

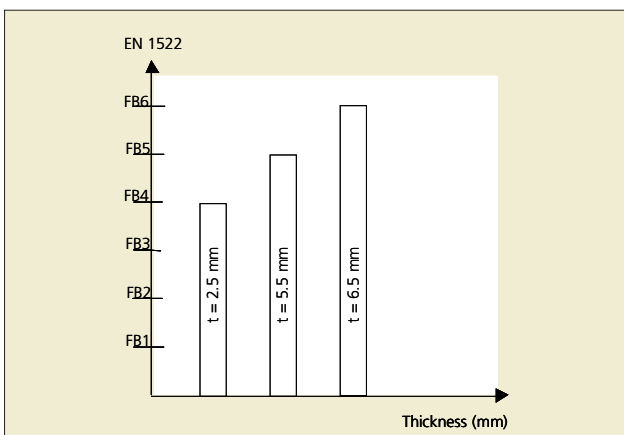
Hot rolled, ballistic protection steel Domex Protect 500

Product

Domex Protect 500 is a hot rolled ballistic resistant steel that is available in thickness 2-6,5 mm. Low carbon and manganese content in combination with its very carefully controlled heating, rolling and cooling sequences gives Domex Protect 500 its good combination of hardness, high strength and formability.

Applications

Domex Protect 500 can be used in civil and military applications. Domex Protect 500 has excellent ballistic protection properties in combination with high hardness and strength but still remains easy to handle in the workshop. The table below shows approximate values according to our own test results and to standard EN 1522. These values are only for guidance. To verify actual ballistic protection properties, test must be performed for each application.



Dimension range

Domex Protect 500 is available in the range of sizes tabulated below in as rolled condition with mill edge.

Thickness (mm)	Width (mm)	Length (mm)
2.00 - 2.49	900 - 1150	1500 - 4000
2.50 - 2.99	900 - 1300	1500 - 4000
3.00 - 6.50	900 - 1500	1500 - 6500

*) Special agreement required

Chemical Composition

C	Si	Mn	P	S	S + P	Others
%	%	%	%	%	%	%
	max	max	max	max	max	max
0.30	0.40	1.30	0.020	0.010	0,025	Cr and B

Mechanical properties

Hardness: approx 500 HV₁₀

Bendability

Steel grade	Min. recommended bending radius (<90°)
Domex Protect 500	5xt
	Min. recommended die width
	10xt

Welding

Weldability is good due to the lean composition and limited thickness of the material. There is very little risk of cracking in the heat-affected zone (HAZ), even without preheating.

Welding methods

Recommended fusion welding methods for Domex Defend 500 include:

- manual metal arc welding (MMA)
- gas metal arc welding (GMAW)
- flux cored arc welding (FCAW)

Filler metals

To minimize the risk of hydrogen cracking, electrodes which give low content of hydrogen in the weld should be used. Electrodes which give a hydrogen content of maximum 5 ml/100 g in the weld metal are recommended. It is recommended that the welds are in areas with low stresses.

Edge preparation

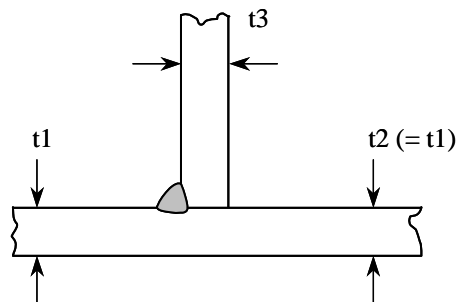
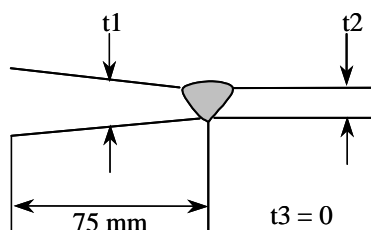
Before welding it is important to remove all kinds of impurities which can create bad weld quality, e.g. rust, mill scale, moisture, oil and paint.

Tack welding

A tack weld is a weld which is shorter than 30 mm. To ensure a constant gap width during the welding operation tack welding is normally used. Tack welds are often short and give a rapid cooling rate which increases the risk of hydrogen cracking. If Domex Protect 500 is tack welded to another steel giving a combined thickness (see illustration below) above 20 mm preheating of 75°C is recommended during the tack welding operation.

Combined thickness = $t_1 + t_2 + t_3$ according to EN 1011-2

t_1 = average thickness over a length of 75 mm



Recommended filler metals

MMA Manual metal arc welding	GMAW Gas metal arc welding	FCAW Flux cored arc welding
AWS: A5.1 E7X18	AWS: A5.18 ER 7XS-X	AWS: A5.20 E7XT-X

Technical service and information

Knowledge Service Center will be pleased to assist with additional information concerning this product from SSAB Tunnpåt.

The particulars in this data sheet are correct at the time of going to print and are intended to give general guidance for the use of the product. Subject to changes arising from continual product development. The information and data must not be regarded as guaranteed values, unless specially confirmed in writing.

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