



FOUNDRY INDUSTRY

Refractory Concept Solutions

CALDERYS PERFORMANCE YOU CAN TRUST

- For all industries with extreme temperatures and working conditions, Caldersys is there for you. Combining a global network with local expertise, we offer customised solutions wherever you are: from monolithic refractory to bricks and precast shapes to a full range of engineering and installation services.

KEY POINTS

Over 100 years of refractory experience

Over 2 300 employees across 33 countries

19 plants in 16 countries totaling 600 000 tons capacity

Annual revenue of over € 500 million

1 Global Technology Centre and 15 Customisation Labs

150 major projects implemented every year

Wholly-owned subsidiary of Imerys Group



OUR VALUE TO THE FOUNDRY INDUSTRY

➤ **CALDERYS** is the world's leading provider of refractory solutions for both ferrous and non-ferrous foundries, combining innovative products, engineering know-how, project management and installation services. We have been building successful partnerships with hundreds of Foundry customers around the world and work together with our customers as one team, always striving to deliver high-performing and reliable customised solutions.

Our market leadership in Foundry stems from the following core points.

Focus on Innovation

We are constantly developing **innovative products** to optimise costs and performance in your production of castings and pioneering new **implementation techniques**, improving equipment to deliver higher yields, and creating new **services** to always bring more value to our customers.





Worldwide Network of Foundry Experts

The Calderys team has a wealth of first-hand **experience** and valuable insider **knowledge** in the Foundry industry and understands your business. Ideas and best practices are exchanged on a daily basis, allowing us to provide you an unparalleled level of reactivity and flexibility when handling **local or international projects**.



Our unique model of Quarry to Furnace

Owning a quartzite mine in Sweden gives us complete process control for our **SILICA MIX** product range, ensuring for you high reliability and quality. Thanks to our parent company Imerys, Calderys also has secure and consistent access to other key raw materials vital for refractories in Foundry.



Safety

We actively foster a culture of safety. Construction sites in Foundry have their specific inherent risks and we have always been proactive in providing proper training, ensuring the use of protective equipment for our own and the customer's staff, and taking targeted measures to minimize the risk of injury to all personnel involved. Our staff, including sub-contractors, attend mandatory tool box safety talks and carry out job site-specific risk assessments as needed.



OUR SERVICES

Material Selection

Calderys provides a comprehensive range of refractory solutions for all aspects of thermal processing within the foundry, from melting over treating and transferring to casting and finally reheating, including many innovative and ground-breaking products for Coreless Induction Furnace, Cupola, and Holding & Pouring furnaces. We also offer a wide range of non-monolithic products such as bricks and insulating fibres to provide the **full package from a single source**.

Quality Control

We comply with strict testing procedures on both raw materials and finished products in all our production facilities across the globe.

Project Management

We provide highly specialised and skilled teams for projects of all sizes and complexities. Our Foundry-specific project engineers plan and control every aspect of the project life-cycle from concept to definition, installation, dry-out and commissioning. Our project management services also include the engineering, material selection, planning, delivery scheduling, site- and sub-contractor management and supervision, direct training of your staff and handover to your production team.

Analysis

Before we start a job, we complete an extensive analysis of your process, equipment and working conditions, in order to provide the best solution for your needs.

Design

We provide customised solutions including thermal profiling, product selection, selection of anchoring and insulation materials, development of innovative installation techniques & complete lining design.

Logistics

Calderys logistics personnel look after the timely delivery of our products to your sites, ensuring tracking and monitoring after delivery. Our strong network of logistics partners enables us to produce and deliver orders even on short notice.



Installation

Using our own equipment and optimised installation techniques, we offer you high-quality installation services on-site, as well as off-site in one of our **Service Facilities**. This ensures minimum downtime and optimal performance of our refractory products.



Maintenance

We offer permanent on-site refractory services including regular and predictive maintenance and repair as well as 24/7 emergency response.



Service Facilities

We carry out **off-site relining of all Foundry equipment** in our Service Facilities at various locations. Our services cover the whole process from pick-up to delivery of the completely refurbished equipment, allowing for a timely, safe and hassle-free refractory relining and maintenance of your furnace. You benefit from a reduced downtime, reduced start-up time and release of otherwise tied-up resources.



CustomerNet

As a valued Calderys customer you have access to tailor-made digital services which include: 1) Extensive product catalogue search with direct access to TDS, SDS, & installation guides, 2) Exclusive Thermal Calculator tool with extractions of your heat transfer calculations, 3) Full access to our library of technical documentation.



KEY PRODUCTS FOR FOUNDRY

SILICA MIX

Silica-based dry vibratable mixes have been well known for many decades as linings for Coreless Induction Furnaces for melting and holding iron, non-ferrous alloys and partly steel alloys. Calderys' SILICA MIX is produced from Swedish Dalsland quartzite that is processed in our Åmål plant. Due to exceptional conditions during the metamorphic overprint of (underwater) volcanic siliceous sediments it has the highest grade of raw material in the world and very unique properties.

The Calderys SILICA MIX range is very well suited for most applications, regardless of the alloys, melting temperatures, operating conditions and installation techniques in use. It is sold worldwide in over 60 countries.



CALDE® RANGE

Our product range, consisting of over thousand active formulas fulfilling all of our customer requirements, is the result of decades of intensive R&D work and interaction with our customers in the field. Our comprehensive product line for Foundry includes:

- ▶ **CALDE® CAST** can be mixed with water and poured like concrete, with internal or external vibration (e.g. CALDE® CAST LX 58 for casthouse applications, CALDE® CAST G 7 P for cupola). CALDE® SOL CAST products are 100% cement-free castables that are mixed on-site with sol-gel binder instead of water.

- **CALDE® FLOW** self-flowing castables (e.g. CALDE® FLOW AZ for casthouse applications) are used to fill thin sections or areas that are difficult to reach with internal vibration tools.
- **CALDE® RAM** summarizes all semi-wet mixtures consisting of moistened aggregates that can be rammed into place with an air or electric hammer (e.g. CALDE® RAM G C 68 S20 for cupola).
- **CALDE® GUN** products are wetted with water (or liquid chemical binder) at the nozzle. They are well suited for large volumes with minimum installation time (e.g. CALDE® GUN LA 50 SZ for cupola shaft). They can also be applied by patching (e.g. CALDE® GUN B 55 M G3 for ladle repairs).
- **CALDE® MIX** and **DRY** products are composed of dry refractory material that can be installed without addition of liquids, similar to our SILICA MIX range (e.g. CALDE® MIX SC 4010 for Coreless Induction Furnaces, CALDE® MAG DRY K 85 for Electric Arc Furnace hearth or CALDE® MIX FLASH A 55 for ladles).
- **CALDE® PATCH, CALDE® TROWEL, CALDE® STIX** and **CALDE® PLAST** are our product ranges for all types of repairing jobs. They can be delivered dry to be mixed with water on-site (e.g. CALDE® STIX 151 for casthouse applications) or ready-to use in PE bags (CALDE® PATCH PB 82 U for all kind of hot or cold repairs), boxes (CALDE® PLAST G C 65S20 for cupola) or buckets (CALDE® PATCH HQ 26 U for Coreless Induction Furnace repairs or CALDE® TROWEL HQ 82 U for brick trowelling).

Time Saving Solutions

Apart from gunning products, our time saving solutions include the product ranges CALDE® CAST QD - QUICK DRY - (e.g. CALDE® CAST G NC 66S24 QD for use in cupolas), our CALDE® SOL CAST range (e.g. the versatile and mechanical highly resistant CALDE® SOL CAST M 60 for use in ladles, runners, receivers or even Coreless Induction Furnace tops), and last but not least the CALDE® MIX FLASH range, (e.g. CALDE® MIX FLASH A 55) as ultra-fast exothermic hardening (blowtorch required) dry vibratable mix for same-day re-use of ladles.

EXTENDED PRODUCT RANGE

CALDE® SHIELD

CALDE® SHIELD is an advanced coating that forms an impervious layer during the sintering phase with coreless or channel induction techniques to repel vapour ingress, allowing the correct formation of the ceramic bonding necessary to withstand the conditions during melting operation. The operators of Coreless Induction furnaces as well as furnaces heated by Inductors benefit from an increased robustness of the hot face lining from the first charge on.

CALDE® SPRAY MACHINE

Our machine for coating applications in Foundries completes our machinery services for our customers.

Main areas of use include ladles, runners, spouts or CIF furnaces, further reducing the time needed for daily maintenance and additionally improving the ergonomic aspects of this tasks.



CALDE® PAC

We offer a range of arm and base vibrators and automatic lifters for the hassle-free installation of our dry refractory materials such as SILICA MIX and CALDE® MIX in Coreless Induction Furnaces. These devices allow a highly efficient, consistent and correct compaction with low-maintenance components, independent from the operator. Easy-to-read installation manuals in all European languages and reusable packing cases for safe storage on site highlight our understanding of our customer's processes.





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