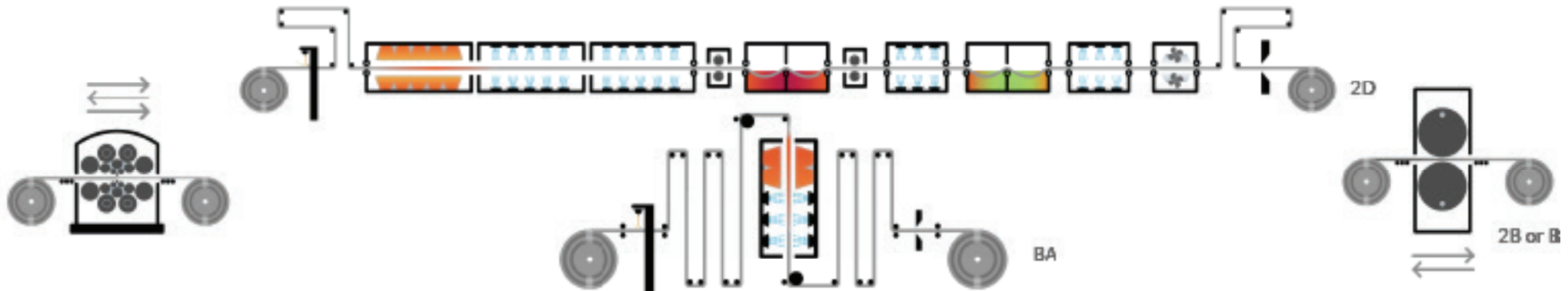
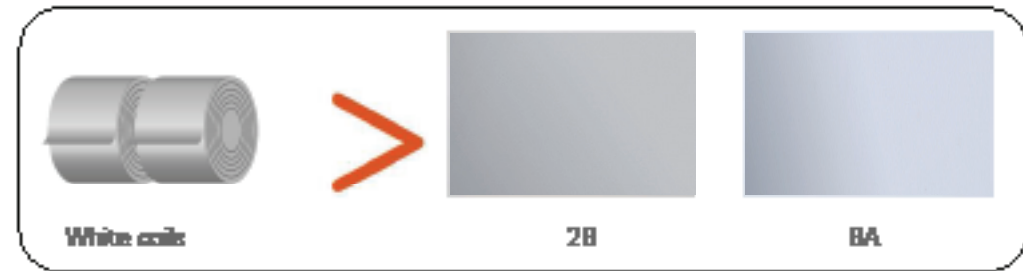


# Manufacturing Process

## Stage 4 - Cold rolling and final annealing

This stage reduces the thickness of the strip down to a minimum of **0.3 mm** to meet the customer's final requirement. A **final annealing** gives the required properties for customer use.

The cold rolling process produces the **flatness** of our stainless steels together with a **surface finish** suitable for visible applications, such as household appliances.



The thickness of white coils – around 3 mm – is reduced again with the **cold rolling mill process**. The thickness can reach **0.3 mm** minimum, by rolling several times in the reversible cold rolling mill in order to achieve the thickness ordered by the customer and the appropriate **surface quality** for the final use.

After cold rolling, the **annealing operation** recovers the mechanical properties of our stainless steels. A **final pickling** then removes the annealing oxide and gives a **mat aspect (2D)**.

Another option is to anneal under a protective atmosphere, to retain the cold rolled appearance for applications requiring **bright annealed finishes (BA)**. The annealing process recovers **ductility and formability** required by customers for processing. In this case no oxide is created and no pickling is necessary. **The strip is very bright.**

The **skinpass operation** guarantees the **flatness** and the **coil surface**. One, two or three passes can be necessary. By selecting different skinpass rolls a surface finish suitable for visible applications, such as **household appliances** can be produced (2B or BA).