

Docol HR500Y550T HE

General Product Description

The Docol HR500Y550T HE steel is the next generation of hot-rolled high-strength low-alloy steels with improved local formability for higher edge ductility and cut-edge quality.

Docol HR500Y550 HE have a new and closely controlled production method resulting in a very fine microstructure in combination with a very clean steel, resulting in greatly improved local formability while still retaining a good global formability making it suitable for stamping most geometries and will excel in demanding forming where the cut edges may limit the forming operation.

The improved cut edge quality achieved with this new way of producing Docol HR500Y550 HE with a steel less sensitive to tool-settings and –wear compared to conventional HSLA grades, make it especially suitable for fine blanking.

HR500Y550T HE will have a typical hole expansion of approx. 30 percentage points above the corresponding conventional HSLA grade. Also the bending performance is improved and a bend radius of 0xt can be guaranteed.

Docol HR500Y550T HE will excel when optimizing any fine blanking, stamping or forming operation and will push the limit on how to utilize the benefits of steel.

Docol HR500Y550T HE can after agreement be adapted and delivered as dual certified with S500MC according to EN 10149-2:2010.

Dimension Range

Docol HR500Y550T HE is available as Hot-rolled pickled and oiled coil, slit coils and cut to length sheets in thickness of 2.00^{*)} - 7.00 mm and widths up to 1600 mm. Length up to 16 meters.

*) Some restrictions may occur, and will be handled on request.

Mechanical Properties

Yield strength R _{p0.2} (min MPa)	Tensile strength R _m (MPa)	Elongation A ₈₀ ¹⁾ (min %)	Elongation A ₅ ²⁾ (min %)	Hole expansion (% typical)	Min .inner bending radius for a 90° bend
500	550 - 700	14	17	70	0.0 xt

The mechanical properties are valid in the longitudinal direction.

Bending properties for both longitudinal and transversal direction.

1) A80 value applies for thicknesses < 3.00 mm.

2) A5 value applies for thicknesses ≥ 3.00 mm.

Chemical Composition (ladle analysis)

C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Al _{tot} (min %)	Nb (max %)	V (max %)	Ti (max %)
0.10	0.03 ¹⁾	1.60	0.025	0.010	0.015	0.09 ²⁾	0.20 ²⁾	0.15 ²⁾

1) If the material is to be hot-dip galvanized, this must be specified in the order.

2) The sum of Nb, V and Ti is max 0.22%.

Tolerances

Hot-rolled (UC): Tolerances in accordance to EN10051.

Customized dimensional and shape tolerances are available on request.

Fabrication and Other Recommendations

For information concerning fabrication, see SSAB's brochures on www.ssab.com or consult Tech Support, techsupport@ssab.com.

Appropriate health and safety precautions must be taken when bending, welding, cutting, grinding or otherwise working on the product.

Contact Information

www.ssab.com/contact