



# Plibrico Company, LLC

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# Technical Data Sheet Plicast Al-Tuff LWI 24

Product # 16505

Available Internationally As: Plico Castable A-T LWI 24

### Product Description:

A moderate temperature, aluminum resistant insulating castable.

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

**Shelf Life:** 12 months

**Service Limit:** 2450 °F 1340 °C

**Contact Limit:** N/A °F N/A °C

**Bulk Density - In Service:** 80 pcf 1282 kg/m<sup>3</sup>

**Bulk Density - To Place:** 80 pcf 1282 kg/m<sup>3</sup>

**Minimum Time To Firing:** 24 hr

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

N/A cc

| Chemistry (calcined) %         |      |                               |     |                  |     |
|--------------------------------|------|-------------------------------|-----|------------------|-----|
| Al <sub>2</sub> O <sub>3</sub> | 42.0 | Alk                           | 1.2 | MgO              | 0.3 |
| SiO <sub>2</sub>               | 42.6 | TiO <sub>2</sub>              | 1.9 | ZrO <sub>2</sub> |     |
| CaO                            | 9.5  | P <sub>2</sub> O <sub>5</sub> |     | Other            |     |
| Fe <sub>2</sub> O <sub>3</sub> | 2.6  | SiC                           |     |                  |     |

| Water Range Per Standard Package |     | %    | Quarts | Liters |
|----------------------------------|-----|------|--------|--------|
| Vib Casting                      | min |      |        |        |
|                                  | max |      |        |        |
| Casting                          | min | 24.2 | 6.4    | 6.1    |
|                                  | max | 27.2 | 7.2    | 6.8    |
| Pumping                          | min |      |        |        |
|                                  | max |      |        |        |

**Coefficient of Thermal Expansion (reversible):**

2.8 x 10<sup>-6</sup> in/in/°F / 5.0 x 10<sup>-6</sup> mm/mm/°C

| Thermal Conductivity | btu*in/hr*ft <sup>2</sup> *°F | W/m°C |
|----------------------|-------------------------------|-------|
| 500°F / 260°C        | 2.6                           | 0.4   |
| 1000°F / 540°C       | 2.7                           | 0.4   |
| 1500°F / 815°C       | 2.9                           | 0.4   |
| 2000°F / 1090°C      | 3.3                           | 0.5   |

| Temperature |      | Linear Change%<br>per ASTM C113 | CCS<br>per ASTM C133 |     | Cold MOR<br>per ASTM C133 |     | Hot MOR<br>per ASTM C583 |     |
|-------------|------|---------------------------------|----------------------|-----|---------------------------|-----|--------------------------|-----|
| °F          | °C   |                                 | psi                  | MPa | psi                       | MPa | psi                      | MPa |
| 230         | 110  | -0.1                            | 850                  | 6.0 | 250                       | 1.7 |                          |     |
| 1000        | 540  | -0.4                            |                      |     | 190                       | 1.3 | 150                      | 1.0 |
| 1500        | 820  | -0.6                            | 550                  | 3.8 | 190                       | 1.3 | 160                      | 1.1 |
| 2000        | 1090 | -0.8                            |                      |     | 140                       | 1.0 | 130                      | 0.9 |
| 2450        | 1340 | -1.5                            |                      |     | 375                       | 2.6 |                          |     |

Other Data:

Release Date: 1 Aug 2019

Heat Up Guide: Schedule B

ASTM Class: C 401 Class Q Insulating 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.