WELDOX®
TechSupport

Information from SSAB Oxelösund **#51**

WELDOX 1300

WELDOX 1300 is the world´s first structural steel plate with a strength of 1300 MPa. The new high performance product is developed for Original Equipment Manufacturers as a natural step in our thrive to always be the market leader in developing high strength steels. The main application of interest is load carrying applications like different types of cranes as well as certain special applications where steel has not yet been considered.

WELDOX 1300 is a general structural steel with a minimum yield strength of 1300 MPa intended for load carrying structures with very high demands on low weight.

WELDOX 1300 is available in thicknesses between 4 and 10 mm. Like all WELDOX products, thickness tolerances are in accordance with our AccuRollTech precision guarantee. See more detailed information at www.accurolltech.com.

WELDOX 1300 combines good weldability and bendability due to an optimized production process. The steel is also very pure and tough due to unique achievements in the secondary metallurgy.

Mechanical properties

Plate thickness mm	**Yield strength** [1] $R_p0,2$, min, MPa [2]	**Tensile strength** [1] R_m, MPa	**Elongation** [1] A_5 min, %
4,0 - 10,0	1300	1400 - 1700	8

[1] For transverse test pieces
[2] 1 MPa = 1 N/mm²

Chemical composition

C* max %	**Si*** max %	**Mn*** max %	**P** max %	**S** max %	**B*** max %	**Nb*** max %	**Cr*** max %	**V*** max %	**Cu** max %	**Ti** max %	**Al*** total min %	**Mo*** max %	**Ni*** max %	**N** max %
0,25	0,50	1,40	0,020	0,005	0,005	0,04	0,80	0,08	0,10	0,02	0,020	0,70	2,0	0,010

* Intentional alloying elements. The steel is grain refined.

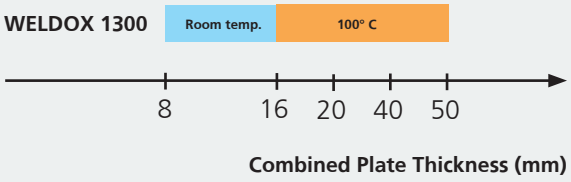
Carbon equivalents

Plate Thickness	**CEV** Typical values %	**CET**
8 mm	0,63	0,40
10 mm	0,65	0,42

Welding

WELDOX 1300 is characterized by high weldability and the welded joints can achieve good mechanical properties. All conventional welding methods are applicable for welding of WELDOX 1300.

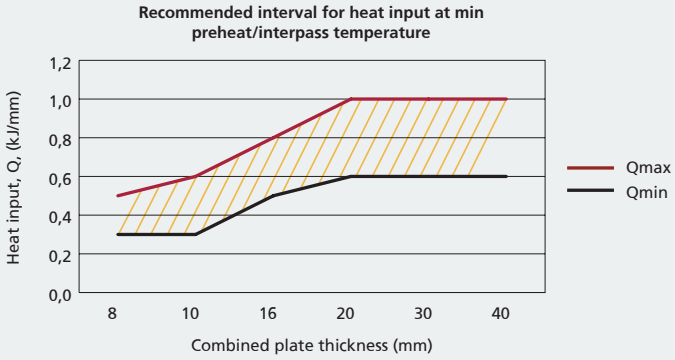
Recommended intervals for heat input and minimum preheat temperatures / interpass temperatures are according to diagrams.

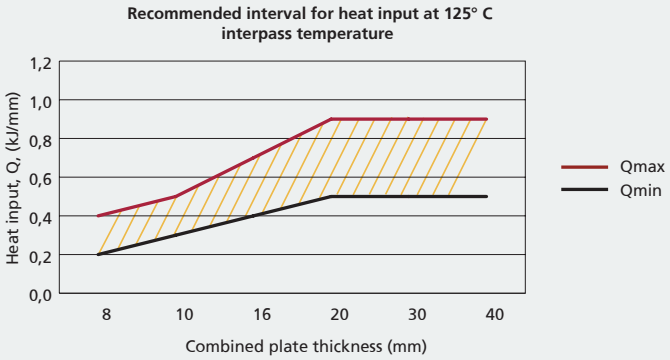


The preheat temperature is based on a heat input (Q) of 1,0 kJ/mm

Welding consumables with Rp0,2 of up to ~930 MPa can be used. The level of diffusible hydrogen content in the consumables is recommended to be max 5 ml/100 g of weld metal. Also consider the preheat temperature for the consumable if the carbon equivalent is higher for the consumable compared to WELDOX 1300.

Interpass temperatures and preheat temperatures of up to 200°C can be used.





Bending

WELDOX 1300 can be bent according to the table. Due to the high strength of the steel spring back is significantly higher than regular steels and almost 2 times higher compared to a 690 material.

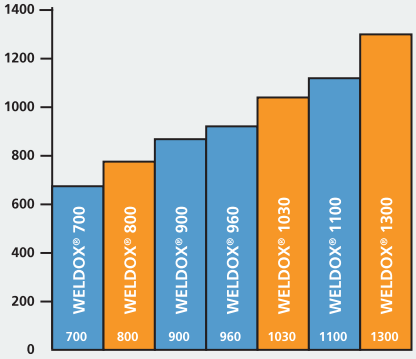
	Thickness [mm]	At right* Angles R/t	Along* R/t
WELDOX 1300	t < 6	3.5	4.0
	6 ≤ t < 10	4.0	5.0

* to rolling direction

The complete product range

WELDOX 1300 is the world´s first structural steel with a yield strength of 1300 MPa and the next step in our mission to offer the strongest structural steel on the market. The WELDOX program contains 7 different grades with yield strengths between 700 and 1300 MPa. During the last two years SSAB Oxelösund introduced 3 new steels, WELDOX 800, WELDOX 1030 and WELDOX 1300. This means that we can offer our customers the most complete product range of high strength structural plates on the market.

New WELDOX grades 2004 - 2005



The most complete product range in the market

Free consultation by
the Conceptual Design Group

The Conceptual Design Group helps you to develop your products with WELDOX 1300, and to evaluate fatigue, buckling and deflection. They also serve as a sounding board in areas like FEM-analysis and Damage Tolerant Design.

Contact your application engineer to help initiate a project. The service is available to all customers.

CDG brings you knowledge, experience and creativity.
From left to right: Christer Sonander, Torbjörn Narström and Bo Lindström.

WELDOX®
STRUCTURAL STEEL PLATE

WELDOX Structural Steel Plate; Only from SSAB Oxelösund.
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