

Docol HR420Y480T HE

General Product Description

The Docol HR420Y480T 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 HR420Y480T 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 HR420Y480T HE with a steel less sensitive to tool-settings and –wear compared to conventional HSLA grades, make it especially suitable for fine blanking.

Combining the improved local formability with the excellent cut-edge quality Docol HR420Y480T 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 HR420Y480T 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 HR420Y480T HE can after agreement be adapted and delivered as dual certified with S420MC according to EN 10149-2:2010.

Dimension Range

Docol HR420Y480T HE is available as Hot-rolled pickled and oiled coil, slit coils and cut to length sheets in thickness of 4.00 - 7.00 mm and widths up to 1600 mm. Length up to 16 meters.

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
420	480 - 600	18	22	90	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⁾	1.50	0.025	0.010	0.015	0.09 ²⁾	0.20 ²⁾	0.15 ²⁾

1) Docol HR420Y480T HE meets the requirements of category A (thin coatings) for hot-dip zinc-coating in EN 10149-2.

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

The steel is grain refined.

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