



METALS

# FLAT PRODUCT PROCESSING

**ANDRITZ**

ENGINEERED SUCCESS



## ENGINEERED SUCCESS

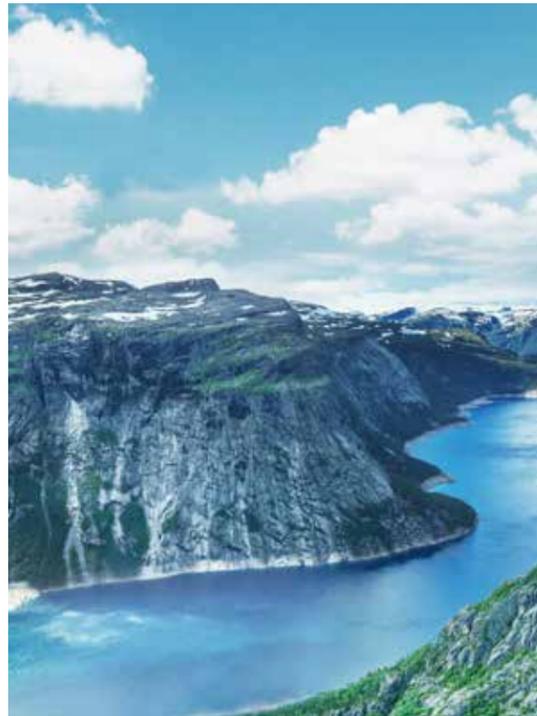
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### ANDRITZ METALS

ANDRITZ Metals is one of the leading global suppliers of complete lines for the production and processing of cold-rolled strip made of carbon steel, stainless steel, aluminum, and other non-ferrous metals. The lines comprise equipment for pickling, cold rolling, annealing and heat treatment, surface finishing, strip coating and finishing, punching and deep drawing, and regeneration of pickling acids. The business area also supplies turnkey furnace systems for the steel, and aluminum industries, burners and refractory products, welding systems, as well as comprehensive services for the metal working industry. In addition, ANDRITZ Metals is the technology and global market leader in forming equipment through the Schuler Group, in which ANDRITZ holds a stake of more than 95 percent. Schuler offers presses, automation solutions, dies, process know-how, and services for the entire metal forming industry. Its customers include car manufacturers and their suppliers, as well as companies in the forging, household appliance, packaging, energy, and electrical industries. Schuler is also the market leader in coin minting technology and offers system solutions for the aerospace industry, rail transport, and manufacture of large pipes.

# The ANDRITZ GROUP - a world market leader

ANDRITZ is an international technology group and a globally leading supplier of plants, equipment, and services for a broad range of industries. The Group has a leading position worldwide in these business areas:



Hydropower

## METALS

Systems and equipment for production and processing of stainless steel, carbon steel, and non-ferrous metal strip; industrial furnaces; resistance welding equipment; presses for metal forming.

## HYDRO

Electromechanical equipment for hydro-power plants (turbines and generators); pumps (e.g. for water transport and irrigation); turbo-generators for thermal power stations.

## PULP & PAPER

Systems and equipment for production of pulp, paper, tissue, and board; energy boilers; plants for production of nonwovens.

## SEPARATION

Equipment for solid/liquid separation for municipalities and a variety of industries; including systems and equipment for the production of feed and biofuel pellets.

Other important fields of business are animal feed and biomass pelleting, as well as automation, where ANDRITZ offers a wide range of innovative products and services in the IIoT (Industrial Internet of Things) sector under the brand name of Metris. In addition, the company is active in power generation (steam boiler plants, biomass power plants, recovery boilers, and gasification plants) and environmental technology (flue gas and exhaust gas cleaning plants) and offers equipment for the production of nonwovens, dissolving pulp, and panelboard, as well as recycling plants.



## ANDRITZ GROUP overview

- Almost 170 years of experience
- Headquarter: Graz, Austria
- Employees: approx. 27,000
- More than 280 locations worldwide



Pulp mill

# ANDRITZ Metals\* worldwide

\*except Schuler Group



**1,260**  
EMPLOYEES

**150+**  
YEARS  
EXPERIENCE  
IN THE METALS  
INDUSTRY

**7**  
INNOVATION  
CENTERS

**500+**  
EMPLOYEES  
IN SERVICE

more than...

**1030** Processing lines installed

**330** Rolling mills installed

**1000** Shapemeter rolls installed

**200,000,000** Tailor Welded Blanks produced on ANDRITZ welding equipment per year

**130,000,000,000** parts stamped on ANDRITZ Kaiser presses per year

**330** carbon and stainless steel industry furnaces installed

# ANDRITZ provides solutions for the following industries:

## Carbon steel



From hot-rolled coils to value-added products - carbon steel, with its huge variety of applications, is a fascinating and dynamic material. ANDRITZ can help you treat and shape it to perfection. The concepts and technology from decades of experience, and the specific needs in the different application fields help us to fuel new ideas and specialized solutions. Together as partners, ANDRITZ can help its customers to condition, treat, and shape the material to its best.

- Reheating
- Pickling, acid regeneration
- Cold rolling, shape control
- Annealing
- Coating
- Finishing
- Heat treatment and forging furnaces

## Stainless steel



From hot-annealed strip to stainless applications used in all areas of life, stainless steel products are fascinating. Stainless is the solution for applications that need to be resistant to corrosion, heat or chemicals. Considering additional life cycle costs and environmental aspects, stainless is the preferred material for household goods, commercial kitchens, sinks, panels, architecture, dishwashers, and cutlery.

- Reheating
- Pickling, acid regeneration
- Cold rolling, shape control
- Annealing
- Finishing
- Heat treatment and forging furnaces

## Aluminum/ Non-Ferrous



Aluminum: Lightweight automotive components with advanced material quality require the high specific strength of aluminum, and these components with the same strength as steel only weigh half as much. Applications: automotive, aviation, shipping, construction, and packaging industries.

Non-ferrous metals: copper, copper alloys and special materials

- Melting, holding
- Reheating
- Pickling, passivation
- Cold rolling, shape control
- Coating
- Finishing
- Heat treatment

## Welding



ANDRITZ is your specialist for laser and resistance welding systems. If you are in the laser welding business, you know what it means to prepare an edge so that it can take the full energy of the laser beam, measuring 0.4-0.6 mm in diameter. A "zero gap" condition between two blanks is the ideal concept, but in reality, this is almost impossible to achieve. ANDRITZ welding machines are equipped with technologies that make this possible and thus ensure the required weld seam quality.

- Laser welding
- Resistance welding

## Stamping



ANDRITZ Kaiser is among the most experienced suppliers on the market for presses and automation used in sheet metal forming. With over 8,000 automatic punching and metal forming presses (from 630 kN up to 25,000 kN) worldwide, the company's customers produce high-quality formed and punched products. ANDRITZ Kaiser sheet metal forming solutions find applications in the automotive (OEMs and suppliers), white goods, electronics, electric motor lamination, construction, and consumer goods industries.

- Punching, stamping
- Blank cutting
- Coining
- Deep drawing
- Sheet metal forming

# Where did a state-of-the-art car body meet ANDRITZ technology?

Some examples of ANDRITZ products:



**1 Press-hardened steel for door ring**  
 Highest strength combined with high ductility for optimized crash performance

Hot-formed on a Schuler hot stamping line

Welded on a tailor welded blank line

Cut on a cut-to-length line, slitting line and Schuler laser blanking line

Annealed and Al-Si coated on a hot-dip coating line

Cold-rolled on a cold-rolling mill with the strip shape controlled by a Shapemeter roll

Scale removed in a pickling line

Slabs reheated in a walking beam furnace

**2 Ultra/Advanced high-strength steel for front-side frame**  
 Highest strength for optimized crash performance

Parts cold-formed on a Schuler press line

Welded on a tailor welded blank line

Cut on a cut-to-length line, slitting line and Schuler laser blanking line

Strip zinc-coated in a hot-dip galvanizing line or electrolytic galvanizing line

Strip cold-rolled on a S6-high cold-rolling mill with the strip shape controlled by a Shapemeter roll

Scale removed in a pickling line

Slabs reheated in a walking beam furnace

**3 Dual-phase steel for roof frame**  
 Weight reduction by down-gauging, high-strength for optimized crash performance

Cold-formed on an ANDRITZ Kaiser press

Cut on a cut-to-length line, slitting line and Schuler laser blanking line

Annealed and zinc-coated in a hot-dip coating line

Cold-rolled on a cold-rolling mill with the strip shape controlled by a Shapemeter roll

Scale removed in a pickling line

Slabs reheated in a walking beam furnace

**4 Aluminum 6xxx series for exposed parts**  
 Light weight, highest surface quality, good formability, age hardening

Parts cold-/hot-formed in a Schuler press line

Cut on a cut-to-length line, slitting line and Schuler laser blanking line

Strip pickled and passivated in an automotive surface treatment line

Strip heat-treated and age-hardened in a continuous heat treatment line

Slabs reheated in a pusher furnace

Primary or secondary aluminum slabs from a melter furnace

**5 Dual-phase steel for exposed panels**  
 Highest surface quality, good formability, high corrosion resistance, weight reduction by down-gauging

Parts cold-formed in a Schuler press line

Cut on a cut-to-length line, slitting line and Schuler laser blanking line

Strip annealed and zinc-coated in a hot-dip galvanizing line

Strip cold-rolled on a cold-rolling mill with the strip shape controlled by a Shapemeter roll

Scale removed in a pickling line

Slabs reheated in a walking beam furnace



# The preferred partner for service solutions

## SPARE/WEAR PART SERVICES

With many years of experience in this field, ANDRITZ is your business partner for after-sales and service work. This includes spare and wear part services for the entire product portfolio of ANDRITZ Metals:

- Classic spare and wear parts
- Preamsembled spare parts ready for installation
- Computer-aided spare part management
- Part/product improvement with engineered spare and wear parts

## MAINTENANCE FOR HOT AND COLD ROLLING MILLS AND PICKLING LINES

ANDRITZ Metals USA has specialized knowledge and equipment for the maintenance, inspection, grinding, reconditioning, turning, chromium-plating, and surface-texturing of mill rolls under the Herr-Voss Stamco line services. The company is able to manufacture, condition, and dynamically balance auxiliary mill rolls. In addition to complete roll services, Herr-Voss Stamco service includes reconditioning of mill roll chocks to original specifications and/or

modifies them for other applications. The service staff also perform automatic gauge control (AGC), hydraulic gauge control (HGC), as well as repairs and testing.

## REBUILD AND RETROFIT SERVICES FOR ALL MANUFACTURERS' BRANDS

ANDRITZ offers complete reconditioning and retrofit services for all manufactured brands. These services can return your line to original or better-than-new condition. From a single component to complete turnkey retrofit of an entire line, to relocation, ANDRITZ is here to help you keep your operations efficient and productive.

## TOOLING

ANDRITZ Soutec offers product-specific loading devices and clamping tools for laser-welding systems as well as grippers for handling purposes (robots and gantry). In order to ensure that the commissioning time is as short as possible, the company tests all tooling in-house.

## ASKO KNIVES

ANDRITZ Metals USA provides an extensive range of ASKO shear blades, circular knives, slitter tooling, bar mill knives, mill housing liners, and wear parts for all metal processing applications. The in-house manufacturing for these products includes machining, heat treating, and precision grinding. Numerous metals industry operations utilize ASKO products such as hot roll transfer-bar shearing and pickle line side-trimming through coil slitting at metals service centers. These knives are tailored to match the ever-changing nature of their application from non-ferrous metals to advanced-high-strength steels. On-site training and software are developed to support these products and help customers stay current with the latest industry changes. Furthermore, Andritz Metals USA's complete knife regrinding service returns knives to their maximum operating capability each time they are serviced.

## SHAPEMETER ROLL WITH STRIP TEMPERATURE PROFILE DETECTION

During the cold-rolling process, the rolling stock heats up irregularly over the strip width for different reasons. These temperature differences lead to changes in strip length proportional to differences in temperature.

Temperature differences of only a few degrees lead to considerable differences in strip shape. The well-proven ANDRITZ Sundwig BFI Shapemeter roll can now also be used to detect the relative strip temperature profile over the strip width. The downstream computer system and the software compensate the temperature effects and thus permit shape measurement that is largely independent of the strip temperature. This new development is an optional feature for Shapemeter rolls and strip temperatures below 200 °C. For strip temperatures above 200 °C, a strip temperature profile measurement is used in all cases.

## SHAPE:TRONIC SYSTEM VR-TRAINING TOOL BOX

The ANDRITZ system for measuring the flatness of metal sheets during rolling is in operation 24/7. Thus, it is practically impossible to train the service personnel on the device itself. With the VR module, training can be provided at any time.

The package includes:

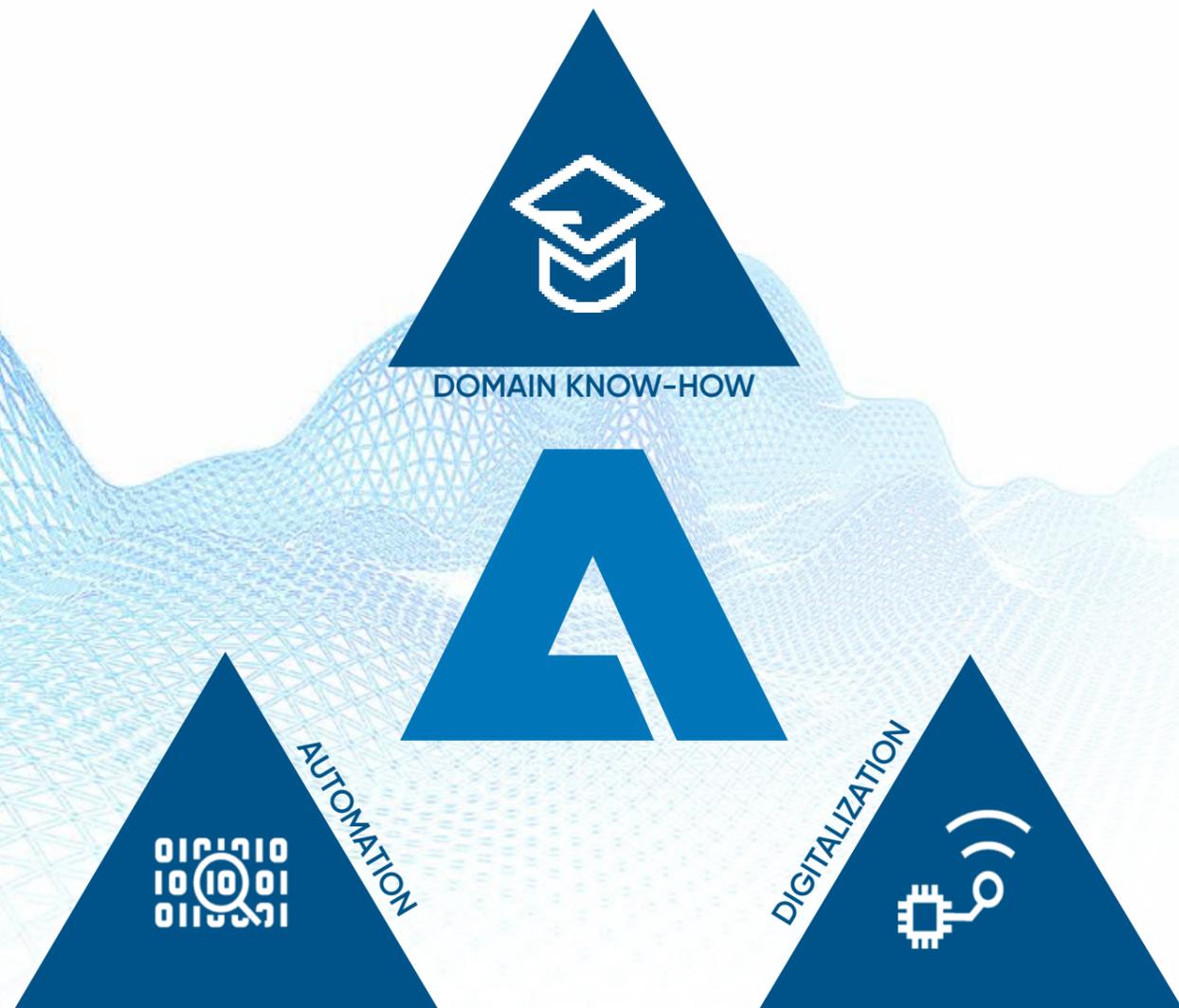
- Laptop computer with VR app
- VR glasses, controller and accessories



Virtual Reality training

# Intelligent flat product processing

Intelligent processing of flat products for world-class, flat steel, stainless steel, aluminum producers who deliver the product exactly as requested, on time and with consistent quality



The ANDRITZ Metris UX platform covers the entire life cycle of a plant. It is designed as continuous micro-service architecture according to the demands of today's market. More than 50 apps are available for optimizing the quality and performance of our customers production operations. With more than 50 references in the industry, we have an extensive portfolio of customers who trust in our digital solutions.

### INCREASE YOUR ASSET VALUE

- Increase asset reliability and availability by up to 25%
- Reduce maintenance costs by 20-30%
- Increase asset lifetime by 20-40%

### INCREASE YOUR PRODUCT QUALITY AND REDUCE YIELD LOSSES

- by delivering consistent product quality!
- Minimize yield losses due to reduced quality by up to 5%
  - Meet the demands of the automotive industry for high-quality products such as third-generation AHSS

### IMPROVE YOUR PRODUCTION PERFORMANCE

- and make informed decisions in real time!
- Increase production output by up to 15%
  - Lower production costs by 5-10%
  - Reduce human error by up to 70%

### SECURE SUSTAINABLE PRODUCTION

- and support the transition to achieving zero emissions and zero waste!
- Reduce CO2 by up to 25%
  - Reduce energy consumption by up to 25%
  - Reduce emissions and wastewater
  - Maintain these goals in the long term

**ASSET MANAGEMENT**  
Increase asset availability by up to 25%

> 50 references, thereof  
> 15 in Metals

**PRODUCT QUALITY**  
Minimize yield losses by up to 5%

> 60 references, thereof  
> 40 in Metals

**PRODUCTION PERFORMANCE**  
Increase production output by up to 15%

> 40 references, thereof  
> 20 in Metals

**SUSTAINABLE PRODUCTION**  
CO<sub>2</sub> reduction by up to 25%

> 30 references, thereof  
> 15 in Metals

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