

# Outokumpu stainless steel quarto plate

## Making the best even better

In 2014 Outokumpu completed major investments in the Degerfors production plant in Sweden. The resulting improvements in the capacity and capabilities of the mill mean our customers can now get larger plate sizes – particularly in our special grades – with industry-leading flatness and quality.

### An even wider range of dimensions

At our Degerfors mill we can now offer up to 5% thicker products in standard grades, 15-20% thicker in duplex grades, and up to 25% thicker products in our high-alloyed grades. Please see the graph on the right for further details.

### Industry-leading product quality

Our end-to-end approach, from melting to testing, means that we produce stainless steel quarto plate with industry-leading consistency, delivery performance, and technical support.

At Degerfors, the following quality improvements can be expected due to our recent investment:

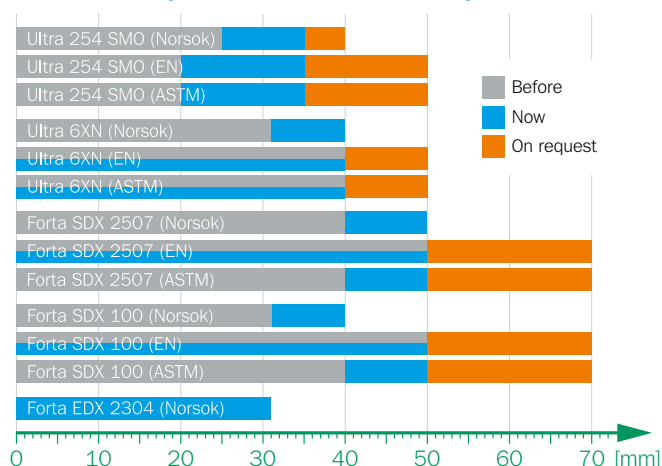
- Improved surface quality, as the new cooling bed results in fewer disc marks on the plate
- Excellent plate flatness
- Lower residual stresses in plates

Our manufacturing programs are supported by in-house product inspection and testing as well as the extensive expertise of our technical team. The mill is accredited to recognized international standards, and we have Norsok approval for Forta DX 2205, Forta DX 2507, Forta SDX 100, Ultra 6XN, and Ultra 254 SMO.

### Competitive lead times

More than 60 stainless steel grades are produced at Degerfors. Increased heating capacity and a leaner process flow allow us to keep lead times competitive.

### Thickness improvements for selected products



Detailed specifications agreed with customers on a case-by-case basis for on-request orders. Please refer to our Quarto Plate Product and Dimensions Program data sheet for our full offering.

### Sustainable supplier

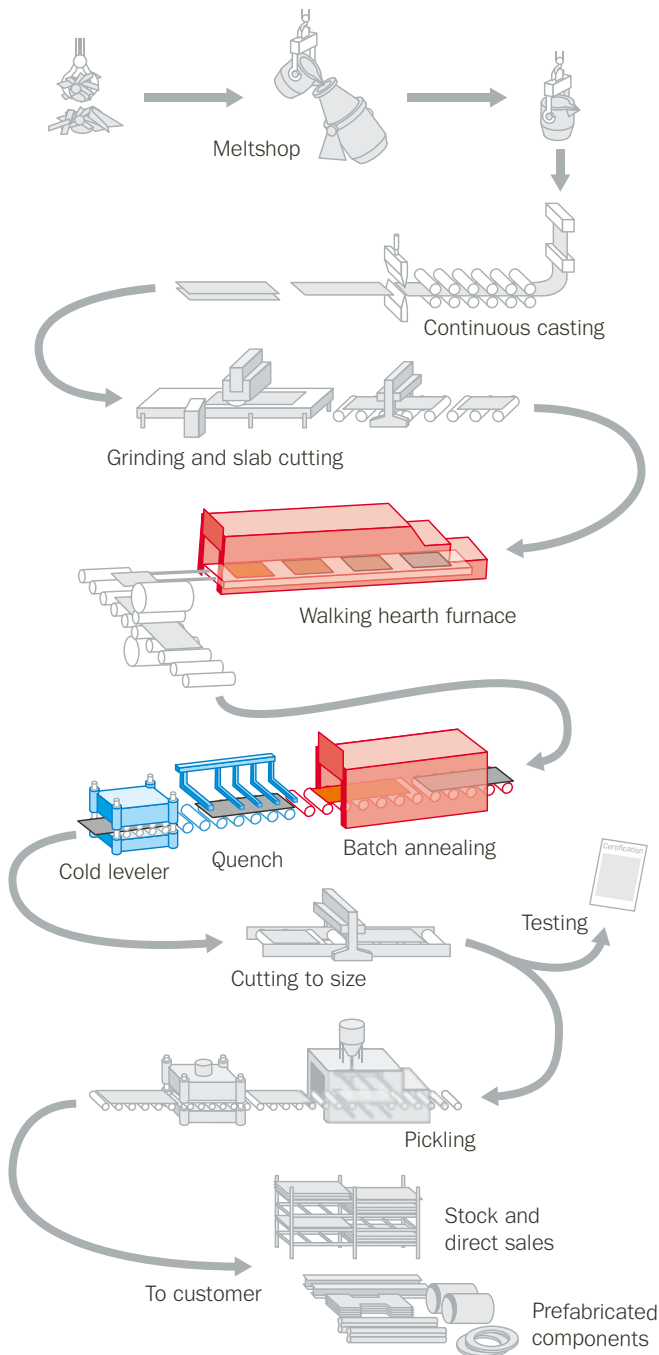
The recent investments in Degerfors have enabled us to achieve the following improvements:

1. Lower overall emissions per produced unit.
2. 50% savings in energy consumption when hot charging plate, and lower NOx emissions in heat treatment and reheating before rolling.
3. Emissions to water reduced by half.

### Increased capacity

The new walking hearth furnaces will ultimately lead to total capacity increasing from 105,000 tonnes to 155,000 tonnes per year.

# Equipment investments in Degerfors, Sweden



In 2014 Outokumpu completed a 100-million-euro investment at its biggest quarto plate mill, in Degerfors, Sweden. The investments and associated improvements have contributed to cost efficiencies across the production process and have further strengthened Outokumpu's position as the leading stainless steel plate producer in the world.

The new equipment includes a new walking hearth furnace, cold leveler, heat-treatment batch furnaces, and associated quencher, as well as an updated transfer bed.

## Walking hearth and batch furnaces

The new heat treatment furnaces are specially designed for annealing stainless steel and are flexible in terms of size and loading, allowing us to produce thicker plate in all grades. The furnaces also have higher precision, which gives improved predictability when it comes to the material temperature. This leads to better plate uniformity at rolling, particularly important with special grades like Ultra 254 SMO and lean duplexes like Forta LDX 2101 and Forta LDX 2404.

## Quenching capabilities

The new quench allows for more rapid and homogenous cooling after annealing, which improves flatness, lowers internal stress and, above all, optimizes material properties. With the new water treatment plant, 97% of process water can be recycled.

## Cold leveler

The new cold leveler, the last step in the heat treatment process, is four times stronger than our old leveler and allows for different setups depending on plate grades and dimensions. The new cold leveler also improves flatness tolerances and lowers internal stress levels, which is beneficial for subsequent fabrication.

## Contact us

Want to find out more about Outokumpu quarto plate? Our experts are ready to help you with your next project. [www.outokumpu.com/plate](http://www.outokumpu.com/plate)

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