



ArcelorMittal

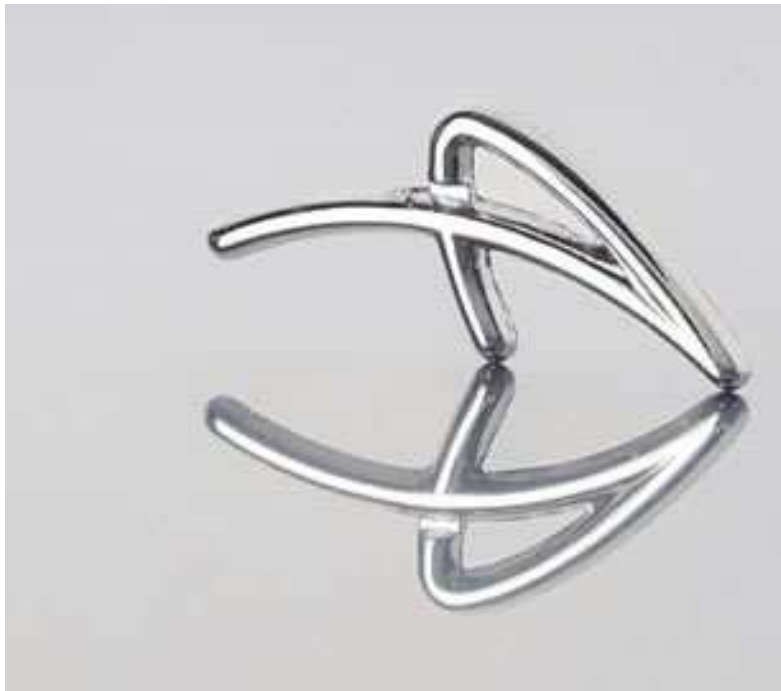
A dedicated stainless steel solution to each
water related issues

Philippe RICHARD

Water symposium – October 7th – Kielce -Poland

Outline

- Introduction to Stainless Europe: who we are
- Stainless and water industry
- Stainless Europe – Global range





ArcelorMittal

Stainless



ArcelorMittal is a world leader in stainless steel and nickel alloys



Stainless			
Stainless Europe	Stainless Brazil	Stainless International	Stainless & Nickel Alloys
Production: 1.248 kT Sales: 6.065M\$ Employees: 5 577	Production: 678 kT Sales: 2.153 M\$ Employees: 5 012	Production: 350 kT Sales: 464 M\$ Employees: 128	Production: 36 kT Sales: 861 M\$ Employees: 859



NB : All 2007 figures

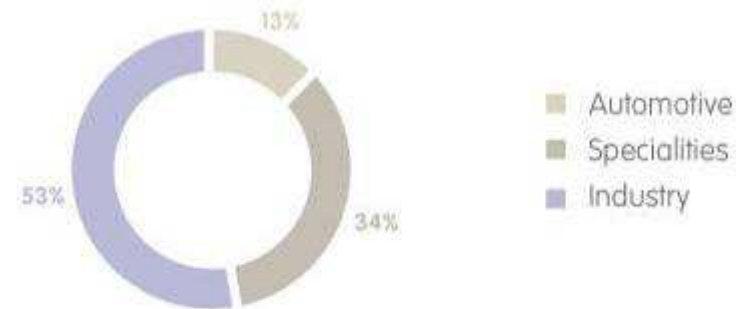
Stainless Europe – European leader in stainless steel



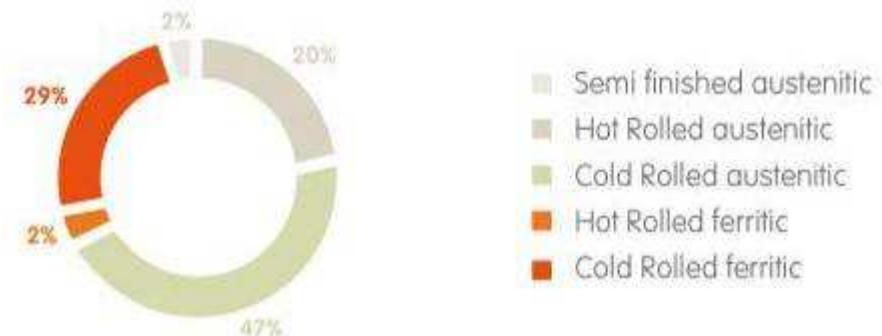
Main figures

- Turnover of 3.1 billion euros in 2008
 - 89% in Europe
 - 11% export
- 1,182 million tonnes in 2008
- 6 plants and 13 service centres in Europe
- 23% market shares in Europe
- More than 5,500 employees in Europe

Breakdown of sales by market - Figures for 2008



Breakdown of sales by product - Figures for 2008



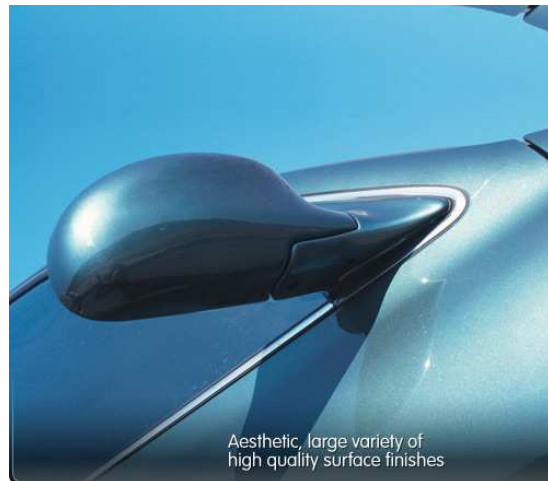
Stainless Europe – markets

Automotive

- Exhaust System



- Automobile Decoration



- Buses and Coaches



- And also: airbags, head gasket, clamps, structural parts.

Stainless Europe – markets

Building

- Building envelopes: roofing, façade.



- Decoration: doors, escalators, elevators

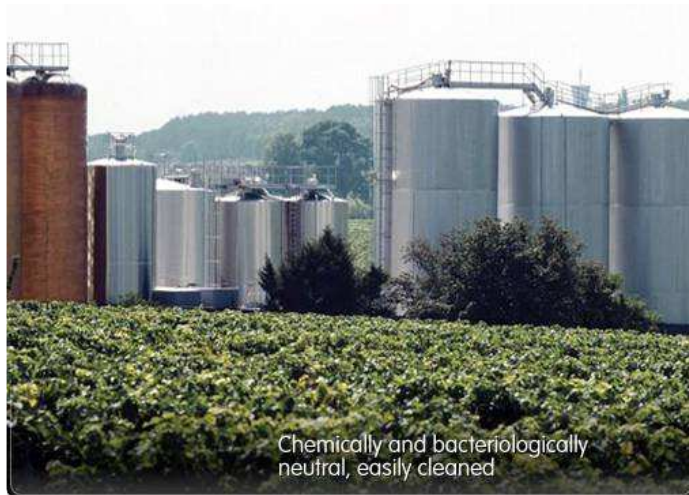


- And also: street furniture (lamp posts, handrails, benches, garbage cans,...)

Stainless Europe – markets

Industry

- **Hygiene and Health**
 - Food industry
 - Pharmaceuticals and cosmetics
- **Transportation**
 - Rail (train, subway, ...)
 - Tanks Road
 - Containers (IMO Tank, refrigerated containers ...)
- **Energy**
 - Chemical and petrochemicals
 - Gas, mining and hydrometallurgy
 - Nuclear, Hydropower



- And also: boiler, fermenting food , keg beer, machinery and equipment maintenance , storage silos...

Stainless Europe – markets

Thermal

- Chimneys



- Boilers and water heaters



- Renewable Energy: solar panels.



- And also heat-exchangers ...

Stainless Europe – markets

Household

- Large appliances
 - Washing / drying , cooking, refrigeration
- Small household appliances
 - Cookware, sinks, housewares



ArcelorMittal



Catering

- Catering and commercial Restaurants
- Washing - laundries



European Region – flat products

- ★ Service centres (with agencies)
- Sales agencies



A european network

- 9 service centres for flat products
- Offices across Europe
- Customer Support
- Wide range of products

- Also agency in Moscow (Russia) and stock available in Tallin (Estonia).

Stainless Central Europe - Overview



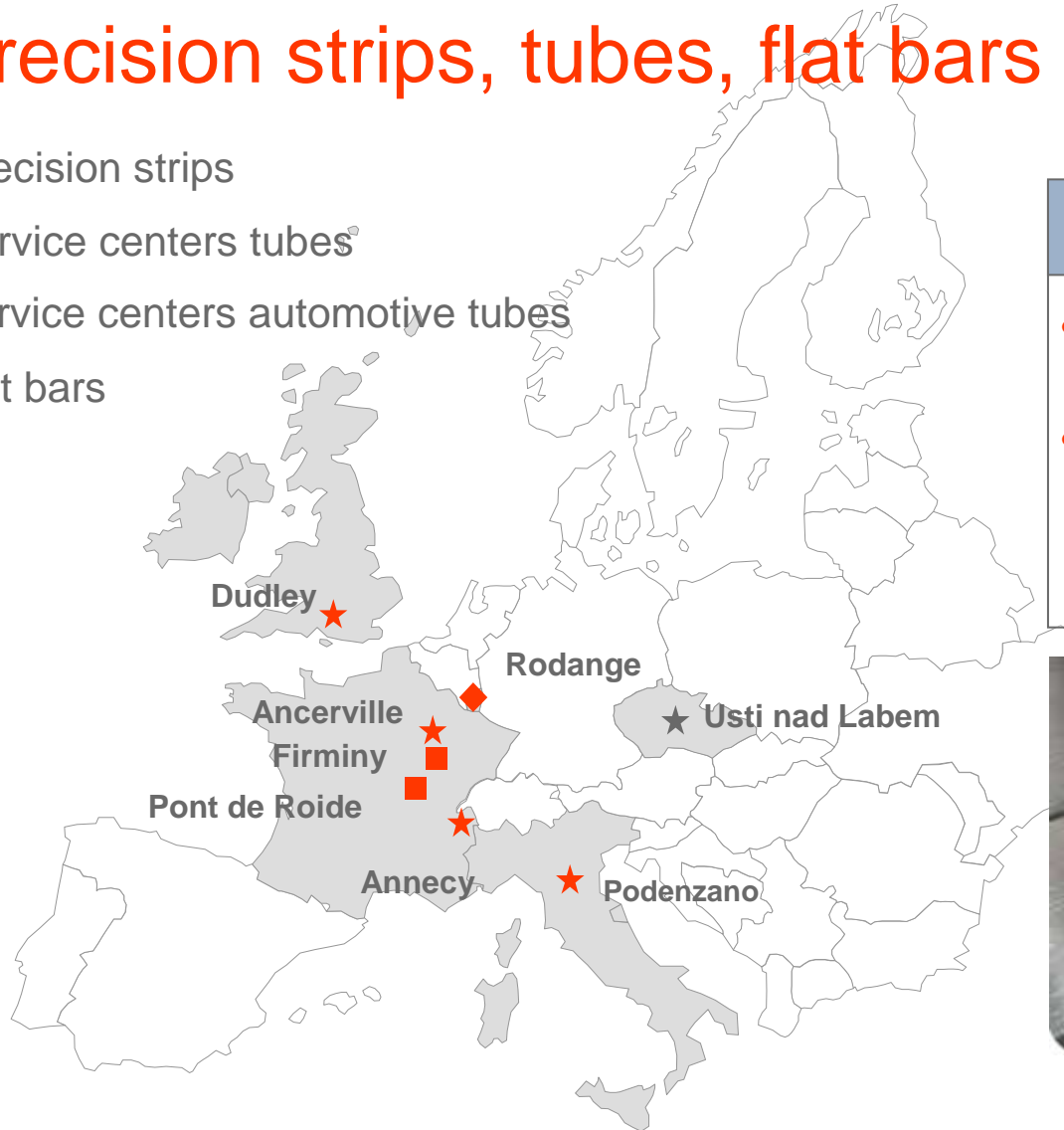
- Sales activity in Central Europe since **1992**,
- Production in Poland since **2001**,
- New factory in Siemianowice Śląskie since **2007**,
- Production and sales of the flat stainless steel products for **Central Europe**:
 - **70** people in Poland (25 production workers),
 - **10** people in Czech & Slovak Republic,
 - **4** people in Hungary (+ Stock in Budapest),
 - 1 agent in Bulgaria, 1 representation Romania
- Average current production : **2 100 tons** per month
- Turnover 2007: **96 M€**





First Transformation: precision strips, tubes, flat bars

- Precision strips
- ★ Service centers tubes
- ★ Service centers automotive tubes
- ◆ Flat bars



A European network

- 8 service centres covering all European countries.
- Wide range of products complimentary to flat products: flat bars, tubes and precision strips.





ArcelorMittal

Stainless and water industry



Why stainless steel players should be present in this industry?



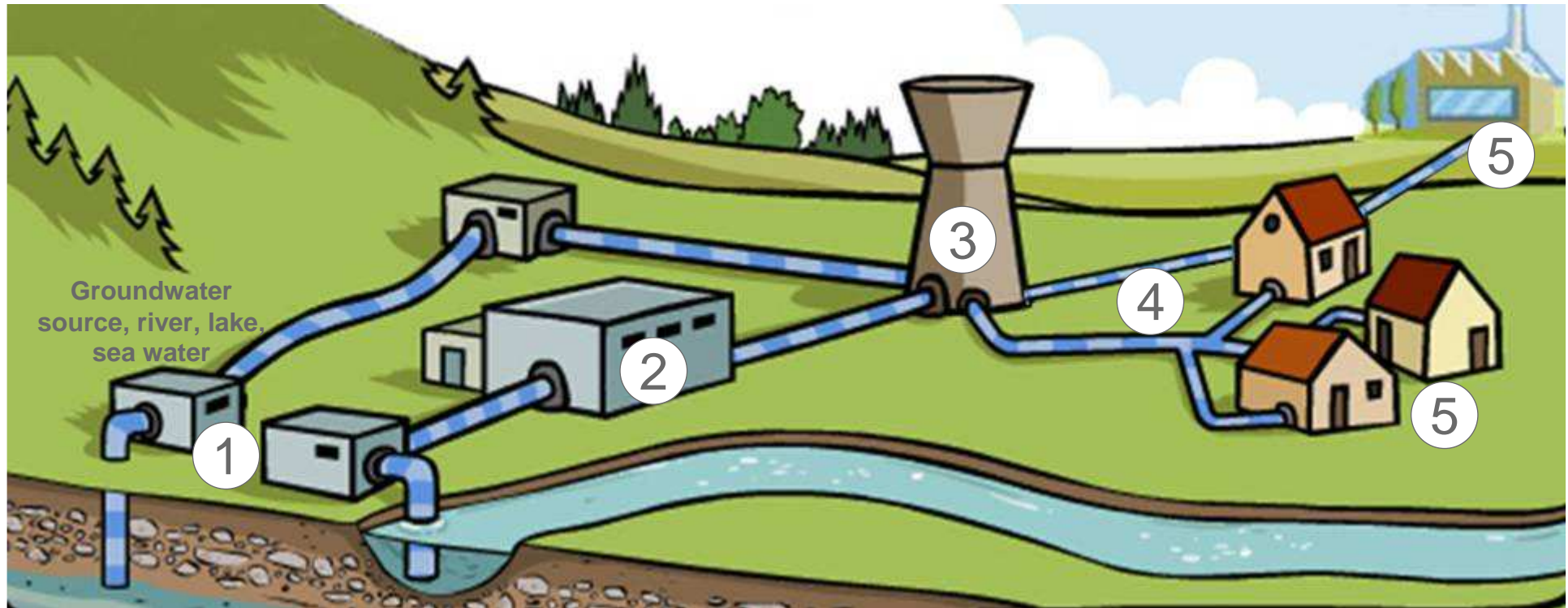
- Water is a common good for people with an unequal repartition around the world.
- Today 1 billion of people have no access to potable water.
- Only 2,5% of the water is soft
- The human activity has a high impact on the quantity of soft water in circulation.
- 25000 people die everyday due to the water quality

Why stainless steel players should be present in this industry?



- Water becomes rare, new investments will be made in the near future.
- Only for the emergent countries, 10 billions \$/year of investments are necessary to reach the goals defined by the worldwide water council.
- In EC, 15 to 20 billions \$/year are necessary to satisfy the new directive and to maintain the current installation.
- Key investments should be made in:
 - Potable water: desalination in particular
 - Potable water management: transport of water as stake
 - Potable water quality
 - Waste water treatment & sludge recycling

The water cycle involves many different types of industries and processes (1/2)



Source extraction
①



Desalination
①



Potable water plants
②



Storage
③



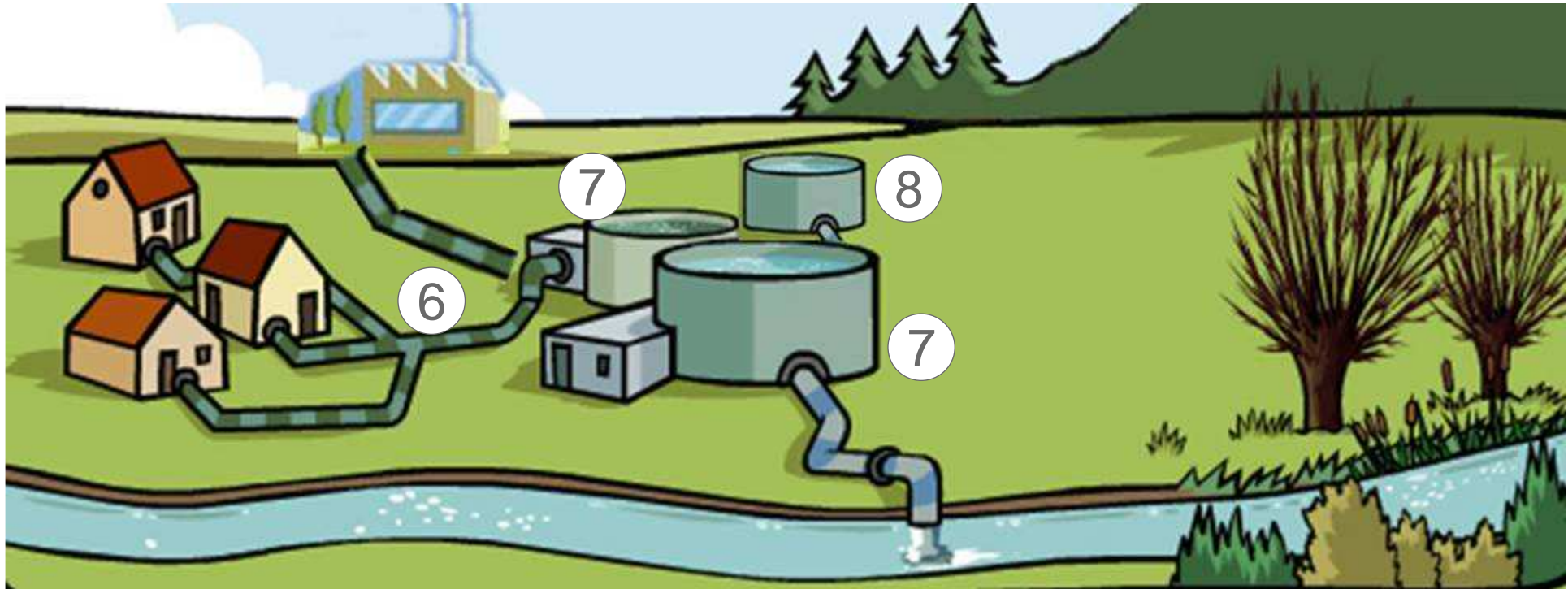
Transport
④



Distribution
⑤



The water cycle involves many different types of industries and processes (2/2)



Waste water collecting & transport

Waste water treatment

Sludge treatment

⑥

⑦

⑧



Stainless steel is present in different parts of this industry



ArcelorMittal

	Process	Main equipments using stainless
①	Source extraction Drilling Extraction	Riser pipes, pumps Groundwater separation casings and membranes
	Desalination Reverse osmosis	Sea water pumps, high pressure pumps, screening Osmosis & high pressure tubes, membrane stacks
②	Thermal (MSF)	Evaporator shell
	Potable water treatment Screening and filtering Sedimentation Disinfection (ozone, UV) Filtration Chlorination	Screening drums, sieves, sedimentation tanks, pumps Tubes Membranes UV disinfection
③	Storage	Water Tanks, Water Towers (Stainless lining)
④	Transport New lines construction Network maintaining	Pipes, valves In site lining tubes
⑤	Distribution	Tubes and fittings
⑦	Waste water treatment Screening and grit removal Sedimentation Biologic or chemical treatment clarification disinfection	Pumps, Tubes Screening drums, Screening systems, sieves, grit chambers Sedimentation tanks Aeration tanks/installations All equipment parts in contact with effluent, polluted air, biogas
	⑧	Sludge treatment Concentration Drying
	Miscellaneous	Ladder, Railing, Platforms, Fire doors, safety doors, Manholes and covers, Climbing rungs, roof frame, footbridge, technical rooms equipments

Stainless steel advantages

		Corrosion resistance	LCC	Mechanical properties (thickness reduction)	Hygiene
①	Source extraction	Shaded		Shaded	
	Desalination	Shaded		Shaded	
②	Potable water treatment	Shaded	Shaded		Shaded
③	Storage	Shaded	Shaded	Shaded	Shaded
④	Transport	Shaded	Shaded	Shaded	Shaded
⑤	Distribution	Shaded	Shaded		Shaded
⑦	Waste water treatment	Shaded	Shaded		
⑧	Sludge treatment		Shaded		

- Provided the selection of the right grade, we can answer the high demands of the water industry

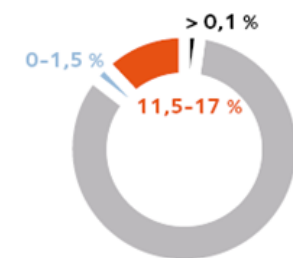
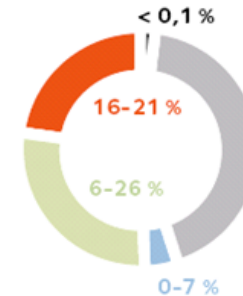
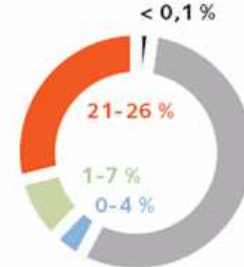
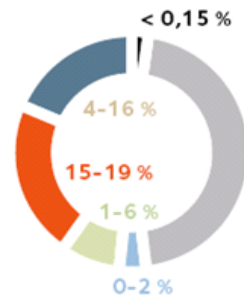
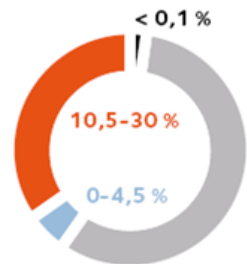
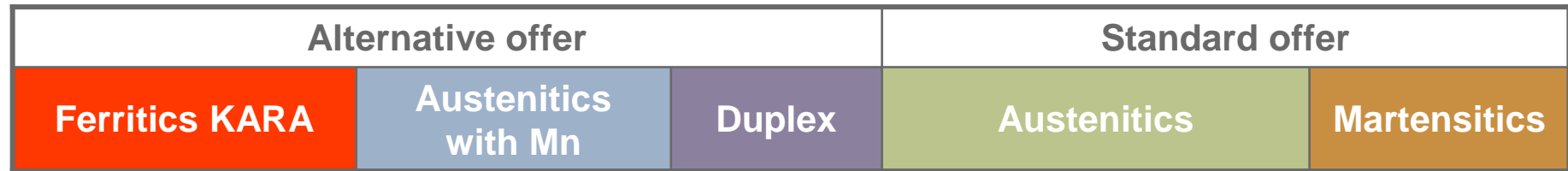
Stainless Europe – Global range



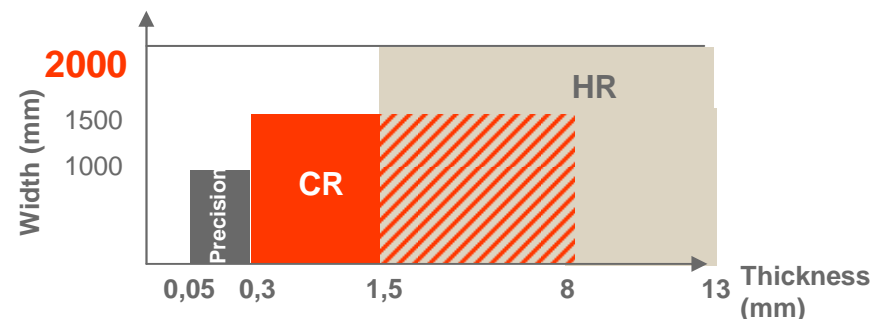


Our range of stainless steel solutions

- A large range of **grades** from standards to alternatives solutions covering all market use.



- **All forms:**
 - Flat products :coils, sheets, blanks, foils, discs...
 - First transformation product: precision strips, tubes, flat bars,...
- Large **size** range:



Selected grades are offered for the water industry



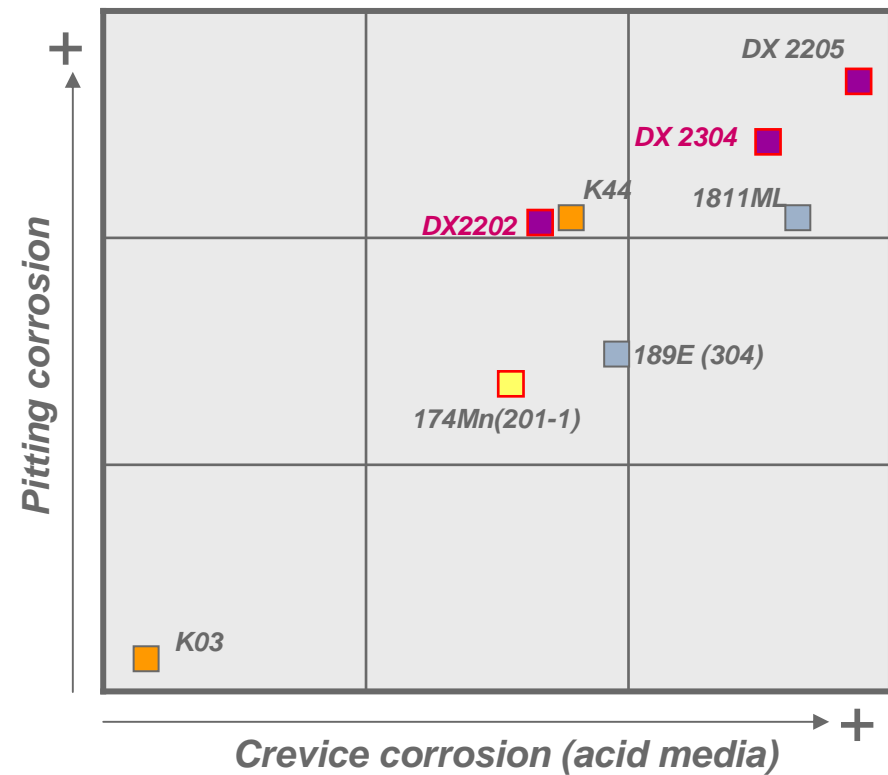
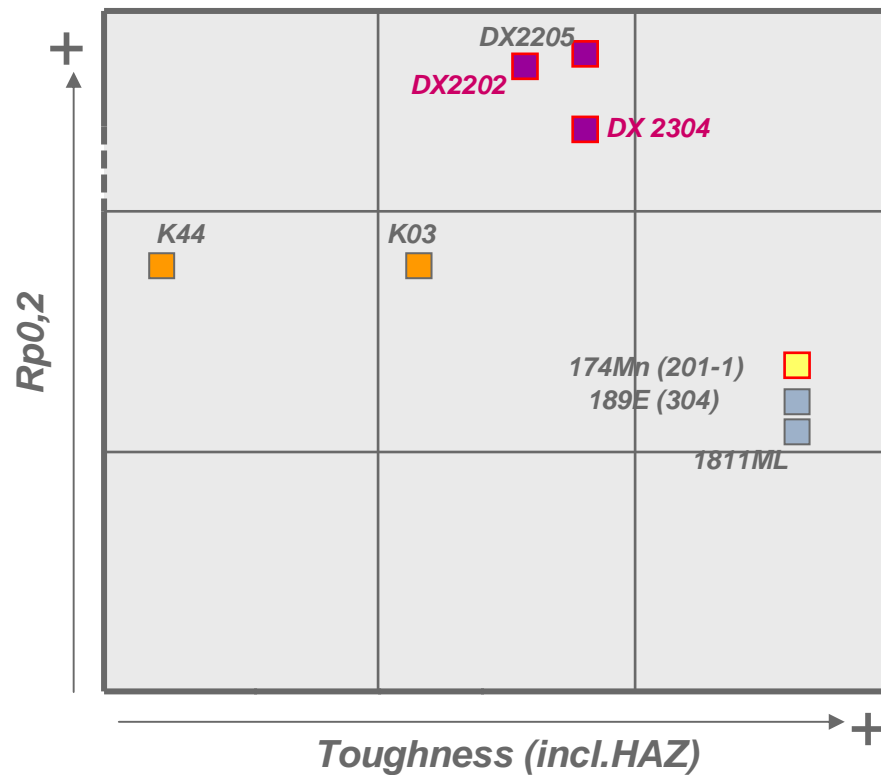
Grade designations	Utilization					Examples of typical applications
	Stretch forming	Weldability	Pitting corrosion resistance	Crevice corrosion resistance	Toughness (1)	
K03	*	****	*	0	****	Structural parts with no critical corrosion issues, could be easily painted
K44	**	****	****	****	**	Sanitary tubes, small capacity storage tanks
17-4Mn	*****	*****	***	***	*****	Structural parts (balustrade), tubes
22-02	****	*****	*****	*****	*****	Desalination: structural parts, transportation pipes, water storage tanks
23-04	****	*****	*****	*****	*****	Desalination: evaporators, pipes
22-05	****	*****	*****	*****	*****	Desalination: sea water & high-pressure pumps, high-pressure tubes, evaporators, pipes
18-9E	*****	*****	***	****	*****	Waste water treatment, tubes
18-9L	*****	*****	***	****	*****	Waste water & potable water treatment: parts in non aggressive atmosphere, structural parts, tubes, water storage tanks
18-11ML	*****	*****	***	****	*****	Desalination: screening, sanitary tubes, transportation pipes, Potable & waste water treatment: filtration, technical rooms in aggressive atmosphere, mechanical parts under water tanks, submerged elements, pumps, tubes, water storage tanks

***** : 1 to 6 stars notation to indicate a growing performance level.

o: Not recommended

(1) On parent metal

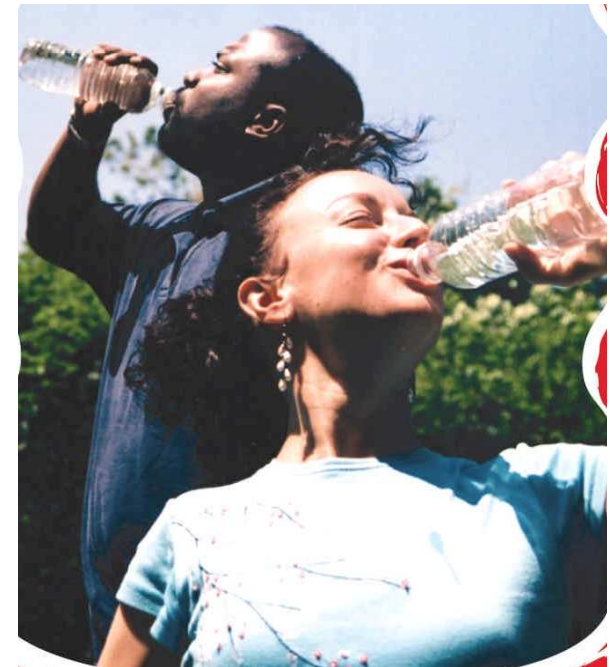
Selected grades answer to the main technical challenge of water industry





Water is the source of life

- For 100 years the world population has tripled, but water consumption has risen sevenfold
- The water uses:
 1. Agriculture (70% of global consumption of water);
 2. Industry (20%);
 3. Domestic use (10%).
- To consider bold and inspiring solutions to complex problems associated with water, it is necessary that we use the best sustainable material and equipment:



Stainless steel

Stainless steel solutions for the water industry



- From desalination of sea water containing chlorides to ground water containing nitrates and pesticides in passing through the wastewater treatment using highly corrosive chemicals, there are **dedicated stainless steel solution**

Consult us for:

- Assistance in selecting the right grade for your water related application
- Guidance on working with stainless steels in the water industry

ArcelorMittal Siemianowice Śląskie

Stainless Service Poland

Ul. Henryka Krupanka 97

PL - 41-103 SIEMIANOWICE ŚLĄSKIE

Reception desk 48 (0)327636100; Fax 48 (0)327636149

siemianowice@arcelormittal.com

www.arcelormittal.com/stainlesseurope/poland/



ArcelorMittal



Degreaser, oil separator



Micro filtration system



WWTP Les Plantiers



Water drinking pipe
Nussbaum



Filter - SCAM



Screening



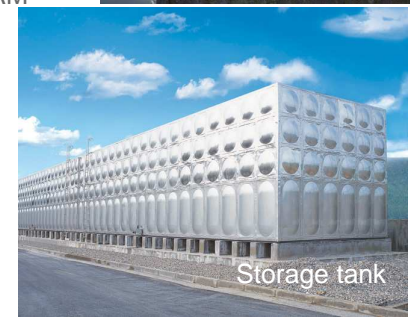
Sludge dryer



Industrial water treatment
Graham Tek



Bar screen - MEVA



Storage tank



Piping - SISC



Submersible pump
Faggioni



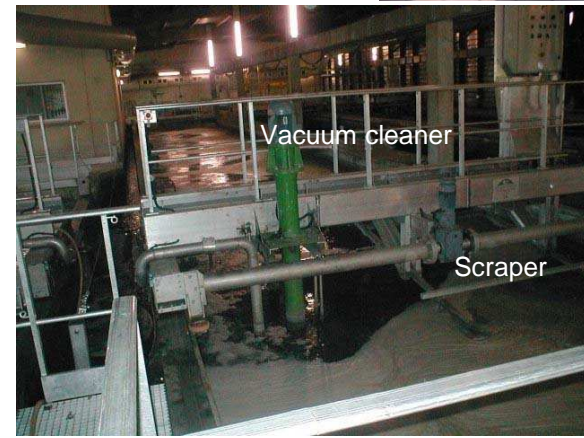
Storage tank



Bottling



Reverse Osmosis
Equiphydro



Vacuum cleaner

Scraper



Potable water treatment
Maisonneuve



Waste water treatment
Bono Artes



Piping - ACM