



# REFRACTORY PERFORMANCE & ASSURANCE SERVICES



## LEADING THE WAY

IN ASSET INTEGRITY MANAGEMENT & INDUSTRIAL SOLUTIONS

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SOUTH AFRICA

ZAMBIA

DEMOCRATIC REPUBLIC OF CONGO

MADAGASCAR

ZIMBABWE

BRAZIL

CHINA



AT DGC AFRICA AND REFLECT,  
**OUR REFRACTORY PERFORMANCE & ASSURANCE SERVICES ARE DESIGNED TO EXTEND OPERATIONAL LONGEVITY & ENHANCE THE EFFICIENCY OF INDUSTRIAL FURNACES ACROSS DIVERSE SECTORS.**

LEVERAGING STATE-OF-THE-ART TECHNOLOGY AND DEEP INDUSTRY EXPERTISE, OUR COMBINED TEAMS DELIVER SPECIALIZED REFRACTORY AND FURNACE SERVICES TAILORED TO THE UNIQUE CHALLENGES OF EACH FACILITY.

**DGC AFRICA**, a division of the Dickinson Group of Companies, is a leading provider of asset integrity management and industrial solutions across sub-Saharan Africa. With a rich heritage spanning 115 years, **DGC AFRICA** has established itself as a trusted partner in the mining, metals smelting, mineral processing, and various other heavy industries.



Our comprehensive range of services includes furnace and smelter solutions, industrial cleaning, mechanical engineering, and specialized industrial products. **DGC AFRICA's** commitment to innovation, safety, and customer-centric solutions has positioned us at the forefront of industrial services in Africa. Our extensive experience, coupled with our deep understanding of local markets, enables us to deliver tailored, high-quality solutions that meet the unique challenges of our diverse client base.

**REFLECT** is a specialized consulting firm dedicated to advancing refractory technology and performance across various high-temperature industries. Founded by industry veterans with decades of experience, **REFLECT** brings unparalleled expertise in refractory materials, design, and application. The company's core focus is on optimizing refractory systems to enhance operational efficiency, reduce downtime, and extend the lifespan of critical industrial assets.

**REFLECT's** team of expert consultants leverages cutting-edge technology and innovative methodologies to provide comprehensive refractory solutions. From failure analysis to performance enhancement strategies, **REFLECT's** services are designed to address the most complex challenges in refractory applications. Their commitment to continuous innovation and excellence has made them a trusted advisor to leading industrial companies worldwide.

**OUR COMPREHENSIVE**

# **REFRACTORY PERFORMANCE & ASSURANCE SERVICES**



**QA/QC SUPPORT FOR INSTALLATIONS**

**QA/QC SUPPORT FOR REFRACTORY PRODUCT INSPECTIONS**

**QA/QC FOR REFRACTORY SUPPLIERS**

**REFRACTORY DESIGN REVIEWS & OPTIMIZATION**

**PRODUCT SPECIFICATION REVIEWS BASED ON APPLICATIONS**

**REFRACTORY TRAINING FOR END USERS**

**REFRACTORY CONSULTING FOR FAILURES OR PERFORMANCE ENHANCEMENTS**

**REFRACTORY INSPECTIONS OF FURNACES,  
INCLUDING THERMOGRAPHY FOR ONLINE ASSESSMENTS**



## QA/QC SUPPORT FOR INSTALLATIONS

ENSURING HIGH-QUALITY INSTALLATION PROCESSES  
WITH DETAILED INSPECTIONS AND ADHERENCE  
TO DESIGN SPECIFICATIONS.

Our **QA/QC Support for Installations** service ensures that every refractory installation meets the highest standards of quality and performance. Our team of experts provides rigorous on-site inspections throughout the installation process, meticulously adhering to design specifications and implementing real-time quality control measures.

We document every step of the installation, offering comprehensive reports that detail our findings and recommendations.

THIS SERVICE NOT ONLY GUARANTEES THE INTEGRITY OF YOUR REFRACTORY INSTALLATIONS BUT ALSO PROVIDES YOU WITH A CLEAR, AUDITABLE TRAIL OF THE ENTIRE PROCESS, ENSURING COMPLIANCE WITH INDUSTRY STANDARDS AND OPTIMIZING THE LONGEVITY AND PERFORMANCE OF YOUR REFRACTORY SYSTEMS.



# QA/QC SUPPORT FOR REFRACTORY PRODUCT INSPECTIONS

**CONDUCTING THOROUGH INSPECTIONS  
TO VERIFY THE QUALITY AND SUITABILITY OF  
REFRACTORY MATERIALS BEFORE USE.**

Our **QA/QC Support for Refractory Product Inspections service** is designed to verify the quality and suitability of refractory materials before they are put into use. We conduct thorough pre-installation inspections that include dimensional and compositional analysis, as well as performance testing under simulated conditions.

Our experts assess each material against stringent quality criteria, ensuring that only the best products are used in your installations. This proactive approach helps prevent potential issues before they occur, saving you time and resources in the long run.

Our detailed reports provide you with comprehensive insights into the quality of your refractory materials, empowering you to make informed decisions about your refractory systems.

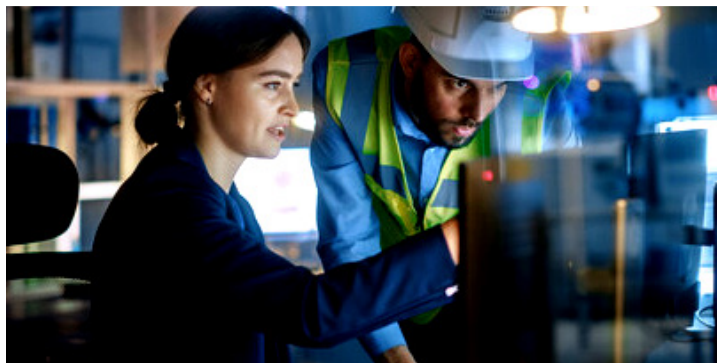
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## QA/QC FOR REFRACTORY SUPPLIERS

**AUDITING AND EVALUATING SUPPLIERS TO  
MAINTAIN STRINGENT QUALITY STANDARDS.**

Our **QA/QC for Refractory Suppliers service** is crucial for maintaining excellence throughout your supply chain. We conduct comprehensive audits of your suppliers, evaluating their quality management systems and production processes. Our team assesses every aspect of the supplier's operations, from raw material sourcing to final product delivery.

We perform rigorous material testing and certification, ensuring that all products meet or exceed industry standards. Through this service, we help you build a reliable network of high-quality suppliers, reducing the risk of substandard materials entering your supply chain.



**OUR CONTINUOUS IMPROVEMENT  
RECOMMENDATIONS ASSIST  
YOUR SUPPLIERS IN ENHANCING  
THEIR PROCESSES,  
ULTIMATELY BENEFITING  
THE QUALITY OF  
YOUR REFRACTORY SYSTEMS.**

# REFRACTORY DESIGN REVIEWS & OPTIMIZATION

ENHANCING DESIGN EFFICIENCY AND PERFORMANCE THROUGH ADVANCED  
SIMULATION TOOLS AND EXPERT ANALYSIS.

Our **Refractory Design Reviews and Optimization service** leverages advanced thermal and mechanical simulations to enhance the efficiency and performance of your refractory systems. Our expert team conducts in-depth analyses of your current designs, identifying areas for improvement and optimization. We integrate cutting-edge materials and techniques into our recommendations, ensuring that your refractory designs are at the forefront of industry innovation.

OUR SERVICE INCLUDES LIFE-CYCLE PERFORMANCE PROJECTIONS,  
ALLOWING YOU TO UNDERSTAND THE LONG-TERM  
IMPLICATIONS OF DESIGN CHOICES.

By optimizing your refractory designs, we help you improve operational efficiency, reduce maintenance needs, and extend the lifespan of your refractory systems, ultimately leading to significant cost savings and improved performance.



## PRODUCT SPECIFICATION REVIEWS

TAILORING REFRACTORY MATERIALS TO SPECIFIC OPERATIONAL CONDITIONS  
FOR OPTIMAL PERFORMANCE.

Our **Product Specification Reviews Based on Applications service** is tailored to ensure that your refractory materials are optimally suited to your specific operational conditions. We conduct an in-depth analysis of your unique operational environment, considering factors such as temperature ranges, chemical exposures, and mechanical stresses. Based on this analysis, we provide material selection optimization recommendations, ensuring that each component of your refractory system is ideally suited to its application.

We use advanced modeling techniques to project performance in your specific environment, allowing us to fine-tune our recommendations. Our service also includes cost-effectiveness evaluations and longevity projections, helping you balance performance requirements with budgetary considerations. This tailored approach ensures that your refractory systems are not just adequate, but truly optimized for your specific needs.

# REFRACTORY TRAINING FOR END USERS

PROVIDING COMPREHENSIVE TRAINING PROGRAMS ON TECHNICAL ASPECTS FOR REFRACTORIES, INSTALLATION, MAINTENANCE, AND TROUBLESHOOTING.

Our **Refractory Training for End Users service** is designed to empower your team with comprehensive knowledge about refractory systems. We offer a range of training programs covering technical aspects of refractories, installation techniques, maintenance procedures, and troubleshooting strategies. Our hands-on workshops provide practical experience, while our theoretical courses delve into the principles underlying refractory performance.

WE TAILOR OUR CURRICULUM TO YOUR SPECIFIC NEEDS, **ENSURING THAT THE TRAINING IS DIRECTLY APPLICABLE TO YOUR OPERATIONS.**

Our ongoing support and refresher training options ensure that your team's knowledge remains current with industry developments. By investing in your team's expertise, you enhance operational efficiency, reduce the risk of errors, and foster a culture of continuous improvement in your organization.



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# REFRACTORY CONSULTING FOR FAILURES OR PERFORMANCE ENHANCEMENTS

OFFERING IN-DEPTH ANALYSIS AND TARGETED STRATEGIES TO ADDRESS REFRACTORY FAILURES AND IMPROVE PERFORMANCE.

Our **Refractory Consulting for Failures or Performance Enhancements service** provides expert analysis and targeted strategies to address refractory failures and improve overall system performance. When failures occur, our team conducts thorough root cause analyses, identifying the underlying issues and developing comprehensive solutions. For performance enhancement, we assess your current systems and provide strategies to optimize efficiency and longevity.

OUR RECOMMENDATIONS ENCOMPASS **MATERIAL SELECTION, DESIGN MODIFICATIONS, & OPERATIONAL PRACTICES.**

We also develop preventive measures to mitigate future risks and create long-term optimization plans tailored to your specific needs. This service not only resolves immediate issues but also sets the foundation for sustained improvements in your refractory system performance.

# REFRACTORY INSPECTIONS OF FURNACES, INCLUDING THERMOGRAPHY FOR ONLINE ASSESSMENTS

UTILIZING NON-INVASIVE THERMOGRAPHY AND OTHER ADVANCED TECHNIQUES TO ASSESS FURNACE INTEGRITY AND OPTIMIZE PERFORMANCE.

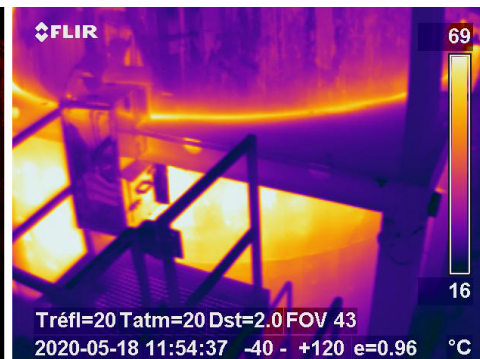
Our **Refractory Inspections of Furnaces service**, featuring advanced thermography for online assessments, provides a non-invasive yet highly effective method of evaluating furnace integrity and performance. Using state-of-the-art thermal imaging technology, we can assess your furnaces while they remain operational, minimizing disruptions to your processes. Our experts analyze thermal patterns to identify potential weak points, thermal anomalies, or developing issues before they escalate into major problems.

We provide detailed reports with visual representations of our findings, making it easy to understand the current state of your furnace linings.

BASED ON THESE ASSESSMENTS,

**WE DEVELOP PREDICTIVE MAINTENANCE PLANS & OPTIMIZATION RECOMMENDATIONS, HELPING YOU PROACTIVELY MANAGE YOUR FURNACE MAINTENANCE AND ENHANCE OVERALL PERFORMANCE.**

This service is instrumental in extending the life of your furnaces, improving energy efficiency, and preventing unexpected downtimes.





# ELEVATE YOUR REFRACTORY PERFORMANCE




Through our **Refractory Performance & Assurance Services**, **DGC AFRICA** and **REFLECT** ensure the technical upgrading of facilities while fostering a culture of innovation and environmental stewardship. Join us to set the industry standard, enhance productivity, and promote sustainability in the mining and smelting sectors. Partnering with **DGC AFRICA** and **REFLECT** means investing in the future of your operations, where extended furnace lifecycles, enhanced operational efficiency, and reliable performance are guaranteed.

**TAKE THE NEXT STEP**

Contact us today to schedule a comprehensive assessment of your refractory systems. Our experts are ready to develop a tailored solution that will optimize your operations, reduce downtime, and drive long-term efficiency.

**TRANSFORM YOUR REFRACTORY PERFORMANCE**  
– LET'S BUILD A MORE EFFICIENT AND SUSTAINABLE FUTURE TOGETHER.



**CONTACT US** to learn how DGC can help transform your operations and deliver sustainable competitive advantage.

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