

**EISENMANN**



**COIL PRETREATMENT**



THE USE OF ALUMINUM COIL IN INDUSTRIAL PRODUCTION PROCESSES IS GAINING IN IMPORTANCE. IT IS EMPLOYED IN ARCHITECTURAL APPLICATIONS, IN THE FOOD AND AUTOMOTIVE INDUSTRIES, FOR HOUSEHOLD APPLIANCES, AND MUCH MORE.

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# INTRODUCTION

Effective pretreatment of aluminum strip – comprising cleaning and activation – is key to optimizing downstream coating or processing.

Eisenmann has extensive expertise with strip pretreatment systems, boasts more than 40 years' experience, and has built over 70 plants.

The Eisenmann name stands for a profound understanding of production systems, outstanding quality and utmost reliability.

## Features pretreatment plants

- Outstanding process quality
- Maximum availability
- Minimized operating costs
- Highest environmental and safety standards

Eisenmann offers a comprehensive portfolio of system components, enabling it to provide solutions tailored to customers' specific needs and requirements.

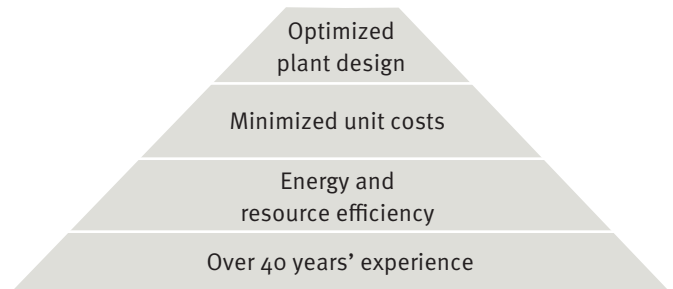
## Plant types

- Vertical spraying units
- Horizontal spraying units
- Dip pretreatment systems
- Combined plants (vertical and horizontal)
- Custom systems including electrolytic treatment and brush cleaning

When selecting the right solution for your needs, there are many factors to consider. Our engineering experts and sales staff work closely with our customers to develop the ideal option.

## Factors affecting plant design and layout

- Thickness and width of the material
- Required line speed
- Planned plant size
- Process specifications



# PORTFOLIO OF COIL PRETREATMENT PLANTS

The portfolio of pretreatment plants comprises four product groups.

PRETREATMENT	WASTE WATER TREATMENT	PAINTING	EXHAUST AIR PURIFICATION
Spray degreasing	Production of DI water	Coating booth	Exhaust air scrubber
Dip degreasing	DI water circulation system	Air make-up unit	Heat recovery
Electrolytic degreasing	Heat recovery	Paint supply to coater	Adsorption wheel
Pickling/desmutting	Waste water system	Paint dryer	Thermal oxidation
Blow-off zone	Supply of process media	Air/water cooling zone	Regenerative thermal oxidation
Anodizing	Disposal of process media		
Conversion treatment			
Dehumidified air dryer			
Mixing station for Chemcoater			



# FEATURES OF PRETREATMENT PLANTS

## Processes

- Degreasing
- Pickling, desmutting
- Conversion treatment (chromium-free, dip coating, spraying, Chemcoater)

## Made-to-measure plant design

- Compact vertical design with high line speed
- Horizontal design for thick process materials and/or low line speed
- Combination vertical/horizontal design with long process and short rinse times
- Tanks under the plant to minimize footprint

## Dehumidified air dryer

- Two-stage blow-off zone for drying (convection) and cooling (evaporative) strip before further processing
- Upstream air make-up unit ensures air in the dryer at the optimal temperature, regardless of external influencing factors
- Compact "U"-layout

## Spray tunnel

- Vapor-proof design
- Compact design
- Access areas with multiple security mechanisms

## Squeegee unit

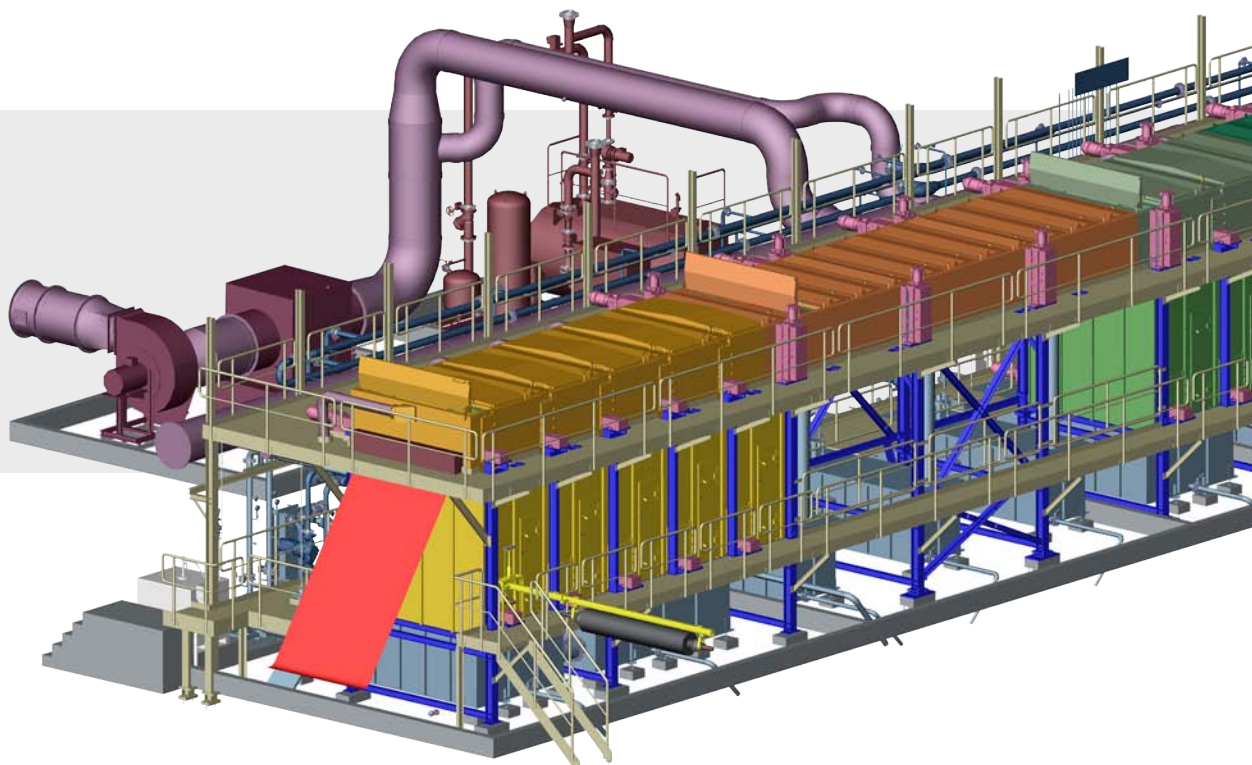
- Minimized carry-over of process fluid
- Individually controlled squeegee roller pressure prevents strip damage
- Minimized risk that strip runs obliquely

## Controlled edge blow-off

- Perfect drying of edges – even when strip width vary
- Prevention of droplet formation after final pair of squeegee rollers

## Pre-spray bars

- Minimization of water consumption, while ensuring high strip cleanliness
- Reduction of rinse zones and rollers, coupled with lower water consumption



**DI water circulation system**

- Minimization of waste water
- Can be operated without producing any waste water

**Extended service life**

- Measures to increase process bath's service life

**Control of water consumption**

- Reduced consumption of power and process media
- Minimization of waste water
- Process parameters and consumption data continuously recorded

**Energy-efficient operation**

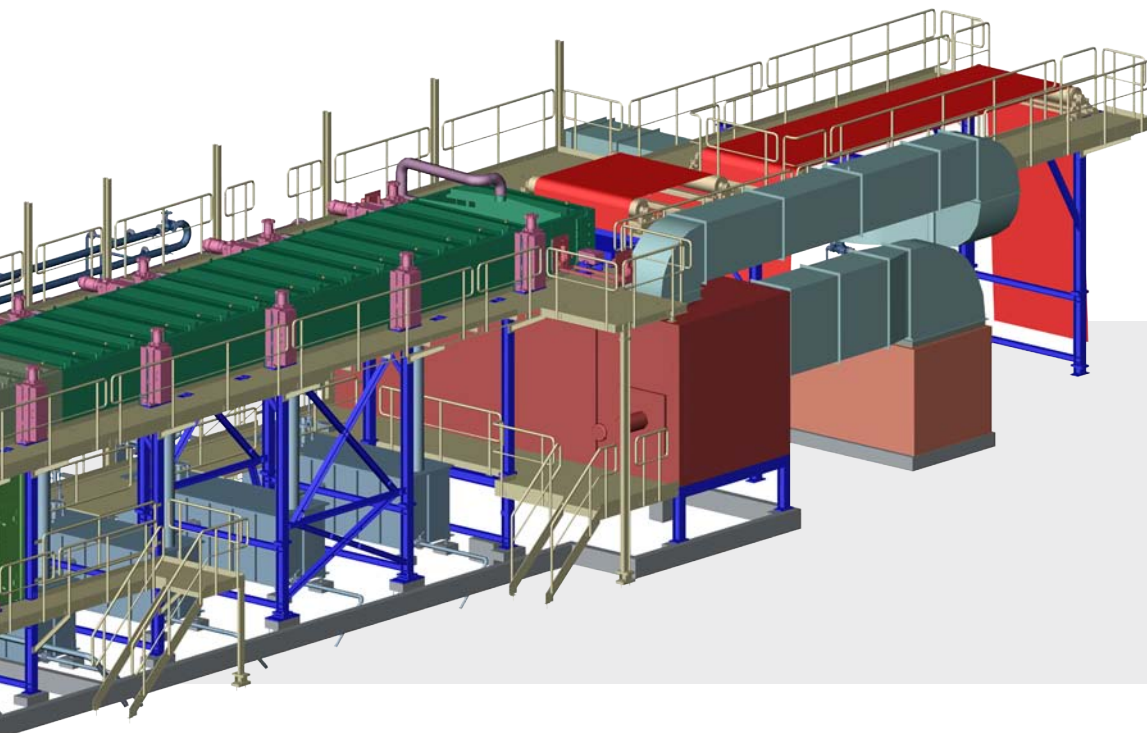
- Automated zone shutdown at reduced line speed
- Heat recovery from waste water

**Maintenance friendliness**

- Walk-through tunnel with electrically controlled doors
- Easy access via maintenance hole in tunnel ceiling
- Low-maintenance nozzles
- Simple replacement of rollers thanks to easy-to-handle spray protection cassettes

**Services**

- Comprehensive services tailored to the customer's specific needs
- Staff on call 24/7 for inspections, service, repairs and replacement parts management



# PLANT TYPES

## SPRAY ZONE, VERTICAL DESIGN

Technical data	
Line speed	max. 500 m/min
Strip thickness	0.08 - 0.5 mm
Strip width	760 - 2,100 mm
Design	
Dryer	Two vertical zones, temperature-/humidity-controlled
Areas of application	Lithographic coil cleaning, pretreatment for coating lines, pickling line for films
Deployment	For high line speed

## SPRAY ZONE, HORIZONTAL DESIGN

Technical data	
Line speed	max. 300 m/min
Strip thickness	0.15 - 3.5 mm
Strip width	800 - 2,100 mm
Design	
Dryer	Two horizontal zones, temperature-/humidity-controlled
Areas of application	Pretreatment for coating lines, pickling lines for automotive applications, pretreatment of lithographic strip (electrolytic), conversion treatment (automotive industry), spray conversion treatment
Deployment	For thick materials and low line speed



Vertical design.



Horizontal design.



## COMBINED VERTICAL/HORIZONTAL DESIGN

Technical data	
Line speed	20 - 300 m/min
Strip thickness	0.15 - 0.8 mm
Strip width	1,250 - 2,100 mm
Design	
Dryers	Blow-off zone, non-woven rollers or heated dryers
Areas of application	Pretreatment for coating lines (can coating architectural materials)
Deployment	For long process times and high line speed



Vertical/horizontal design.

## IMMERSION ZONE

Technical data	
Line speed	max. 300 m/min
Strip thickness	0.04 - 1.2 mm
Strip width	800 - 2,100 mm
Design	
Dryers	Blow-off zone, non-woven rollers or heated dryer
Areas of application	Pickling and degreasing for films, pickling of copper strip, conversion treatment



Immersion zone.

# THIS IS EISENMANN

Eisenmann designs and builds plants for surface finishing, material flow automation, environmental technology, firing lines for ceramics and special installations for coating, recycling, thermal treatment and energy recovery.

Approximately 3,600 employees worldwide, half of them engineers or technicians, develop new ideas in the areas of production, painting, assembly and distribution. Among them are experts and specialists with solid knowhow in various areas of expertise and industry sectors. This is an advantage that results in customized concepts with state-of-the-art technology and a high degree of economic efficiency.

Another result of our efficient production and assembly strategies: Our production centers are tailored to the individual requirements of our customers. We design a plant configuration especially adapted to your needs.

When complex systems are involved, we assemble the entire plant in our factory before delivering it, and we put the system to the acid test. Only when the preassembled function modules have passed the test run will they be handed over to the customer. This method saves considerable time and cost for assembly and commissioning on site and enables the installation in your plant without even interrupting your production process.

Of course, we will assist you after commissioning at your demand: Our Aftersales Service provides professional maintenance, short repair times and immediate provision of spare parts.



*Eisenmann technology center in Holzgerlingen.*



# NOTES

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# EISENMANN

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