RHI MAGNESITA

NFM

Aluminium



© RHI Magnesita

There for you, wherever you need us

RHI MAGNESITA

The more closely we work with our customers, the greater the impact we can make for them. So a global network of offices, research centers, and production sites is important to us, and to them. We are continuously extending our global reach to be closer to even more customers.

Being closer to customers doesn't just mean we can be more responsive to their needs. It also helps us to listen better — to understand their concerns, cultures and ways of working. It makes us alert to new ways of thinking and ideas that enable us to deliver even better advice, services, and solutions.

Our exceptional resources and expertise extend far beyond making and selling products. We provide solutions to customers worldwide for cover projects, material specifications, thermal studies, numerical simulations, follow-ups and technical support in application of minerals, and maintenance and electromechanical services for refractory equipment.



35
Main production and raw material sites

70
Sales offices

180
Countries shipped to worldwide

We are RHI Magnesita

Refractory Competence — Aluminium Industry

- Tilting Rotary Drum Furnace
- Rotary Drum Furnace
- Single Chamber Hearth Type Tilting Furnace
- Single Chamber Top Loaded Furnace
- Multi Chamber Furnace
- Shaft Melting & Holding Furnace
- Dosing Furnace
- Channel Induction Furnace
- Coreless Induction Furnace



We are RHI Magnesita

Refractory Competence — Aluminium Industry

RHI Magnesita is the global leader in refractories. We have the largest number of locations around the world and the most innovative, reliable products and services. Our exceptional vertical integration — from mining to full service solutions — ensures our customers the most robust reliability of supply with the best quality.

The RHI Magnesita brand comprises a large number of successfully established trademarks (Radex, Didier, Veitscher, Interstop, Agellis), which combine tradition with innovative technology and highest quality standards.

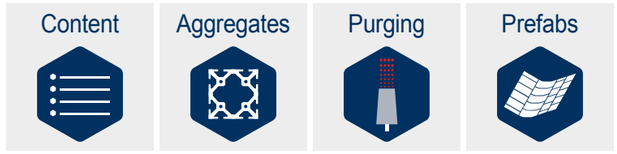
We are a global partner for the nonferrous metal industry. The complete program of products and services ranges from basic and non-basic mixes and bricks to prefabricated products, slide gate plates, isostatically pressed products, special machines and repair systems, and technical equipment used to install refractory products into the various production units of the nonferrous metal industry.

The refractory systems applied for aluminium production make a significant contribution to the efficiency and safety at the aluminium plant. A prerequisite for optimum application of the refractory products is extensive knowledge of all steps of the production process and conditions at the customer. Our metallurgists are active around the globe and cooperate with renowned research facilities and universities in Austria and foreign countries. In addition, the partnership and cooperation with the customers are the important factors which ensure enhancement of processes in aluminium metallurgy. These activities are concentrated at the RHI Magnesita Nonferrous Metals Process Technology Group.

In this regard RHI Magnesita is not just a reliable supplier of premium-grade refractory products but also a partner of the aluminium industry who cooperates with the customers to work on all-inclusive solutions:

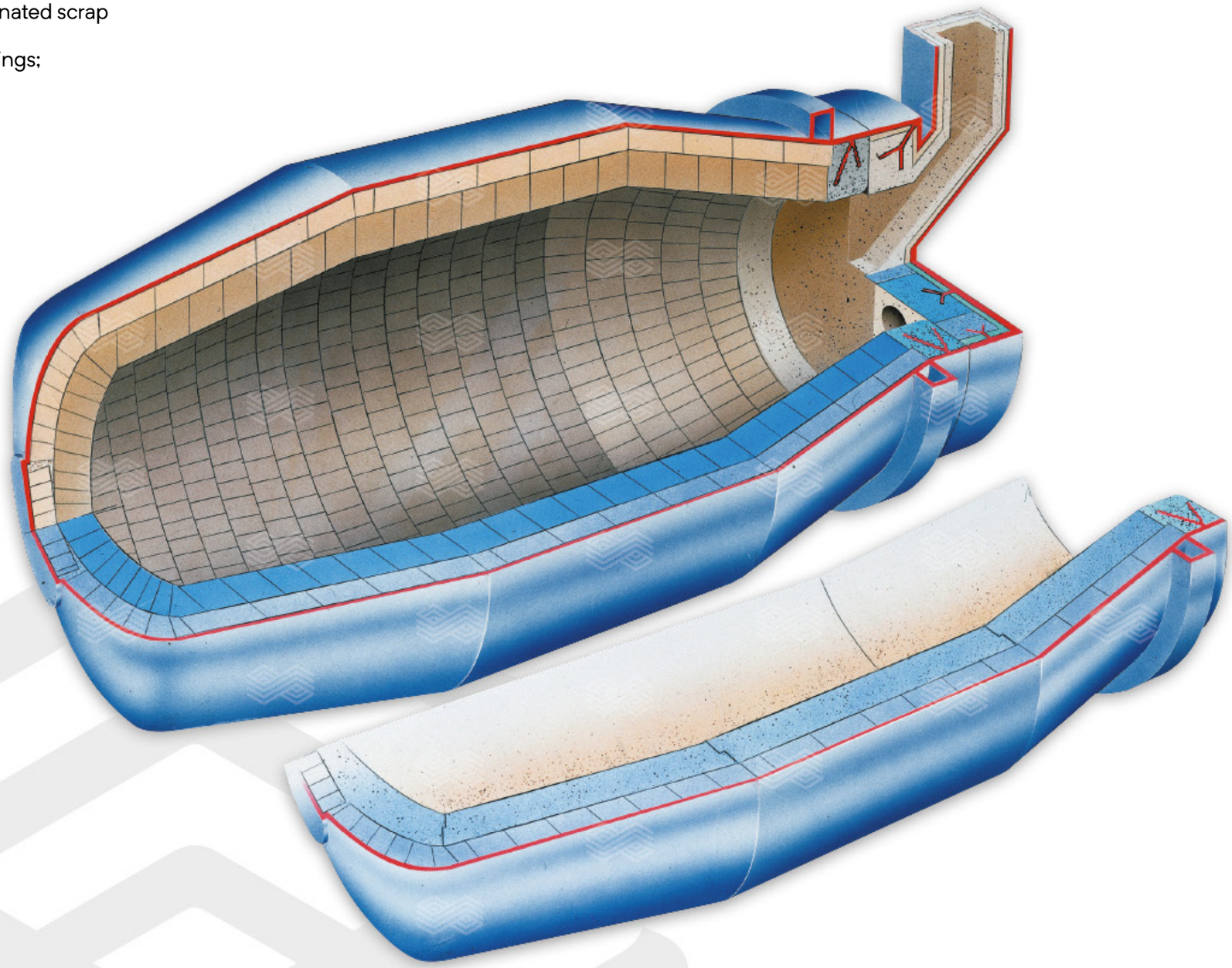
- Process solutions (e. g. AL KIN purging technology)
- Lining suggestions
- Heat transfer and heat flux calculations (FEM, CFD modelling)
- Instructions for heating-up
- Lining drawings
- Lining service (including sending the needed equipment and machinery)
- Service technicians
- Refractory linings for the whole range of melting and holding vessels in the aluminium industry
- Mixes and pre-fabricated parts
- Bricks in standard and special shapes
- High-temperature heat insulation

RHI Magnesita concentrates its worldwide refractory activities and, consequently, the core business of RHI Magnesita with headquarters in Vienna, Austria.



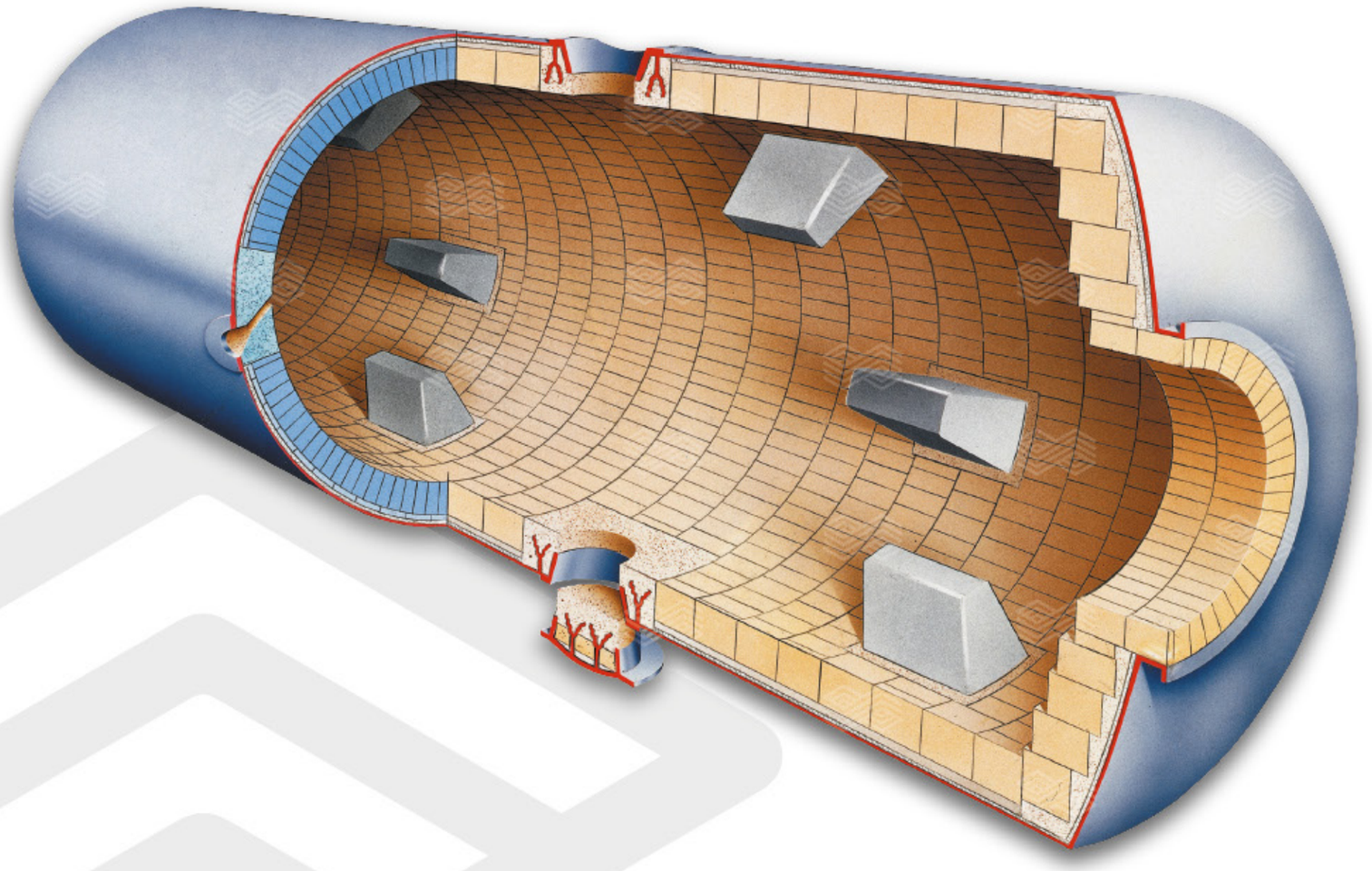
Tilting Rotary Drum Melting Furnace

- Recycling facility for smelting small pieces of contaminated scrap
- Particulary suited to the use of dross; UBC scrap; shavings; irony automotive scrap
- Capacities ranging from 2 tonnes to 40 tonnes
- Melting rates ranging from 1 – 8 tonnes / hour



Rotary Drum Furnace

- Recycling facility for smelting small pieces of contaminated scrap
- Particulary suited to the use of dross; UBC scrap; shavings
- Equipped for smelting heavily contaminated scrap with addition of salt

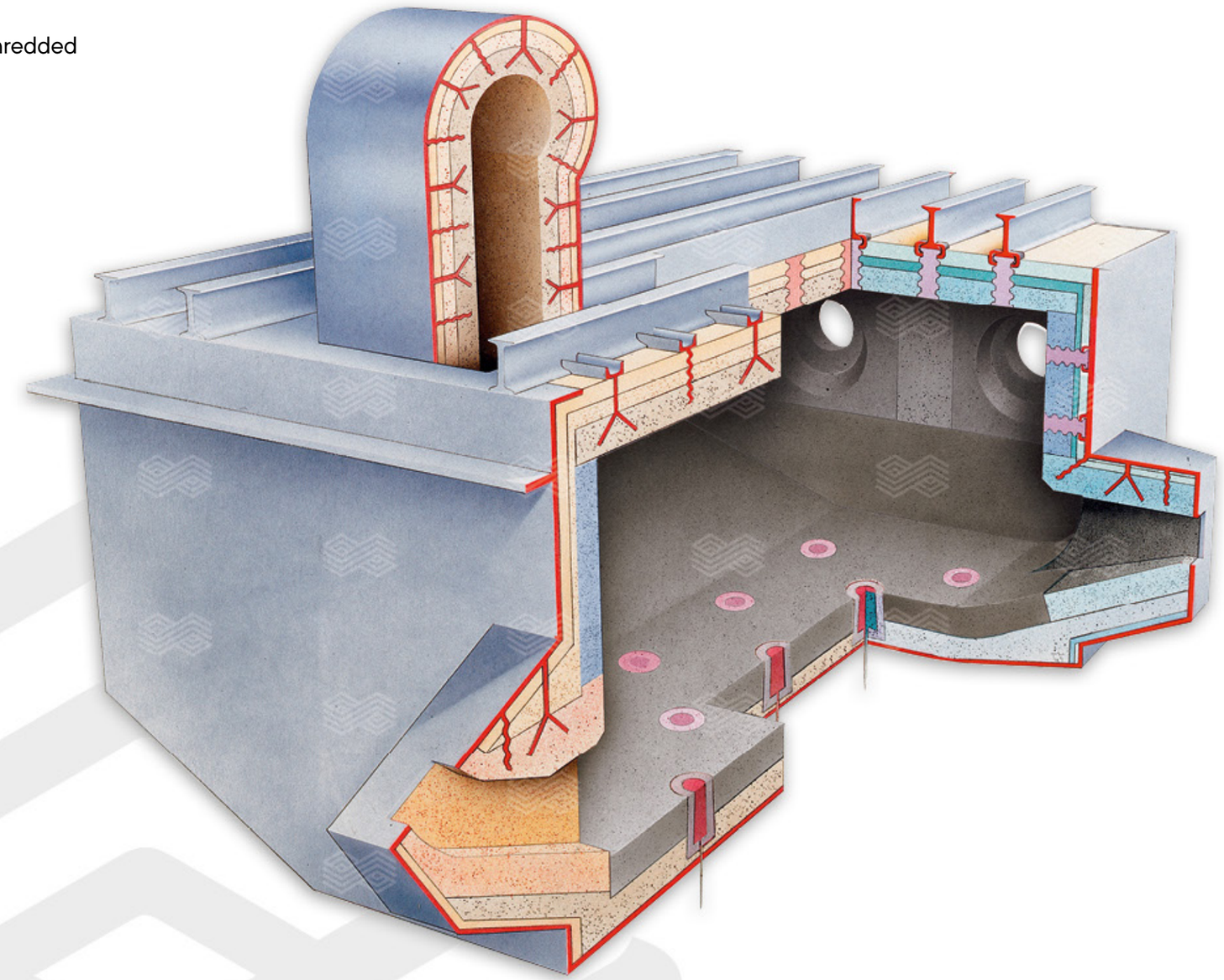


Single Chamber, Hearth Type Tilting Furnace

Melting; Holding and Casting Furnace

Lining concept: Monolithic

- Remelting facility for ingots; baled foil scrap; shredded/ unshredded UBC scrap; medium light sheet scrap; briquetted scrap
- Capacities ranging from 30 tonnes – 150 tonnes / charge
- Melt rates ranging from 2 – 30 tonnes / hour — normally supported by EMS to enhance melting rate further

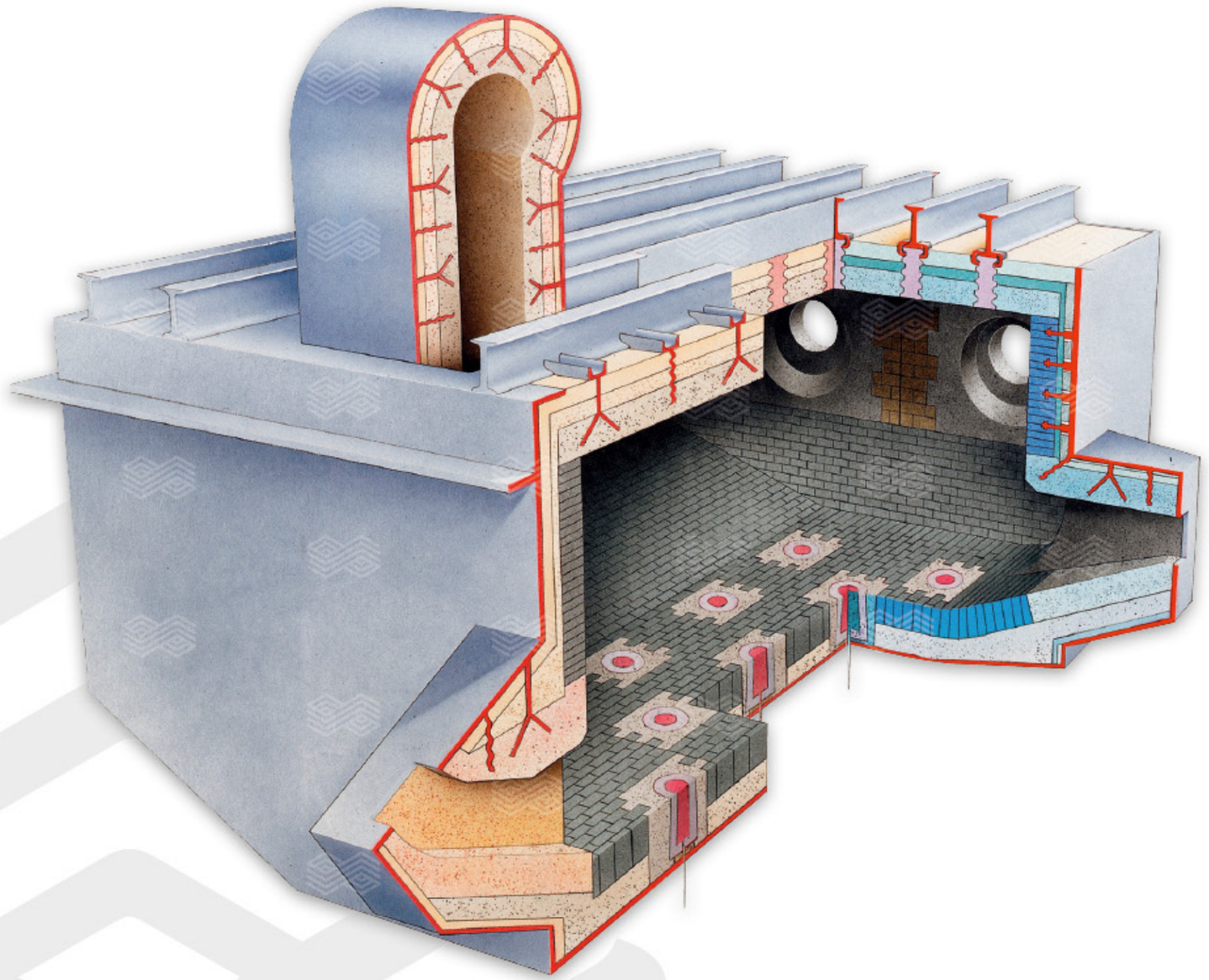


Hearth Type Tilting Furnace

Melting; Holding and Casting Furnace

Lining concept: Brick

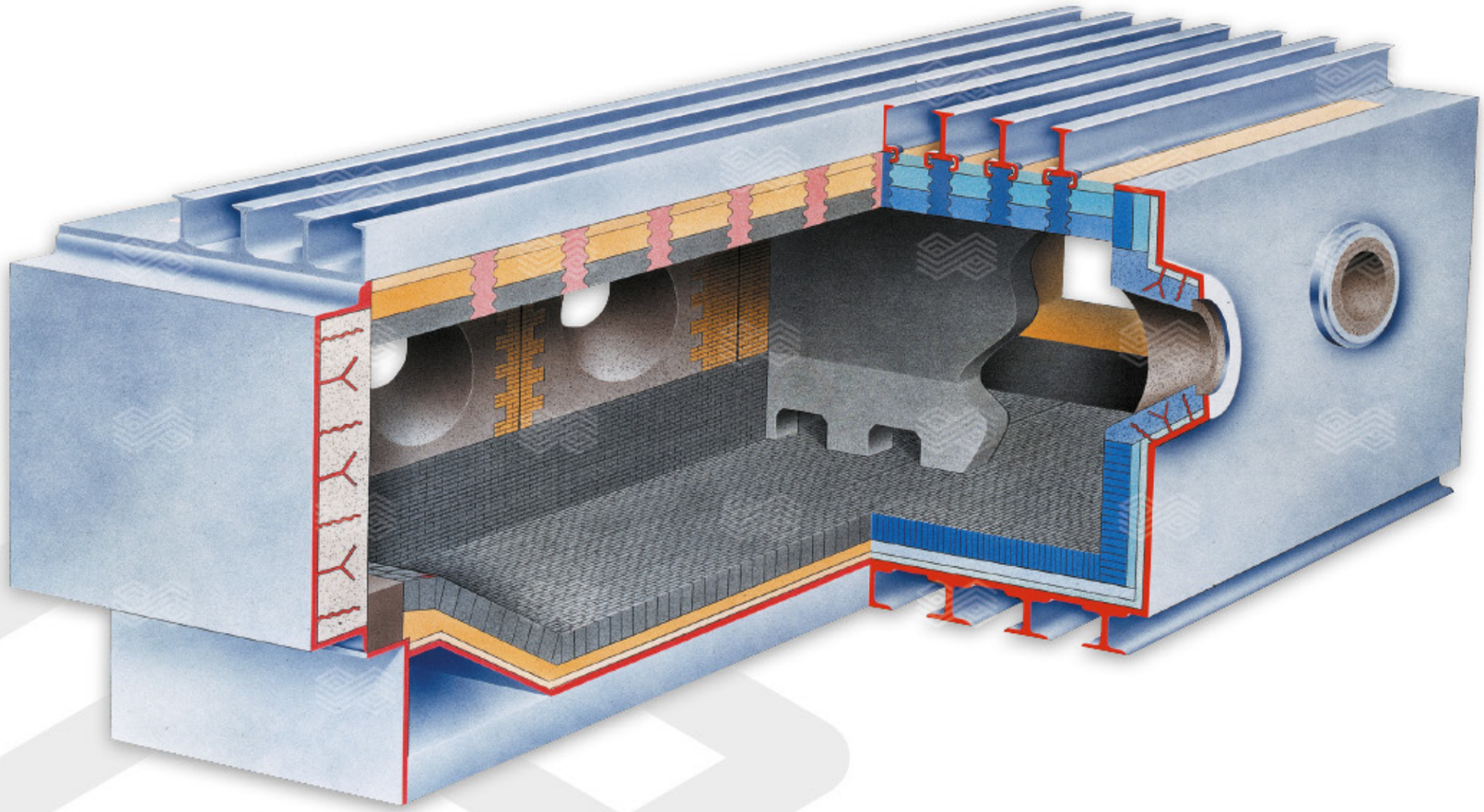
- Front loaded furnace – melting in front of a direct flame
- Remelting facility for ingots; heavy clean scrap; shredded/ unshredded UBC scrap
- Capacities ranging from 30 tonnes – 150 tonnes / charge
- Melt rates ranging from 2 – 30 tonnes / hour — normally supported by EMS to enhance melting rate further



Sidewell Furnace

Multi Chamber Furnace

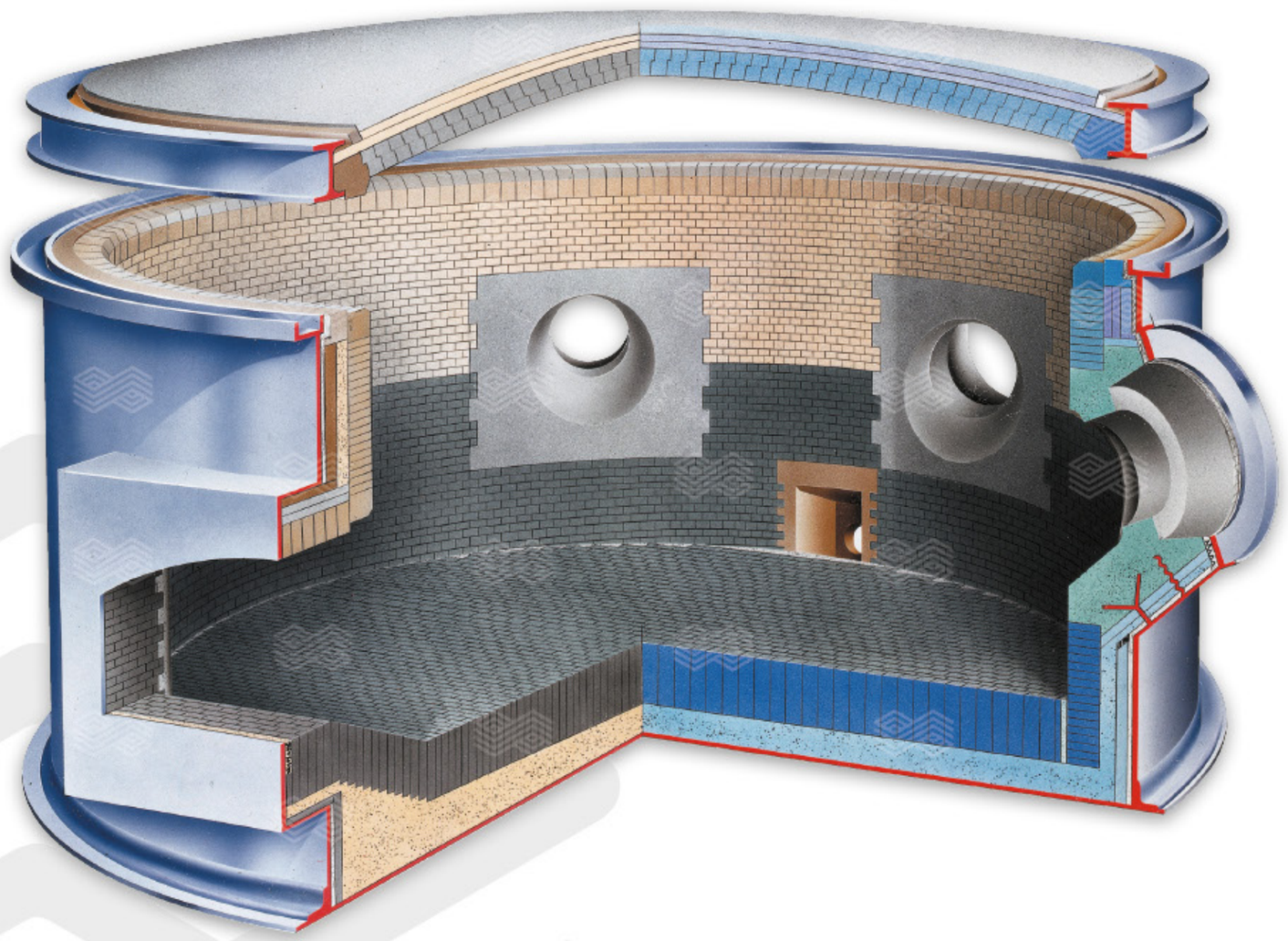
- Remelting facility for light baled foil scrap; shredded/ unshredded UBC scrap; medium light sheet scrap; clean lightely oiled swarf; briquetted scrap
- Capacities ranging from 40 tonnes – 200 tonnes
- Melt rates ranging from 2 – 15 tonnes / hour



Single Chamber — Top Loaded Furnace

Top Charge, Stationary Type Round Melting Furnace

- Remelting facility for heavy clean scrap; extrusion scrap; briquetted scrap
- Circular furnace construction
- Lid moved sideways
- Charge bucket with „bomb doors“
- Capacities ranging from 65 tonnes – 135 tonnes / charge
- Melt rates ranging from 25 – 40 tonnes / hour — normally supported by EMS to enhance melting rate further

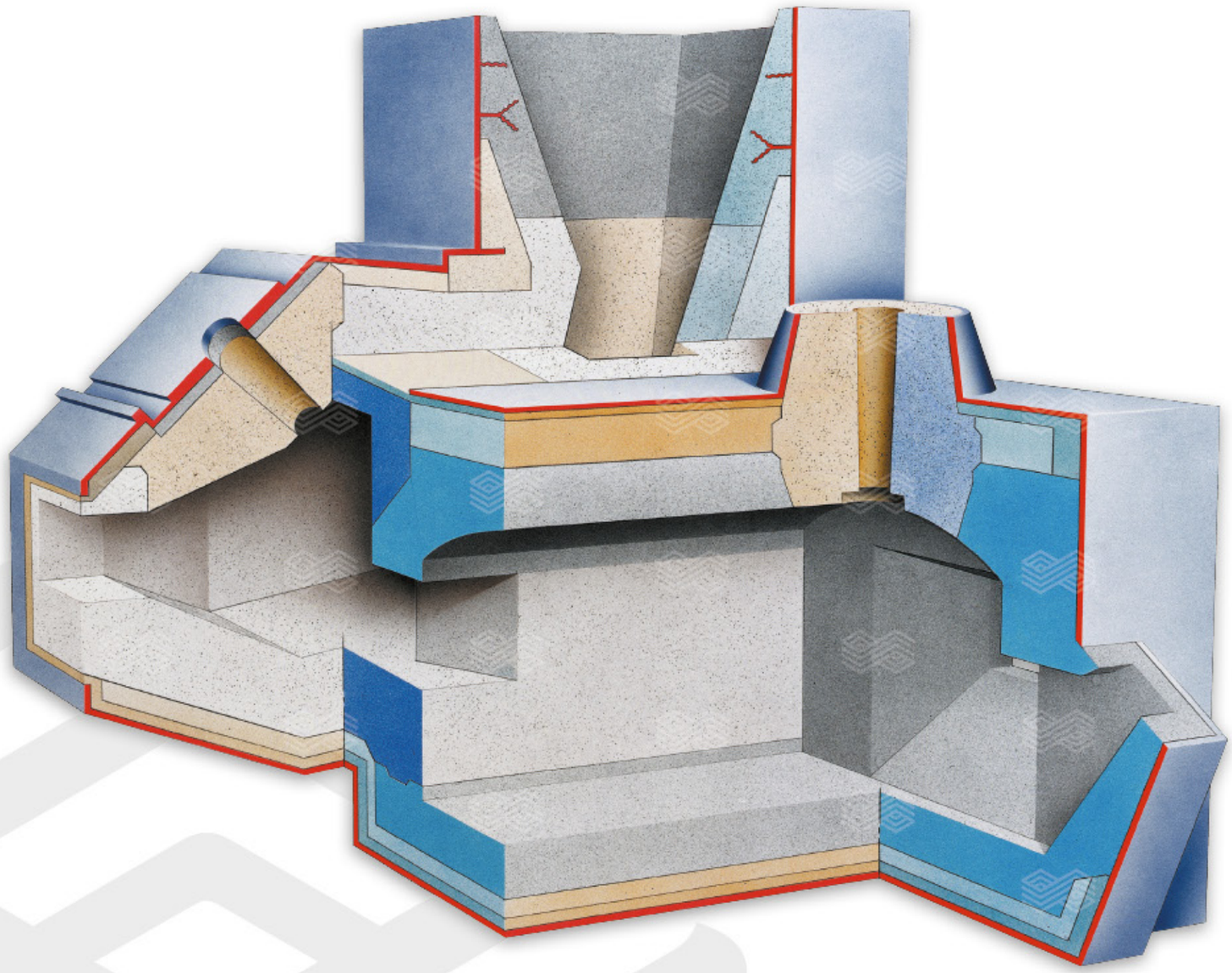


RHI MAGNESITA

Shaft Melting & Holding Furnace for Foundries

Melting Furnace for Die Casting

- Remelting facility for ingot; clean cast scrap
- combinations of melting and holding capacities
- Holding capacities ranging from 500 kg – 20 tonnes
- Melt rates ranging from 300 kg /hour – 7 tonnes / hour

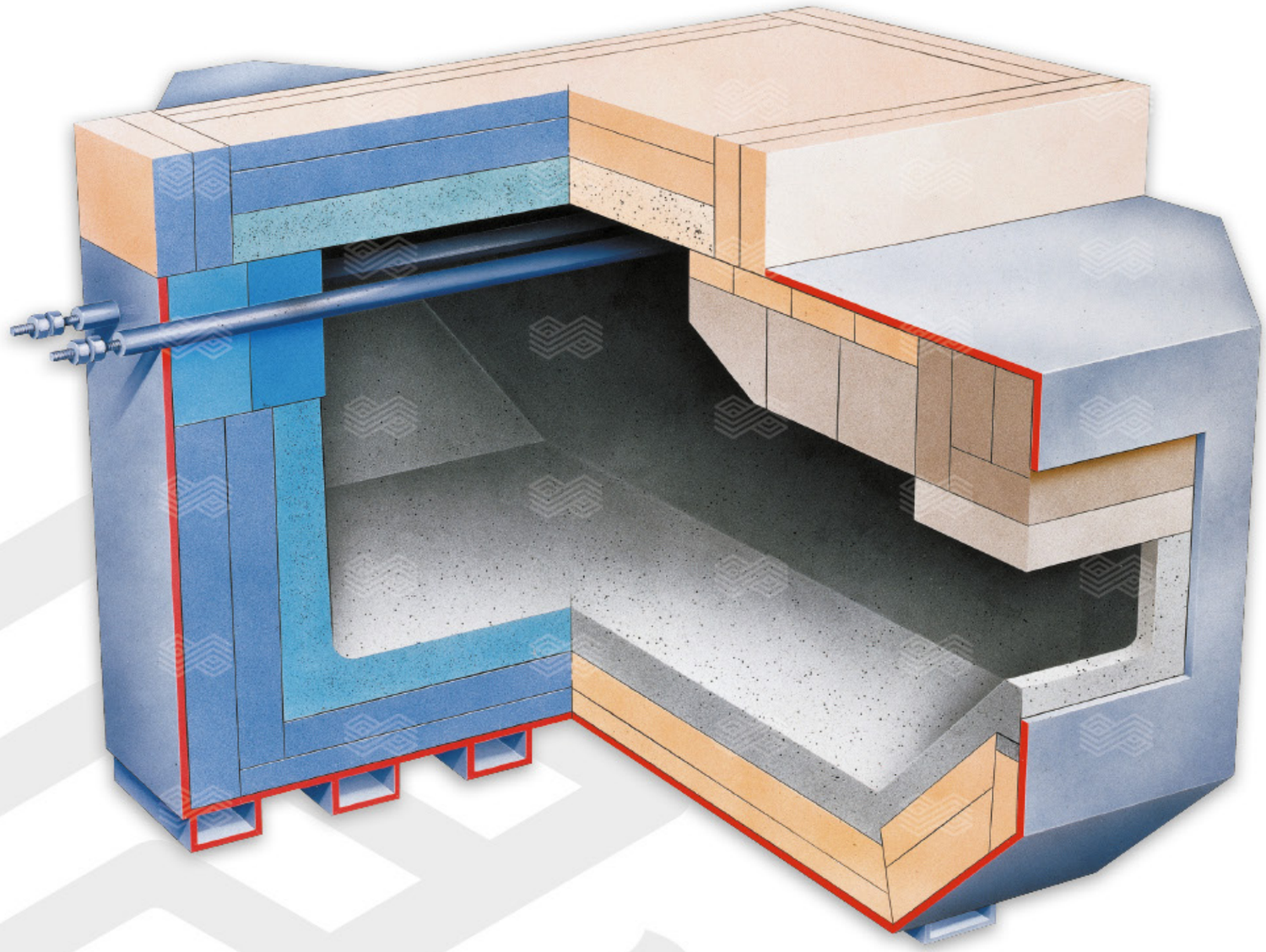


RHI MAGNESITA

Dosing Furnace

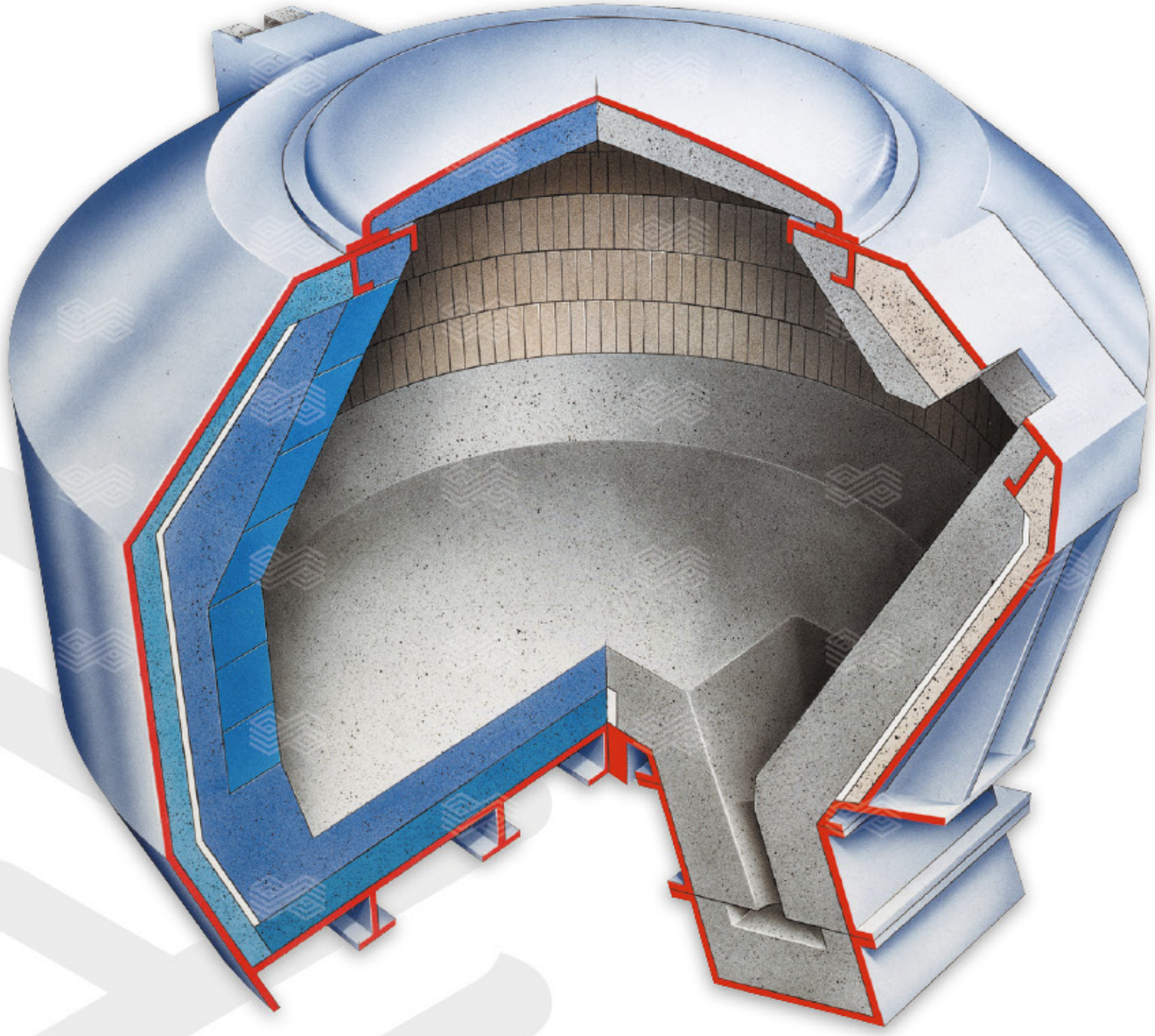
Holding Furnace Without Crucible for Die Casting
Low Pressure Die Casting Holding Furnace

- Heated by means of electrical resistance
- “dose“ liquid aluminium in order to transport it to casting machines in corect quantity of metal



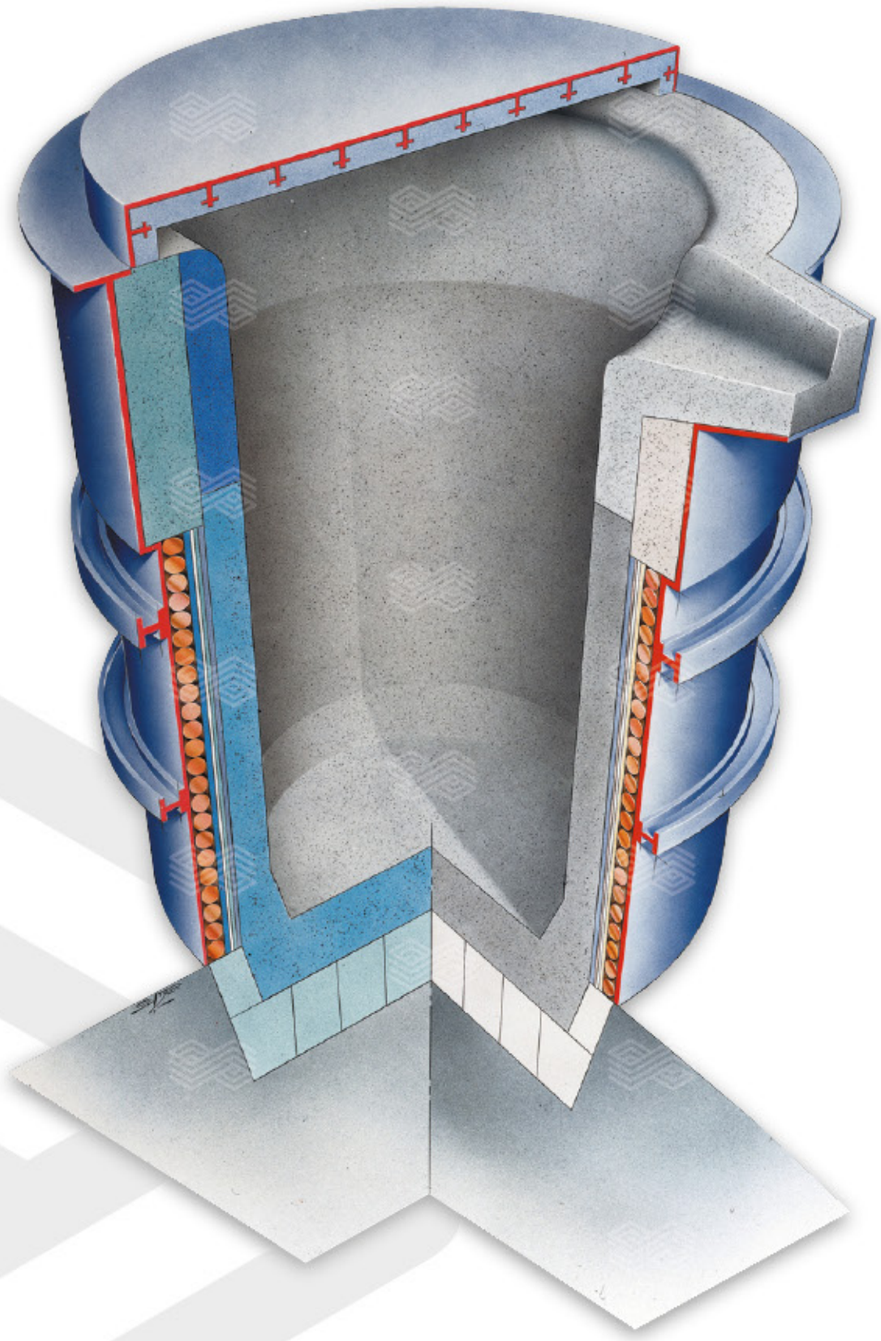
Channel Type Induction Furnace for Melting and Holding

- Remelting facility for ingot; clean cast scrap.UBC scrap; shavings; irony automotive scrap
  > low power densities
  > large furnace capacity
  > continuous operating regimes
- Holding capacities ranging from 500 kg – 20 tonnes
- Melt rates ranging from 300 kg /hour – 7 tonnes / hour



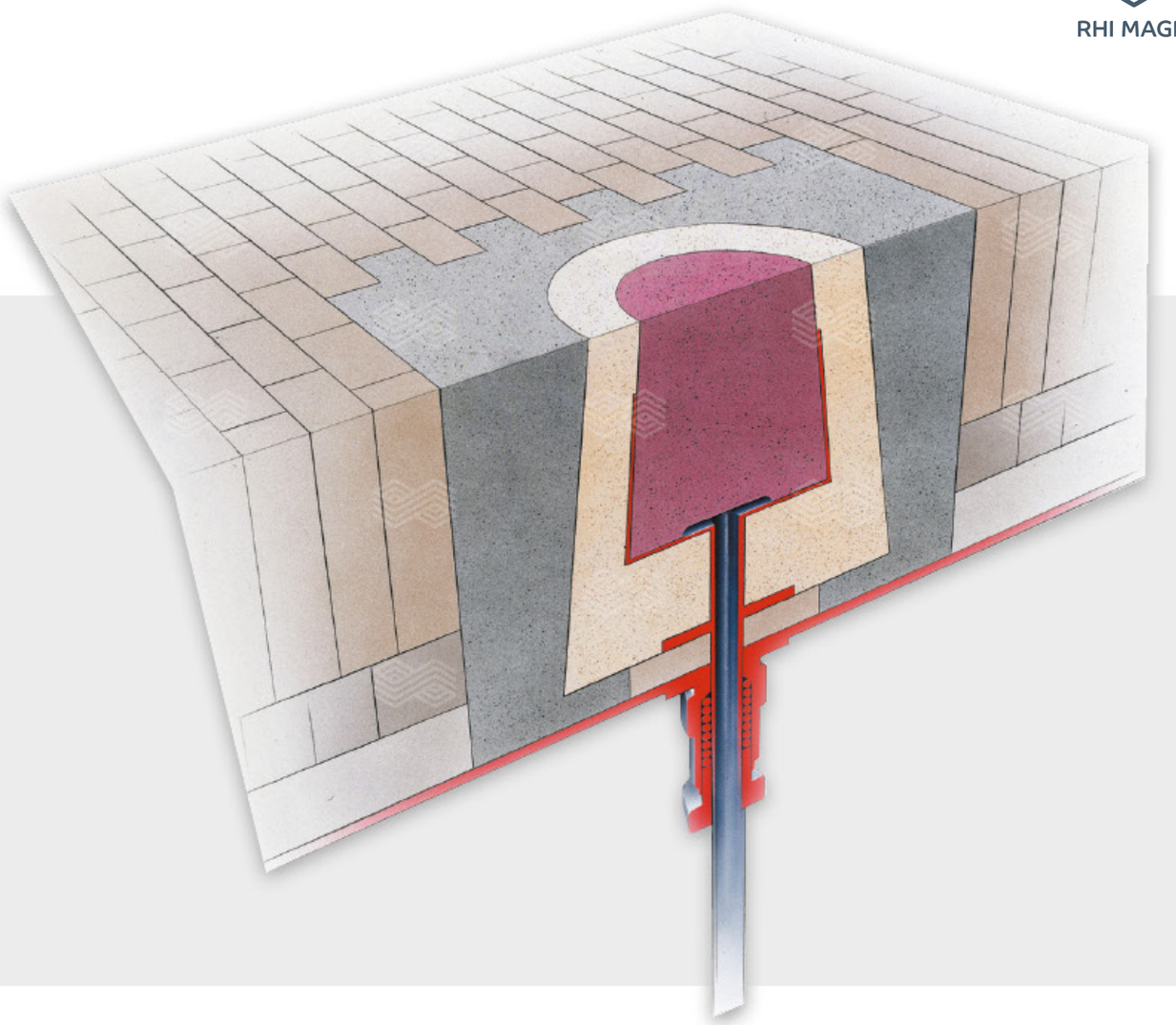
Coreless Induction Furnace for Melting and Holding

- Remelting facility for swarf clean cast scrap. UBC scrap; shavings; automotive scrap
- These furnace systems address the specific needs of the manufacturer of high-grade light metal castings and semi-finished products
- High-power induction melting furnaces for lumpy material and chips



AL KIN Purging System

Porous plugs for the aluminium industry allow gas to pass through but prevent aluminium from penetrating the pores. With AL KIN (aluminium kinetics) RHI Magnesita offers a reliable, proven system that can be used at all stages of aluminium melting, holding and transport and in primary melting as well as in die cast, sheet and extrusion plants. In stationary and tilting furnaces as well as in troughs and inline boxes.



Benefits of Purging:

- Significant improvement in melt rate
- Reductions in H_2 content and Na concentration
- Thermal and chemical homogenization of the molten metal
- Reduced energy/fuel consumption
- Reduced dross formation and metal loss
- Significantly less salt and chlorine are needed

Application

AL KIN purging can be used in all stages of aluminium melting, holding and transport: in stationary and tilting furnaces as well as in troughs and inline boxes.

Following customers have saved costs and improved their metal quality by using AL KIN Systems:

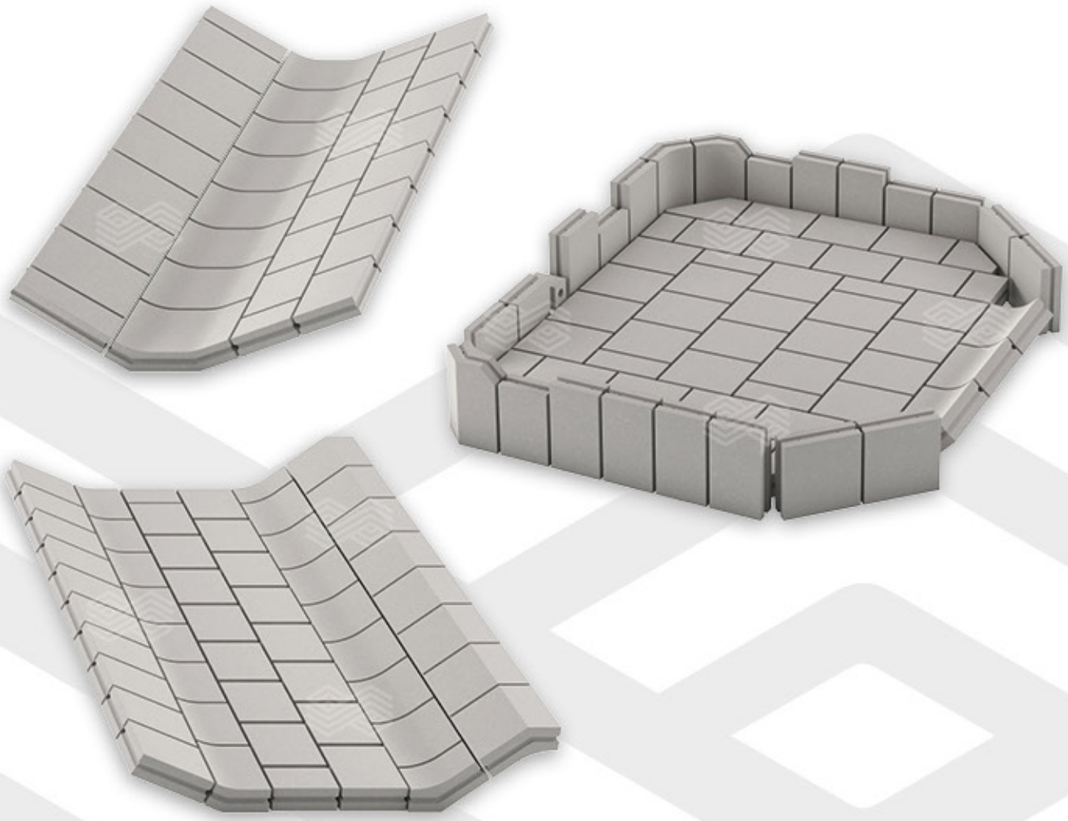
ALCAN Aluminium Valais (Switzerland) / ALCAN Aluminium Valais (Switzerland) / ALCAN Decin (Czech-Republic) / ALCOA Automotive, Soest (Germany) / ALCOA Drunen (Netherlands) / Aleris Recycling, Töging (Germany) / Aluminium de Grece S.A. (Greece) / Aluminium Lend GmbH (Austria) / Alumino Catalan S.A. (Spain) / Boading Lizhong Wheel LTD (China) / CORUS Aluminium, Duffel (Belgium) / Dicastal Wheel, Qinhuandao (China) / ELKEM Aluminium Farsund (Norway) / ELKEM Aluminium Musjoen (Norway) / ELVAL S.A., Viota (Greece) / FARAL S.P.A., Orgiano (Italy) / Fergal S.R.L. Chignolo (Italy) / GDS Engineering SRL, Vimercate (Italy) / GIS 2003 S.L., Valls-Taragona (Spain) / Gulf Extrusions Dubai (V.A.E.) / HYDRO Aluminium, Sunndalsoera (Norway) / HYDRO Aluminium, Ardalstangen (Norway) / HYDRO Aluminium, Hoeyanger (Norway) / HYDRO Aluminium, Neuss (Germany) / INDALEX LTD, North York (Canada) / Leghe Leggere S.P.A. (Italy) / MARCONI S.R.L., Milano (Italy) / Midal Cables, Bahrain (Bahrain) / NEMAK, Dillingen (Germany) / NEMAK, Windsor (Canada) / Neumann Aluminium Austria, Marktl (Austria) / Nuova Presso Fondal (Italy) / OAD Agrisorgas, Malojaroslavez (Russia) / OAO Kamensk-Uralsker (Russia) / Osalmec S.R.L., Maclodio (Italia) / RADIATORI 2000 S.p.A., Ciserano (Italy) / Raffineria Metalli Capra S.P.A. (Italy) / RER S.P.A., Pozzilli (Italia) / Sapa Heat Transfer, Shanghai (China) / Sapa Profiles, Drunen (Netherlands) / SOR Norge Aluminium, Husnes (Norway) / Southwest Aluminium Ldt., Xipang (China) / Suzhou New Changguang Thermal, Suzhou (China) / TEKSID Poland S.A. (Poland) / TNT Automotive S.R.L., Carmagnola (Italy) / TRIMET Aluminium AG, Essen (Germany) / VAW IMCO Guss, Töging (Germany) / VAW IMCO, Grevenbroich (Germany) / VAW-IMCO Guss und Recycling, Deizisau (Germany) / VAW-IMCO Guss und Recycling, Plochingen (Germany) / Veneta Lombarda Refrattari SRL, Gussago (Italy)

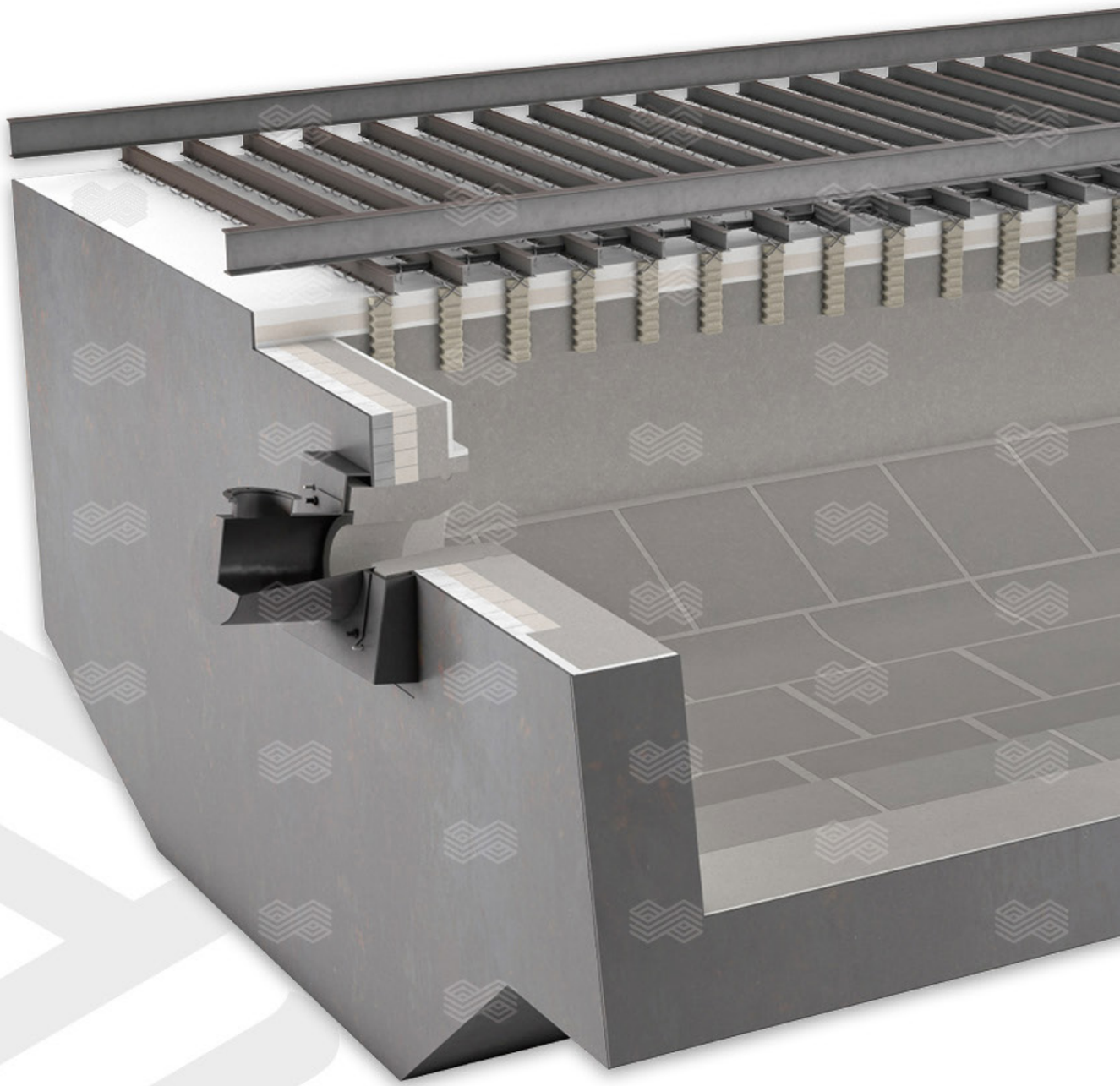
Special Shapes

In addition to the regular refractory bricks for vessel floors and walls RHI Magnesita offers specially shaped or prefabricated products. These save installation time in geometrically complex lining areas like vessel crowns, roofs, burner openings or arches.

The door jamb brick for melting and holding vessels pictured below has been specially developed to minimize the mechanical damage to the lining during dross removal. The brick, which has an infiltration-resistant additive to protect it against splashing shows the following additional advantages:

- Easy dross removal due to adapted geometrical form
- Less repair work necessary
- Additional possibility of anchoring the jamb bricks and side wall





Imprint:
Media owner and publisher: RHI Magnesita GmbH, Kranichberggasse 6, 1120 Vienna, Austria
Produced by: RHI Magnesita — 09 / 2019-EN
Place of publication and production: Vienna, Austria

Copyright notice:
The texts, photographs and graphic design contained in this publication are protected by copyright. Unless indicated otherwise, the related rights of use, especially the rights of reproduction, dissemination, provision and editing, are held exclusively by RHI Magnesita. Usage of this publication shall only be permitted for personal information purposes. Any type of use going beyond that, especially reproduction, editing, other usage or commercial use is subject to explicit prior written approval by RHI Magnesita.

RHI MAGNESITA

The Journal of Refractory Innovations

bulletin

Subscriptions
Service and
Contributions

RHI MAGNESITA
Kranichberggasse 6, 1120 Vienna, Austria
T +43 50213 6200 **F** +43 50213 6391
E nfm-marketing@rhimagnesita.com

rhimagnesita.com