GHC 7 KK

**Product Description:**

Plicast® Al-Shield™ GHC 7 KK is a 70% alumina, low cement castable, with a mullite aggregate and high mullite matrix. This product possess excellent aluminum resistance and improved thermal cycling performance due to the incorporation of a high temperature aluminum resistant additive system. Originally developed as a greater crack resistant material for division walls in demanding recycling furnace applications, it has proven to be a great cost effective upgrade for many

**Standard Packaging:** 55 # / *25 kg* Bag

**Shelf Life:** 6 months

**Service Limit:** 3000 °F *1650 °C*

**Contact Limit:** N/A °F *N/A °C*

**Bulk Density - In Service:** 165 pcf *2643 kg/m³*

**Bulk Density - To Place:** 165 pcf *2643 kg/m³*

**Minimum Time To Firing:** 16 hr

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

8 *cc*

| Chemistry (calcined) % | | | | | |
|---|---|---|---|---|---|
| $Al_2O_3$ | 69.7 | Alk | 0.1 | MgO | 0.1 |
| $SiO_2$ | 17.2 | $TiO_2$ | 1.4 | $ZrO_2$ | |
| CaO | 2.1 | $P_2O_5$ | | Other | 8.1 |
| $Fe_2O_3$ | 1.2 | SiC | | | |

| Water Range Per Standard Package | | % | Quarts | *Liters* |
|---|---|---|---|---|
| Vib Casting | min | 5.6 | 1.5 | *1.4* |
| | max | 6.2 | 1.6 | *1.6* |
| Casting | min | 6.2 | 1.6 | *1.6* |
| | max | 6.8 | 1.8 | *1.7* |
| Pumping | min | 6.6 | 1.7 | *1.7* |
| | max | 7.3 | 1.9 | *1.8* |

| Coefficient of Thermal Expansion (reversable): |
|---|
| 4.0 x $10^{-6}$ in/in/°F / *7.2 x $10^{-6}$ mm/mm/°C* |

| Thermal Conductivity | btu*in/hr*ft²*°F | *W/m°C* |
|---|---|---|
| 500°F / *260°C* | 11.1 | *1.6* |
| 1000°F / *540°C* | 10.6 | *1.5* |
| 1500°F / *815°C* | 10.5 | *1.5* |
| 2000°F / *1090°C* | 10.6 | *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 | 10000 | *69.0* | 2000 | *13.8* | | |
| 1000 | *540* | -0.1 | | | 1300 | *9.0* | 2100 | *14.5* |
| 1500 | *820* | -0.2 | 10000 | *69.0* | 1500 | *10.3* | 2900 | *20.0* |
| 1800 | *980* | -0.2 | | | 1700 | *11.7* | 3000 | *20.7* |
| 2000 | *1090* | -0.3 | | | 2000 | *13.8* | 2100 | *14.5* |

Other Data:

Release Date: 1 Aug 2019

Heat Up Guide: Schedule AT AS or AT AS Linear

ASTM Class: C 401 Class E
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.