SUPER REFRACTORIES
ENGINEERING CONSTRUCTION

# TECHNICAL DATA SHEET

## INSULATING CASTABLE SIC 1100 | LIGHTWEIGHT INSULATING CASTABLE

| PRODUCT CODE | PRODUCT TYPE | CLASSIFICATION TEMP. |
|---|---|---|
| SIC 1100 | Insulating Castable (Lightweight) | 1100 °C |

## 1. PRODUCT DESCRIPTION

Insulating Castable SIC 1100 is a lightweight, calcium aluminate cement bonded insulating castable for backup insulation in furnaces, kilns, ovens and dryers operating at moderate temperatures. Its low density reduces heat loss through the lining and the weight of the structure. It is used behind a dense refractory lining, not as a hot-face material.

## 2. CHEMICAL ANALYSIS (TYPICAL)

| Chemical Composition | Typical Value (%) |
|---|---|
| **$Al_2O_3$ — Alumina** | 28 - 32 |
| **$SiO_2$ — Silica** | 50 - 55 |
| **$Fe_2O_3$ — Iron Oxide** | ≤ 2.5 |
| **CaO — Calcium Oxide** | 7 - 9 |

*Indicative chemical values for product reference; not contractual or batch-specific limits.*

## 3. PHYSICAL PROPERTIES (TYPICAL)

| Property | Test Condition | Typical Value |
|---|---|---|
| **Classification Temperature** | — | 1100 °C |
| **Recommended Service Temperature** | — | 1000 °C * |
| **Classification** | — | Lightweight Insulating Castable |
| **Recommended Water Addition** | — | 25 - 30 % |
| **Bulk Density** | 110 °C x 24 h | 0.95 - 1.15 g/cm³ |
| **Cold Crushing Strength (CCS)** | 110 °C x 24 h | 15 - 30 kgf/cm² |
| **Cold Crushing Strength (CCS)** | 815 °C x 5 h | 10 - 20 kgf/cm² |
| **Thermal Conductivity** | mean 600 °C | 0.30 - 0.40 W/m·K |

** Classification temperature is the maximum temperature the material can withstand on its exposed face for a short period; it is not a continuous service rating. Recommended service temperature is application-dependent and can be lower depending on atmosphere, thermal cycling, chemical attack and lining design.*

*Indicative values for product reference; not contractual or batch-specific limits. CCS is a cold-strength property measured on laboratory specimens (5 x 5 x 5 cm). This is an insulating material and is not intended for hot-face, abrasion, slag-contact or load-bearing service.*

## 4. INSTALLATION GUIDELINE


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- Add clean, cool water at 25 - 30 % of the dry material weight. Do not exceed the recommended dosage.
- Mix in a paddle or forced-action mixer only until uniform; over-mixing breaks down the lightweight aggregate.
- Place into tight, leak-proof formwork. Use light rodding or light vibration only; over-vibration causes segregation.
- Keep the surface moist and cure for a minimum of 24 hours before stripping the formwork.
- Dry out slowly: hold at 110 °C until moisture release stops, then heat at no more than 1 °C/min up to 600 °C with a 2 - 4 hour hold before further heating.

## 5. TYPICAL APPLICATIONS

| | |
|---|---|
| • Furnace backup insulation | • Kiln wall insulation |
| • Oven and dryer lining | • Insulating layer behind dense lining |
| • Duct and casing insulation | |

## 6. PACKAGING & STORAGE

| Item | Description |
|---|---|
| **Packaging** | 10 kg per bag (moisture-resistant bag with inner liner) |
| **Storage Life** | 6 months from date of production |
| **Storage Condition** | Store in a dry, covered area, clear of the ground and protected from moisture |

## DISCLAIMER

The values shown in this data sheet are typical properties obtained under controlled laboratory and production conditions and are provided for reference only. They do not constitute a specification or a guarantee of performance. Actual results may vary depending on installation practice, water addition, curing, dry-out schedule, furnace atmosphere, and service conditions. For assistance with product selection or installation, please contact Super Refractories.


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