RICHO Refractory
FIRE BRICK & INSULATING BRICK PRODUCT

TECHNICAL DATA SHEET

RCH-18S | HIGH ALUMINA DENSE REFRACTORY CASTABLE

PRODUCT CODE	PRODUCT TYPE	REFRACTORINESS
RCH-18S	Dense Castable (High Alumina)	1700 °C

1. PRODUCT DESCRIPTION

RCH-18S is the highest alumina grade in the RCH dense castable range, formulated for continuous service temperatures up to 1600 °C. The high alumina matrix and low water demand provide high refractoriness, high density and strong resistance to thermal and mechanical load in severe furnace environments.

2. CHEMICAL ANALYSIS (CALCULATED)

Chemical Composition	Calculated Range (%)
Al_2O_3 — Alumina	77.0 - 79.0
SiO_2 — Silica	9.5 - 11.5
Fe_2O_3 — Iron Oxide	1.5 - 2.2
CaO — Calcium Oxide	5.5 - 6.5

Calculated on a fired basis; indicative values, not contractual or batch-specific limits.

3. PHYSICAL PROPERTIES (TYPICAL)

Property	Test Condition	Typical Value
Refractoriness	—	1700 °C
Recommended Service Temperature	—	1600 °C *
Classification	—	High Alumina Dense Castable
Recommended Water Addition	—	9 - 11 %
Bulk Density	110 °C x 24 h	2.50 - 2.60 g/cm³
Material Required (approx.)	—	2,550 kg/m³
Cold Crushing Strength (CCS)	110 °C x 24 h	235 - 250 kgf/cm²
Cold Crushing Strength (CCS)	815 °C x 5 h	190 - 230 kgf/cm²
Modulus of Rupture (MOR)	110 °C x 24 h	80 - 110 kgf/cm²
Modulus of Rupture (MOR)	815 °C x 5 h	50 - 75 kgf/cm²

** Recommended service temperature is the temperature for continuous service and is application-dependent. Actual safe operating temperature can be lower depending on load, atmosphere, thermal cycling, abrasion, chemical attack and lining design. Refractoriness is the temperature at which the material begins to soften and is not a service rating.*

CCS and MOR are cold-strength properties measured on laboratory specimens (CCS 5 x 5 x 5 cm; MOR 23 x 5 x 5 cm, span 20 cm) and are not a measure of strength at operating temperature.

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4. INSTALLATION GUIDELINE

- Add clean, cool water at 9 - 11 % of the dry material weight. Do not exceed the recommended dosage.
- Mix thoroughly using a forced-action pan or paddle mixer until a uniform consistency is obtained. Gravity (drum) mixers are not recommended.
- Place into the formwork in layers and compact with a vibrator until the surface is closed and entrapped air has been released.
- Keep the surface moist and cure for a minimum of 24 hours before stripping the formwork.
- Dry out gradually following a controlled heating schedule, holding at 110 - 150 °C until moisture release stops, prior to first firing.

5. TYPICAL APPLICATIONS

• Furnace hot face	• Burner block
• Kiln lining	• Abrasion-exposed areas
• High thermal load areas	

6. PACKAGING & STORAGE

Item	Description
Packaging	25 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 CV Richo Refractory.

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