



DGC REFRACTORIES



FLASH SMELTING FURNACES | SLAG CLEANING FURNACES | ROTARY KILNS
ANODE BAKING FURNACE | SMELTING & HOLDING FURNACES | TAPPING CHANNELS & LAUNDERS
FLUES & CHIMNEYS

NON-FERROUS METALS INDUSTRY

Industry Application Guide

**ADVANCED REFRACTORY
SOLUTIONS FOR SMELTING,
REFINING & METALLURGICAL
EXCELLENCE**



INDUSTRY FOCUS

The future of non-ferrous metallurgy depends on precision-engineered refractories that perform reliably under extreme conditions. At DGC Refractories, we specialise in delivering just that.

From aluminium and copper to zinc, lead, and nickel, non-ferrous metallurgy presents some of the harshest chemical, thermal, and mechanical environments in industrial manufacturing. With a heritage of over a century in industrial services and refractory innovation, DGC Refractories delivers tailored refractory solutions that enable metallurgical plants to maintain high operational uptime, control thermal efficiency, and reduce lifecycle costs.

OVERVIEW

The non-ferrous sector demands highly engineered refractory materials capable of withstanding:

- Severe thermal shock
- Intense chemical corrosion from slags and vapours
- Mechanical abrasion in high-wear zones
- Extended campaign durations across continuous and batch operations

Our solutions are designed to meet these challenges with precision and consistency, supported by rigorous quality control and advanced technical support.

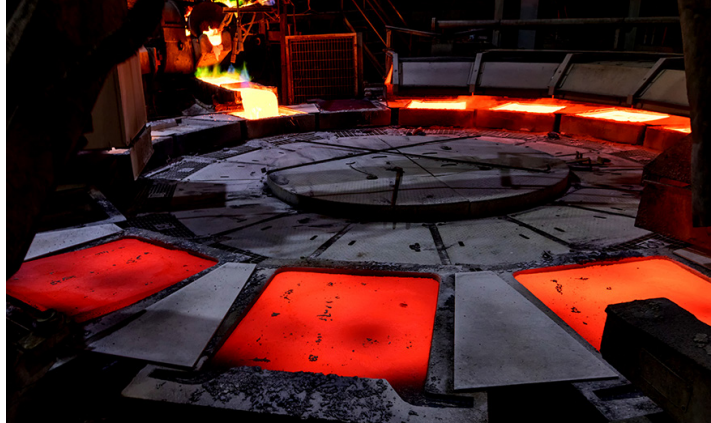
KEY APPLICATION AREAS

Our refractory materials are engineered for performance across a range of non-ferrous metallurgical units, including:

- Flash Smelting Furnaces
- Slag Cleaning Furnaces
- Rotary Kilns
- Anode Baking Furnaces
- Melting & Holding Furnaces
- Tapping Channels & Launderers
- Flues & Chimneys



EACH APPLICATION DEMANDS SPECIFIC THERMAL, MECHANICAL, PROPERTIES, & OUR MATERIALS ARE DESIGNED TO EXCEED THOSE EXPECTATIONS



REFRACTORY **PRODUCT** RANGE

DGC Refractories offers a technically validated portfolio of shaped and specialty materials for the non-ferrous industry:

SHAPED REFRACTORIES

- **Magnesia Bricks**
MgO content: 90–98%
Bulk Density: 2.8–3.2 g/cm³
Cold Crushing Strength (CCS): 50–100 MPa
- **Magnesia-Chrome Bricks**
MgO content: 55–75%
Cr₂O₃ content: 10–20%
Bulk Density: 3.0–3.3 g/cm³
CCS: 80–120 MPa
- **High Alumina Bricks**
Al₂O₃ content: 70–90%
Bulk Density: 2.5–3.0 g/cm³
CCS: 60–100 MPa
- **Andalusite-Mullite Bricks**
Al₂O₃ content: 50–65%
Bulk Density: 2.4–2.8 g/cm³
CCS: 40–80 MPa
- **Special Acid-Resistant Bricks**
SiC content: 75–90%
Bulk Density: 2.6–2.9 g/cm³
CCS: 60–100 MPa
- **Chrome-Corundum Bricks**
Cr₂O₃ content: 10–20%
Al₂O₃ content: 75–90%
Bulk Density: 3.2–3.6 g/cm³
CCS: 100–150 MPa



**ALL PRODUCTS ARE MANUFACTURED
TO ISO-CERTIFIED STANDARDS UNDER STRICT
QUALITY ASSURANCE PROTOCOLS**



ENVIRONMENTAL & SUSTAINABILITY FOCUS

DGC Refractories is committed to helping clients meet sustainability targets while maximising operational efficiency. Our solutions contribute to:

- Reduced carbon footprint through energy-efficient production technologies
- Extended refractory life and fewer shutdowns
- Enhanced furnace insulation and reduced energy loss
- Adoption of recycled input materials wherever feasible

These initiatives not only support environmental goals but also translate into measurable cost savings over the full furnace lifecycle.

TECHNICAL EXCELLENCE

All materials offered by DGC Refractories are manufactured in advanced production facilities featuring:

- 5G-enabled intelligent process control
- Real-time monitoring via digital twin systems
- In-house R&D and collaboration with top material science institutions
- Comprehensive QA/QC, from raw materials to final delivery

This ensures high reliability, batch-to-batch consistency, and full traceability.

WHY CHOOSE DGC REFRACTORIES?

- **Industry Expertise** – Over 100 years of refractory and industrial process experience
- **Tailored Solutions** – Application-specific material design and performance modelling
- **Global-Grade Materials** – Manufactured in alignment with international specifications
- **End-to-End Support** – Technical consulting, installation guidance, and operational reviews

LET US HELP YOU STRENGTHEN PERFORMANCE, REDUCE RISK, & OPTIMISE YOUR NON-FERROUS OPERATIONS, BRICK BY BRICK



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