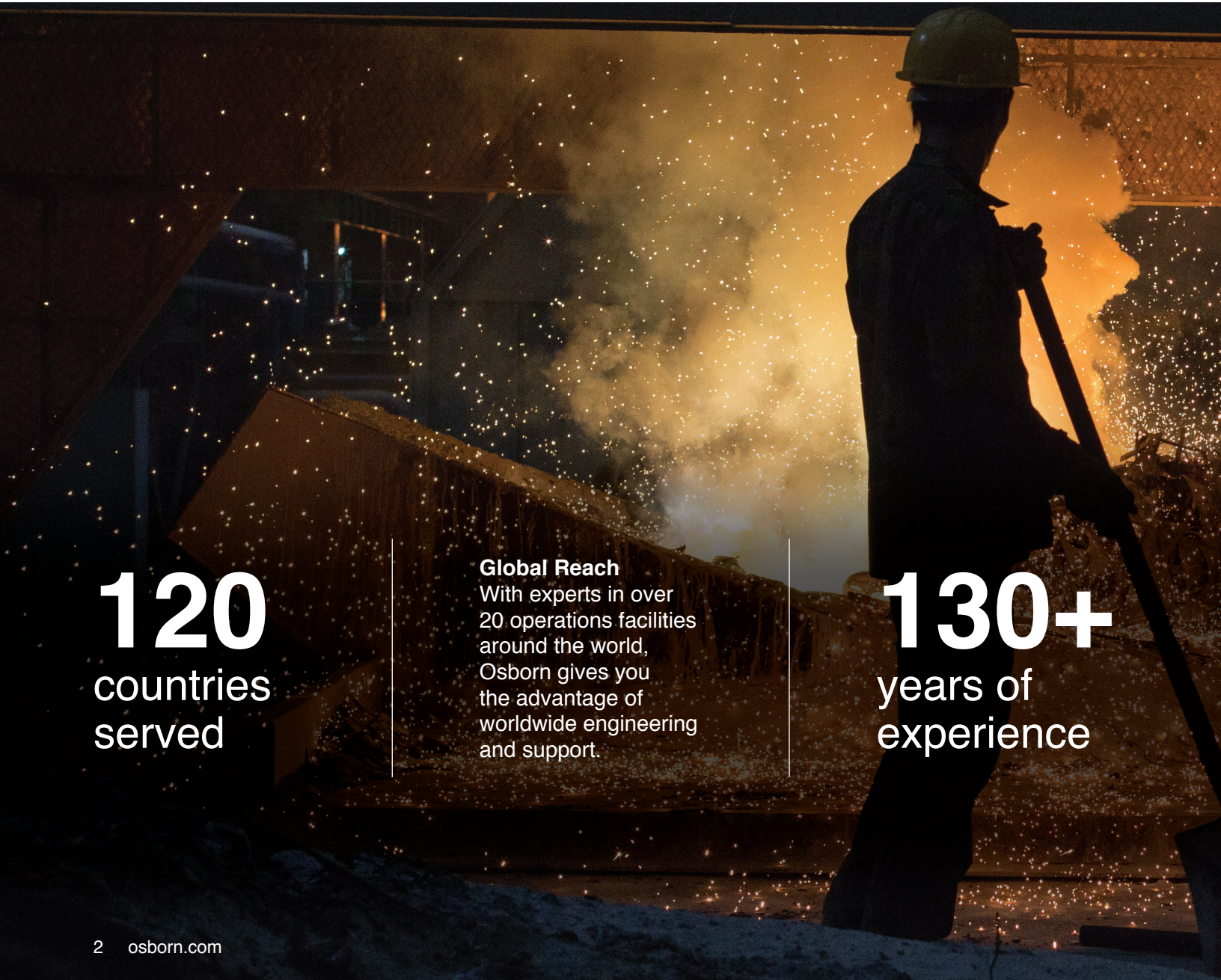


Roller Technologies

Roller Brushes for Every Need

From start to finish, Osborn has your back with trusted solutions.

Osborn is the global leader in surface treatment and finishing solutions, providing both world-class products and proven-results process expertise. We are proud to offer the industries most extensive portfolio of roller technologies to increase efficiency and reduce costs.



120
countries
served

Global Reach
With experts in over 20 operations facilities around the world, Osborn gives you the advantage of worldwide engineering and support.

130+
years of
experience

Our experts are ready to pair optimal roller configurations for your specific application, allowing you to achieve optimum results and eliminate costly surface contamination challenges from your processes.

Best in Class

Fueled by a passion for finding new solutions, Osborn holds more patents on products and processes than all competitors combined.

1,250
experts at
the ready

Vast Experience

Our successes in vertical markets and various industries brings unmatched expertise to every customer project.



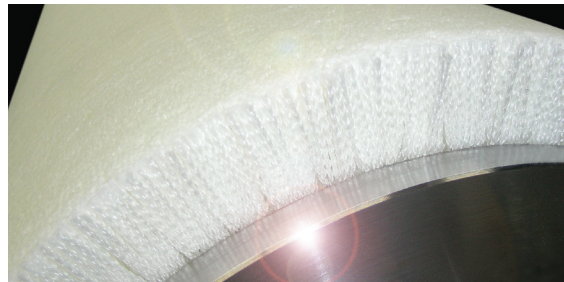
BRUSH ROLLS

Setting the new standard.

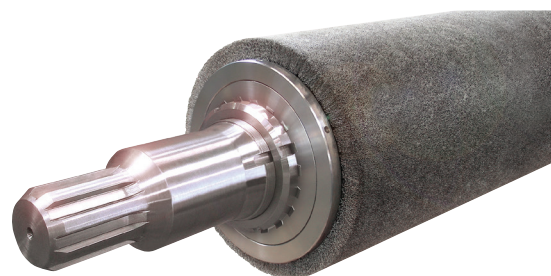
Osborn offers multiple types of expertly designed brush rolls for various stages of the manufacturing process. HDL® brush rolls raise the bar on degreasing and cleaning strip surfaces, meeting rigorous technical requirements and exceeding quality standards. Helimaster® brush rolls are ideal for cleaning and as back-up rolls in wet or dry operated rolling and skin pass mills, removing oxides, dirt and rolling residuals. Brush rolls are designed to improve repeatability, increase process times and enhance the quality of the final product.



HDL Premium Brush Rolls excel in the cleaning, descaling and strip surface finishing for all metal sheet and strip processing lines. Designed for precision brushing control for both uniform surface finishing and brush wear. Provides superior cleaning performance deep into the strip surface. High-contact density for longer brush roll life and reduced maintenance costs.



Standard Brush Rolls are an economical choice for that provides cleaning, descaling, deburring and scratching in metal sheet and strip processing lines. Offers good brush life and flexibility based upon application needs.



Helimaster Premium Brush Rolls are available with high density wire or abrasive bristles in brush rolls up to 20 feet long. Ideal for roll coating control in hot and cold rolling mills, roll cleaning and scratching. Offers precision brushing control and long life. Customized brush material available (dependent on customer's setup and back-up rolls).

BRUSH ROLLS

HDL – General Information

Degreasing, Washing and Cleaning

Metallurgic Field	Process Line	Description of Application
Carbon Steel	<ul style="list-style-type: none"> • Continuous Hot-dip Galvanizing Line • Continuous Annealing Line • Cleaning Line/Degreasing Line • Electrolytic Tinning Line 	<ul style="list-style-type: none"> • Removal of oil, grease, other protective coatings • Rolling residue or dirt from the strip/sheet surface
Stainless Steel	<ul style="list-style-type: none"> • Hot Annealing & Pickling Line • Cold Annealing & Pickling Line • Bright Annealing Line • Cleaning Line 	
Aluminum	<ul style="list-style-type: none"> • Tension Level Line • Slitting/Cross Cutting Line 	
Non-ferrous	<ul style="list-style-type: none"> • Cleaning Line • Descaling Pickling Line • Annealing Pickling Line • Continuous Pickling Line 	

Activation of Strip Surface

Metallurgic Field	Process Line	Description of Application
Carbon Steel	<ul style="list-style-type: none"> • Continuous Pickling Line • Color Coating Line • Electrolytic Galvanizing Line • Electrolytic Tinning Line 	<ul style="list-style-type: none"> • Strip surface activation prior to coating
Aluminum	<ul style="list-style-type: none"> • CRM • HRM • Finishing Line 	<ul style="list-style-type: none"> • Strip, sheet or plate surface preparation prior to cladding, coating or pressing
Non-ferrous	<ul style="list-style-type: none"> • Pickling Line • Annealing Line 	<ul style="list-style-type: none"> • Strip, sheet or plate surface preparation prior to cladding, coating or pressing

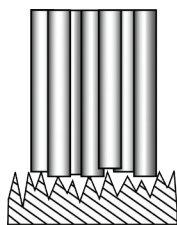
Strip Polishing and Finishing

Metallurgic Field	Process Line	Description of Application
Carbon Steel	<ul style="list-style-type: none"> • Oxide removal, polishing and finishing of hardened and tempered strips 	<ul style="list-style-type: none"> • Oxide removal, polishing and finishing of hardened and tempered strips
Aluminum		
Non-ferrous	<ul style="list-style-type: none"> • Oxide removal, polishing, finishing and generating decorative surfaces 	<ul style="list-style-type: none"> • Oxide removal, polishing, finishing and generating decorative surfaces
Stainless Steel	<ul style="list-style-type: none"> • Polishing Line • Finishing Line 	<ul style="list-style-type: none"> • Micro Particles Removal

Scale Removal

Metallurgic Field	Process Line	Description of Application
Carbon Steel	• Continuous Pickling Line	<ul style="list-style-type: none"> • Heavy duty descaling prior to acid pickling • Heavy duty descaling between acid tanks
Stainless Steel	• Hot Annealing Pickling Line	
Non-ferrous	• Hot Reserving Mill	• Scale and dirt removal prior to rolling

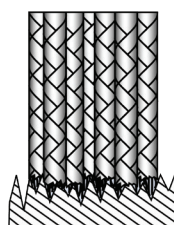
Comparison Conventional Brush vs. Osborn HDL



Standard Brush Rolls

(Mono-Filament)

- Imprecise Brushing
- Low Cleaning Performance
- Short Lifetime
- Low Contact Density
- Irregular Brushing



Osborn HDL

(Multi-Filament)

- Very Precise Brushing
- High Cleaning Performance
- Long Life
- High Contact Density
- Even Brushing

Helimaster – General Information

Degreasing, Washing and Cleaning

Metallurgic Field	Process Line	Description of Application
Aluminum	<ul style="list-style-type: none"> • Skin Pass Mill • Temper Mill • Continuous Hot-dip Galvanizing Line 	<ul style="list-style-type: none"> • Removal of oxides, dirt and rolling residuals
Stainless Steel	<ul style="list-style-type: none"> • Skin Pass Mill • Temper Mill 	
Non-ferrous	• Cold Rolling Mill	

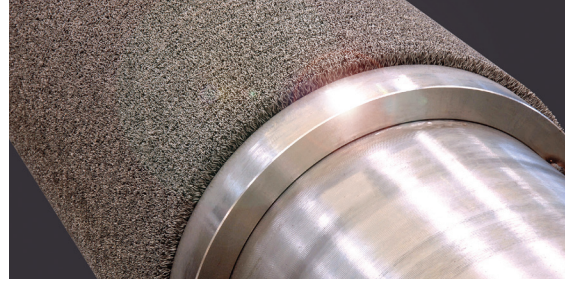
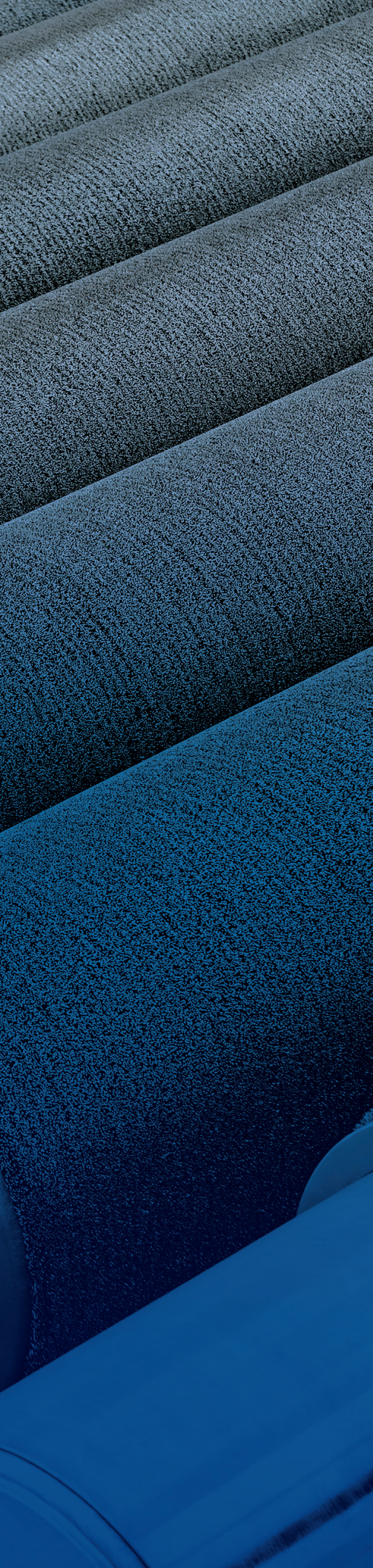
Roll Coating Control

Metallurgic Field	Process Line	Description of Application
Aluminum	<ul style="list-style-type: none"> • Hot Reversing Mill • Hot Reversing Finishing Mill • Hot Finishing Mill 	<ul style="list-style-type: none"> • Control of the oxide layer and removal of oxides
Non-ferrous	• Hot Continuous Mill	

FURNACE ROLLS

Follow the leader.

With decades of experience collaborating with leading equipment manufacturers, Osborn brings unmatched application expertise to the design and manufacturing of furnace rolls. Our furnace rolls are an important part of our global customers' complex metal technology processes and are designed to perform under rigorous conditions in continuous processes up to 1,300°C. Beyond manufacturing, Osborn extensively tests rolls to ensure proper sheet tracking. The entire furnace zone is tested. Tracking is simulated on an in-house test system to guarantee optimal performance when installed in new furnace lines. In addition, these rolls can be recovered when worn.



Furnace Rolls – Aluminum designed specifically for Aluminum Plate Solution Heat Treatment Furnaces, offering controlled tracking and eliminating marking. Unique construction reduces noise and provides a longer roll life.



Furnace Rolls – Carbon Steel the premium choice for Carbon Steel Annealing Furnaces (CAL and CGL) that offers a higher wear resistance compared to ceramic and eliminates the challenge of ceramic particle detachment. Designed to prevent pickup or indentation and with improved zinc adhesion.



Furnace Rolls – Electrical and Stainless Steel designed for electrical steel annealing furnaces for GO or NGO (ACL and DCL) stainless steel furnaces (CAPL and BAL). Offers higher wear resistance compared to ceramic or graphite and eliminates the issue of particle detachment. Prevents cover oxidation, pickup or indentation. Design features improved shaft deflection and better magnetic and isolation properties. Substantially longer life compared to ceramic discs.

FURNACE ROLLS

Benefits

Osborn furnace rolls are designed to provide optimum tracking through the furnace and prevent both scale pick-up and spot formation on the surface of the roller. By utilizing wire at the contact surface, rollers have an open face versus the solid face of ceramic or solid steel rollers that can cause defects on the strip. These advancements offer resistance to aggressive conditions, allowing steel companies the time and flexibilities to develop and produce new grades of steel. Osborn's roller designs results in increased strip production, reduced quality issues and substantial cost savings in maintenance.



Osborn Furnace Roll



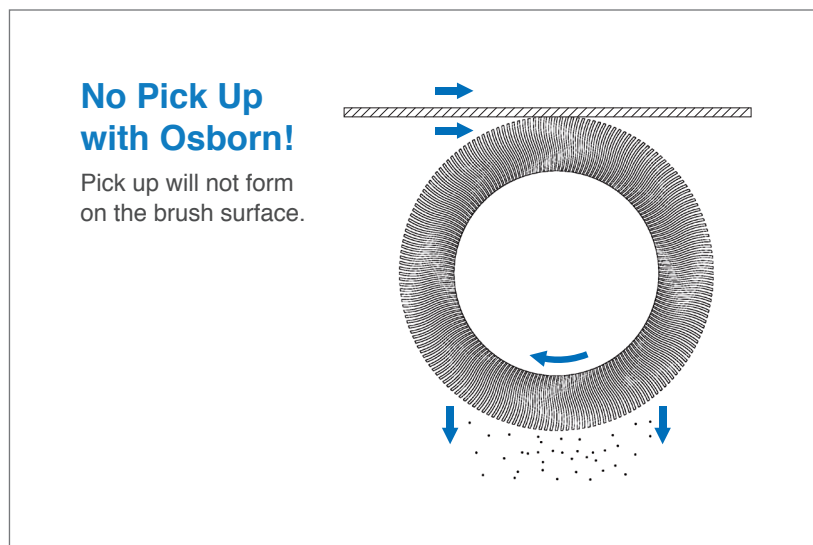
No Pick Up



Conventional Furnace Roll



Pick Up Problems



General Information

Transport roll systems for horizontal heat treatment furnaces

Metallurgic Field	Description of Application
Aluminum	<ul style="list-style-type: none"> • Transportation of hot plates through the heat treatment process • Optimized heat transfer • Avoidance of transport roll pick-up and surface damages

Transport roll systems for high temperature applications

Metallurgic Field	Description of Application
Carbon Steel	<ul style="list-style-type: none"> • Transportation of high temp strip • Avoidance of transport roll pick-up and surface damages
Stainless Steel	
Non-ferrous	

Properties and Benefits

- Temperature resistant up to 1300°C
- Shaft construction for dry roll or internally cooled roll
- Extremely dense and accurate neutrally ground surface
- No scale pick up (formation of spots) due to the absorption properties of the exposed brush surface
- Reduced maintenance
- Precise transportation of the plates and reduced damager to the surface
- Lower roll wear results in significantly longer life than ceramic coatings or other roll coatings

Capacity Optimization Older Furnace Installations

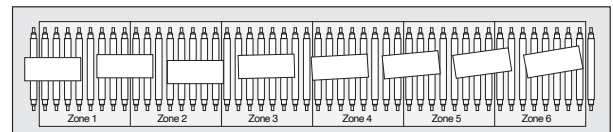


Plate tracking in initial state

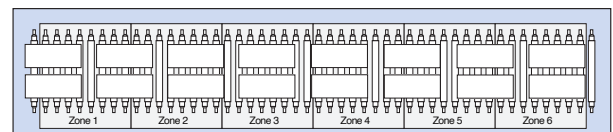
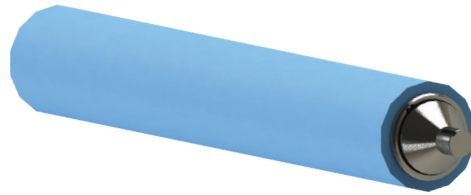


Plate tracking after optimization per Osborn recommendation

NON-WOVEN ROLLERS

When performance matters.

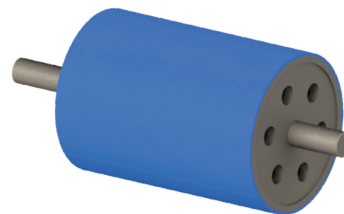
Neutral Mill Rolls are general-purpose, non-woven roll coverings used for primary metal and original equipment manufacturer (OEM) stamping operations. The rolls are constructed to be compressible to provide consistent, continuous contact for uniform wringing action. This reduces the need for additional drying, in turn reducing costs. When compared to rubber or urethane rolls, non-woven rolls have a significantly greater coefficient of friction to reduce metal coil slippage.



Neutral Non-woven Rolls ideal for wringing, oiling, tension/break, snubber, bridle, cradle, deflector, pinch/feeder and table/conveyor. Provides reduced replacement, inventory and maintenance costs as well as a reduction in fluid usage, staining and defects on the roll, ultimately increasing line uptime and speed.



Chemical Non-woven Rolls designed for resistance of chemical solutions. Reduces fluid contamination and fluid usage. Decreases overall replacement, inventory, maintenance and fluid costs.



Bridle Non-woven Rolls preferred for tension/break, bridle and deflectors. Increase line speed and tighten process control with reduced strip slippage. Also reduces maintenance, replacement and inventory costs.

NON-WOVEN ROLLS

General Information

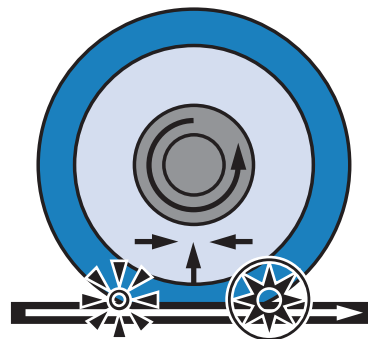
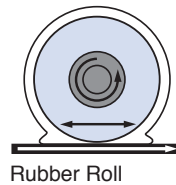
Comparison – Rubber rollers vs. Non-woven rollers

Rubber Rollers	Osborn non-woven rollers
Short life – Non compressible, susceptible to cuts, causes more downtime	Long life – Compressible resists cutting for more uptime
Can limit line speed due to hydroplaning because of non-porous, closed surfaces	Line speed – Porous, open surface for consistent strip contact can allow higher line speeds
Non-repairable	Repairable for better return on investment
Cuts propagate causing excessive fluid pass-through and reduced life	Self-healing for superior fluid control
Low coefficient of friction on wet/oiled surface conditions	High coefficient of friction on many surfaces, even wet, for better strip control

Material Compressibility of Non-woven

Unlike conventional rubber rolls, non-woven rolls are compressible. This allows focused pressure to be applied to the nip area resulting in higher performance.

1. Non-woven material compresses which results in damming effect, liquid is absorbed into roll cover due to capillary action
2. Nip area stays compressed and completely sealed
3. Non-woven material decompresses, resulting in absorption of excess fluid; thin, consistent and determinable film is left on the sheet surface; precise film thickness can be determined by material density and roll pressure



Non-woven Rolls can be used in all strip lines or rolling mills for steel, stainless steel, aluminum and non-ferrous metals. They include:

- Hot-dip galvanizing lines
- Continuous annealing lines
- Annealing and pickling lines
- Cold rolling mills
- Skin-pass mills
- Color and/or organic coating systems
- Electrolytic galvanizing lines
- Cleaning or degreasing lines

and a whole range of other types of lines. They also significantly contribute to improving product and process quality.

Just Better

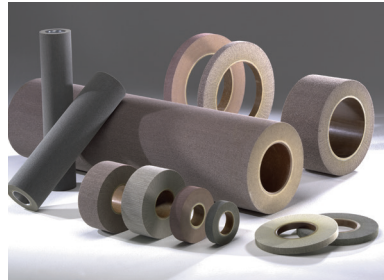
Compared to felt wipes, rubber or cork, Neutral Non-Woven Rolls offer:

- Longer life
- Better cleaning, “scrubbing” and wiping action
- Easier operation
- Best value

NON-WOVEN ABRASIVE ROLLS

Proprietary solutions for every application.

By varying abrasive content and construction, we are able to produce a wide range of roller options. Expertly matching grit and synthetic fiber grades produce an open, flexible structure. The material is self-dressing and suitable for wet and dry processes. New abrasive particles are continually exposed to the surface for a consistent and uniform finish. An absolutely uniform fine final grind and a corresponding homogeneous surface finish can be achieved with the special web construction. With the correct contact pressure, the flexible roller web adapts to the surface offsetting any slight surface irregularity.



Lipprite® is ideal for surface cleaning, oxide removal, decorative finishes and light deburring. Constructed to provide regular wear over the entire surface for consistent performance. Flap density influences product hardness and its ability to adapt to different shapes. Available in a variety of sizes and non-woven abrasive grades depending on application and desired finish. Additionally, Osborn has developed special treatments for Lipprite® that increase the abrasive effect and provides extended service life. For use for metal working and plastic.



Lipprox® is designed specifically for deburring, coil cleaning prior to coating, and precision oxide removal. The convolute construction of the non-woven abrasive web gives Lipprox® unmatched consistency and precision when used with Osborn specially developed foams, offering higher performance and longer life versus comparable flap rollers. Can be used in both wet and dry operations, as well as wood industry profile work requiring dust removal.

NON-WOVEN ABRASIVE ROLLS

General Information

Coverings and Material Specifications

Roughness values vary depending on diameter, pressure, cutting speed, feeding speed, density. Treatment with synthetic resin stiffens the LIPPRITE® Roller improving performance and extending its suitability for a range of applications.

Aluminum Oxide Abrasive Grain (Al2O3)

A2	coarse	CRS	Grit 80
A4	medium	MED	Grit 100
A6	fine	FN	Grit 180 (240)
A7	very fine	VFN	Grit 280 (320)

Silicon Carbide Abrasive (SiC)

S4	medium	MED	Grit 100
S6	fine	FN	Grit 180 (240)
S7	very fine	VFN	Grit 280 (320)
S8	super fine	SFN	Grit 500
S9	ultra fine	UFN	Grit 600 (800)
S10	micro fine	MFN	Grit 1000 (1200)

Application Recommendations

Please ask our application engineer for the optimized set-up and operational parameters for your application.

Technical Data and Characteristics

- Standard roller width up to 2.65 m
- Standard roller diameter up to 450 mm
- Versions available with or without impregnation
- Rollers are dynamically balanced in accordance with DIN EN ISO 1940
- Oversized rollers can be made per customer request

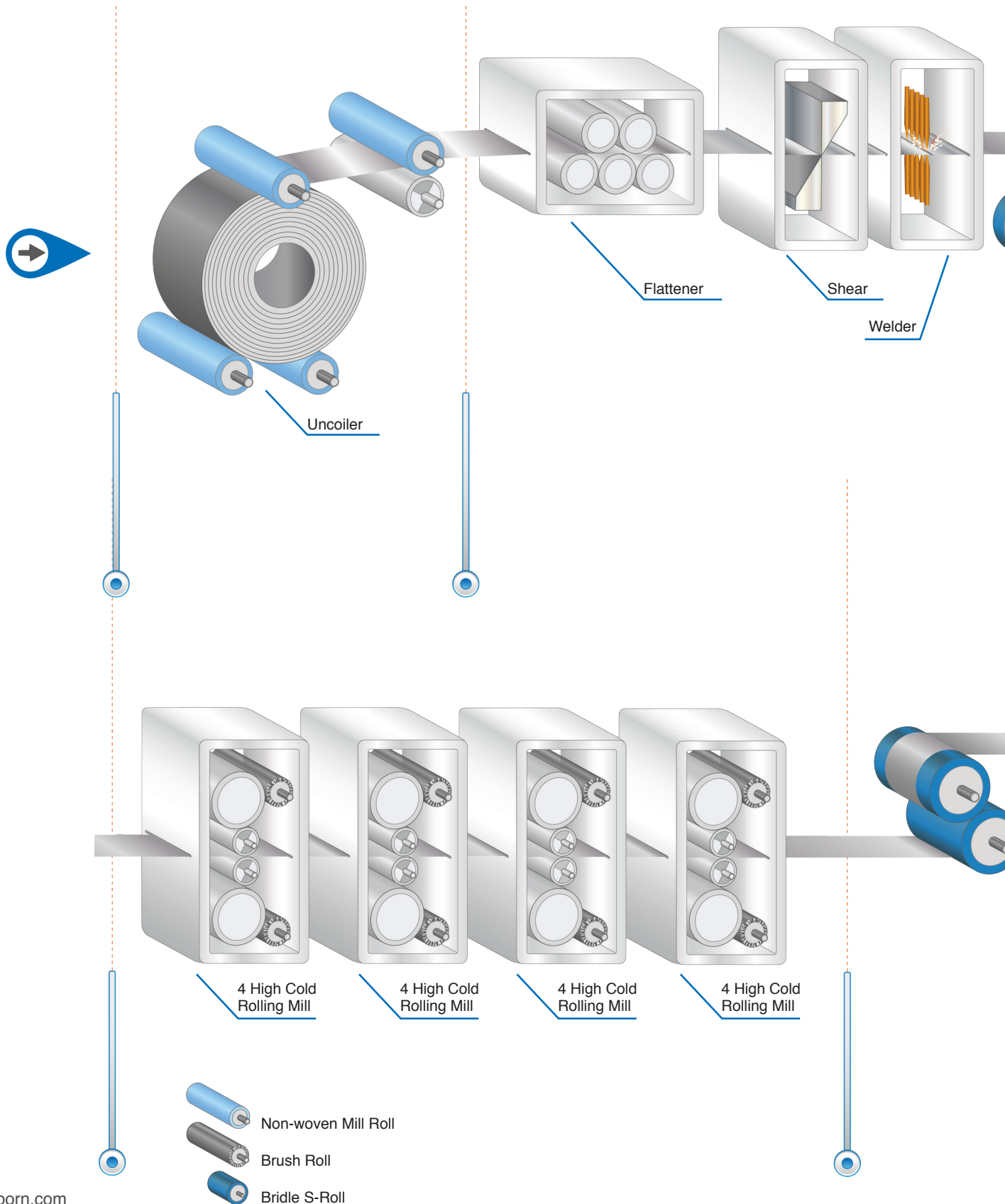
Metallurgic Field Process Line

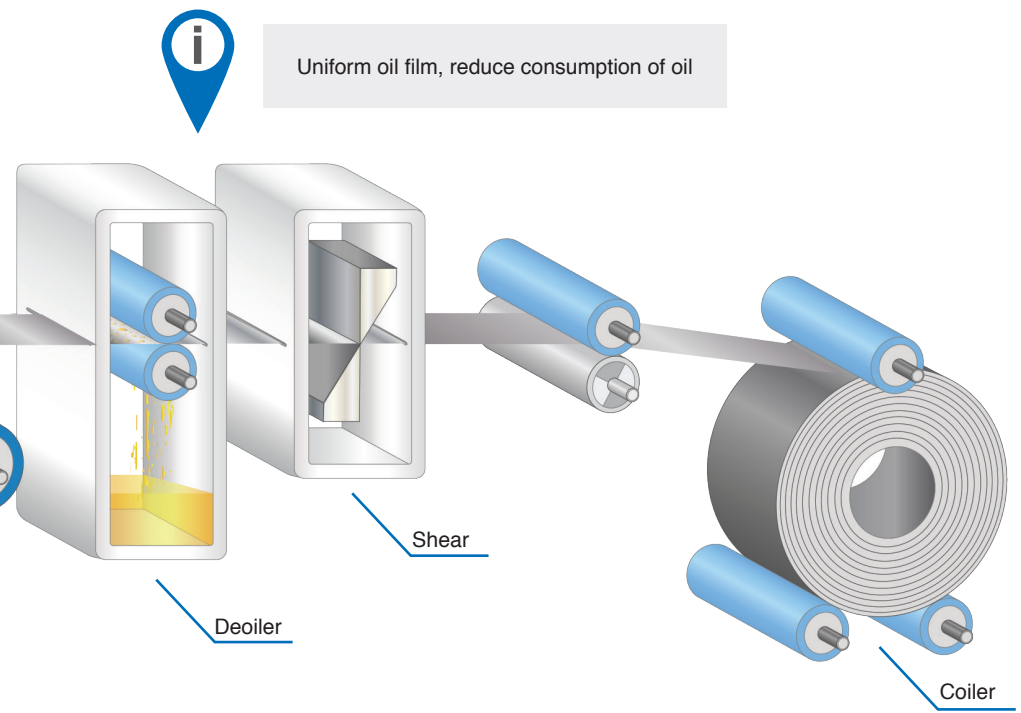
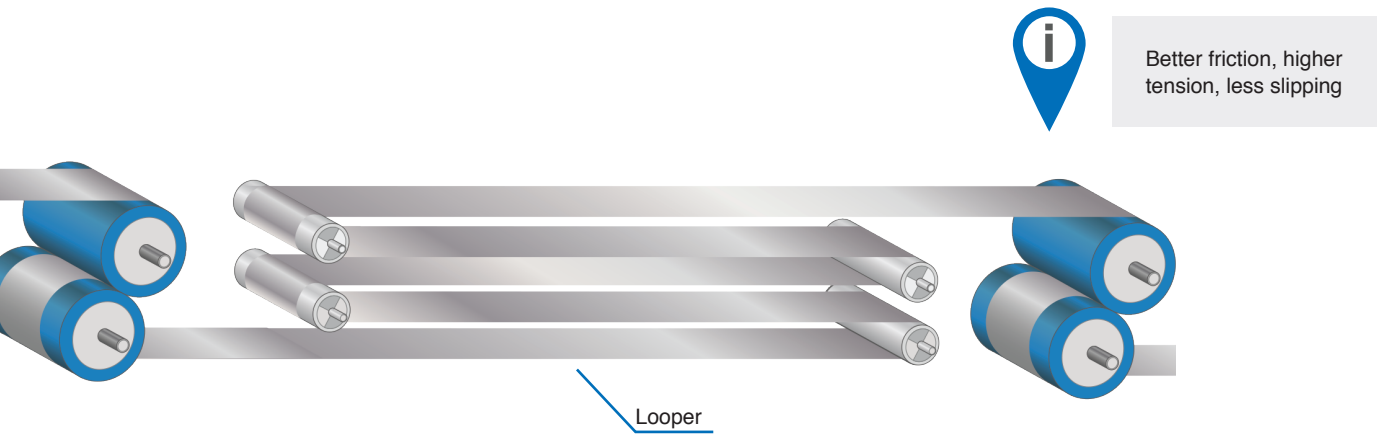
Metallurgic Field	Process Line
Aluminum	Finishing Line
Carbon Steel	Continuous Annealing Line/Skin Pass Back Roll Polishing Continuous Galvanizing Line/Skin Pass Back Up Roll Polishing Continuous Coating Line Finishing Line
Copper Brass	Annealing and Pickling Line Finishing Line

We will be happy to advise you! Osborn non-woven abrasive rolls are available in a variety of sizes with Osborn-developed treatments specific to your application. Contact us at marketsupport@osborn.com to speak with our experts!

PROCESS LINE EXAMPLES

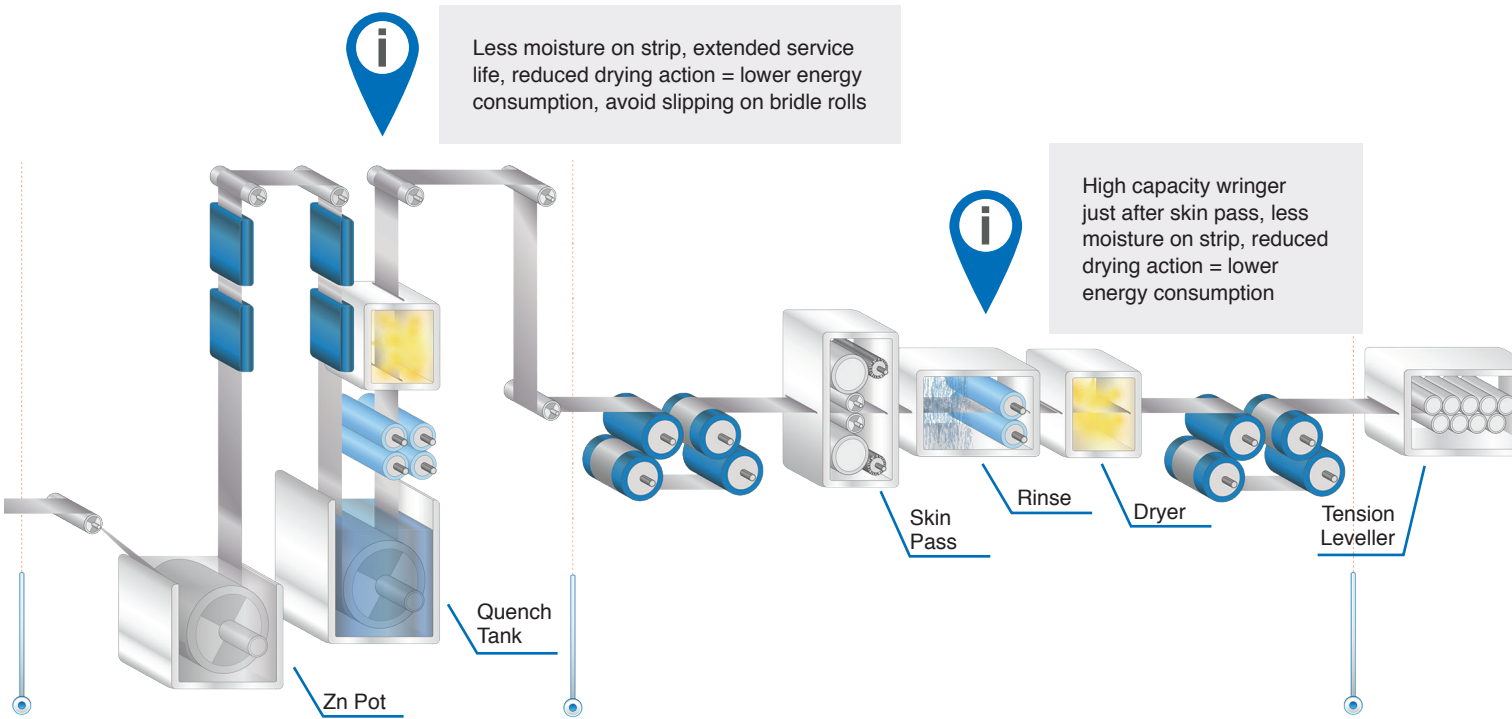
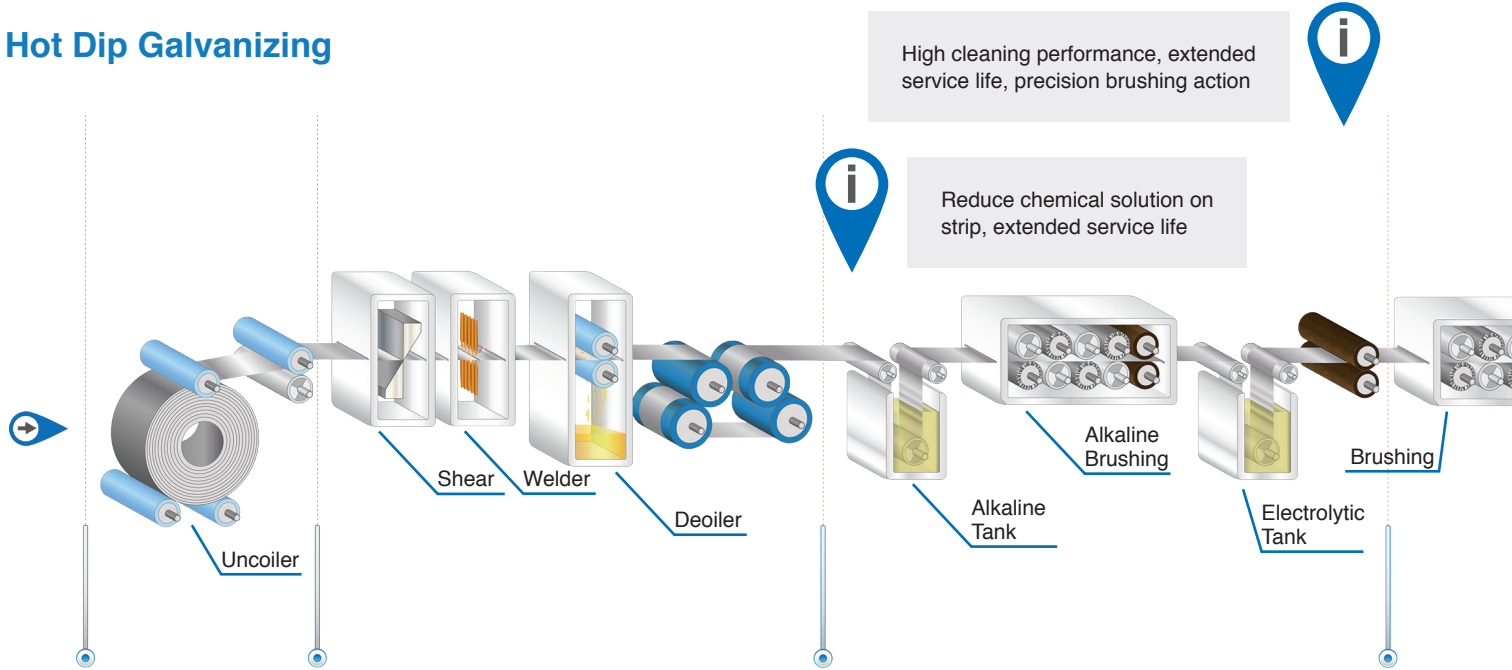
Hot and Cold Rolling Mill







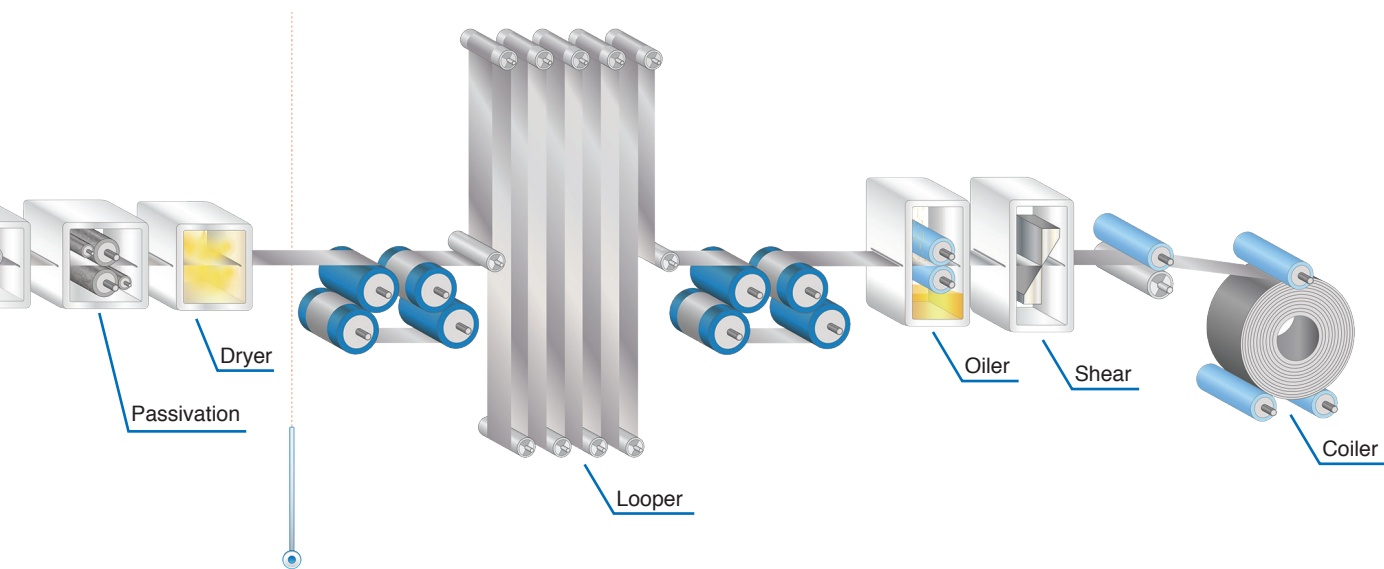
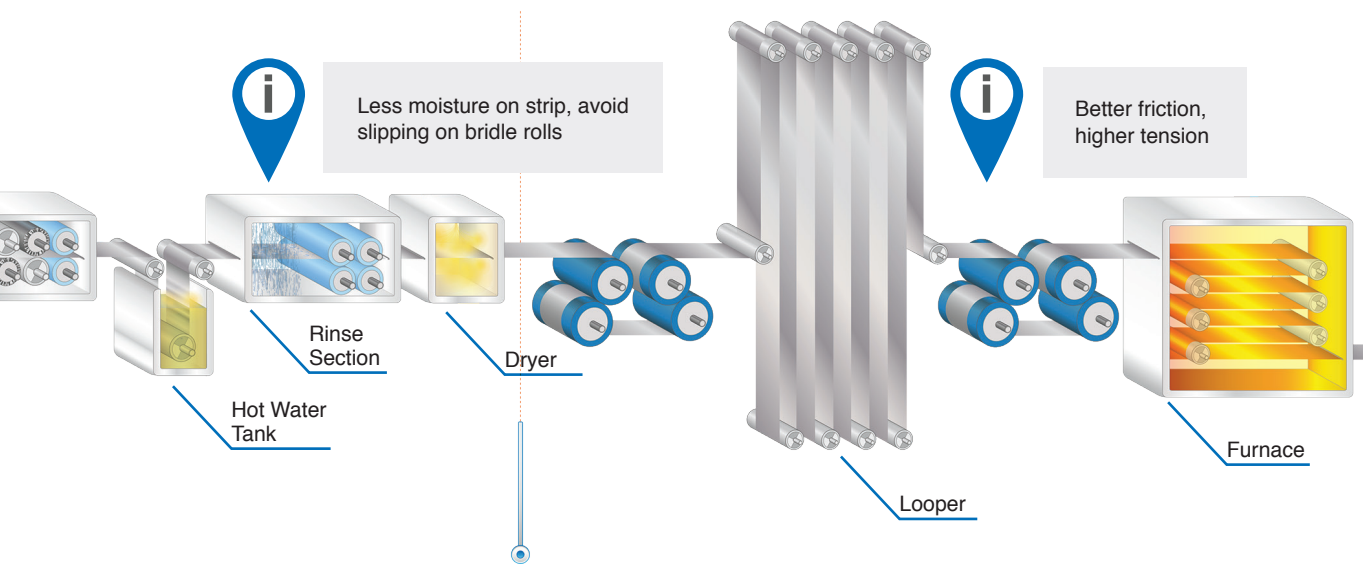


PROCESS LINE EXAMPLES

Hot Dip Galvanizing

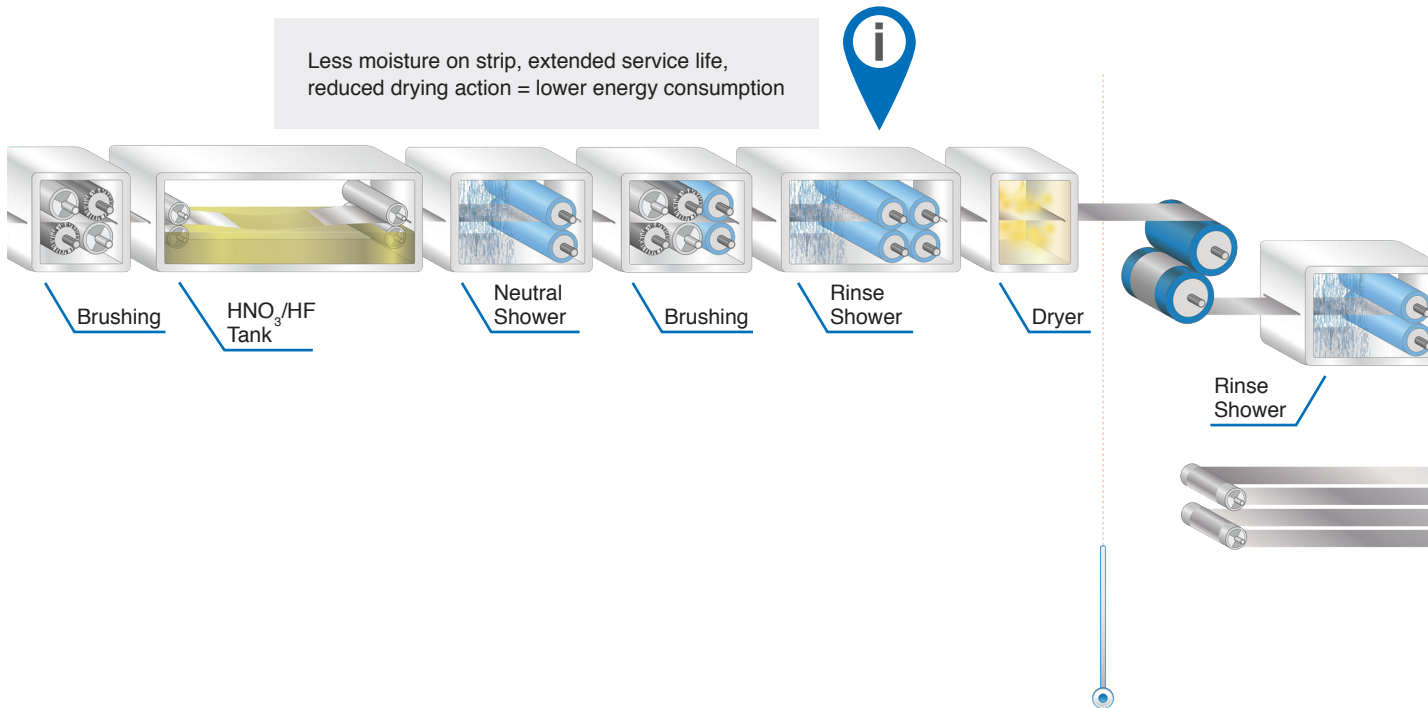
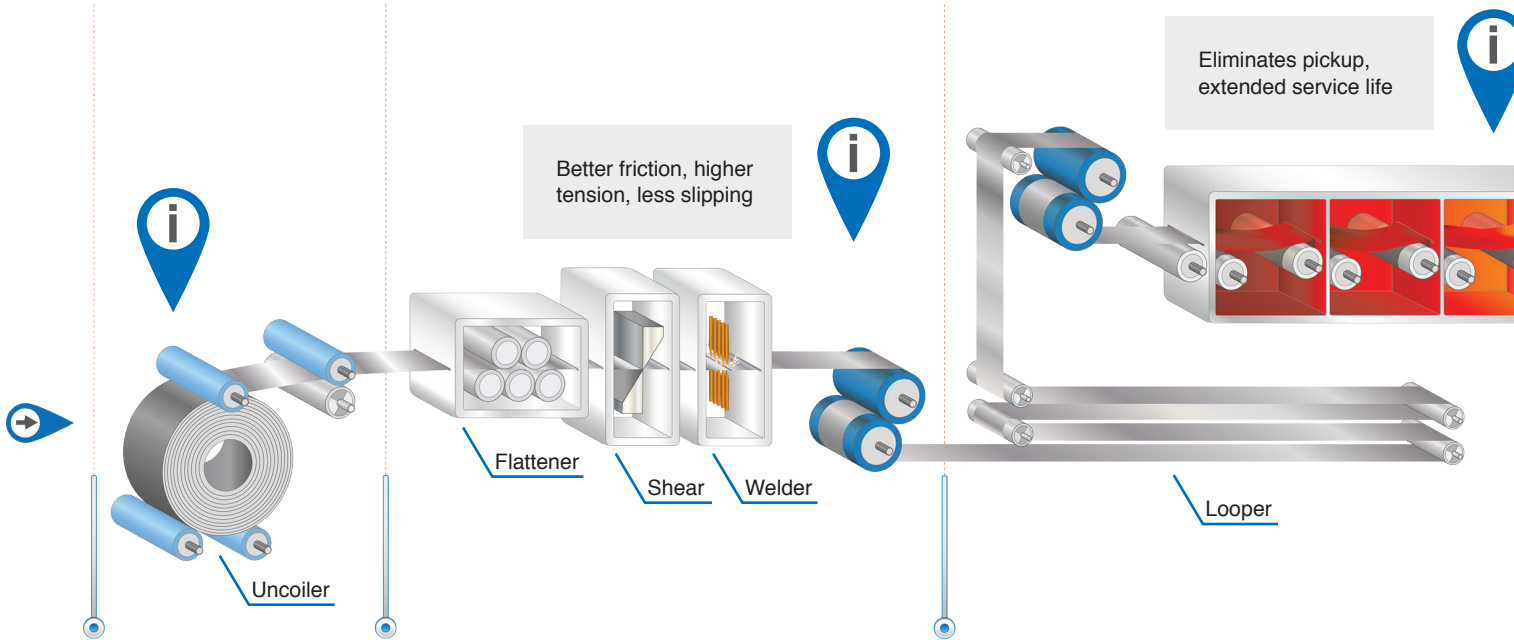





-  Non-woven Mill Roll
-  Brush Roll
-  Bridle S-Roll
-  Chemical Non-Woven Roll

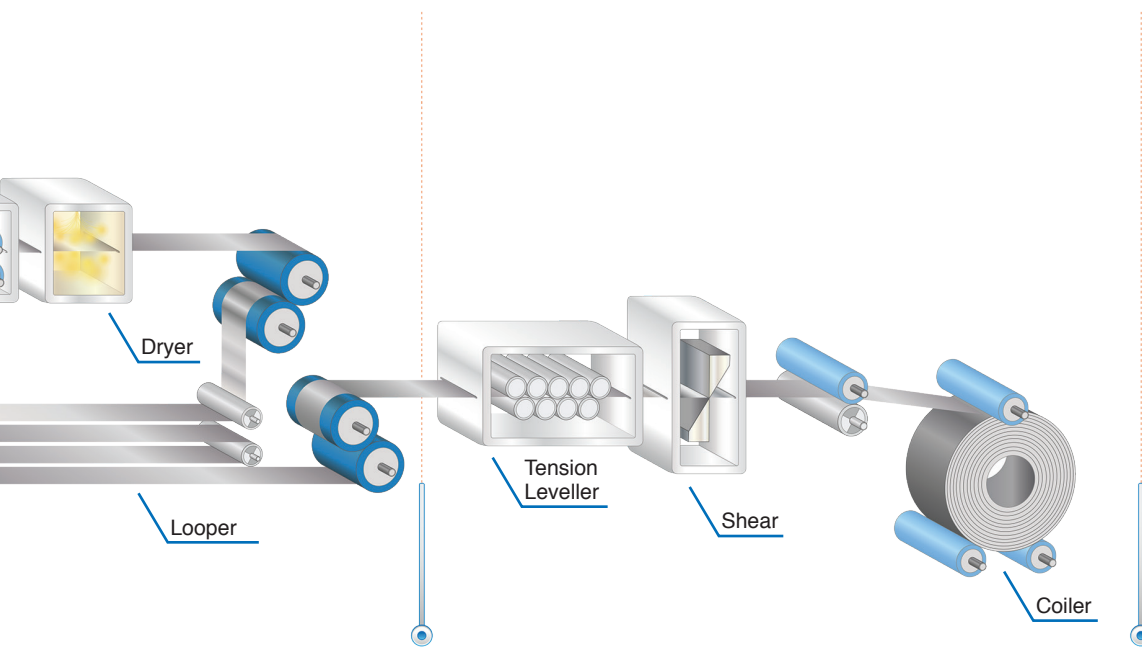
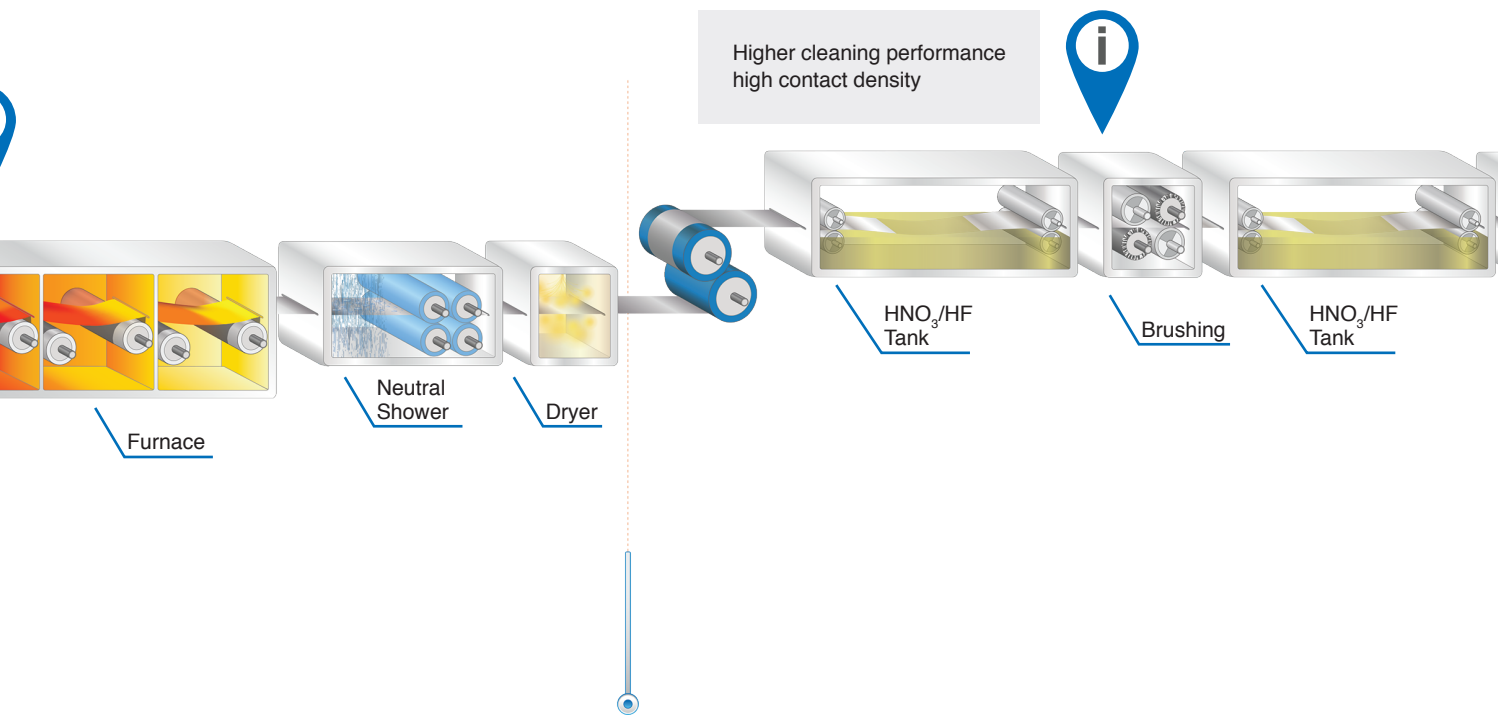


PROCESS LINE EXAMPLES

Hot or Cold Annealing & Pickling



-  Non-woven Mill Roll
-  Brush Roll
-  Bridle S-Roll



A close-up photograph of a metal roller, likely used in a manufacturing process. The roller has a textured surface with many small, rounded protrusions. The lighting is dramatic, with a bright light source from the left creating a strong highlight on the metal edge and casting deep shadows on the textured surface. The background is dark and out of focus.

Eliminate waste.

Specially engineered rolls eliminate costly surface contamination. These long lasting rolls shed contaminants before they can damage the surface of the sheet.



[osborn.com](https://www.osborn.com)