

Since 1867, Fives has been serving the steel industry



Automotive | Building construction | Food & Beverage | Appliance | Electrical | High-tech industry

Steel

Process Architect

19 design offices and manufacturing workshops worldwide

335 patents in force

5 test centers for R&D and combustion development

1,300 employees dedicated to development, sales, manufacture, retrofit and commissioning

Fives' steel technologies and equipment are trusted by the world industrial leaders:

ACERINOX GROUP — AK STEEL — ALCOA — APERAM — ARCELORMITTAL — ATI — BAOSTEEL — BAOTOU — BEHAI CHENGDE — BENXI IRON & STEEL — BLUESCOPE STEEL — BOOMERANG TUBE — BORÇELIK — CSN — ERDEMIR — ESSAR STEEL — EVRAZ — GERDAU — ISDEMIR — JINDAL STEEL — JISCO — LUSOSIDER — MARCEGAGLIA — MASTEEL — NLMK — NORTH AMERICAN STAINLESS — NUCOR — OMK — OUTOKUMPU — POSCO — SAIL — SALZGITTER — SEVERSTAL — SHOUGANG JINGTANG — SWSS — TATA STEEL — TENARIS — THAINOX — TISCO — THYSSENKRUPP — USIMINAS — US STEEL — VALLOUREC — VAMA — VOESTALPINE — WUHAN IRON & STEEL — YUSCO



The information provided on this brochure is for information purposes only and does not constitute a legal obligation or a warranty, express or implied, concerning quality, marketability or suitability for a specific purpose.



Fives provides technology leading tailor-made solutions and expert services for the steel industry

- Process expertise: consulting and technical assistance to meet any market requirements
- NeoKoil® strip processing lines and proprietary technologies
- Affordable CAPEX, ultimate OPEX
- Superior quality of the final product
- Minimized environmental impact
- Local network to ease client relations, minimize response time and improve service



Steel
steel@fivesgroup.com
Tel.: +33 1 45 18 65 35

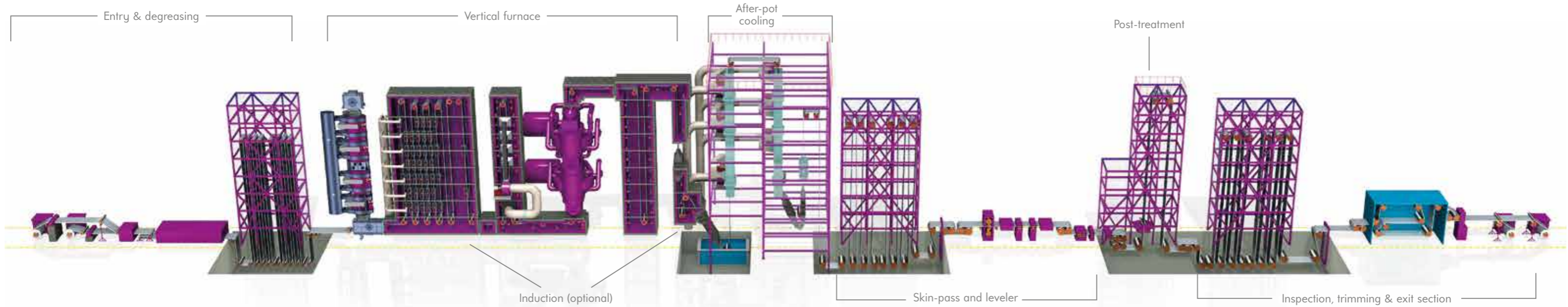
Induction
fivesceles@fivesgroup.com
Tel.: +33 3 89 74 55 00

www.fivesgroup.com

Copyright © 2017 - Fives - All rights reserved.

NeoKoil® strip processing lines: engineering and consulting, manufacturing, supply, commissioning, start-up

NeoKoil® Auto: automotive-grade steel processing lines (CGL, CAL, CAGL)



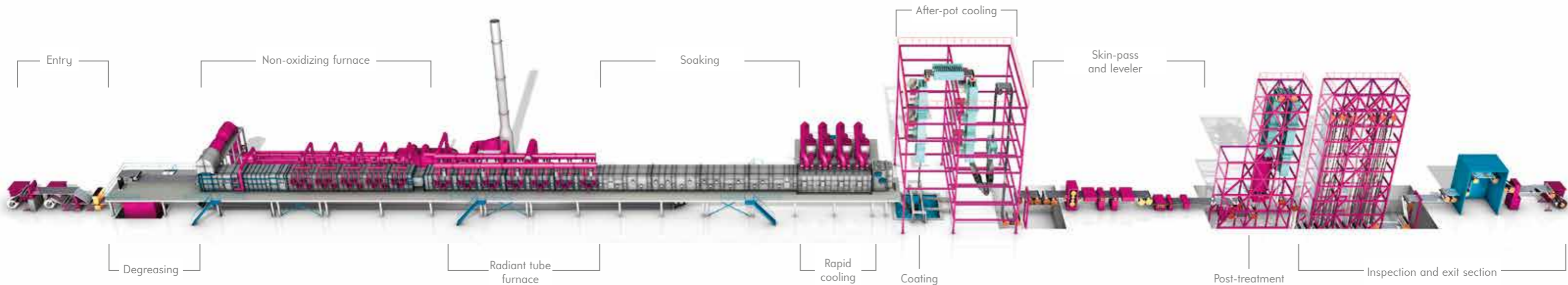
Strip processing lines for the production of high value-added products (automotive exposed panels and any high-strength steel):

- Process expertise, including Eyeron™ quality management application, AbsSIS™ surface quality control software, DMS OptiLine™ process management software, Virtuo® thermal solutions

- Complete terminal equipment
- Degreasing sections
- Stein Digiflex® vertical furnace with AdvanTek® combustion system and FlashCooling®

- CELES EcoTransFlux™ technology for rapid heating and CELES inductors
- DMS SkinPass and DMS StripLeveler
- DMS Trim solutions

NeoKoil® Coating: galvanizing and organic coating processing lines (CGL, CGPL, CCL)



Strip processing lines dedicated to production of any metal coated carbon steel products for construction, home appliances, white goods and automotive grades:

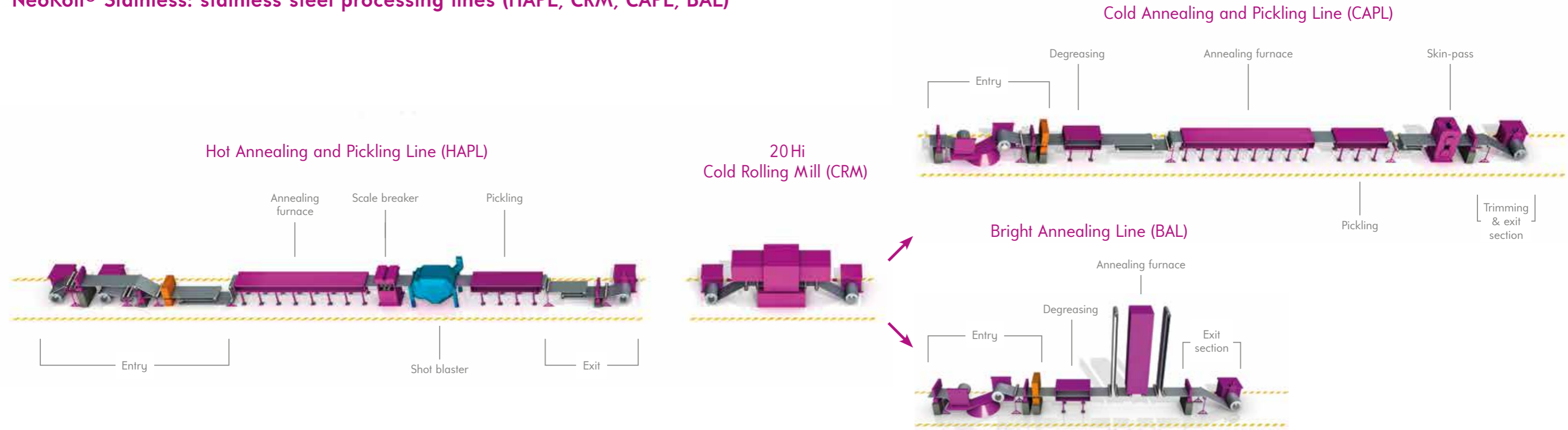
- Process expertise, including Eyeron™ quality management application
- Virtuo® thermal solutions
- Degreasing sections

- Non-oxidizing and radiant tube furnaces
- Rapid jet cooling system, after-pot air & water cooling
- Zinc dust minispangle technology: Stein Minispangle Lore
- DMS SkinPass and DMS StripLeveler

- Post-treatment heating with CELES inductors
- Post-treatment dryers and coolers
- Organic coating section

NeoKoil® strip processing lines: engineering and consulting, manufacturing, supply, commissioning, start-up

NeoKoil® Stainless: stainless steel processing lines (HAPL, CRM, CAPL, BAL)



Strip processing lines and cold rolling mills dedicated to the production of stainless steel for different applications:

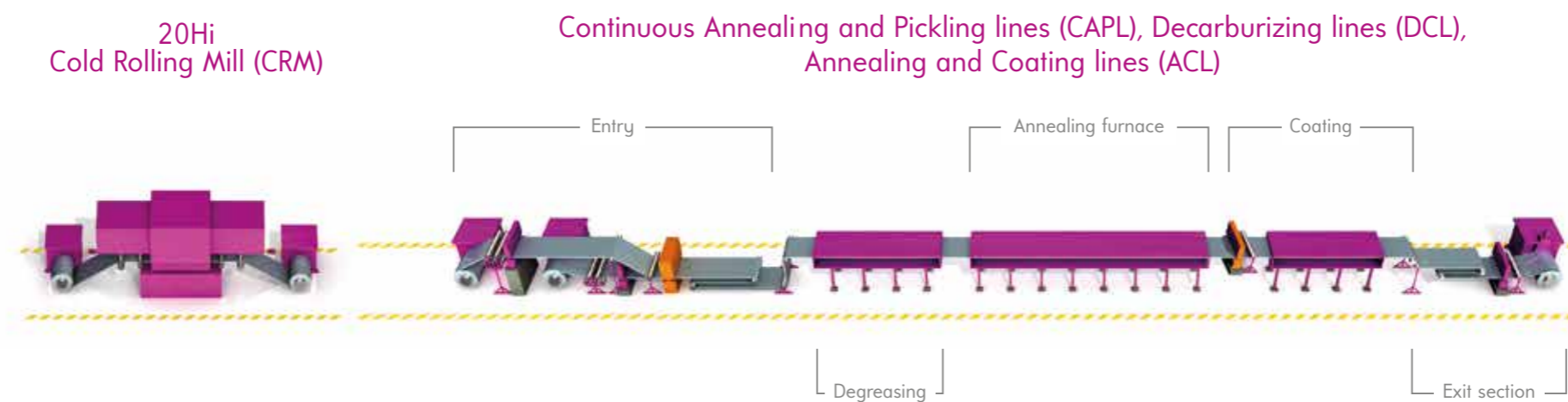
- Process expertise, including DMS OptiLine™ and DMS OptiMill™ process management software

- Complete terminal equipment, including DMS TwinCoil pay off reel system and DMS Trim solutions

- Degreasing sections
- Annealing furnaces with AdvanTek® combustion systems
- Pickling sections

- DMS 20Hi cold rolling mills
- DMS ScaleBreaker
- DMS SkinPass

NeoKoil® Silicium: silicon steel processing lines (CAPL, DCL, ACL, FCL)



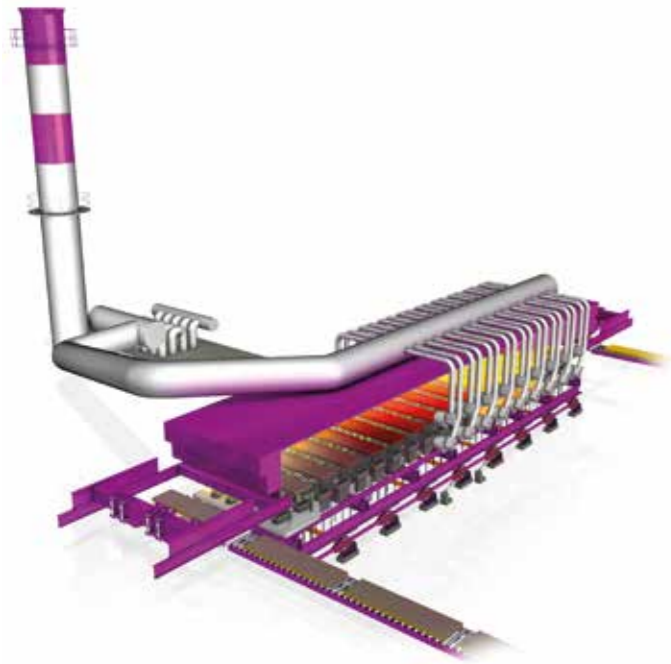
Strip processing lines and cold rolling mills dedicated to the production of NGO, GO and HiB steel grades:

- Process expertise, including DMS OptiLine™ and DMS OptiMill™ process management software

- DMS 20Hi cold rolling mills
- Complete terminal equipment
- Degreasing sections

- Annealing furnaces with AdvanTek® combustion systems (decarburization, recrystallization, nitriding, etc.)
- Coating technologies

Reheating and heat treatment solutions for flat and long products, quenching & tempering for tube and pipe



Stein Digit@l Furnace® AT 2.0, a new generation of reheating furnace

The Stein Digit@l Furnace® AT 2.0 is designed with the best available technology: very efficient heating, maximum flexibility, reduced operational costs and minimized NOx emissions.

Stein Digit@l Furnace® AT 2.0 was awarded the Fives Engineered Sustainability® brand for being the best-in-class product in terms of environmental performance.



CELES CELINE LP inductors

Fives developed a new hybrid solution with a reheat furnace and CELES CELINE LP inductors for long products. It's mainly used for continuous casting lines before roughing mills or finishing mill stands, or at reheating furnaces or in thermal profile correction machinery at rolling lines.



Helyo™ Quench-Tg and Stein Helyo™ Tempering furnace

Fives developed a hybrid solution for quenching and tempering lines to produce tubes and pipes: CELES CELINE LP inductors for austenitizing cycle, Helyo™ Quench-Tg quenching machines for rapid cooling and Stein Helyo™ Tempering furnace, a gas fired austenitizing and tempering furnace.



High-level expertise and services to achieve ultimate performance and reduced operational expenses

Expertise



- KEODS metallurgical assistance
- AbSIS™ and Eyeron™ quality management software tools
- Automotive surface inspection assistance

Expert software



- Virtuo® thermal solution
- Eyeron™ quality management software
- DMS OptiLine™ and DMS OptiMill™ process management software

Service



- Technical consulting & audits
- Upgrade & retrofit
- On-site assistance, maintenance
- Training

Mechanical



- DMS TwinCoil
- DMS SkinPass and DMS StripLeveler
- DMS Trim solutions and terminal equipment
- DMS EcoFilter

Thermal



- Stein Digit@l Furnace®
- Stein Digiflex® vertical furnaces
- AdvanTek® combustion system, FlashCooling®
- Horizontal furnaces, curing ovens, minispangle

Surface treatment



- Pickling sections for flat products
- Batch pickling to wire, bar, pipe and tube
- Degreasing sections
- Chemical dosing systems

Induction



- Full range of induction solutions including:
 - CELES CELINE for long products
 - CELES EcoTransFlux™ for flat products

Long product straightening



- Bronx bar, section and rail straighteners
- Largest range of heavy duty straighteners
- COMPASS control system

Electrics and Automation



- OTO automation systems
- OTOMES production management system