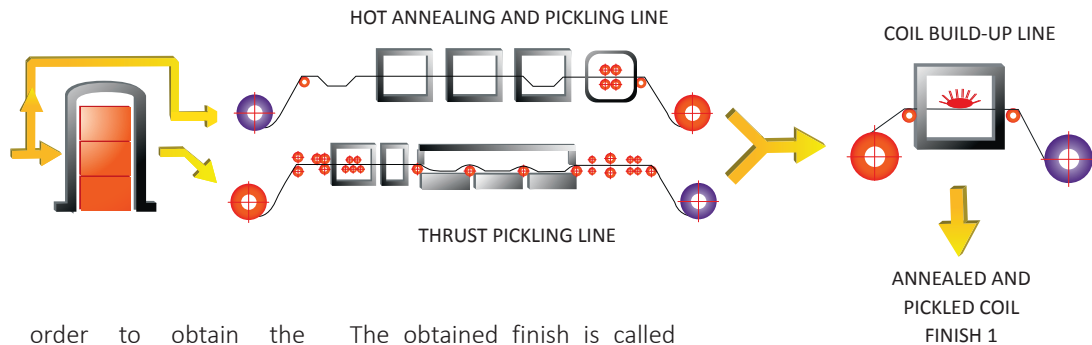


Cold rolling of flat products

In the process of the cold rolling of stainless steel flat products, the black coil changes into finish product with the exact reduction of thickness depending on the required characteristics.

1. ANNEALING AND PICKLING OF HOT ROLLED STAINLESS STEEL:

After hot rolling, the stainless steel structure has lost its properties. To recover them, the material is subjected to a thermal regeneration process. The annealing process consists of a high temperature treatment followed by controlled cooling.



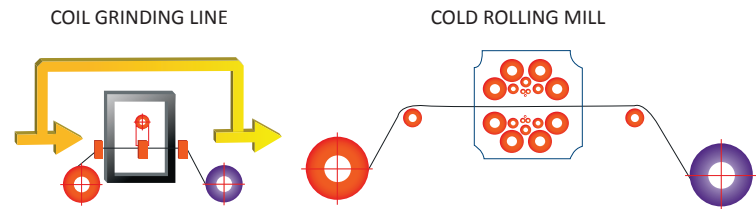
In order to obtain the characteristic appearance of stainless steel, it is subjected to a pickling treatment.

The obtained finish is called N1.

2. COLD ROLLING:

In order to obtain the desired final thickness, reversible rolling mills type Sendzimir are used. They are designed to roll stainless steel up to final thicknesses between 6.0 and 0.15 mm, in coils up to 30 metric tons

The rolling case consists of a set of 20 cylinders. The working cylinders, which are in contact with the stainless steel surface, are changed several times during the process, achieving a very uniform and high quality finish.

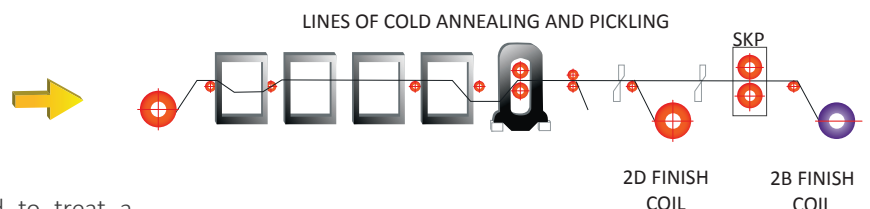


3. ANNEALING AND PICKLING OF COLD ROLLED COILS:

Again, after the rolling process, the metallurgical structure has lost its properties and must be subjected to a heat treatment of annealing to recover them.

Matt finishes are processed through traditional annealing and pickling lines, conceptually similar to the previous ones,

although adapted to treat a much thinner material with a much more delicate and demanding aesthetic aspect. The finish that is obtained in this line is called 2D ("Dull").



For better surface uniformity and gloss, finishing 2B is required. The process through a Skin-Pass line which gives the surface its definitive properties, is needed.

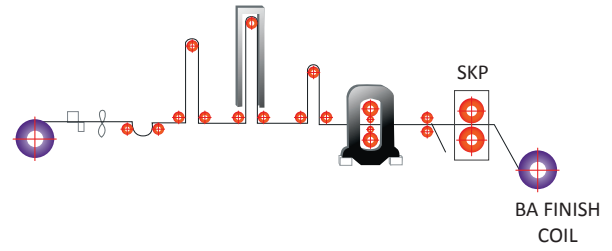


4. BRIGHT ANNEALING LINE:

When the final application requires an extremely smooth and glossy finish, a mirrored finish, the cold rolled coil is processed in a controlled reducing atmosphere. In this

case a subsequent pickling is not necessary. This finish is called BA (“Bright Annealing”) At this stage, the metallurgical process has finished.

BRIGHT ANNEALING LINES



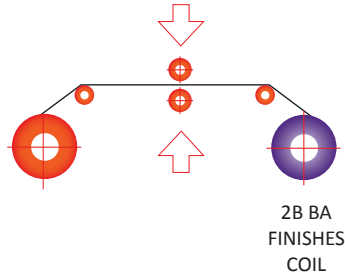
5. FINISH WORKSHOP:

The material can be subjected to operations that modify its surface finish, such as polishing with abrasives of different grit sizes.

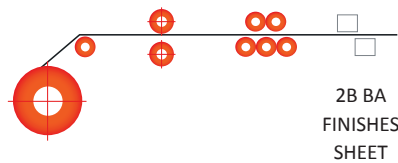
Finally, it is delivered to the cutting lines to adapt its dimensions to the needs of the client. The coil can be cut lengthwise to any width, transversely, to get sheets, or in the form of discs.

Samples are taken to certify its mechanical properties and resistance to corrosion.

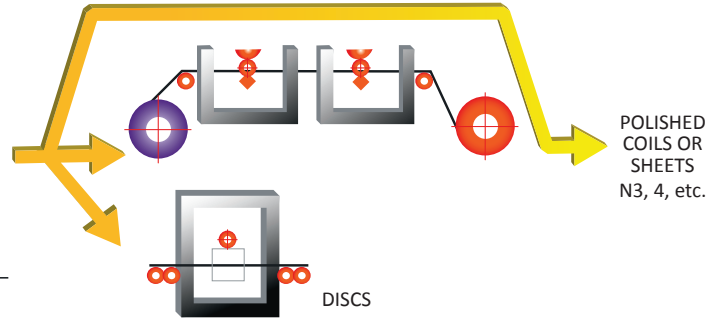
LONGITUDINAL SHEARING LINES



CROSS SHEARING LINES



FINAL POLISHING LINES



Packaging

The packaging of our products is designed to protect the material and ensure that it arrives in optimal conditions to its destination.

Each format is treated individually, taking advantage of its geometry and taking into account how it is to be transported.

Expeditions

Depending on the destination, the transport is done by trucks or ships, using the mill’s own port facilities.



FINAL INSPECTION, PACKAGING AND SHIPMENT

SOURCE:
Acerinox Europa
www.acerinox.com
Cedinox
www.cedinox.es