RHI MAGNESITA

The driving force of the refractory industry

Company presentation

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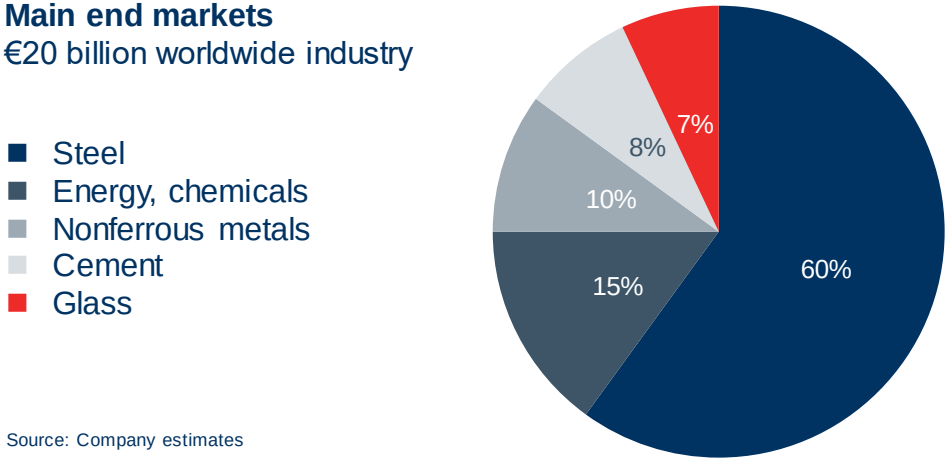
Table of contents

Refractories are critical to all high-temperature industrial processes

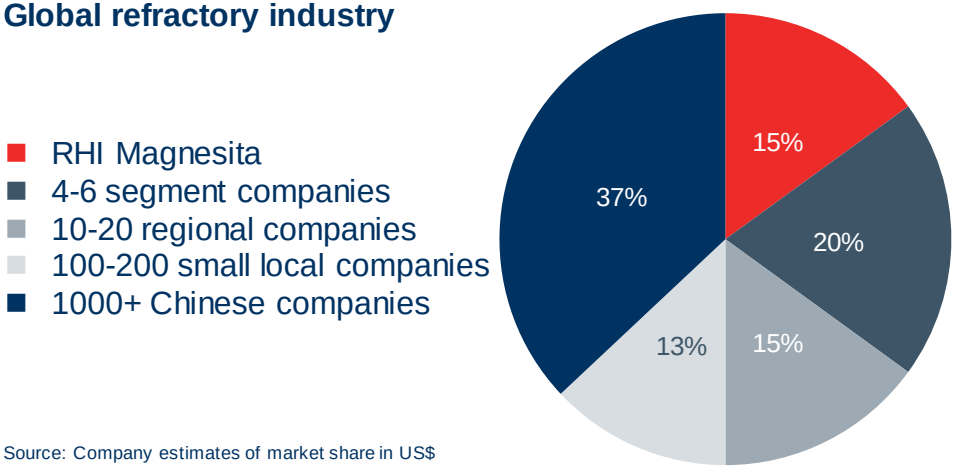
- Refractories are critical consumable or investment goods for high-temperature manufacturing processes
- Fireproof materials consumed whilst protecting clients' production processes, retaining physical and chemical characteristics when exposed to extreme conditions
- Critical, yet represent less than 3% of COGS in steel manufacturing and less than 1% in other applications

Main end markets
€20 billion worldwide industry



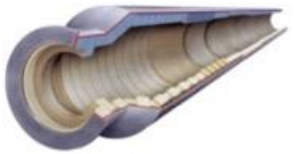
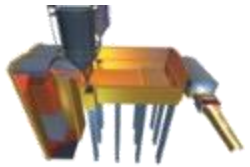
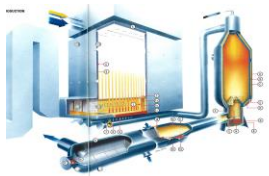
Source: Company estimates

Global refractory industry



Source: Company estimates of market share in US$

Refractories are continuously consumed during finished goods production

Key industries	Applications		Replacement	Costs
Steel	Basic oxygen-, electric arc furnace casting ladles		20 minutes to 2 months	~3.0%
Cement/Lime	Rotary Kiln		Annually	~0.5%
Nonferrous metals	Copper-converter		1 – 10 years	~0.2%
Glass	Glass furnace		Up to 10 years	~1.0%
Energy/ Environmental/ Chemicals	Secondary reformer		5 – 10 years	~1.5%

Refractory characteristics

Consumable product

Systems and solutions for complete refractory management

Demand correlated to output

Investment goods

Longer replacement cycles

Customized solutions based on the specific requirements of various industrial production processes

Complete lining concepts including refractory engineering

Wide areas of application

Project driven demand cycles

A complex range of tailored refractory products are required for each application

Bricks

1 Permanent lining

2 Non-basic, ex. Alumina

3 Basic, ex. Mag-Carbon

Monolothics and pre casts

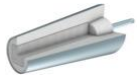
4 Mixes

5 Pre Castables

Functional products

6 Slide Gates

7 Nozzles



8 Purge Plugs

9 ISO

+Systems and machinery

Example of refractory application for steel ladle

Table of contents

RHI Magnesita is the world leader in refractories and a truly global company

€3.1bn
2018 revenue

10,000
Customers served globally

14,000
Employees spread over 40 countries

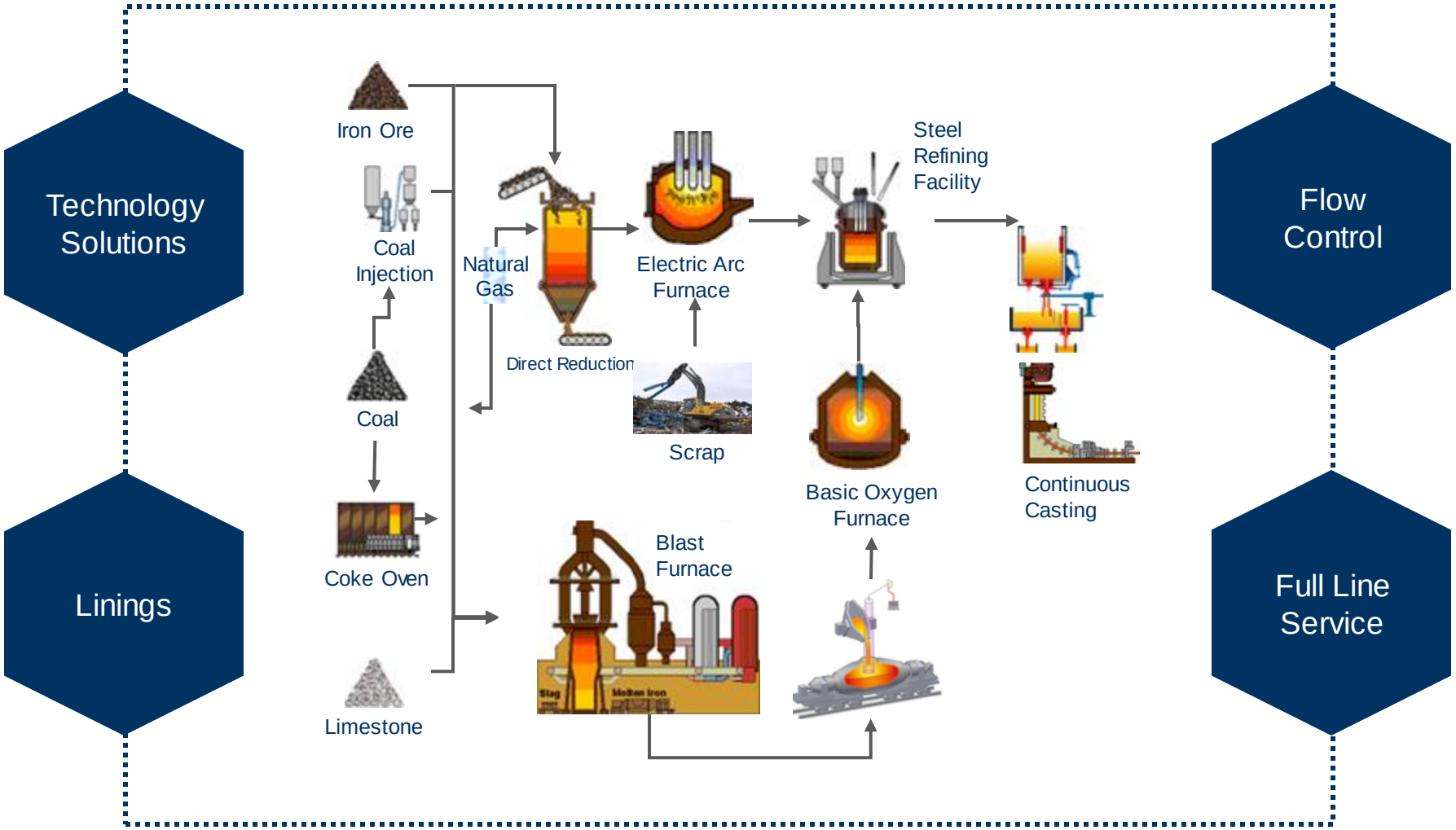
35
Main production sites across 16 countries

+100
Countries shipped worldwide

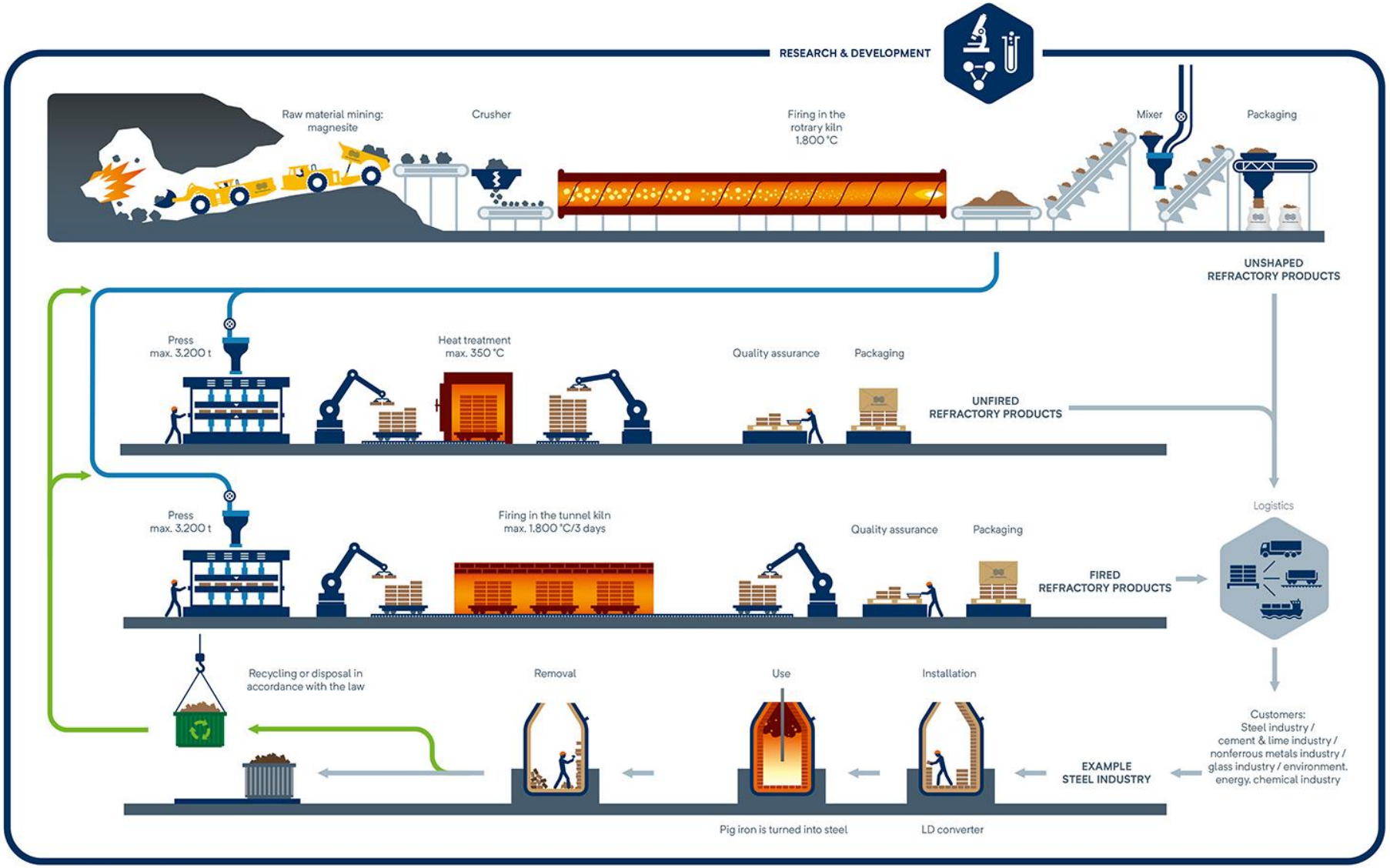
13
Main raw material sites in 4 continents

>€37m
Annual investment in Research

Adding value through a full suite of products and services



The refractory world of RHI Magnesita



Serving blue chip clients in every industry

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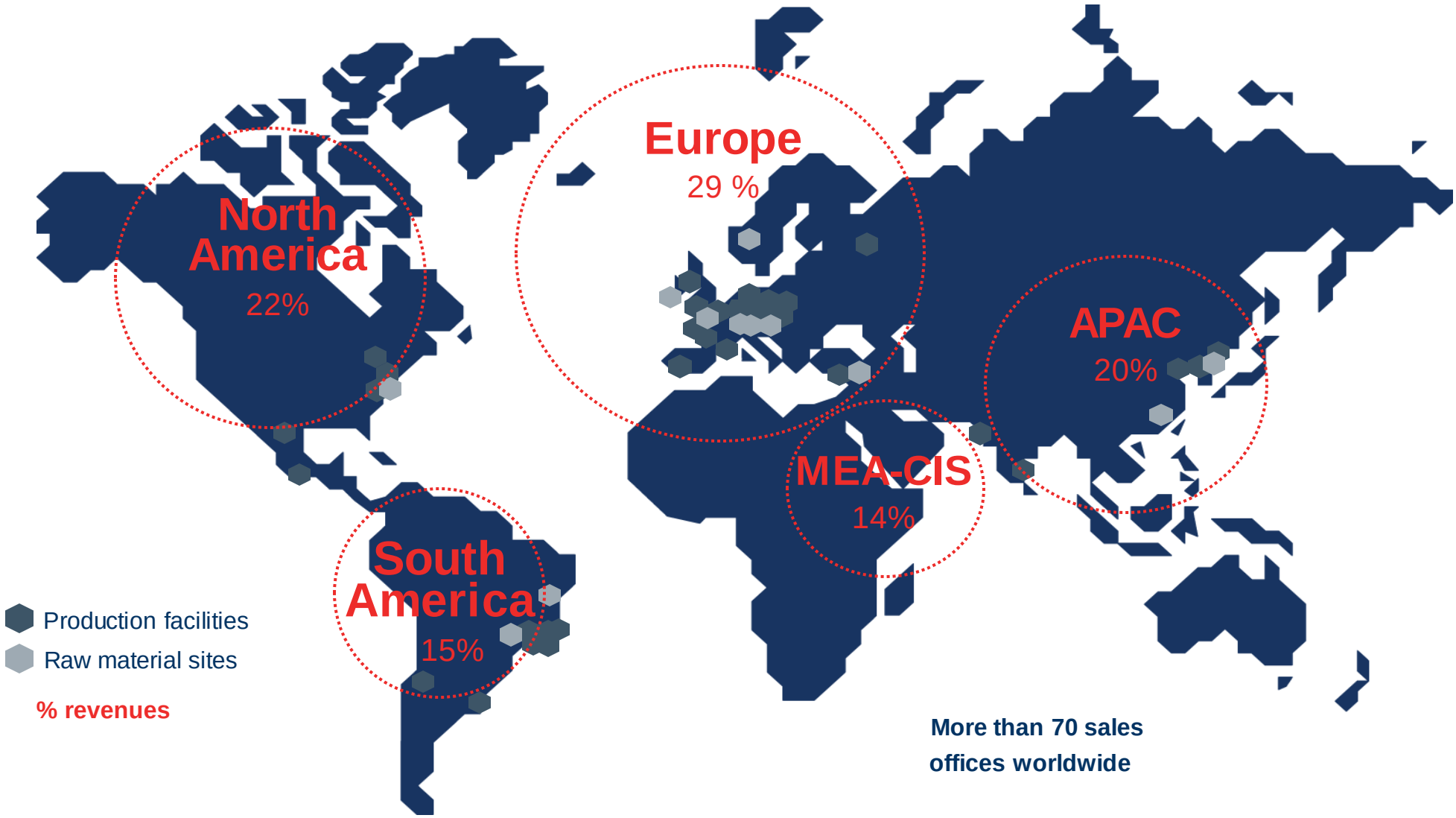
Steel			Cement	Glass	Metals
Severstal	ArcelorMittal	Ternium	LafargeHolcim	SCHOTT	VALE
NIPPON STEEL & SUMITOMO METAL	posco	NUCOR	Votorantim	ArdaghGlass	bhpbilliton
NLMK	OUTOKUMPU	ThyssenKrupp	HEIDELBERGCEMENT	Vitro	GLENCORE
USS	TATA STEEL	GERDAU	CEMEX	rigolleau	RioTinto
Serving 1060 of 1250 plants[1]			Serving 1376 of 1537plants[1]	Serving 800 of 900 plants[1]	Serving 650 of 2000 plants[1]

[1]ex-China

Optimally positioned to reach customers everywhere



Source: RHI Magnesita

Driving client performance improvements

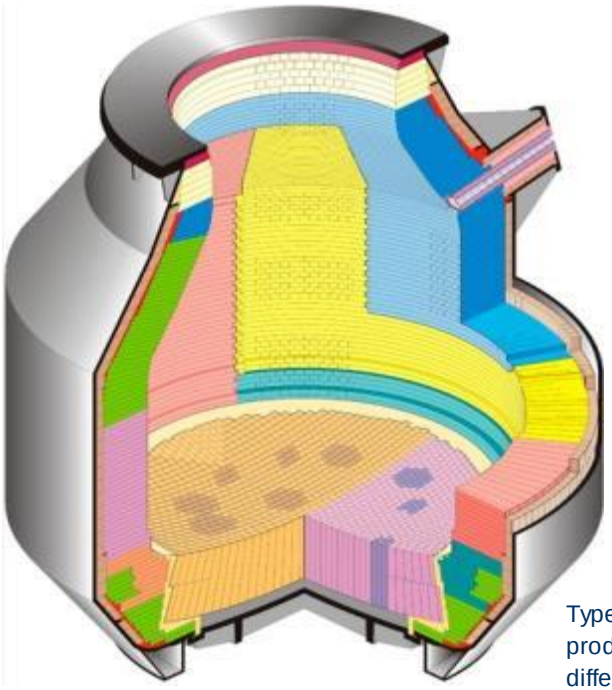
Equipment/Application	Service	Starting point	End game	Improvement
Client A (Integrated)				
Basic Oxygen Furnace (B.O.F.)	Refractories	1,900 heats	7,200 heats	**+385%**
	Assembly	145 h	40 h	**3.8X faster**
Blast Furnace	Runners	1,600 h	330 h	**4.8X faster**
Torpedo Cast	Casting	230 kton metal	640 kton metal	**+280%**
Client B (Mini Mills)				
EAF	Roof	300 heats	2,100 heats	**+600%**
	Assembly	27 h	8 h	**3.4X faster**
	Working Line	360 heats	1,200 heats	**+200%**
Slide Gate	Refractory	3 heats	9 heats	**+200%**
Client C (Stainless)				
AOD	Working Line	55 heats	70 heats	**27%**
EAF	Working Line	200 heats	300 heats	**50%**
Ladle	Working Line	50 heats	65 heats	**30%**

Source: RHI Magnesita

Solutions that maximize efficiency and margins

Example: full line service

A single basic oxygen furnace (BOF) demands different types of refractories designed according to their distinct physical and thermo-chemical properties.



Types of refractory products shown in different colors

One key objective for Full Line Service clients is to develop refractories that last longer and are consumed homogeneously within each equipment for each customer in each plant.

Refractory consumption on the converter walls was diagnosed as heterogeneous, potentially leading to premature disposal of other refractories within the converter. Replacing an entire wall would lead to higher downtime of the equipment and more refractory use.

The solution consisted of:

- Identifying the compromised area in the BOF converter
- Applying lower-cost gunning mixes in order to increase the lifetime of still-good refractories
- Higher refractory efficiency led to higher margins for both RHI Magnesita and the customer
- Finally, refractories were sent for post-mortem analysis and allowed for adjustments to customer process and refractory composition to increase homogeneity

Source: RHI Magnesita

Tailor-made products and services that drive performance and cost savings

Example: implementing gas purging in electric arc furnances for high-alloyed steelmaking

Stainless steel production has significantly different EAF process conditions compared to low-alloyed steelmaking due to the oxidation characteristics of Chromium during decarburization of the molten metal

Benefits of gas purging

- Decreased melting time of scrap and DRI
- Increased heat transfer during the superheating period
- Decreased specific electrical energy demand
- Enhancing mixing of the steel melt and increasing homogeneity
- Avoidance of unwanted skull formation or debris
- Decreased deviation between the measured steel temperature in the EAF and the ladle furnace

Immediate process improvement and client cost savings

120t EAF	Before	After	Δ
Charged weight (t)	126.3	126.7	+0.4
Tap Weight (t)	122.9	127.9	**+5.0**
Yield (%)	87.9	92.4	**+4.5**
FeSi (kg)	290	222	**-23%**
Lime/Dolomite (t)	4.45	4.14	**-7%**
Power-on time (min)	102	108	**+6**
Tap Temperature (°C)	1.571	1.572	**+1**
Energy (kWh/t)	543	526	**-17**

As a result, the vast majority of customers in high-alloyed and stainless steelmaking now use EAF gas purging as standard technology

Source: RHI Magnesita

Experienced management team with solid financial and strategic background

Executive Management Team	Joined	Background
Stefan Borgas *CEO*	2016	• Former CEO of Israel Chemicals Ltd and Lonza Group • Several management positions at BASF
Luis R. Bittencourt *CTO*	1989	• Former R&D and raw material VP of Magnesita • BA in mining engineering (UFMG), MS degree in metallurgical engineering (University of Utah) and PhD in ceramic engineering (University of Missouri)
Ian Botha *CFO*	2019	• Former Finance Director of Anglo American Platinum • Several management positions at Anglo American plc, including CFO Ferrous Metals, CFO Coal and Group Financial Controller
Gustavo Franco *CSO*	2019	• Former Global Sales & Marketing VP at Magnesita • 18 years of experience in Sales for the Refractory Industry, being based in South America, North America and Europe
Thomas Jakowiak *Integration*	2000	• Former CSO Industrial Division of RHI • Several leadership positions at RHI
Jacqueline Knox *General Legal Counsel*	2019	• Former Associate General Counsel M&A at VEON, an international telecoms and technology business • Former General Counsel and Company Secretary at Ophir Energy plc, a FTSE listed upstream oil and gas business
Simone Oremovic *Human Resources* *Corporate Communications*	2017	• 19 years of experience in leadership positions in HR, among other fields at GE, Telekom Austria, IBM and Shire/Baxter
Luiz Rossato *Corporate Develop.*	2008	• Former Legal Council, M&A and Institutional VP of Magnesita • General Counsel of the Year 2012 by International Law Office
Gerd Schubert *COO*	2017	• Former COO of Pfleiderer S.A. • Global Operations Director at Ferro Deutschland GmbH and Ferro Spain

Table of contents

A strategic combination that captures synergies and drives efficiencies

RHI MAGNESITA

Establish leading market position

- Complementary asset portfolio
- Transaction to support regional growth in several markets, especially in the United States and Asia
- Strengthening competitive position against consolidating Chinese refractory industry

Leverage technology capabilities

- Enhanced value-added products and tailored solutions best fitting customer needs in every market
- Strong, globally recognized brands associated with high-quality products and services
- Innovative technology and best in class R&D

Strengthen geographic cluster

- Valuable assets enhancing combined global footprint
- Economies of scale in important operations
- Increased proximity to customers, shorter lead-times, and lower inventory in the chain

Retain raw material integration

- Global raw material network to smooth out demand volatility and reduce capital requirements and logistic costs
- Highest level of vertical integration in the industry with unique raw material sources ensures best product quality

Capture synergies and drive cost efficiencies

The industry's largest dedicated research team, pushing the boundaries of what is possible

We drive innovation in every aspect of our business, from materials, robotics and Big Data, to bespoke new business models and efficient new processes, under extreme conditions.

Refractories

- Development and optimization of refractory products and manufacturing processes
- Market driven project portfolio
- Plant technical support and quality control

Mineral

- Increase ore recovery, maximize mine useful life and minimize environmental impacts
- Development of high quality, low cost raw material sources

Basic research

- Basic research ensuring technology leadership
- Strong focus on innovation

Recycling as an opportunity

- Green technology applied to reprocessing, sorting and reutilization of recycled raw material

Global research team of 250+ employees, of which 98 have masters and PHDs, working out of 2 research hubs and 3 centers

Investing €33m p.a. into technology-based solutions

On-site technical experts consult, develop and deliver innovative solutions directly to clients

340+ technical engineers across 90 countries, working on-site with clients to provide custom-made solutions, installation support, recycling, post-mortem analysis and more.

A combination of…

High quality raw materials

Continuous investments in R&D

World-class products

On-site technical consulting

…ensures customers

- Improve efficiency
- Improve quality
- Increase productivity
- Reduce costs
- Reduce working capital
- Reduce energy and other raw materials consumption

Table of contents

A clear and compelling strategy

Enabling us to add value through a full suite of products & services

People

Hire, retain and motivate talent and nurture a meritocratic, performance-driven, customer-focused and friendly culture

Business model

Leading service and solution provider in the refractory industry with an extensive
portfolio based on leading material science, innovative technologies and digitalisation

Markets

Worldwide presence with strong local organisations and solid market positions in all major markets

Competitiveness

Low-cost producer of technically advanced refractory materials with safe production network

Progress in 2018

- Integration of c.14,000 employees worldwide
- Roll out of cultural values and international career programmes in place
- Diversity targets in place
- Strong leadership team in place across regions and key functions

- Exploring new business models focused on new customer requirements
- Application of automation and product differentiation
- Developing new services beyond refractory materials

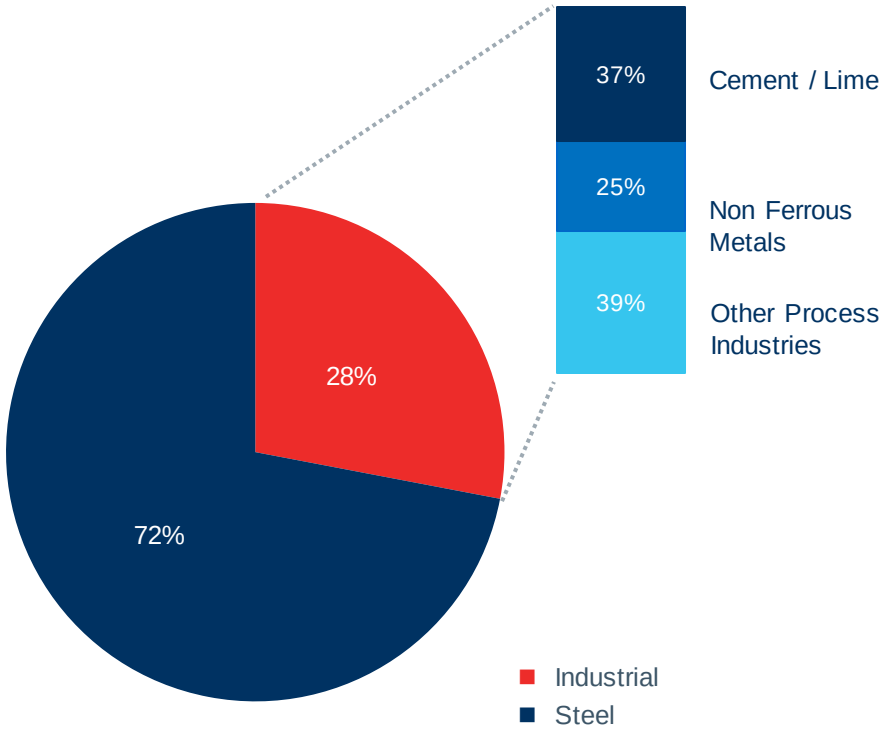
- 15% global market share (30% ex-China)
- Continued to strengthen leading position across established markets,
- Strong growth and market share increases in India & China

- €70 million synergies realised in 2018 (€110m overall target)
- Established global business services team & Supply Chain Management department
- c.€63 million expenditure on R&D and Technical Marketing in 2018

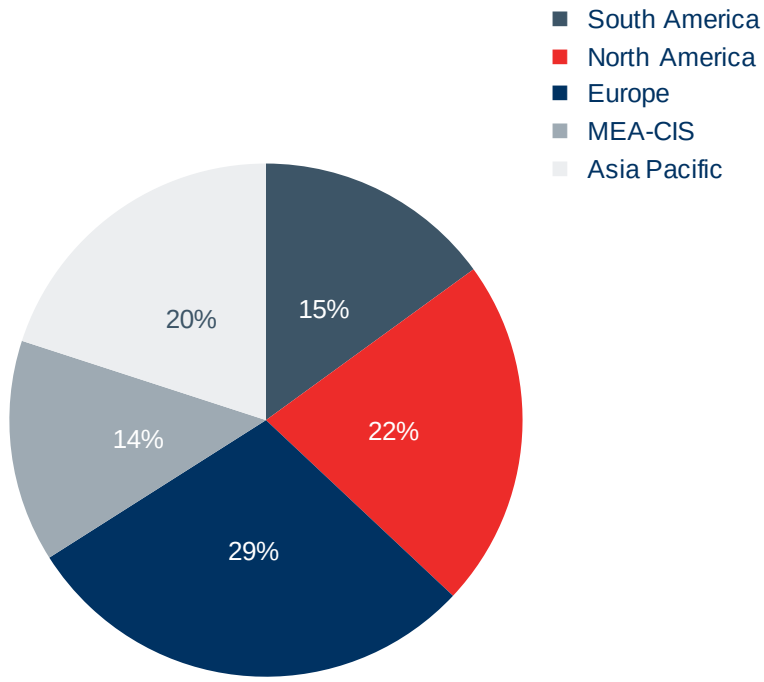
Table of contents

Revenue

Revenue[1] by Industry



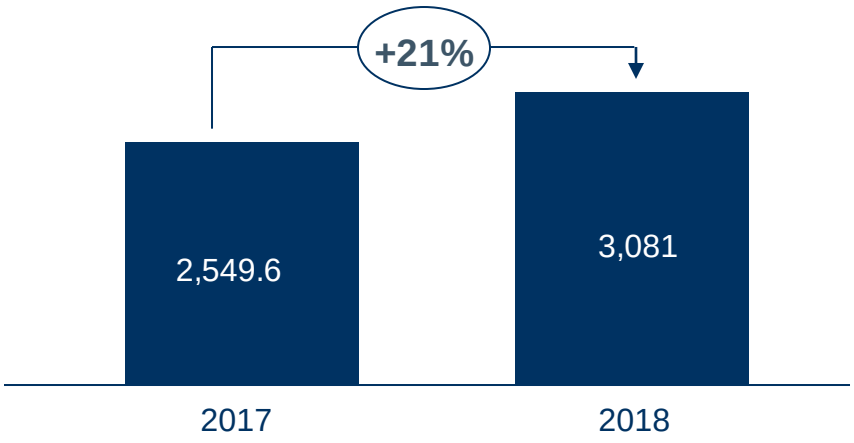
Total Revenue by Geography



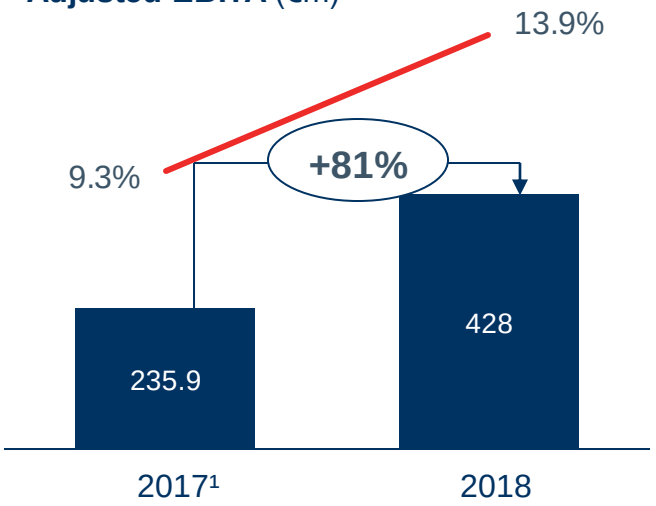
1 Revenue split considers only refractory segments and does not take into account the effect of any divestitures.

Revenue and Adjusted results

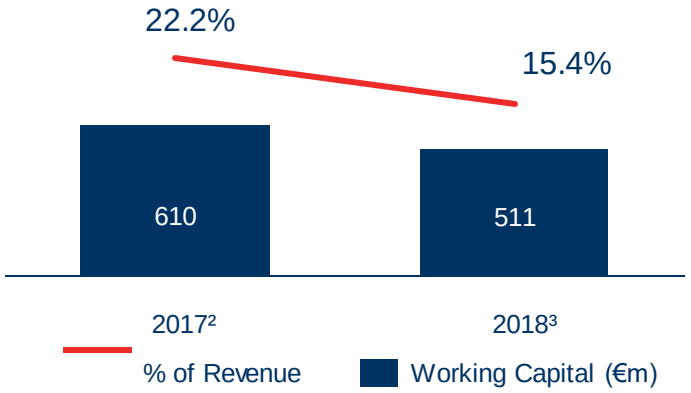
Revenue (€m)



Adjusted EBITA (€m)



Working Capital Intensity (€m)



Notes: 1) Adjusted pro-forma numbers at constant currency. 2) Working capital for 2017 measured as a % of adjusted pro-forma second half annualised revenues. 3) Working capital for 2018 based on annualised last 3 months revenues.

Selected financial highlights

€m	2018	2017[1]	Change
Revenue	3,081.4	2,549.6	21%
CoGS	(2,344.5)	(1,989.1)	18%
Gross Profit	**736.9**	**560.5**	**31%**
SG&A	(337.3)	(350.4)	(4%)
Other Inc/Exp	(0.9)	14.2	(106%)
EBIT	**398.6**	**224.2**	**78%**
Amortization	(28.6)	(25.9)	11%
Adjusted EBITA	**428.1**	**235.9**	**81%**

Significant revenue growth of 21% driven by:

- Robust end markets
- Continued high raw material pricing
- Growth in Steel and Industrial Divisions

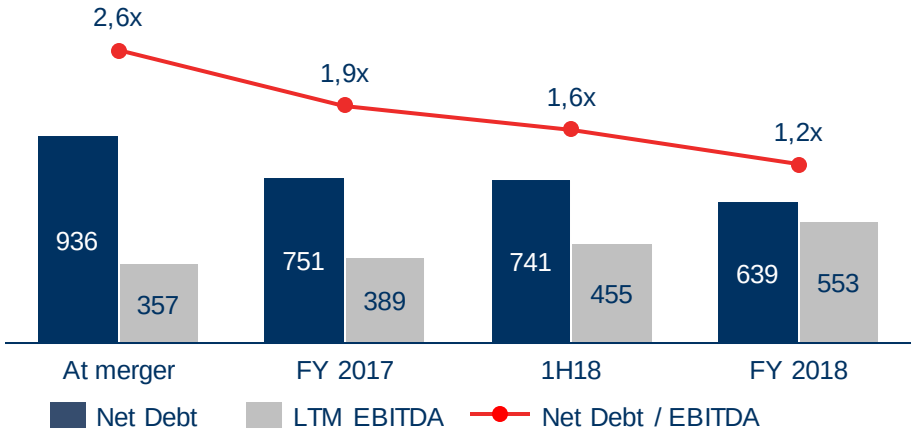
Adjusted EBITA up 81% from:

- Improving gross margin +190bps
- Some deterioration in H2 due to identified operational problems
- Reducing SG&A with successful implementation of the synergies

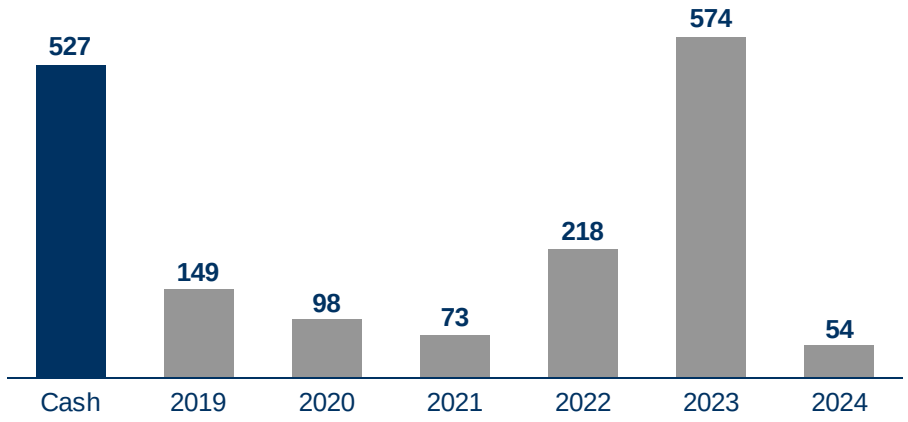
1: Adjusted pro-forma numbers at constant currency

Capital structure

Solid credit profile and commitment to de-leveraging current business



Amortisation schedule (€m as of 31 December 2018)



- During 2018 RHIM refinanced c.€800 million of its capital structure, including the redemption of Magnesita's legacy Bonds, achieving funding costs commensurate with its stronger credit profile

Capitalisation table	€m
OeKB Term Loan	306
US$ Term loan + RCF	358
Other loans & facilities	502
Total gross indebtedness	**1,166**
Cash, equivalents & marketable securities	527
Net debt	**639**

Get in touch

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