

SIMAXX^{...} 700

HIGH-STRENGTH FINE-GRAINED STRUCTURAL STEEL

SIMAXX 700 is a high-strength fine-grained structural steel with a minimum yield strength of 650–690 MPa, depending on the thickness, according to EN 10025-6. Excellent combination of high strength, toughness, and workshop properties makes SIMAXX 700 ideal for use in a wide range of industries where high strength-to-weight ratio is required. Typical products made of SIMAXX 700 steel are truck trailer chassis, load-bearing components for agriculture machinery and booms for advanced lifting industry. SIMAXX 700, supplied as quarto plates in quenched and tempered condition, has good bendability and can be welded using all arc welding processes.

STANDARDS

- General technical delivery requirements according to EN 10021.
- Tolerances on dimensions and shape according to EN 10029.
- Delivery requirements for surface condition according to EN 10163-2.
- Ultrasonic testing according to EN 10160.
- Technical delivery conditions according to EN 10025-6.
- Tensile testing at room temperature according to EN ISO 6892-1.
- Impact testing according to EN ISO 148-1.

CHEMICAL COMPOSITION

SIMAXX 700	C	Si	Mn	P	S	Cr	Ni	Mo	B
Max. in %	0.18	0.5	1.7	0.015	0.005	1.2	1.0	0.8	0.004

Steel contains nitrogen-binding and grain-refining elements.

SIMAXX 700	6–25 mm	25.01–50 mm	50.01–100 mm
CEV* (max. in %)	0.60	0.65	0.75

$$*CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Ni + Cu}{15}$$

MECHANICAL PROPERTIES

Thickness [mm]	Tensile properties*		
	R _{p0.2} [MPa] min.	R _m [MPa]	A _{5.65} [%] min.
6–50	690	770–940	14
50.1–100	650	760–930	14

* For transverse tensile flat test pieces.

Thickness [mm]	Impact toughness*			
	Testing direction	Quality	Temperature [°C]	KV ₂ [J] min.
6–100	Transverse	Q	–20	27
6–100	Transverse	QL	–40	27
6–60	Transverse	QL1	–60	27

* Measured on standard specimen 10 x 10 x 55 mm. The specified minimum value is the average of 3 tests. One individual value may be below the minimum average value specified, provided that it is not less than 70 % of that value. For plate thickness below 12 mm, subsize specimens shall be used. The minimum values of subsize specimens shall be reduced in direct proportion to the cross-sectional area of the test piece.

DELIVERY CONDITION

- Hot-rolled quarto plates in quenched and tempered condition.

DIMENSIONS

Thickness [mm]	Width* [mm] max.	Length [mm] max.
6–7.9	2000	12500
8–100**	2500	12500

*2060/2560 – if plates are ordered with untrimmed rolling edges.

**8–60 for QL1 quality.

SURFACE CONDITION

- Sandblasted
- Sandblasted and anti-corrosion painted*

* Maximum width of the anti-corrosion painted plates is 2000 mm. Thickness of the coating is 20–60 µm.

INSPECTION DOCUMENTS

The type of document shall be agreed upon at the time of enquiry and order. A test certificate according to EN 10204/3.1 is issued mandatorily.

The information and data in this product data sheet are intended for informative purpose only and may be revised at any time without notice. Presented typical properties of the materials are described only to help readers make their own evaluations and decisions. They are not guaranteed.