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Technical Data Sheet Plicast Si-Bond SP RS

Product # 3346

Available Internationally As:

Plico Castable Si-Bond SP RS

Product Description:

Plicast Si-Bond SP RS is a high alumina based, cement less castable, modified with a magnesium aluminate spinel addition designed for casting refractory shapes. This castable was specifically developed for enhanced resistance to high alkali slags and alkali vapor attacks. Plicast Si-Bond SP RS also exhibits exceptional hot strength up through 2500°F.

Standard Packaging: 55 # / 25 kg Bag

Shelf Life: 4 months

Service Limit: 3100 °F 1700 °C

Contact Limit: N/A °F N/A °C

Bulk Density - In Service: 182 pcf 2916 kg/m³

Bulk Density - To Place: 182 pcf 2916 kg/m³

Minimum Time To Firing: 24 hr

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

N/A cc

| Chemistry (calcined) % | | | | | |
|--------------------------------|------|-------------------------------|-----|------------------|-----|
| Al ₂ O ₃ | 84.3 | Alk | 0.5 | MgO | 7.2 |
| SiO ₂ | 7.7 | TiO ₂ | | ZrO ₂ | |
| CaO | 0.2 | P ₂ O ₅ | | Other | |
| Fe ₂ O ₃ | 0.1 | SiC | | | |

| Water Range Per Standard Package | | % | Quarts | Liters |
|----------------------------------|-----|-----|--------|--------|
| Vib Casting | min | | | |
| | max | | | |
| Casting | min | 5.3 | 1.4 | 1.3 |
| | max | 6.0 | 1.6 | 1.5 |
| Pumping | min | | | |
| | max | | | |

Coefficient of Thermal Expansion (reversible):

4.9 x 10⁻⁶ in/in/°F / 8.8 x 10⁻⁶ mm/mm/°C

| Thermal Conductivity | btu*in/hr*ft ² *°F | W/m°C |
|----------------------|-------------------------------|-------|
| 500°F / 260°C | 18.0 | 2.59 |
| 1000°F / 540°C | 17.5 | 2.52 |
| 1500°F / 815°C | 17.0 | 2.45 |
| 2000°F / 1090°C | 18.0 | 2.59 |

| 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 | 2000 | 14.0 | 950 | 6.6 | | |
| 1500 | 820 | -0.1 | 2500 | 17.0 | 1800 | 12.4 | 1500 | 10.3 |
| 1800 | 980 | -0.1 | | | | | 3200 | 22.1 |
| 2000 | 1090 | | | | 2500 | 17.2 | 4500 | 31.0 |
| 2500 | 1370 | | | | 3500 | 24.1 | 1000 | 6.9 |

Other Data:

Release/Revision Date: 7 Jan 2026

Heat Up Guide: Schedule E

ASTM Class: C 401 Class F

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.