

Roller Technologies

EXPECT MORE



From start to finish, Osborn has your back.

As the global leader in surface treatment and finishing solutions, Osborn knows that it's about more than just a product. With Osborn, you have a partner; an expert in your field that is dedicated to providing you the right solutions to do the job at hand better, faster, and safer.



Robert Calabuig
VP Roller Technologies

Dear Customer,

since Osborn's inception in 1887, success has always been about ensuring that you finish first. Whether it was last century, last week or in the last hour, customers like you need the right solutions and count on us.

Engineering expertise and manufacturing skills are what set the Osborn brand apart.

People experienced in surface treatment solutions and finishing tools, collaborating with customers to achieve optimum results. Matching tough finishing problems with the right solutions when and where you need them.

In addition to more than 10,000 standard products sold in more than 120 countries, we offer local support throughout the world. So, no matter where you or your customers are located, you will always have access to Osborn application expertise and the industry's best, most practical solutions.

When you start with Osborn, you finish first.



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The image is a full-page background photograph with a blue color overlay. It depicts industrial machinery, likely a paper mill or textile loom. On the right side, there are several large, horizontal rollers or spindles. On the left side, there is a complex arrangement of electrical wiring, cables, and control boxes. The overall scene is industrial and technical.

Brush Rolls



HDL

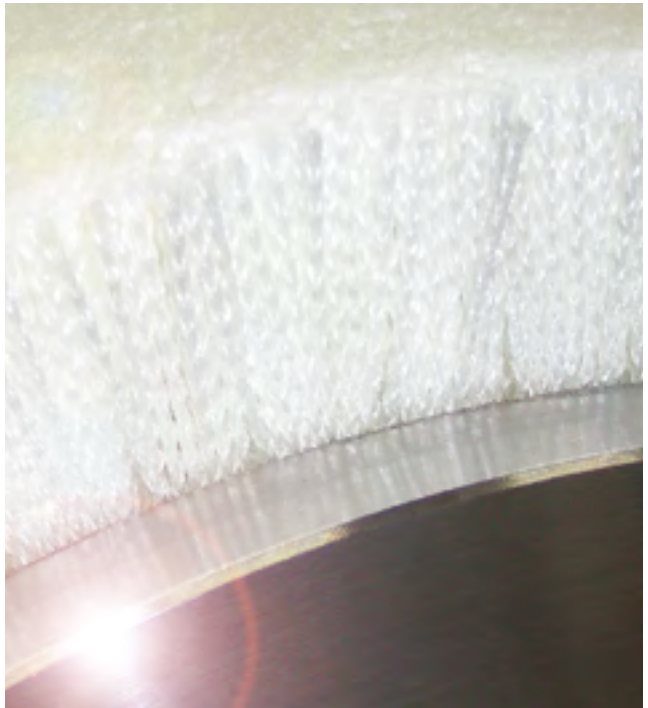
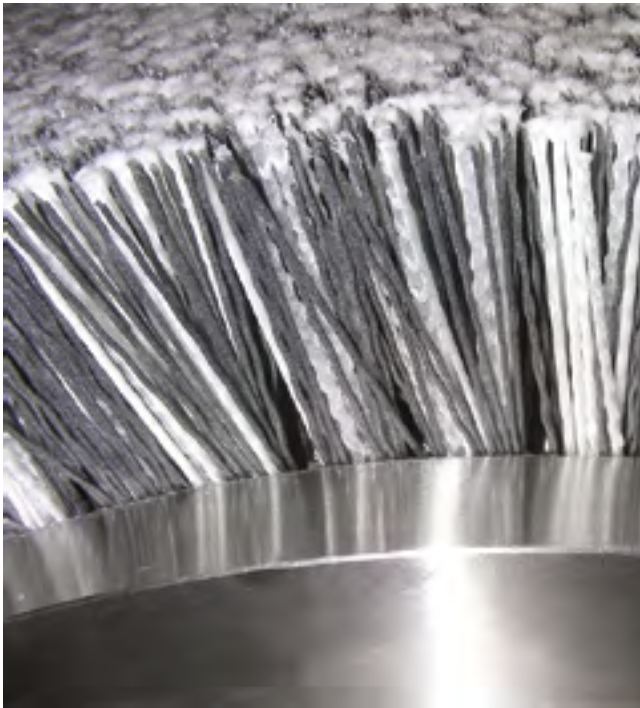
APPLICATION

The demands relating to the quality and the technical product characteristics of flat rolled steel in the form of cold rolled steel, tin plated steel, electrical steel, galvanized strips or other refined surface materials are steadily rising. Along with increasing processing speeds, optimising the tempering, refinement or coating process of the upstream strip cleaning section also increases.

With the development and introduction of the HDL® brush roller, Osborn has found an answer to these demands, in comparison to conventional brush rollers. HDL® sets new standards in the degreasing and cleaning of strip surfaces. Through the consistent development of quality, by looking at fill material, brush construction and fill density, we achieve significant improvements in terms of the brush lifetime / cleaning performance. This results in reduced operating and maintenance costs for our customers.

For descaling strip surfaces after hot and cold mill processes, our brush rollers have been setting standards for years. OSBORN's developments and innovations in both brush constructions and filaments have in set the international standards in annealing and pickling lines or bright annealing lines for stainless steel strip.

With the development of acid resistant fill materials, it has been possible to achieve tremendous quality and improvements relating to service life on numerous strip lines. This results in substantial reduction of total cost for our customer. The parallel optimisation of the brush / shaft design and operational parameters through targeted assistance on site is another important Osborn competence based on our long-standing worldwide experience. Give us a challenge!



SOLUTIONS

HDL Premium Brush Rolls

Cleaning, descaling and strip surface finishing for all Metal Sheets and Strip Processing Lines

- very precise brushing control
- high cleaning performance deep in the strip surface roughness
- very long life-time
- high-contact density
- uniform surface finishing
- very uniform brush wearing
- reducing maintenance costs

Standard Brush Rolls

Cleaning, descaling, deburring and scratching in Metal Sheets and Strip Processing Lines

- price Competitive and good Cleaning and Life Performance
- flexible brush system–based of customer's and application requests
- either as customer or as factory brush system possible
- standardized brush materials

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 residues or dirt from the strip/sheet surface
Stainless steel	<ul style="list-style-type: none"> • Hot Strip Annealing Line • Cold Strip Annealing 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"> • CM 	<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"> • Annealing Pickling Line, • Continuous Pickling Line 	

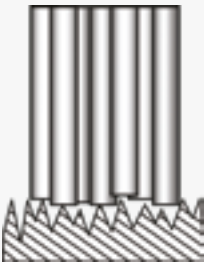

Strip polishing and finishing

Metallurgic Field	Process Line	Description of Application
Carbon steel	<ul style="list-style-type: none"> Polishing Line, Annealing Pickling Line, Finishing Line 	<ul style="list-style-type: none"> oxide removal, polishing and finishing of hardened and tempered strips oxide removal, polishing, finishing and generating decorative surfaces
Aluminum		
Non ferrous		

Scale removal

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

Comparison conventional brush vs. Osborn HDL

	Standard Brush Rolls (Mono-Filament)	Osborn HDL (Multi-Filament)	
	imprecise brushing	very precise brushing	
	low cleaning performance	high cleaning performance	
	short life-time	long life-time	
	low contact density	high contact density	
	irregular brushing	even brushing	



HELIMASTER

APPLICATION

Osborn's Helimaster brush rolls are perfect for cleaning work and back-up rolls in wet or dry operated rolling and skin-pass mills. They have been fitted to technological developments worldwide for decades, both in online lines integrated in strip lines as well as stand-alone off-line rolling stands.

The rollers can work sporadically or continuously when designed as a wire or an abrasive brush. Each brush is neutrally ground at the radius and gets axially. This means that it gets either a cylindrical camber ground or, for offsetting the computed roll deflection, a positive and/or negative camber ground.

In the meantime, with Lipprite® abrasive rollers, an alternative technology, has also been developed and manufactured in-house for skin-pass roller cleaning.

The brush roller itself is only part of the solution. This technologically demanding application can only be optimally implemented with a precise matching of the brush tool to operational and process parameters. The

reproducibility of the specified corrosiveness and brush effect as well as constant tool performance play a crucial role from the first point of use to the exchanging of the roller.

For the cleaning of deflector, shape control or thickness measurement rolls, special wear-resistant non-abrasive plastic filaments are used. They ensure an equally thorough removal of solids and liquid materials without damaging the roll surface or altering the roughness. At the same time, the filament type and bristle diameter are dependent on the surface hardness and the degree of pollution of the roll that requires cleaning.

The individually adapted camber ground of the brush roller body is one of the most important prerequisites for guaranteeing uniform brushing across the entire width of the roll. Depending on the construction of the working or back-up rollers to be brushed and the calculation of the optimum crown, convex or concave contours are ground. Osborn, of course, also grinds brush rollers with a CVC contour on CVC technology.

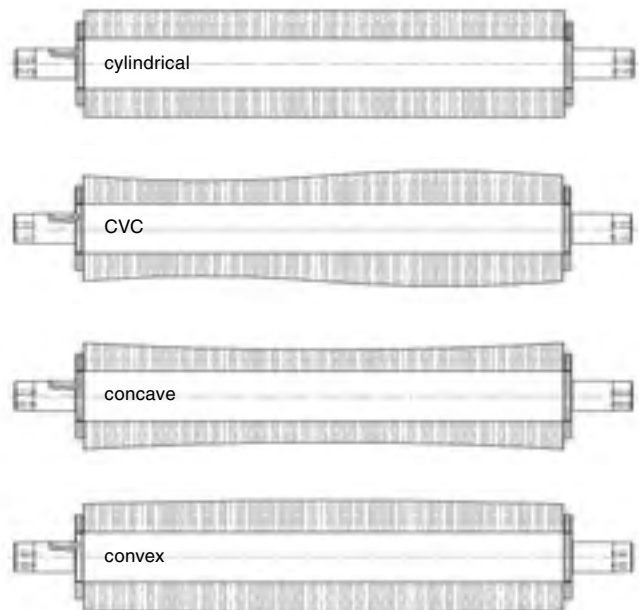


HELIMASTER – SOLUTIONS

Helimaster Premium Brush Rolls with wire or abrasive Bristles

Roll Coating Control in Hot and Cold Rolling Mills Roll Cleaning and Scratching

- very precise brushing control
- very high density brush rolls
- very long life-time
- flexible ground brush surface contours – (convex, concave, CVC, cylindric)
- customized brush material (considering customer's set up and back-up rolls)
- long ground Helimaster brush rolls possible – length 8000 mm



Individually adapted camber ground

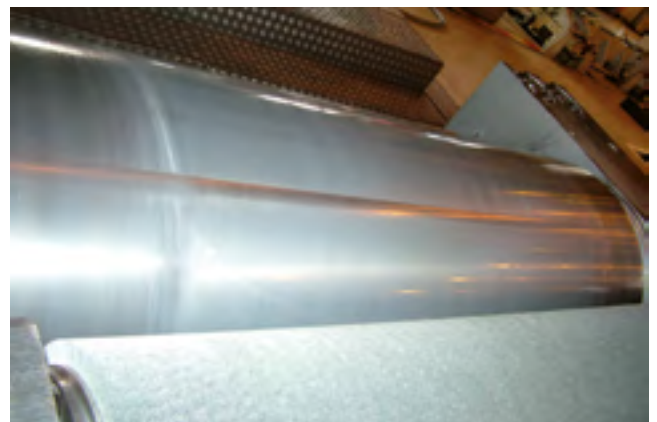
HELIMASTER – GENERAL INFORMATION

Roll cleaning and polishing

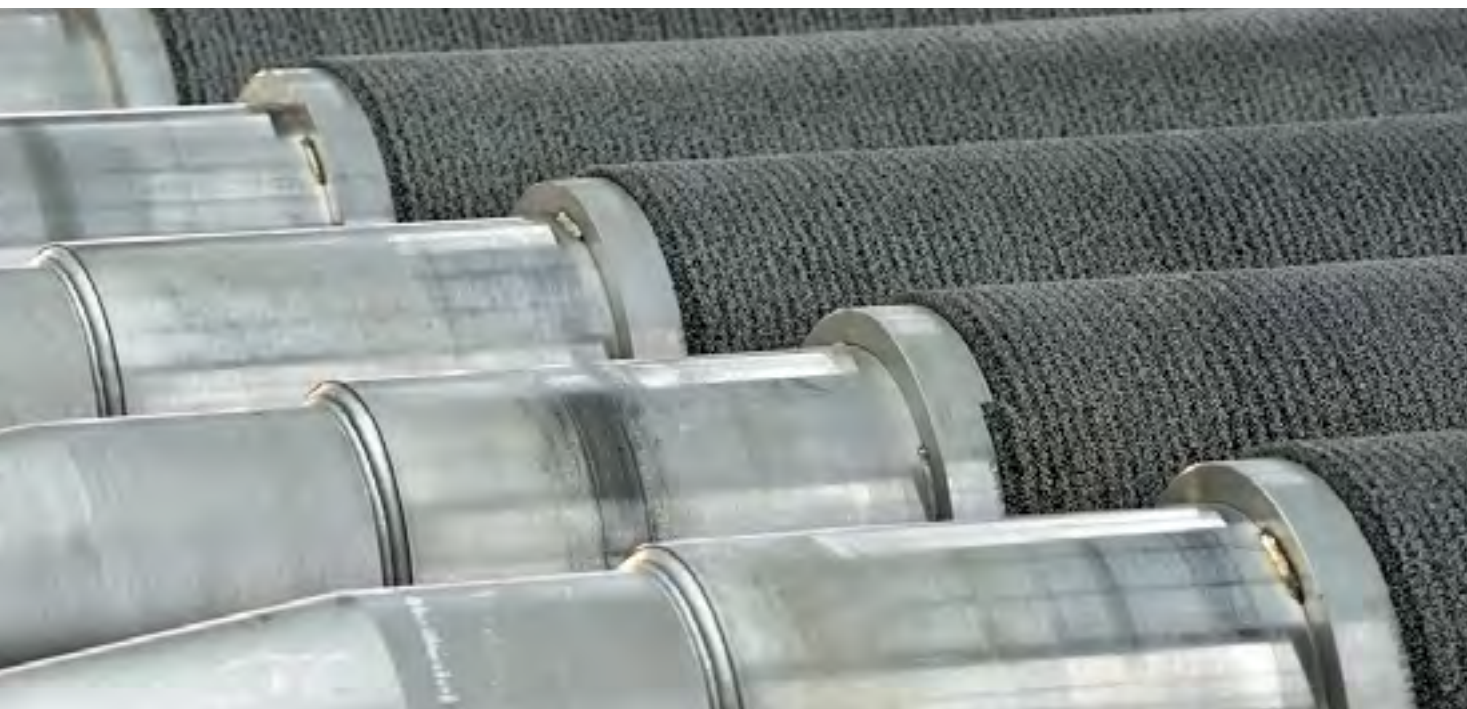
Metallurgic Field	Process Line	Description of Application
Carbon steel	<ul style="list-style-type: none"> • Skin Pass Mill • Temper Mill • Continuous Hot-dip Galvanizing Line 	Removal of oxides, dirt and rolling residuals
Stainless steel	<ul style="list-style-type: none"> • Skin Pass Mill • Temper Mill 	
Aluminum	<ul style="list-style-type: none"> • Cold Rollig 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 	Control of the oxide layer and removal of oxides
Non ferrous	<ul style="list-style-type: none"> • Hot Continuous Mill 	



Furnace Rolls



FURNACE ROLLS

APPLICATION

The tempering of hot mill plates made of precipitation hardening aluminum alloys through the process of solution annealing, serves the purpose of attaining higher strength and strain values along with a good level of corrosion resistance. Today, this is required for structural parts in aircraft in accordance with the strict requirements of standards AMS 2750D, AMS 2750C and AMS-H-6088. The careful transportation of these aluminum plates in 'hard metal and hard material technology' roll hearth furnaces takes place as a batch or continuous process at temperatures of up to 600°C on brush transportation rolls. In close cooperation with leading equipment manufacturers, numerous furnaces around the world have been equipped in recent years with Osborn's sophisticated technology. In the process, plates with thicknesses of up to 400mm, lengths of 20 metres and weights of over 10 tonnes do not present a problem for us. Tolerances have been continually reduced and product features optimised, so that now more than ever, the brush roller is an integral and technologically superior component in the overall design of the line.

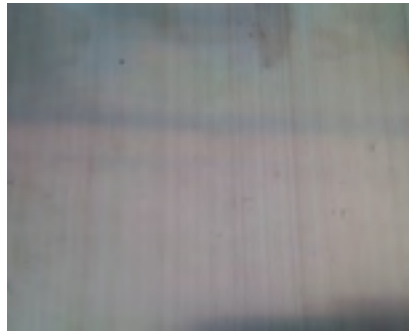
With brush furnace transportation rolls, Osborn customers can today place their trust in several decades of experience and well known global references. In the complex production of the rolls, some with a total length of over 6000mm and 4000mm of brush length, the highest level of precision and reliability are required in all manufacturing processes.

After the rolls have been manufactured, the later course of the sheet is accurately simulated in advance in our factory. For roll assemblies in new furnace lines, this allows Osborn to guarantee an optimum course of the sheet within tight tolerances even when starting up the run.

In order to guarantee the lowest possible sheet tracking with the 're-brushing' of entire furnace zones the transportation of the sheets is simulated on an in-house test rig just like new lines. This advanced technology provides a convincing argument for why brushing with heat resistant wires is increasingly establishing itself as a roller cover for furnace transportation rolls.



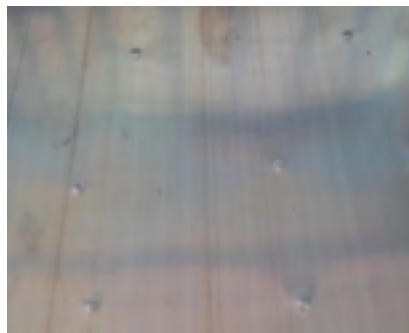
Osborn Furnace Rolls



No Pick Up



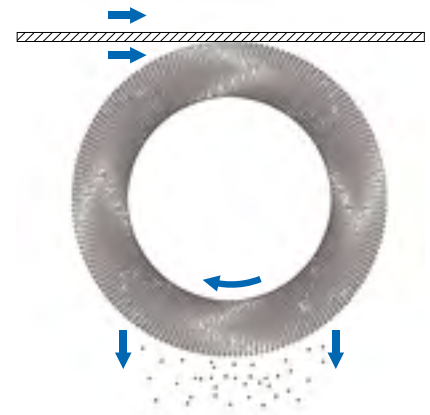
Conventional furnace Roll



Pick Up Problems

NO PICK UP WITH OSBORN!

Pick-up will not form on the brush surface



Aside from the production of new rolls, the recovering and replacement of worn brushes in older lines is also one of our core competences.

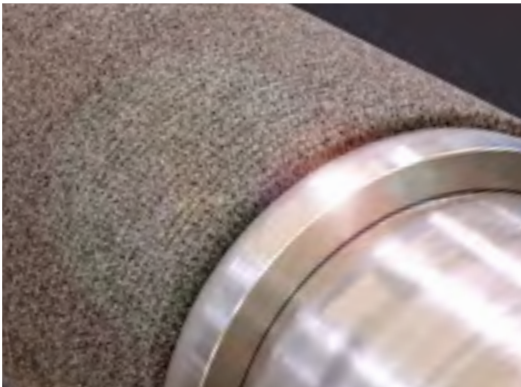
By precisely measuring the course of the plate as well as the state of the individual rolls within the furnace by means of self-developed test equipment, we are able to optimise plate tracking if needed, which maximizes the output of the entire system.

Roll coverings made from extremely dense stainless steel wires in special alloys and resistant to high temperatures provide specific product features and strong advantages compared to uncoated transportation shafts or furnace rollers with ceramic coatings. These can be used in different horizontal heat treatment lines for strips of steel, stainless steel or non ferrous metals.

BENEFITS

- optimum heat transfer between the transportation roll and the plate
- longstanding lifetime without significant wear of the brushes
- complete avoidance of scale pick-up and spot formation on the surface of the roller, just as it is the case with self-contained roller coverings
- total-care transportation of the plates during the heat treatment without damaging the surfaces of the plates

SOLUTIONS



Furnace Rolls Aluminum

Aluminum Plates Solution Heat Treatment Furnaces

- controlled tracking
- longer lifetime
- no marking
- reduced noise



Furnace Rolls Carbon Steel

Carbon Steel Annealing Furnaces (CAL and CGL)

- no pick up or indentation
- higher wear resistance compared to ceramic
- no ceramic particles detached
- improved zinc adhesion



Furnace Rolls Electrical and Stainless Steel

Electrical Steel Annealing Furnaces for GO or NGO (ACL and DCL) Stainless Steel Furnaces (CAPL and BAL)

- no pick up or indentation
- higher wear resistance compared to ceramic or graphite
- extremely longer life compared to ceramic discs
- no cover oxidation
- no ceramic or graphite particles detached
- improved shaft deflection
- improved magnetic and Isolation properties for electrical steels

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 temp 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 Advantages

- temperature resistance of up to approx. 1250°C
- shaft construction as dry roll or internally cooled roll
- extremely dense and accurate neutrally ground surface of the rolls
- significantly better heat transfer characteristics of the tips of the wires in comparison to full metal surfaces
- no scale pick up (formation of spots) on account of the absorption properties of the exposed brush surface
- reduced maintenance
- particularly careful transportation of the plates and reduction of damage to the surface
- very low wear to the rolls with significantly longer lifespan than ceramic coatings or other roll coatings

Capacity optimization at older furnace installations

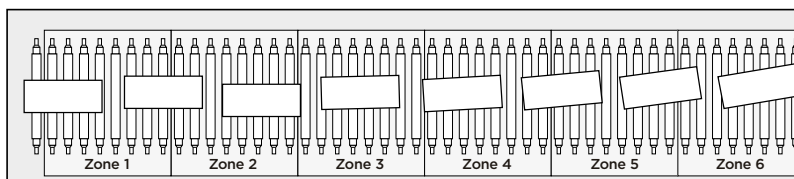


Plate tracking in initial state

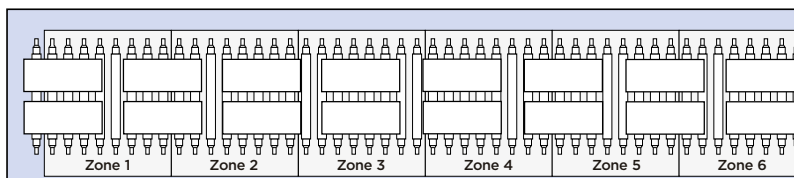
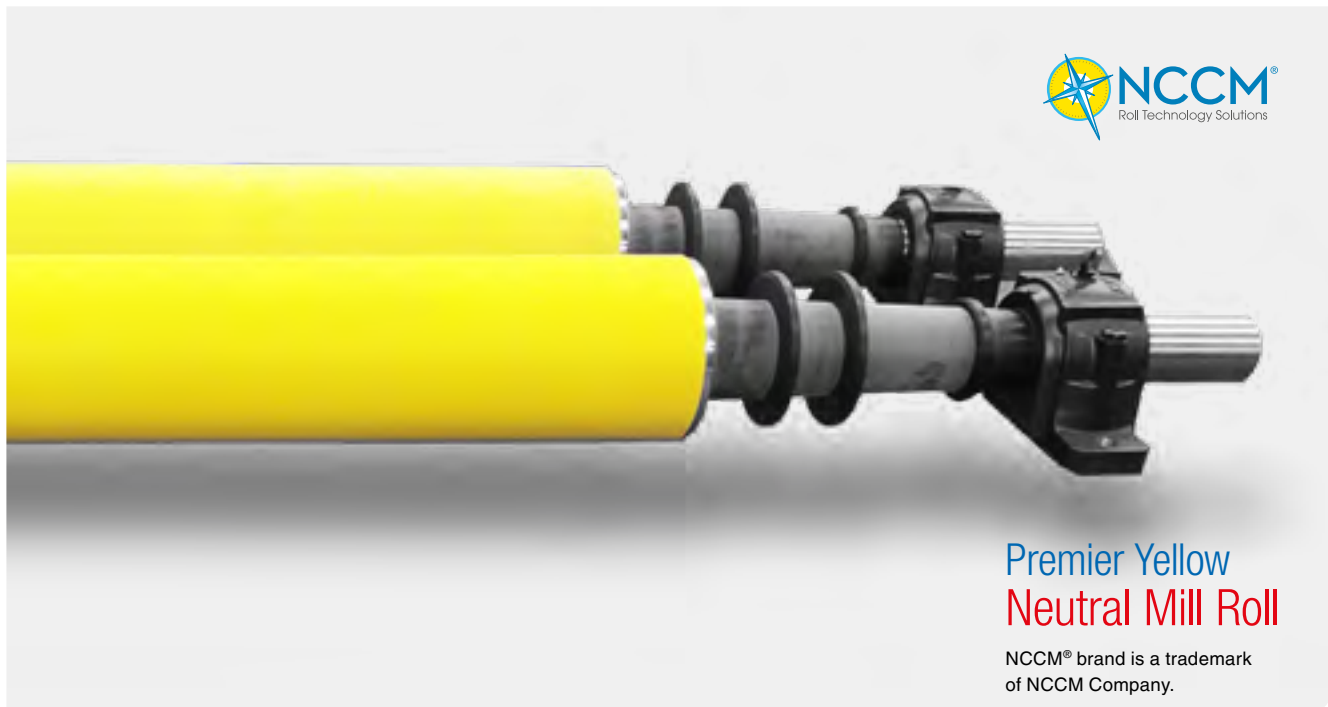


Plate tracking after optimization as per Osborn recommendation

Non-woven Rolls





NON-WOVEN ROLLS

APPLICATION

NCCM® Premier Yellow Neutral Mill Rolls are the finest general-purpose, Non-woven roll covering for primary metal and original equipment manufacturer (OEM) stamping operations.

NCCM® Premier Yellow Neutral Mill Rolls are porous to absorb debris that can mar the metal strip surface. Once absorbed, the roll heals over so fewer repairs that reduce productivity are required. If a problem does occur, the rolls can be quickly and easily repaired instead of replaced.

Porosity also makes the NCCM roll compressible which maintains consistently tight contact across the metal strip to wring uniformly. Chemical tank to tank carry-out and the need for auxiliary drying is reduced. The rolls have up to 24 times greater coefficient of friction compared to rubber or urethane rolls to improve material control by reducing metal

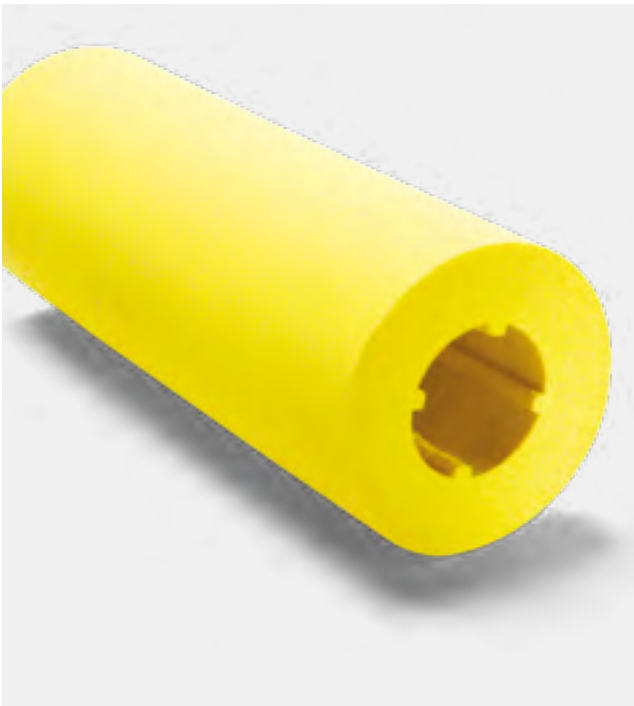
coil slippage and hydroplaning. One NCCM® Premier Yellow Neutral Mill Roll can last as long as up to 100 rubber rolls making it an exceptional value for the money spent, especially when costly line downtime is taken into account.

NCCM® Mill Roll premium roll covering products optimize countless metal sheet processing applications in primary metals and AOEM (automotive original equipment manufacturer) stamping plants. They also show exceptional value In other industries such as lithography.

NCCM® Mill Roll technology is designed to replace traditional roll coverings such as rubber, urethane, Non-wovens and various fabrics. NCCM® Mill Roll technology has features and properties that no other Non-woven rolls offer.

NON-WOVEN ROLLS

SOLUTIONS



Premium Non-woven Rolls

Wringing, Oiling, Blank Washing, Tension/Break, Snubber, Bridle, Cradle, Deflector, Pinch/Feeder, Table/Conveyor

- reduced replacement cost
- reduced inventory cost
- reduced maintenance cost
- reduced fluid usage/cost
- reduced staining from poor wringing
- reduced defects on coil
- increased line uptime
- increased line speed
- cost effective



Standard Non-woven Rolls

Wringing, Oiling, Tension/Break, Snubber, Bridle, Cradle, Deflector, Pinch/Feeder, Table/Conveyor

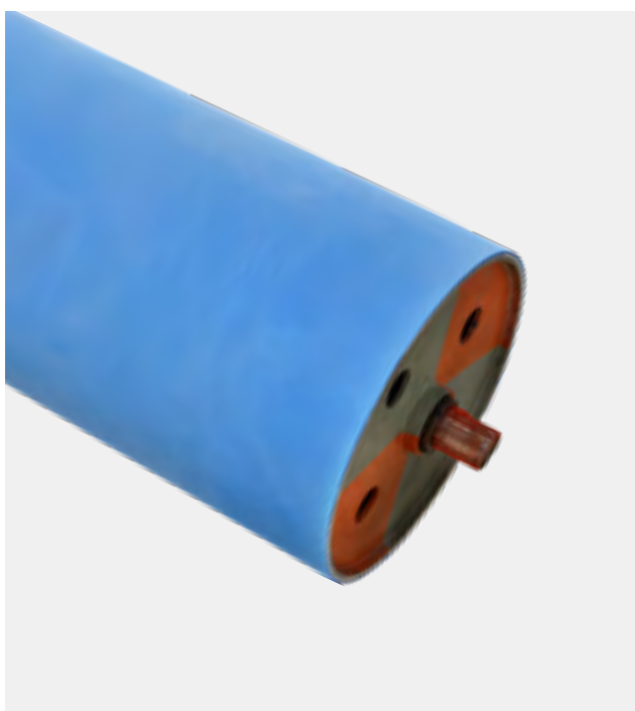
- reduced replacement cost
- reduced inventory cost
- reduced maintenance cost
- reduced fluid usage/cost
- reduced staining
- reduced defects on coil
- increased line uptime
- increased line speed



Chemical Non-woven Rolls

Wringing, Deflector

- reduced replacement cost
- reduced inventory cost
- reduced maintenance cost
- reduced fluid usage/cost
- reduced fluid contamination
- increased line uptime
- increased line speed



Bridle Non-woven Rolls

Tension/Break, Bridle, Deflector

- reduced replacement cost
- reduced inventory cost
- reduced maintenance cost
- reduced strip slippage
- increased line speed
- increased process control

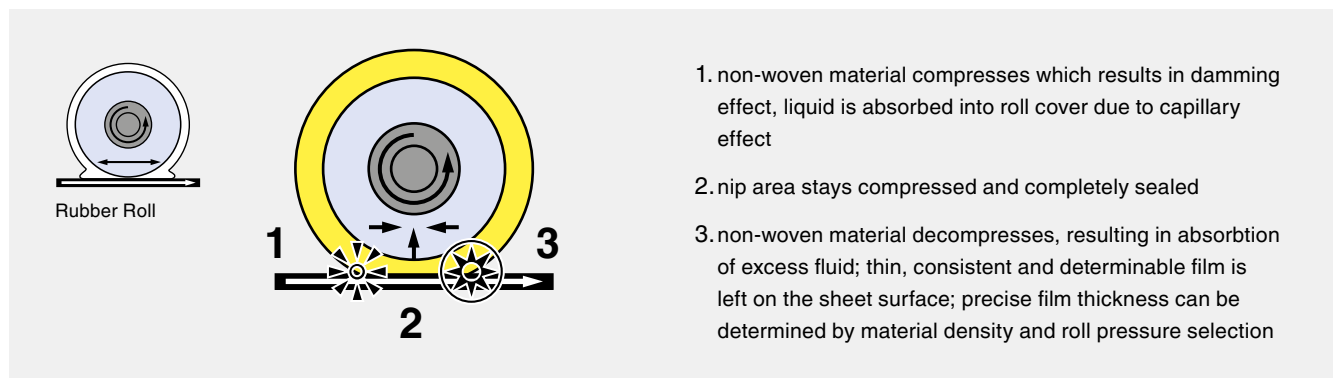
GENERAL INFORMATION

Comparison Rubber Rolls vs. Non-woven Rolls

Rubber Rollers	Osborn Mill Rolls Made with NCCM Materials Advantages
short life – non compressible, susceptible to cuts, causes more downtime	long life – compressible resist 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 lie	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.



International Cooperation

Osborn has a value-add-cooperation with company NCCM, River Falls/WI, United States for manufacturing and service of high-tech Non-woven Mill Rolls. Since 2009 NCCM has the exclusive rights to the original premier yellow non-woven material from 3M Company anywhere in the world. NCCM own a unique technology in the manufacturing of roll coverings using the original 3M high-tech material.

Osborn is engineering individually customized High performance Non-woven Rolls for Quality and Process improvement in Coil and Sheet Metal processing in Strip Process Lines, Rolling Mills and automotive press- and blanking systems, using the leading NCCM technology in combination with our comprehensive application know-how. We are assembling, finishing and servicing the original premier yellow rolls in our wide-face Roller manufacturing centers around the world.



Image courtesy MarkOne

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

- Hot-Dip Galvanizing Lines
- Continuous Annealing Lines
- Annealing and Lickling Lines
- Cold Rolling Mills
- Skin-Pass Mills
- Colour and/or Organic Coating Systems
- Electrolytic Galvanizing Lines
- Cleaning or Degreasing Lines

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

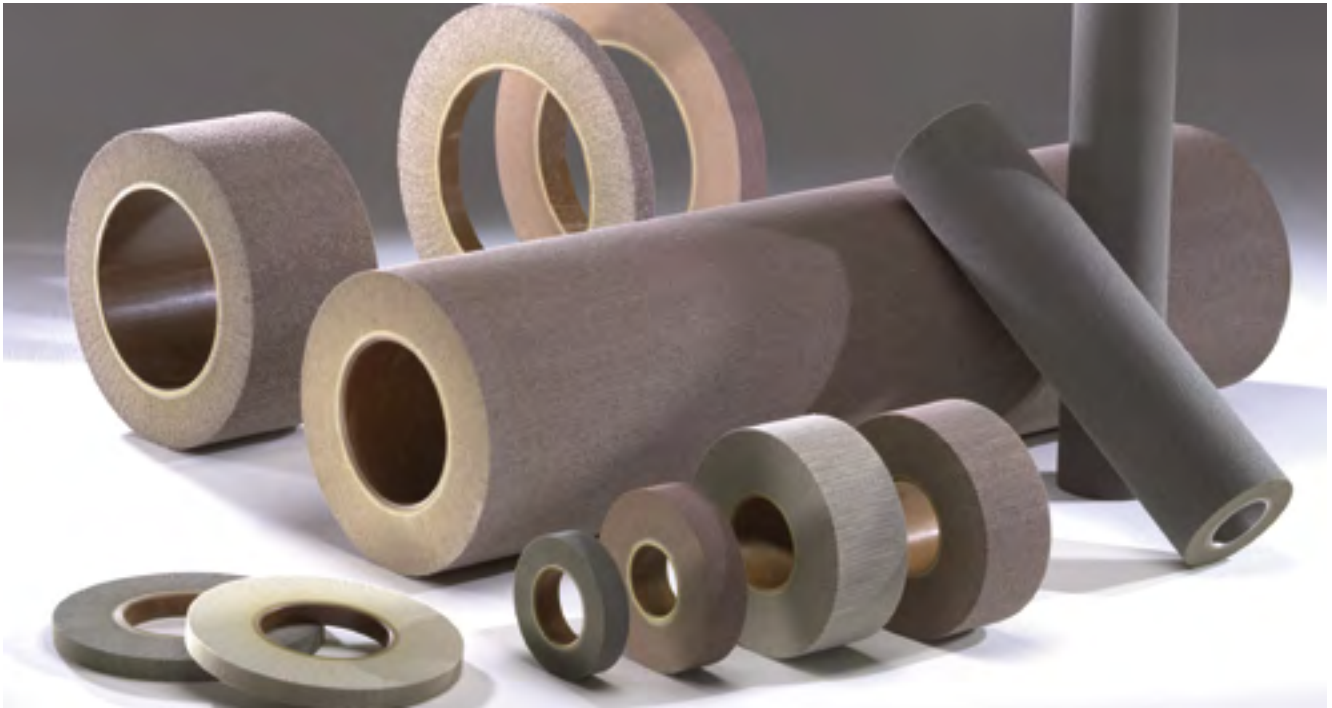
JUST BETTER

Compared to Felt Wipes Rubber or Cork, NCCM® Mill Wipes offer:

- longer life
- better cleaning, “scrubbing”, and wiping action
- less waste
- easier operation
- best value

Non-Woven Abrasive Rolls





LIPPRITE®

APPLICATION

When it comes to the optical finishing of strip surfaces in the form of polishing, satinising, finishing or decorative grinding and brushing, you're in good hands with Osborn. Decades of experience in the machining of steel, stainless steel, aluminum and other ferrous or non-ferrous surfaces have given us a technological advantage, from which our customers benefit worldwide today.

Our Lipprite® product series represents a completion to brush rollers with wire or abrasive bristle coating. Different combinations of adhesive and abrasive together with nylon web generate diverse products to meet different demands. 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

like a suspension and is in a position to offset any slight unevenness of the strip (spring action, see picture below).

Various grades of synthetic fibre and abrasive grit are combined and bonded with special resin, firmly fixing the grit particles to the non-woven fibres. The result is 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.

Based on many years of experience or by individual tests on our test lines, we are able to specify the right product in a targeted way for almost any surface roughness required. Contact our application engineers.



ALSO AVAILABLE

Osborn Lipprox®

Osborn offers two types of non-woven abrasive rollers and wheels: Lipprite® and Lipprox®. While Lipprite® is mainly used for surface cleaning, oxide removal, decorative finishes and light deburring, Lipprox® is specifically used for deburring, some coil cleaning prior to coating, and precision oxide removal.

For more information visit:
osborn.com

SOLUTIONS

Lipprite® permits homogeneous and constant work, with regular wear over the entire surface. The flap construction provides flexibility and adaptability to all types of profiles. The dimensional range of possibilities allow us to supply you with many options for technical applications: rollers up to 2.6 meters wide are used in the stainless steel industry, smaller rollers are used in the PCB or porcelain industry, and there are wheels for all types of manual and precision work.

Density

The number of flaps (density) influences directly the hardness of the product and its capacity to adapt to different shapes. The grade of abrasive non-woven is selected depending on the application and desired finish.

For certain applications Osborn has developed special treatments for Lipprite® that harden the product, increasing the abrasive action and extending service life. Please contact our Technical Team for more details.

Use

Lipprite® can be used on stationary, automatic or robotic machines, in both dry and wet operations. It is recommended for light deburring, satin finishing, cleaning and decorative surfaces. The recommended speed is 22-25 m/s, reducing to 18 m/s for metal working and 12 m/s for plastic. Please contact our Technical Team for more details.

GENERAL INFORMATION

Coverings and material specifications

Roughness values vary depending on diameter. Pressure, cutting speed, feeding speed, density. Sheets and flat rolled metals with hard material lower roughness than with soft material.

Treatment with synthetic resin stiffens the LIPPRITE® Roller improving performance and extending its suitability for a range of applications.

Application recommendations

Please ask our application engineer for the optimized set-up and using parameter for your application.

Technical data and characteristics

- standard roller width up to 2650 mm
- 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

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)

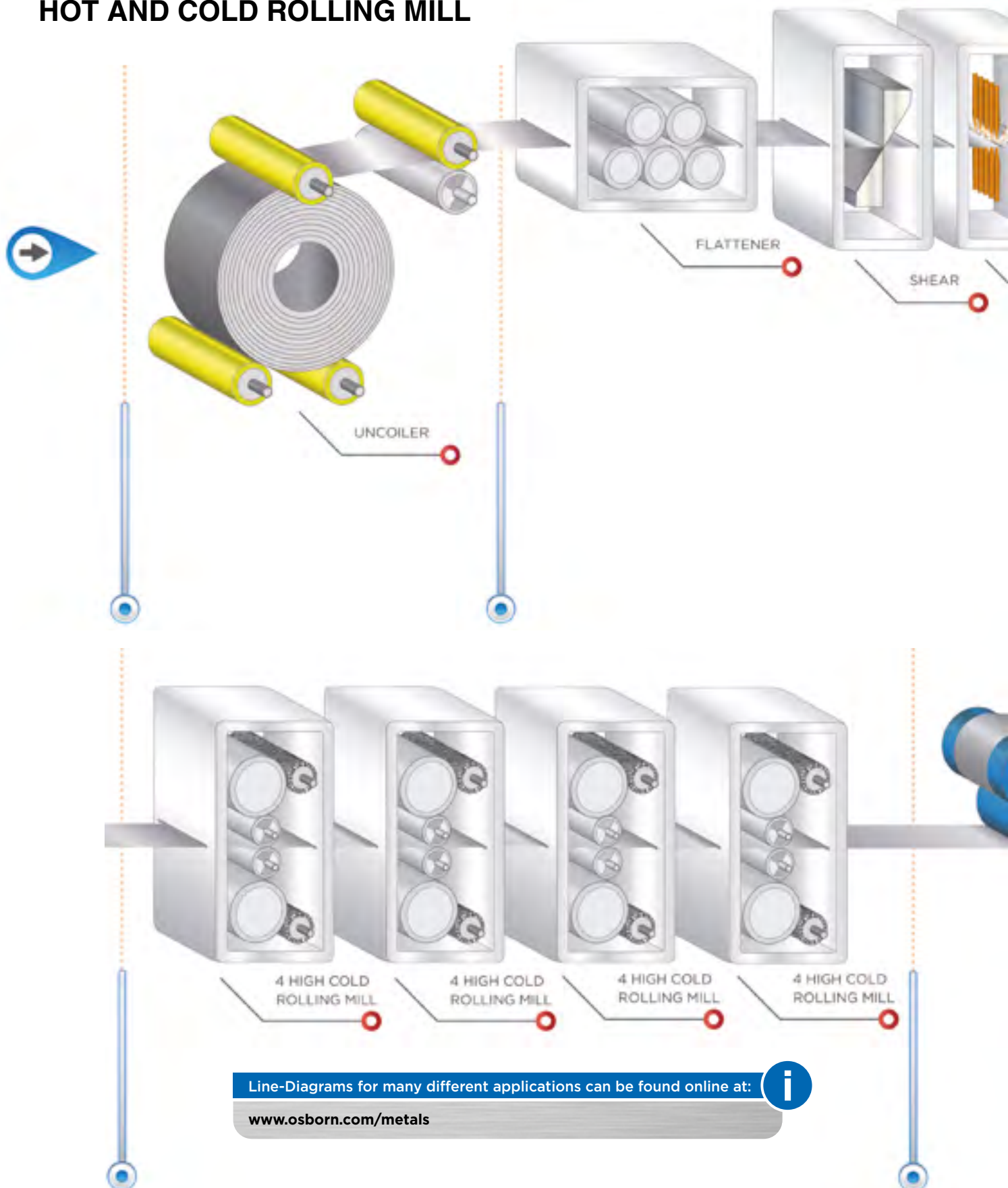
YOUR ADVANTAGES

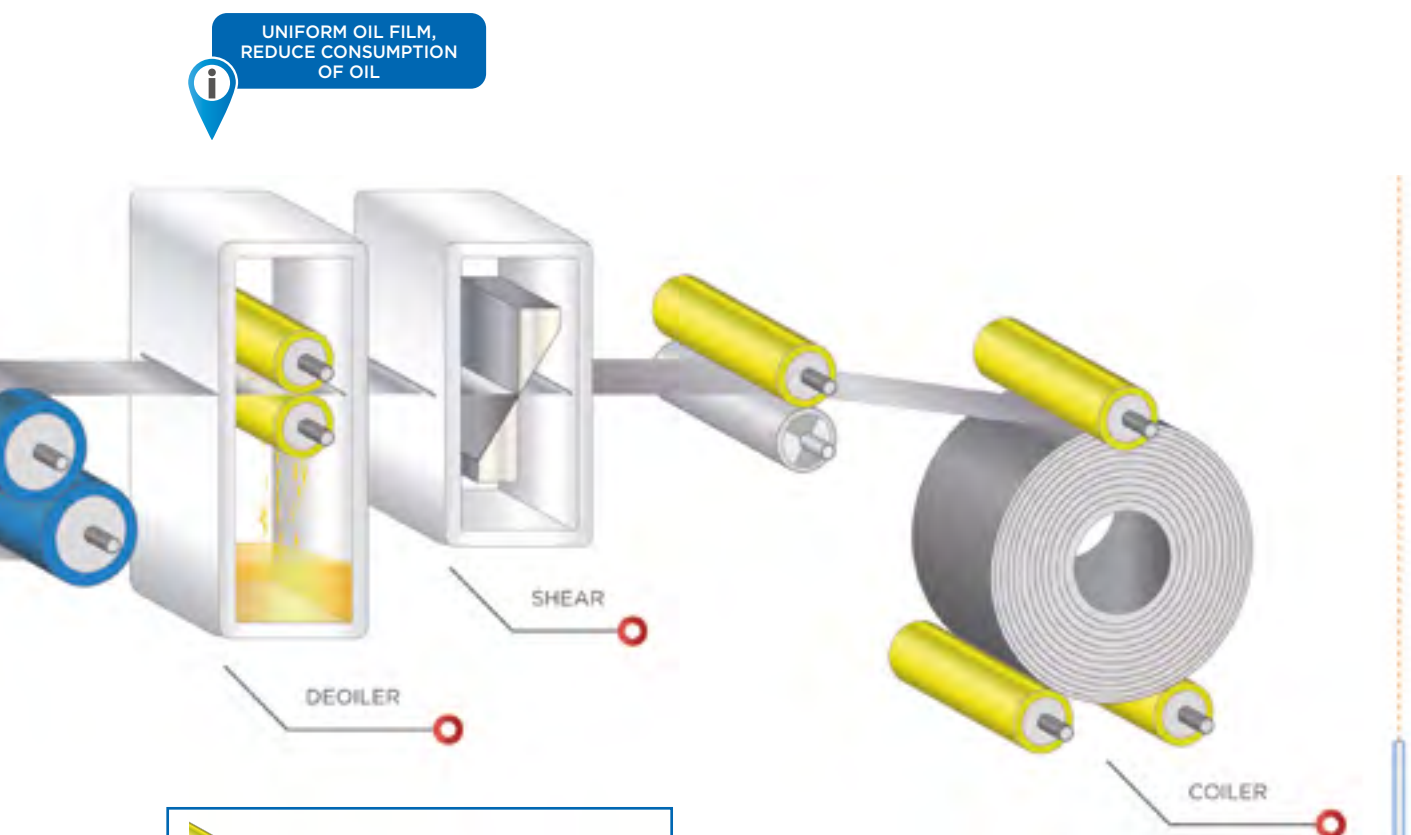
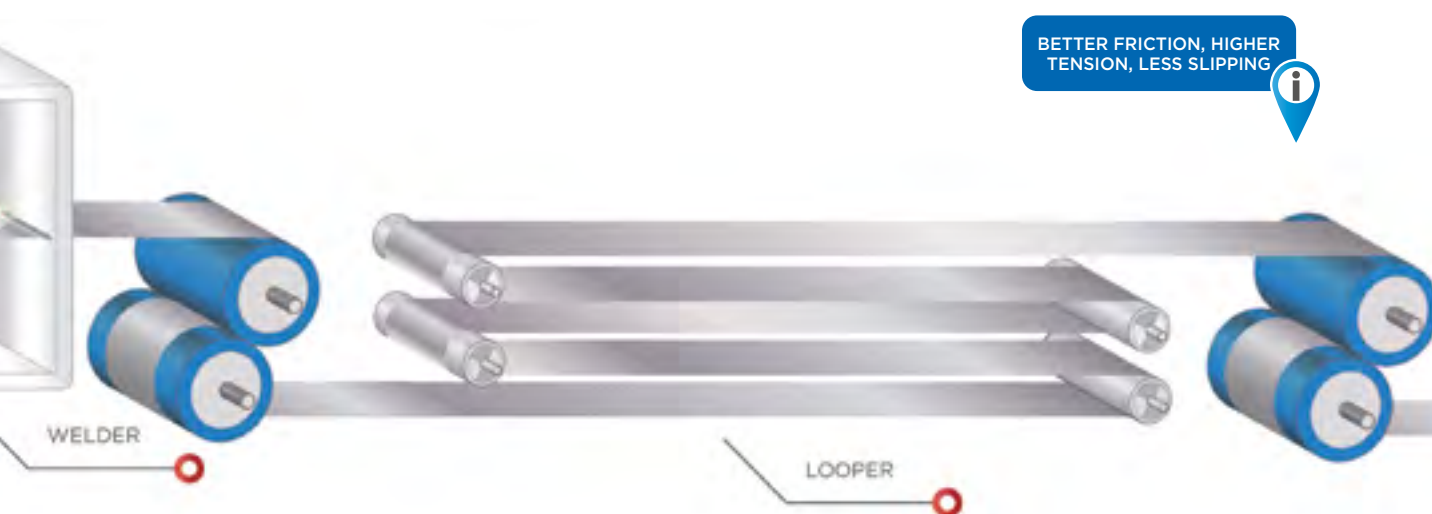
- uniform surface quality
- intense cleaning performance
- remains hard under wet conditions
- dynamic balancing




Metallurgic Field Process Line

Metallurgic Field	Process Line
Aluminum	<ul style="list-style-type: none"> • Finishing Line
Stainless Steel	<ul style="list-style-type: none"> • Skin Pass Mill / Back Up Roll Polishing
Carbon Steel	<ul style="list-style-type: none"> • Continuous Annealing Line / Skin Pass Back Up Roll Polishing • Continuous Galvanizing Line / Skin Pass Back Up Roll Polishing • Continuous Coating Line • Finishing Line
Copper, Brass	<ul style="list-style-type: none"> • Annealing and Pickling Line • Finishing Line

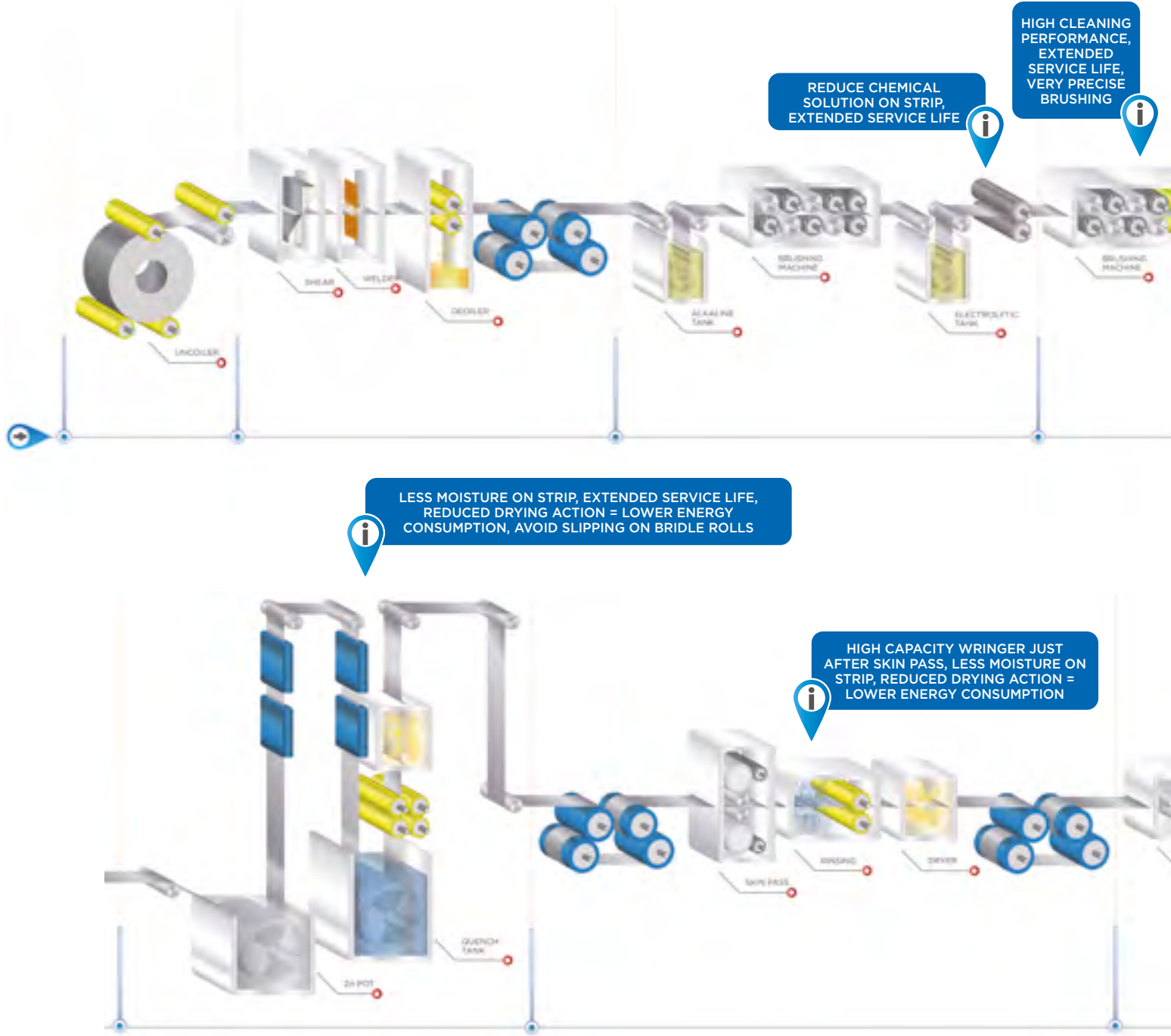
HOT AND COLD ROLLING MILL





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

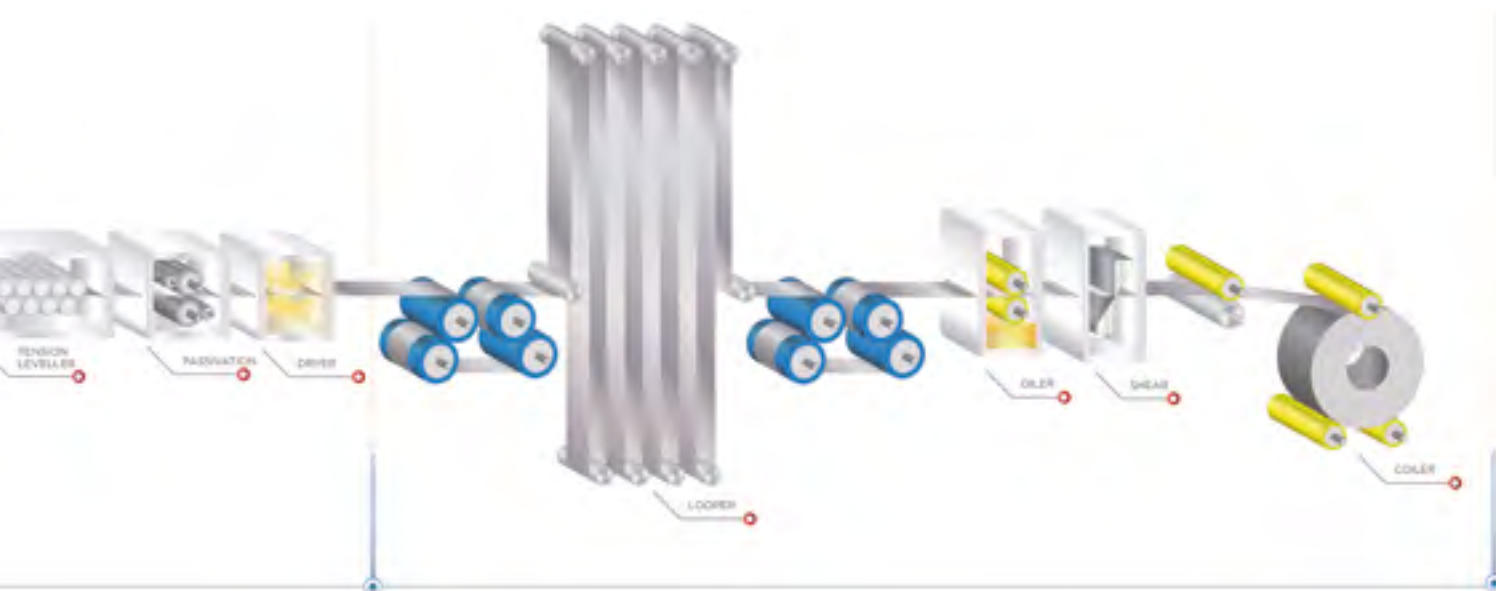
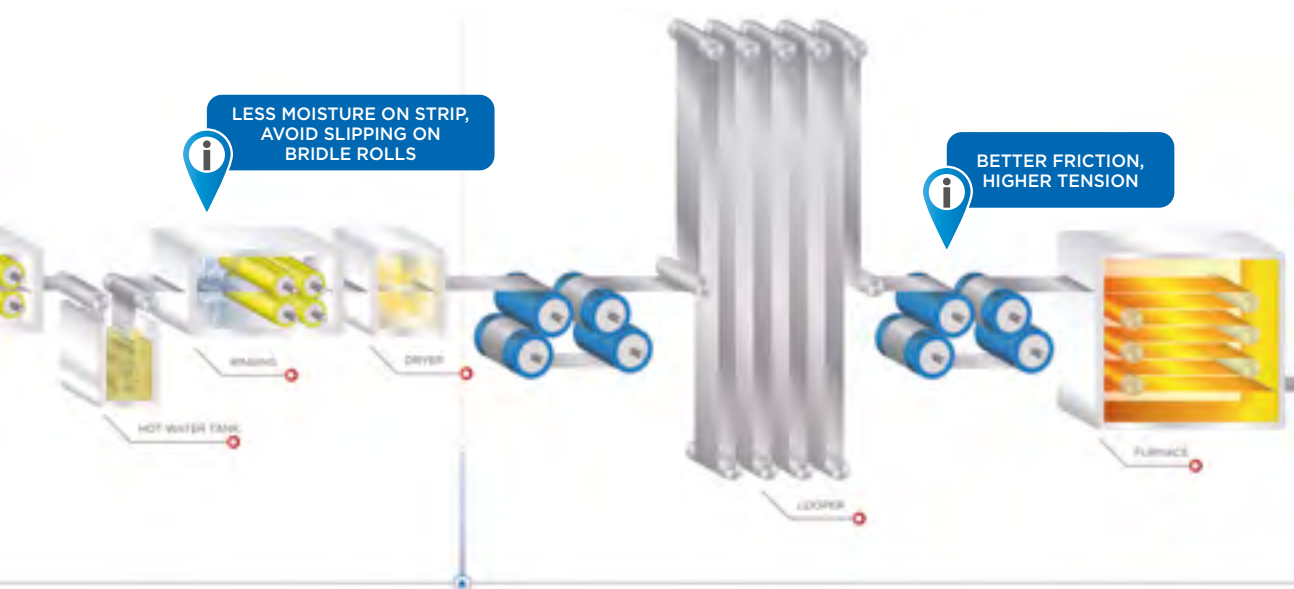
HOT DIP GALVANIZING






Line-Diagrams for many different applications can be found online at:

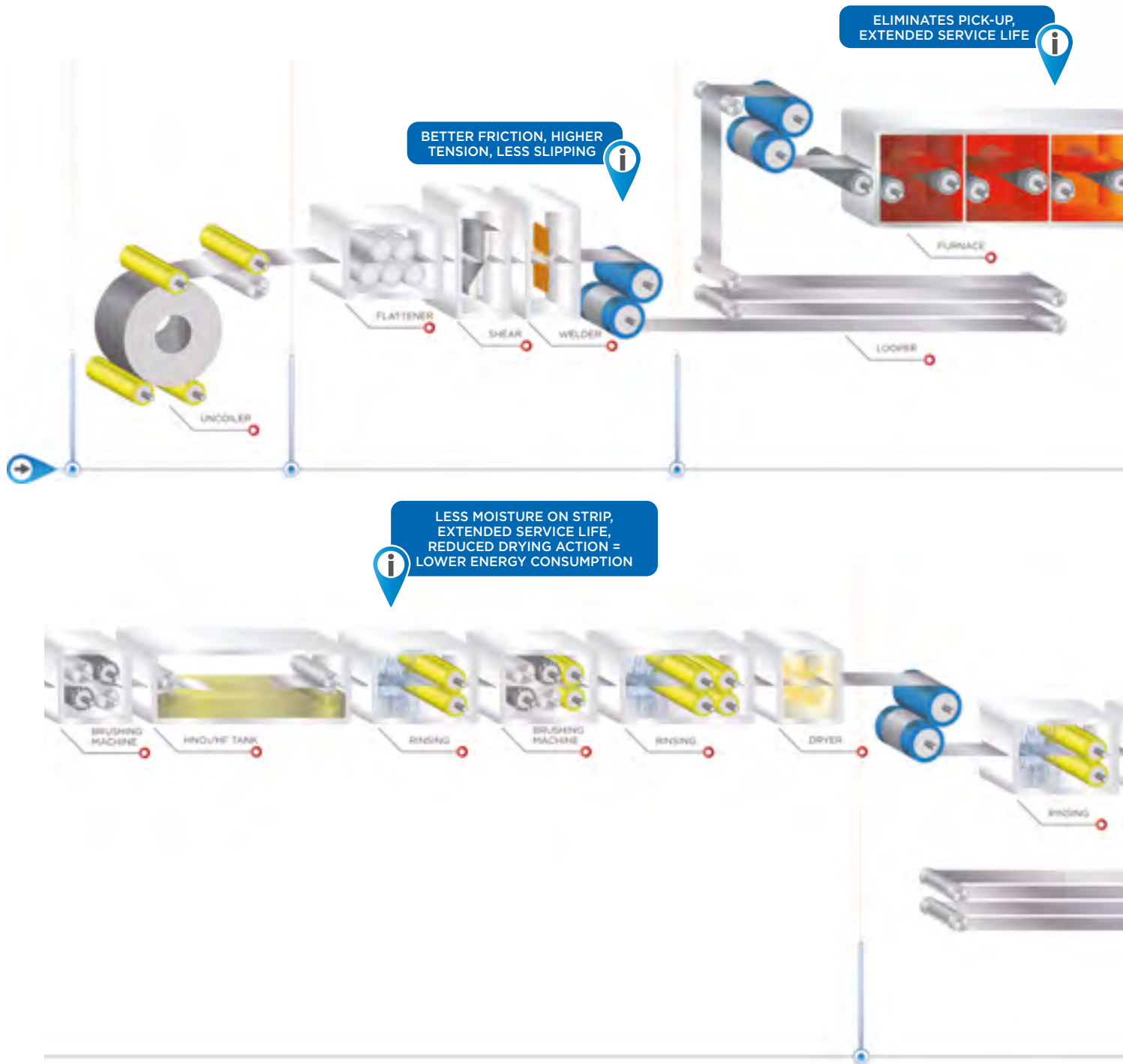
www.osborn.com/metals

Process Line Examples



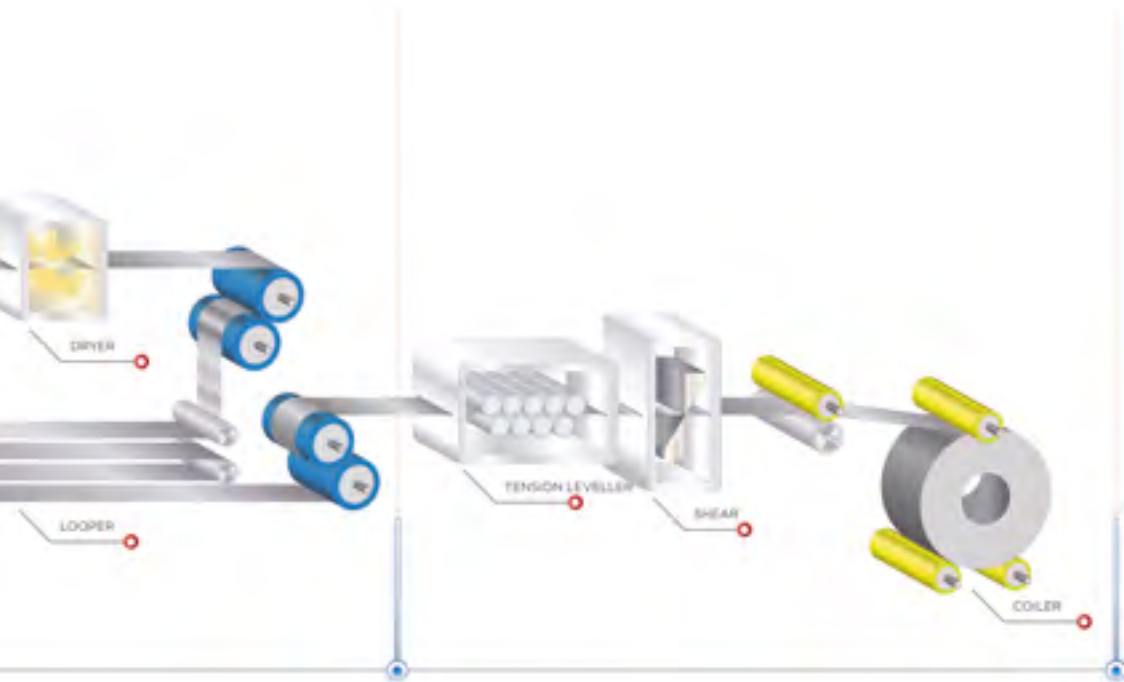
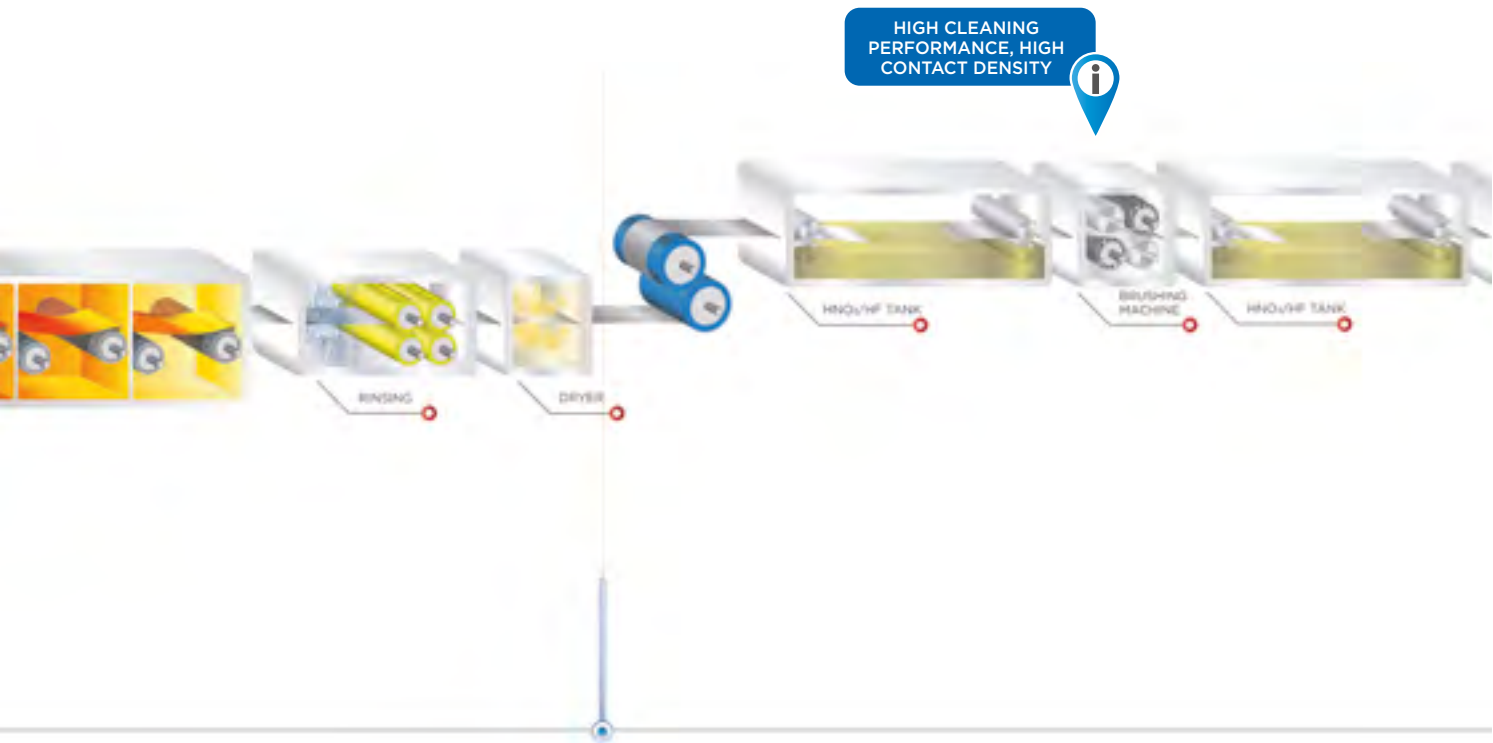
-  Non-woven Mill Roll
-  Brush Roll
-  Bridle S-Roll




HOT OR COLD ANNEALING & PICKLING



Line-Diagrams for many different applications can be found online at:

www.osborn.com/metals



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



AUTOMOTIVE PRESS & BLANKING LINES

NON-WOVEN AND BRUSH ROLL APPLICATIONS

Blank washing units remove dirt and deposits from the blanks and apply a protective film of oil. The Blank washers are constructed with three to four pair of rolls (6-8 total). The first pair of rolls are Non-woven Rolls which are working as Feeder Rolls to control the blanks. The center rolls are brush rolls and provide the cleaning of the blanks. The exit rolls are Non-woven Rolls which control the residual film thickness.

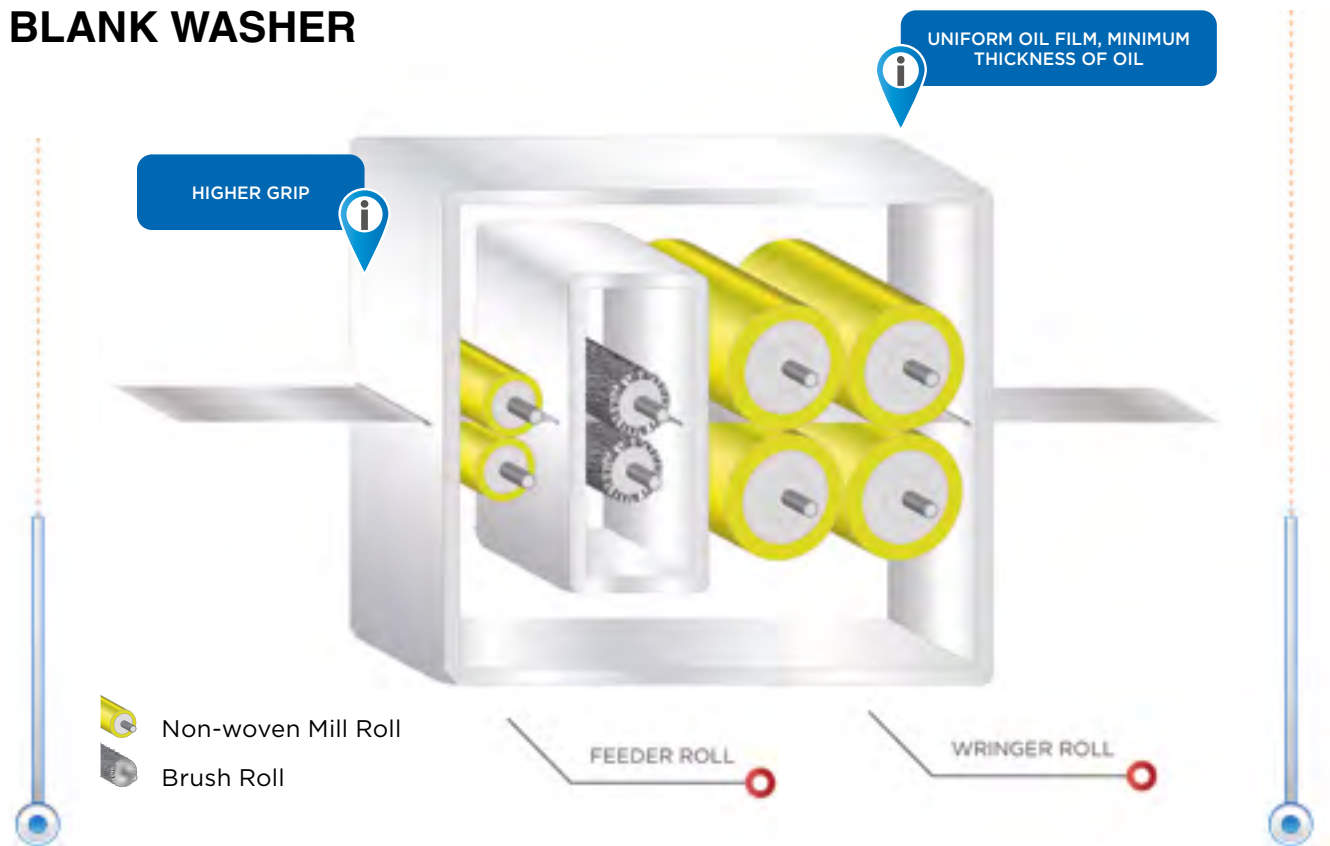
Osborn provides high performance Non-woven Wringer Rolls for precise coating application of the lubrication fluid and as Feeder Roll to pull in the blanks into the machine as well as brush rolls for optimized cleaning of blanks and sheets.

Our high-density Mill Roll material is considered the premium general-purpose roll covering for primary metal and AOEM stamping operations.

World-renowned quality and performance is what makes our Neutral Mill Roll, made with NCCM Materials, outperform all others.

The neutral roll is used in pH neutral environments and oil applications. Our Rolls are made in variety of densities and to your specification and roll processing need.

BLANK WASHER



COST SAVINGS ADVANTAGES

Provide Highly Engineered Film Thickness

- maintain film thickness longer over life of the roll
- reduce hydrostatic stamping defects
- reduce part rework
- reduce paint rework

Drastically Reduce Oil Usage

- reduce welding smoke
- save oil costs
- better part transfer
- reduce excess oil in production line

Longer Life

- best total value roll system
- more damage resistant
- more consistent performance

Global Network and Process Solutions Experts



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