

WELDOX 700

HIGH STRENGTH STEEL

Weldox 700 is a general structural steel with a minimum yield strength of 700 Mpa. **Weldox 700** meets the requirements corresponding steel grades and qualities according to EN 10025.

Applications	Load carrying structures having high demands on low weight.														
Designation	Weldox 700D with guaranteed impact toughness at -20°C (-4°F). Corresponds to S690Q Weldox 700E with guaranteed impact toughness at -40°C (-40°F). Corresponds to S690QL Weldox 700F with guaranteed impact toughness at -60°C (-76°F). Corresponds to S690QL1														
Chemical composition	C*	Si*	Mn*	P	S	B*	Nb*	Cr*	V*	Cu*	Ti	Al* total	Mo*	Ni*	N
	max %	max %	max %	max %	max %	max %	max %	max %	max %	max %	max %	max %	max %	max %	max %
	0,20	0,60	1,60	0,020	0,010	0,005	0,04	0,70	0,09	0,30	0,04	0,015	0,70	2,00	0,010
	* Intentional alloying elements. The steel is grain-refined.														
						Plate thickness	CEV Typical values	CET %		CEV = C + $\frac{Mn}{6}$ + $\frac{Cr+Mo+V}{5}$ + $\frac{Cu+Ni}{15}$					
										CET = C + $\frac{Mn+Mo}{10}$ + $\frac{Cr+Cu}{20}$ + $\frac{Ni}{40}$					
						WELDOX 700D.E	8 mm	0.43	0.29						
							20 mm	0.43	0.29						
							30 mm	0.46	0.31						
							60 mm	0.57	0.35						
						WELDOX 700F	8 mm	0.55	0.36						
							20 mm	0.55	0.36						
							30 mm	0.55	0.36						
							60 mm	0.55	0.36						
Mechanical properties	Plate thickness mm		Yield strength ¹⁾ R _{p0,2} min MPa ²⁾			Tensile strength ¹⁾ R _m MPa ²⁾			Elongation ¹⁾ A ₅ min %						
	4,0 - 53,0		700			780-930			14						
	53,1 - 100,0		650			780-930			14						
	100,1- 130,0		630			710-900			14						
	1) For transverse test pieces 2) 1 MPa = 1 N/mm ²														
Impact properties	Steel grade and quality					Impact energy (J) for tests on transverse 1) Charpy V 10 x 10 tests specimens 2) Test temperatures in °C									
	WELDOX 700 D					0		-20		-40		-60			
	WELDOX 700 E					30		27		-		-			
	WELDOX 700 F					35		30		27		-			
						40		35		30		27			
	1) Unless otherwise agreed, transverse impact testing according to EN 10025-6 option 30 will apply. 2) For plate thicknesses less than 12 mm, subsize Charpy V-specimens are used. The specified minimum value is then proportional to the cross section of the specimen.														
Testing	Testing according to EN 10025.														
Delivery conditions	Q Quenched and tempered as per EN 10025-6.														

Dimensions	<p>Weldox 700 is supplied in plate thicknesses of 4–130 mm.</p> <p>More detailed information on dimensions is provided in our brochure 41-General Product Information Weldox, Hardox, ArmoX and Toolox-UK.</p>
Tolerances	<p>- All plates are produced with AccuRollTech™ thickness precision guarantee.</p> <p>AccuRollTech™ meets the requirements of EN 10 029, but offers more narrow tolerances.</p> <p>- Tolerances on flatness according to Class N (Normal tolerances).</p> <p>More detailed information is given in our brochure 41-General Product Information Weldox, Hardox, ArmoX and Toolox-UK as well as at www.weldox.com</p>
Surface condition	
General technical delivery requirements	<p>According to our brochure 41-General Product Information Weldox, Hardox, ArmoX and Toolox-UK.</p>
Heat treatment and fabrication	<p>Weldox 700 has obtained its mechanical properties by a quenching and tempering process.</p> <p>Weldox 700 is not suited for applications requiring hot working at temperatures above 580°C since the material may then lose its guaranteed properties.</p> <p>For information concerning welding and fabrication, see our brochures on www.weldox.com or consult our Technical Customer Service.</p> <p>Appropriate health and safety precautions must be taken when welding, cutting, grinding or otherwise working on the product. Grinding, especially of primer coated plates, may produce dust with high particle concentration.</p>