

# SSAB high strength steels and wear plates meet all demands for laser cutting

High Strength Steel (HSS) and Wear Plate offer significant advantages over mild steels. However, when it comes to laser cutting, they behave exactly the same way. Both Hardox and Domex, from SSAB, meet all demands for laser cutting and can be processed with the same cutting parameters as unalloyed steel grades such as S235.

“Contrary to popular belief, a laser beam has the same effect regardless of whether a material is soft or hard,” explains Anders Ivarson, a thermal cutting and welding specialist at the SSAB Knowledge Service Center.

Since a laser beam is bundled light made up of a certain wavelength, it does not matter whether the light is directed at hard or soft steel—the material is heated either way.

“For example, the melting temperature of our High Strength Steel Domex 700 is exactly the same as that of S235GR, which includes no alloying elements of any kind. This is why a laser cutting machine with the same parameters can cut Domex 355, 420 or 700 equally well,” explains Ivarson.

In contrast to other suppliers, SSAB does not require a special laser for high strength steel grades. All Hardox and Domex steels can be perfectly laser cut because of their consistent steel properties, low thickness tolerances, outstanding flatness and surface finish, as well as low alloy and optimized chemical composition. The high steel quality also allows for smaller radii and ensures accurate results when bending.

Bystronic, one of the leading manufacturers of laser cutting machines, also confirms this.

“During Competence Days, our in-house exhibition, we processed Hardox and Domex exclusively and demonstrated to about 900 visitors from 50 countries that it is possible to cut and bend this material perfectly, even in larger thicknesses. Currently there is still a certain level of reluctance by our customers to use such high strength material – but without cause,” says Mario Duppenhaler, Product Manager Laser & Automation at Bystronic.

Bystronic’s laser cutting systems reliably cut Hardox in thicknesses up to 20 mm with excellent results. Even 25 mm Hardox plates can be laser cut, however, the results depend to some extent on the contour and the surface of the material.

“We can also laser cut 25 mm Hardox plates very well, without time-consuming post-processing. In doing so, we are opening up many new application areas for our machines,” explains Duppenhaler.

## Contact

Andie Drobnik, Manager Communications, SSAB Americas  
T +1 630 810 4774, [andrea.drobnik@ssab.com](mailto:andrea.drobnik@ssab.com)

## **Image 1**

Due to outstanding properties, Hardox 500 plates can be laser cut with good results in thicknesses up to 25 mm. Image © Bystronic.

## **Image 2**

Anders Ivarson, Joining & Thermal Cutting Specialist at the SSAB Knowledge Service Center.

SSAB is a global leader in value added, high strength steel. SSAB offers products developed in close cooperation with its customers to create a stronger, lighter and more sustainable world. SSAB has employees in over 45 countries and operates production facilities in Sweden and the US. SSAB is listed on the NASDAQ OMX Nordic Exchange, Stockholm. [www.ssab.com](http://www.ssab.com).