



The **PLUS**  
for your  
business



## Foundry Corporate Presentation



# Just add Foseco

- **A global market player , Foundry Technologies is the division of Vesuvius PLC that's dedicated to the foundry industry.**
- We are a leader in technology and services that improve foundry performance.
- We offer a comprehensive range of foundry technologies, equipment and consumable supplies.
- Backed by world-leading foundry process and product application expertise.
- These are delivered to our customers by an international team of experts, passionate about creating better castings through a combination of:
  - + Expert Advice
  - + Partnership
  - + Global Technology - Locally Delivered
  - + Creative, Innovative Solutions
  - + Knowledge Leadership
  - + Reliability



# Mission

- Our teams mission is to partner with its foundry customers focussing on improving their business performance.
- We create value by enabling foundries to produce castings in the most cost-effective, technically efficient and sustainable way possible.



# Glenn Cowie – President Foundry



- *“Foseco continues to focus on technical service, market leading technology supported by above industry average investment in R&D to provide business enhancing solutions to our customers .”*
- Glenn Cowie, President Foundry

# International Presence



## Vesuvius

- 65 manufacturing sites
- 84 sales offices
- 16 R&D Centres
- Almost 12,000 employees worldwide

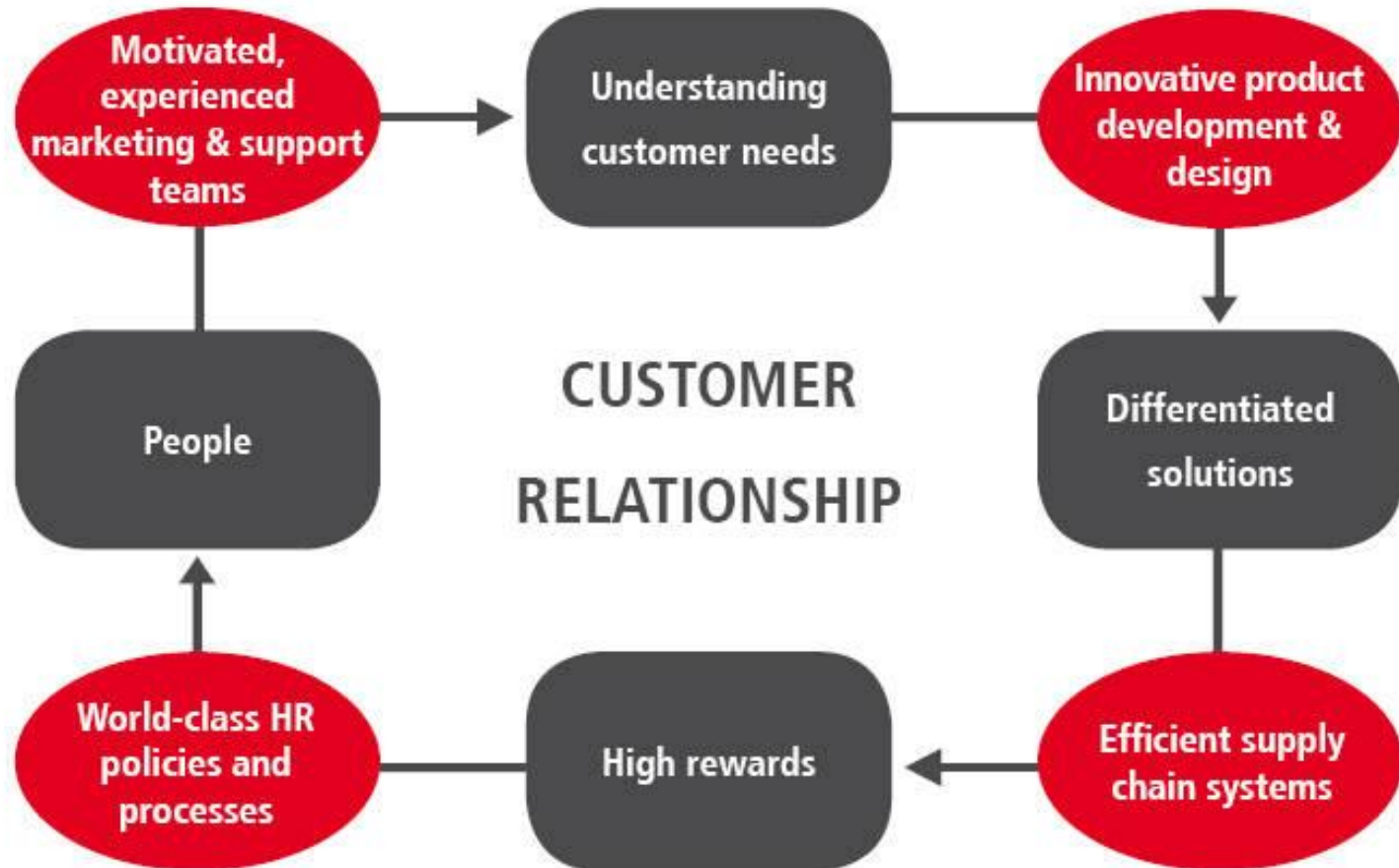
## Foseco

- Operations in over 30 countries
- Over 3,000 employees worldwide
- Product research and development centres in Germany, the Netherlands, the USA, India and Japan

# Foseco Group Pedigree

- Following the demerger from **Cookson plc**, **Vesuvius plc** was created in **2012**
- **Vesuvius** acquired **SERT Metal** **2011**
- **Foseco** acquired by **Cookson plc** and became part of the **Vesuvius Group** **2008**
- **Foseco floats** on London Stock Exchange (Foseco plc) **2005**
- Formation of **Foseco (Jersey) Limited** (MBO) **2001**
- **Foseco** group of businesses sold to **Cinven** private equity group **2001**
- **Burmah Castrol Group** purchased by **BP Amoco** **2000**
- **Foseco** acquired by the **Burmah Castrol Group** **1990**
- **Foseco** founded in the UK **1932**

# The Foseco Business Model



# Expert Advice

**Our proud heritage allows customers to benefit from a wealth of specialist knowledge accumulated over eight decades. During this time we've underpinned industrial growth worldwide, resulting in dedicated teams strategically positioned across the globe.**

We work in partnership with customers to create greatest value for them by consistently optimising the casting process.

To achieve this Foseco draws upon:

- a deep understanding of foundry processes,
- in-house application engineering expertise and simulation capabilities,
- outstanding product technology,
- Outstanding product consistency,
- a combination of products and process control systems
- company-wide dedication to delivering outstanding service quality.





# Partnership

We're dedicated to realising the power of partnership. Simply by working closely together, we can understand our customers needs today, whilst driving development forward for tomorrow.

Foseco creates differentiation by combining **product technology, process understanding** and **application expertise**. We can help meet the challenges of assured consistency by:

- Improving metallurgical integrity through enhanced process control in metal treatment
- Maximising control over solidification characteristics & the rate of heat loss
- Ensuring smoother mould filling processes & reduced turbulence
- Adopting consistent & cleaner ladle practices
- Enhancing the quality & uniformity of surface finishing



# Collaboration and Expertise – Application Engineering

Foseco Experts Work in  
Partnership with the Customer



Foseco Software  
engineering



Foseco  
know-how

Foseco Product Technology



# Global Technology – Locally Delivered



In every industrialised country throughout the world, just take a look and you'll find Foseco. In new markets too, we're there, ready to provide expert support and advice.

Foseco combines its **global technical expertise** with **extensive local knowledge**.

Our aim is to exceed expectations, maximise performance and deliver outstanding results.



# Creative, innovative solutions

Responding to ever increasing challenges, we simplify operations, providing innovative solutions that deliver real-world results.

To satisfy our customers' ever-changing needs, **constant innovation** is essential, we continuously develop **new product technology and casting processes** to meet these needs.

Our unique technologies are supported by powerful software solutions and dedicated equipment. Together, these deliver uniformity and control, ensuring optimum results every time.

Foseco remains committed to the foundry industry, providing innovative solutions to the challenges faced by our customers worldwide.



# Knowledge leadership

It's no accident that we've retained global leadership in the foundry sector for over eighty years. As demands on technology and business needs change, we'll continue to stay well ahead of the curve by maintaining a proactive approach.

We are committed to **reducing the environmental impact** of casting production, and promoting practices that **enhance health and safety** and **improve environmental performance** within the foundry.

Our solution sets currently include:

- Creating safe & healthy working environments
- Reducing emissions
- Eliminating hazardous substances
- Promoting sustainable practices
- Cutting energy consumption
- Minimising the level of non-productive metal
- Targeting zero waste



# Reliability

Foseco is proud to provide the world's most comprehensive range of foundry solutions. However, in today's demanding markets, simply having the best products means little without consistent integrity and the certainty of assured supply.

So, across every aspect of our business, Foseco is dedicated to achieving exemplary standards. These are sustained through integrated quality and HS&E policies, focusing on four key objectives:

- Identifying & satisfying customer needs & expectations: first time; on time; every time
- Reducing variability & waste in everything we do
- Involving every member of the Foseco team in the process
- Ensuring clear & constructive communication with our customers

All our production facilities have, or are working towards, ISO 9001 and ISO 14001 accreditation.



# Knowledge Leaders

Our Foundry Practice journal is valued by Foundrymen throughout the world for its detailed insights into contemporary techniques and innovations as well as in-depth reviews of interesting new applications. It is usually published twice a year, however we had 4 editions for GIFA 2015



# Committed to Foundries

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- History of significant innovation in the industry
- In-depth understanding of customers' processes
- Applications knowledge and expertise on the ground
- Unique global reach
- Broadest range of solutions for all foundries



# A Global Supply Chain Capability

Small example of some of our Manufacturing locations



# The Facilities – Manufacturing sites



● Manufacturing sites



# Key Brands

## Coatings

DYCOTE die coatings  
RHEOTEC water-based coatings  
TRIBONOL powder coatings  
STYROMOL lost foam coatings  
TENO solvent-based coatings  
SEMCO water-based coatings  
HOLCOTE water-based coatings

## Feeding

FEDEX exothermic feeder sleeves  
KALMINEX 2000 insert sleeves  
KALPUR direct pour units  
KALMIN insulating feeder sleeves

## Filters

SEDEX ceramic foam filters  
STELEX ZR zirconium oxide filters  
STELEX PrO carbon aluminium oxide filters  
SIVEX FC non-ceramic filters for aluminium  
HOLLOTEX running and gating components

## Furnace Linings

RAMWELL ramming material  
HYDRAMAX ultra low-cement castable  
KELLUNDITE refractory  
DURACRETE refractory  
BLU-RAM plastic mouldable  
CRITERION low-cement castable

## Ladle Lining Systems

INSURAL ladle lining systems  
INSURAL consumables for NF dosing furnace  
KALTEK ladle linings  
TRIAD no-cement castable

## Ferrous Metal Treatment

MSI+ 900 automatic metal stream inoculation  
INITEK initialisation process  
INOCULIN inoculants  
NODULANT spheroidisers  
INFOFEED - In-Stream Inoculant Feeder  
INOCHECK - In-Stream Inoculation Checker

## Non Ferrous Metal Treatment

FDU - Foundry Degassing Unit  
MTS - Metal Treatment Station  
COVERAL fluxes for dressing, covering and cleaning

## Binders

ECOLOTEC binder  
FENOTEC resin binder  
ESHANOL resin binder  
SOLOSIL inorganic binder  
FUROTEC resin binder  
POLITEC cold box binder  
POLISET self set resin binder  
REFANOL resin binder

## Crucibles

ENERTEK energy efficient crucibles  
DIAMANT Special / Universal / Super Rapid /  
Super Rapid Special crucibles  
DURATEK crucibles

## Flow Control

VISO stoppers and nozzles  
VAPEX stoppers and nozzles  
Porous Plugs  
ROTOLOK

# Foseco Products

Foseco offers a comprehensive range of foundry consumables and equipment for sand and investment foundries, backed up by strong process knowledge and application expertise, to help its customers find better ways of producing better castings.

Foseco's products areas are:



■ Coatings



■ Filtration



■ Feeding Systems



■ Melt Shop Refractories



■ Metal Treatment



■ Binders



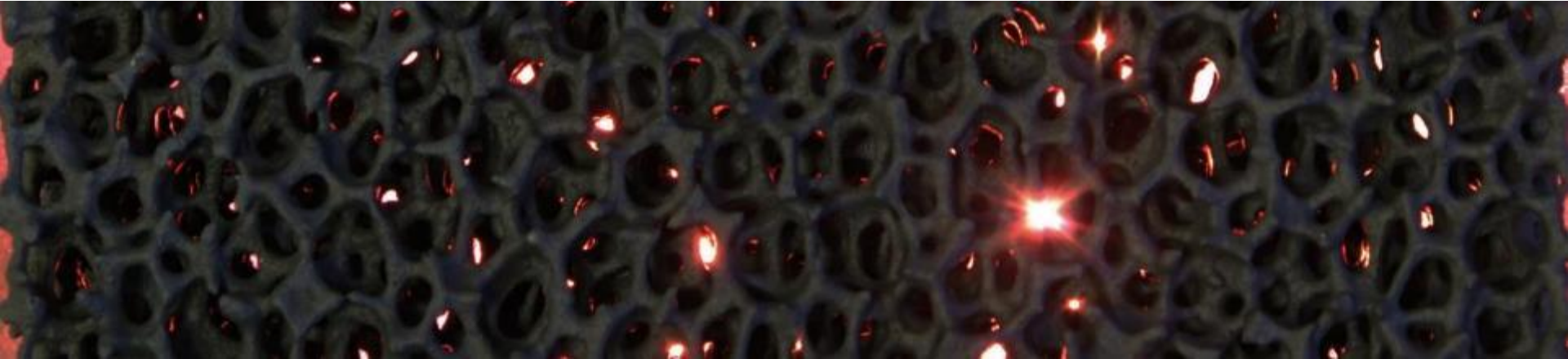
■ Crucibles

# Coatings



By careful selection of refractory fillers and rheological technology, Foseco coatings are designed to deposit the correct coating structure onto a given substrate, to ensure cast surface integrity. The range of products have been specifically engineered so that they can be applied by dipping, flow coating, brushing, swabbing and spraying.

Foseco offers a range of coatings for sand moulds and cores, specialty coatings, and coatings for jobbing iron, steel and non-ferrous.



Foseco's range of foundry filters are used in the production of castings subject to heavy wear and tear but also to safety critical parts such as brake components, crankshafts, wheel hubs, suspension components and steering knuckles. The application of filtration in the production of such castings enables the foundry to achieve the full potential of the mechanical and dynamic properties of the alloy chosen.

Conventional pouring systems are frequently unable to retain sufficient slag material and reaction products. Even when it is technically feasible, the design of the running system required may be inefficient and uneconomic. Correctly selected and applied, Foseco foundry filters remove inclusions and optimise running system design. Casting properties are enhanced, performance and productivity are increased, and costs are lowered.



# Feeding Systems



Feeding system products are a range of insulating, exothermic-insulating or exothermic sleeves designed to extend the solidification times of feeder heads.

Application of the correct breaker core can reduce the contact area between feeder and casting by as much as 75%, significantly reducing or even eliminating expensive fettling operations.

The application of Foseco feeding solutions avoid shrinkage defects and improve casting yields, reducing the amount of non-productive metal poured. Significant savings can also be made in fettling and cleaning operations.

Our methoding engineers help and advise customers in designing and optimising the way a casting is made. Years of practical experience combined with state-of-the-art simulation support helps ensure 'Right First Time' design.



# Melt Shop Refractories



Today's melt shop is under increasing pressure to improve productivity, temperature control and metal cleanliness.

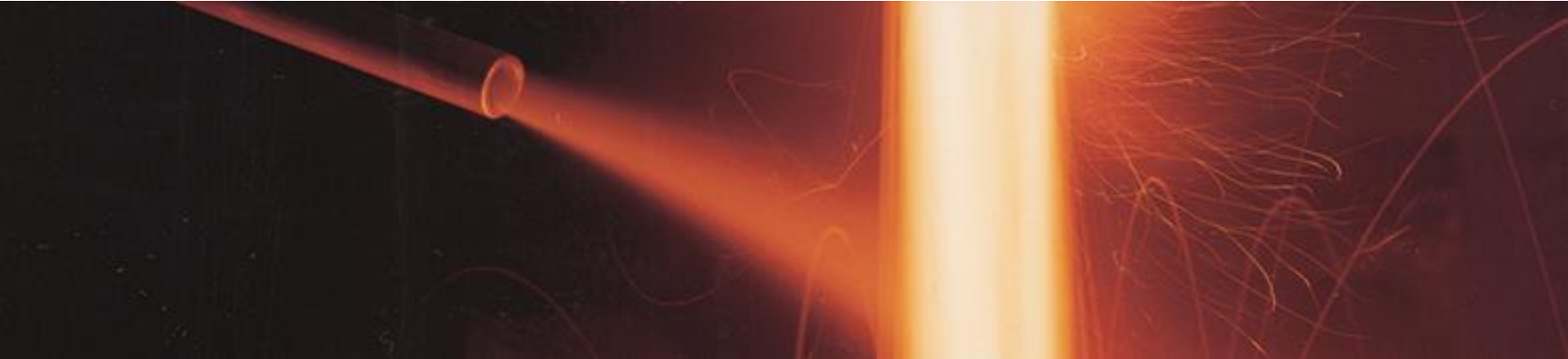
Following the integration with Vesuvius, Foseco is now able to offer a full range of refractory systems for iron, steel, aluminium and investment foundries.

A broad range of monolithic and pre-cast products are available and Foseco personnel are on hand to offer advice on product selection, maintenance and design.

- Ladle linings
- Furnace linings and castables
- Stoppers and nozzles
- Precast refractory shapes



# Metal Treatment



Foseco offers a package of consumables and equipment for the production of clean, reproducible metal quality and uniform microstructure.

Concerning ferrous and non-ferrous foundries, metallurgical properties have to be controlled during the production of modern castings and other ferrous and non-ferrous alloys.

Foseco is at the leading edge of industry efforts to improve the metallurgical performance of castings offering a package of consumables and equipment for the production of clean, reproducible metal quality in a range of ferrous and non ferrous alloys.

The range of products we supply offer advantages in safety, health and environmental issues, automation and process control and productivity.





Foseco offers a broad range of organic and inorganic mould and core binder systems. Organic binders are almost exclusively synthetic resins, which are cured by the addition of a separate hardener or catalyst. Inorganic binders are based on sodium silicates that have been optimised to accommodate the varying casting processes, thus guaranteeing best decomposition.

Foseco offers:

- Self setting resin systems
- Gas setting resin systems
- Sodium silicates
- Additives, glues, sealants and release agents



# Crucibles



Crucibles are used in a wide range of melting and holding applications for non ferrous alloys, particularly aluminium, copper and zinc. Each of these applications requires a crucible with specific properties to maximise productivity and minimise energy costs.

The Foseco range of crucibles offers a solution for all non ferrous melting and holding applications from high durability crucibles for heavy duty applications to high thermal efficiency crucibles to minimise energy consumption. Our experienced Application Engineers are able to advise on the selection and installation of crucibles for optimum performance and productivity.