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GNEE STEEL stock various dimensions of S690Q steel plate, S690QL steel plate and S690QL1 steel plate with low temperature charp v-notch impact test. Ultrasonic examination for S690Q steel plate with A578, A435 standard.

Plates of S690Q steel grade

Fine-grain structural steel after quenching and tempering

Products description

S690Q – structural high-strength steel with minimum yield strength of 690 MPa supplied in quenched and tempered condition (Q). Plates of S690 steel grade comply with EN 10025-6 standard. It is typically used in structures bearing extreme loads – in the production of mining and heavy construction equipment, crane facilities, offshore drilling rigs and supports for offshore wind mills as well as in the construction of bridges and trestles.

Available dimensions

Plates of S690 steel grade are available with thicknesses of 8-100 mm for Q and QL quality groups and with thicknesses of 8-50 mm for QL1 quality group. Available width of plates is up to 3200 mm, length – up to 12200 mm. With the plate thickness of 100 mm and plate width of 1600 mm, the maximum length is 7500 mm*. Plates with thickness up to 50 mm are supplied with edges trimmed, with thickness of 51 to 100 mm – with the edge flame cut.

* – maximum weight is 9,5 ton

Mechanical properties under EN 10025-6

Steel grade	Thickness, mm	Yield strength, min MPa	Tensile strength, MPa	Elongation, min %
S690Q, QL, QL1	≥8 t ≤50	690	770-940	14
S690Q, QL	>50 t ≤100	650	760-930	14

Steel grade	Impact energy KV, min J			
	0	-20	-40	-60
S690Q	40	30	-	-
S690QL	50	40	30	-
S690QL1	60	50	40	30

Chemical composition (max %)

According to EN 10025-6

C	Si	Mn	P	S	N	B	Cr	Cu	Mo	Nb	Ni	V
0.20	0.80	1.70	0.020-0.025	0.010-0.015	0.015	0.005	1.50	0.50	0.70	0.06	2.00	0.12

According to Metinvest production

C	Si	Mn	P	S	N	B	Cr	Cu	Mo	Nb	Ni	V
0.19	0.35	1.15	0.015	0.006	0.009	0.002	0.65	0.30	0.50	0.03	0.90	0.07

Carbon equivalent

Thickness, mm	CEV	
	EN 10025-6	Metinvest production
< 50	0.65	0.59
> 50	0.77	0.73

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

Tolerances

Thickness	According to EN 10029 Class A
Length and width	According to EN 10029
Flatness	According to EN 10029 Class N
Surface properties	According to EN 10163 Class A

Welding

Steels specified in this document possess limited weldability properties since steel behavior before and after welding depends not only on the material, but its dimensions and shapes as well as operating conditions of goods.

General requirements to arc welding of steels specified herein shall be in line with EN 1011-2.

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