



DGC REFRACTORIES QUALITY CONTROL & CERTIFICATION OVERVIEW

ASSURANCE THROUGH PRECISION. EXCELLENCE THROUGH DISCIPLINE.

COMMITMENT TO QUALITY

At DGC Refractories, product reliability is not an assumption—it is a deliverable. Across all stages of production, we embed rigorous quality assurance and control processes that ensure each refractory product meets or exceeds international standards. Our approach integrates real-time data acquisition, digital manufacturing oversight, and certified testing procedures to maintain consistent material performance across every batch.

We maintain full traceability from raw material selection through to final product delivery, backed by documented inspection protocols and comprehensive technical records.

QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PROCEDURES

Our QA/QC system is fully integrated into the manufacturing workflow and built upon the following foundations:

- **Incoming Raw Material Inspection:** All raw materials are verified for chemical composition, grain sizing, moisture levels, and impurity content before acceptance into production.
- **Process Control Monitoring:** Each manufacturing stage—crushing, mixing, shaping, drying, and firing, is monitored using intelligent process control systems to ensure adherence to defined parameters.
- **In-Process Testing:** Technicians conduct real-time sampling and analysis during mixing and forming to detect deviations early.
- **Final Product Testing:** A comprehensive battery of tests is performed on each production lot, including chemical, physical, thermal, and mechanical performance indicators.
- **Data Traceability:** Test records, batch numbers, and production timestamps are logged electronically and linked to each shipment, ensuring full traceability and accountability.

LABORATORY & EQUIPMENT CAPABILITIES

Our quality testing laboratories are equipped with world-class instruments, enabling comprehensive analysis across multiple categories. These include:

- **X-Ray Fluorescence (XRF) Spectrometry** – for chemical composition analysis
- **Bulk Density & Apparent Porosity Testers**
- **Cold Crushing Strength (CCS) & Modulus of Rupture (MOR) Machines**
- **Refractoriness Under Load (RUL) & Permanent Linear Change (PLC) Testing**
- **Thermal Shock Resistance Testing**
- **Thermal Conductivity Measurement Units**
- **Microscopy & Grain Size Analysis Systems**
- **Creep Testing Equipment (High Temperature Deformation Testing)**

All instruments are calibrated and maintained under strict quality protocols, with control samples used to validate results.

THIRD-PARTY TESTING & INDEPENDENT VERIFICATION

In addition to internal QA/QC processes, DGC Refractories partners with internationally recognised third-party inspection and verification agencies to assure impartiality and reliability. These include:

- **SGS** – Global leader in inspection, verification, and certification
- **CTC (China Building Material Test & Certification Group)** – A CNAS-accredited laboratory for refractory and construction material testing
- **CST (China Standard Testing)** – Independent verification of thermal, mechanical, and chemical properties

These agencies conduct random and scheduled inspections, as well as verification sampling on export orders when required by clients or industry standards.

CERTIFICATIONS & COMPLIANCE

Our manufacturing partners maintain ISO-certified quality systems, ensuring that every stage of the production process complies with global best practices. These certifications include:

- **ISO 9001:2015** – Quality Management System
- **ISO 14001:2015** – Environmental Management System
- **ISO 45001:2018** – Occupational Health & Safety Management

All refractory products are also tested in accordance with international standards including:

- **ASTM C133, C134, C199, C704, C1171**
- **EN ISO 10081, 993 Series**
- **DIN and GB/T equivalents where applicable**

We provide test certificates and compliance documentation with all major product deliveries, giving clients complete confidence in the integrity and performance of their refractories.

WHY QA/QC MATTERS

At DGC Refractories, quality is not a checkbox—it is a discipline. By combining intelligent manufacturing systems, certified laboratories, and independent inspection partners, we ensure that each product delivers:

- Proven performance under extreme conditions
- Consistent quality from batch to batch
- Full traceability and transparency
- Lower lifecycle costs and improved operational uptime for clients

Our clients don't just receive refractory products—they receive engineered performance backed by measurable quality control.



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