DGC REFRACTORIES TECHNICAL DATA SHEET

MAGNESIA-ALUMINA SPINEL BRICK (MA-85)

OPTIMISED FOR THERMAL SHOCK RESISTANCE & SLAG RESISTANCE IN ROTARY KILNS, SMELTERS, AND REGENERATORS

The Magnesia-Alumina Spinel Brick (MA-85) is a high-performance, chemically bonded refractory brick formulated with synthetic spinel aggregates and high-purity fused magnesia. Its robust thermal shock resistance, moderate refractoriness, and resistance to alkali and sulphur vapours make it ideal for cement and non-ferrous applications. This material is widely used in **transition zones, coolers, smelters, and thermal power furnaces,** where frequent temperature cycling and corrosive atmospheres challenge conventional refractories.

TECHNICAL SPECIFICATIONS

PROPERTY	MA-85
MgO (Magnesia)	≥ 83%
Al_2O_3 (Alumina)	≥ 12%
Fe_2O_3 (Iron Oxide)	≤ 1.5%
Apparent Porosity	≤ 17%
Bulk Density	≥ 2.90 g/cm³
Cold Crushing Strength (CCS)	≥ 50 MPa
Refractoriness Under Load	≥ 1650 °C @ 0.2 MPa
Thermal Conductivity (1000°C)	4.8–5.3 W/m·K

KEY APPLICATIONS

- **Cement Rotary Kilns –** Transition zones and coolers
- **Non-Ferrous Metallurgy –** Melting furnace linings
- **Thermal Power Plants –** Waste heat boilers, regenerators
- **Shaft Kilns –** Mid-zone linings
- **Secondary Refining Units –** Slag lines, safety linings

PERFORMANCE CHARACTERISTICS

- **Exceptional Thermal Shock Resistance:** Minimises cracking during thermal cycling.
- **Good Alkali Resistance:** Withstands sulphur and alkali-rich atmospheres.
- **Chemical Compatibility:** Suitable for environments with fluctuating slag chemistry.
- **Good Workability:** Stable performance under mechanical stress and dynamic loading.
- **Long Service Life:** Reduces frequency of shutdowns and refractory replacements.

INSTALLATION & HANDLING

- Bricks should be installed dry with tight joints, optionally using a matching spinel-compatible mortar.
- Keep materials dry and avoid stacking on uneven surfaces to prevent edge damage.
- Backed by application-specific installation guidelines available upon request.

QUALITY & COMPLIANCE

- Manufactured in accordance with ISO 9001:2015 quality management system.
- Batch-tested for dimensional accuracy, chemical composition, and strength.
- Full traceability provided with QA certification and technical support.

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