

EN10025-6, Hot Rolled Products of Structural Steels

Part 6: Technical delivery conditions for flat products made of high yield strength structural steels in the quenched and tempered condition



EN10025-6 is Standard specifies Hot rolled products of structural steels. Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition. EN10025-6 Standard main steel grade: S460Q, S460QL1, S460QL, S500QL, S500Q, S500QL1, S550Q, S550QL, S690Q, S690QL, S890Q, S890QL, S960QL and so on.

Standard: EN10025-6

Grade :S460Q, S460QL1, S460QL, S500QL, S500Q, S500QL1, S550Q, S550QL, S690Q, S690QL, S890Q, S890QL, S960QL

Thickness : 8mm-500mm

Width : 1000mm-4000mm

Length : 1000mm-20000mm

MOQ: 1 PC

Product type : Steel plate

Delivery time : Promptly (Stock) or 10-40 days (Production)

Stock : Available

MTC: Available

Delivery condition: AS REQUIREMENTS

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Table 2 - Chemical composition of the ladle analysis for quenched and tempered steels ^a

Grade	Quality	C % max.	Si % max.	Mn % max.	P % max.	S % max.	N % max.	B % max.	Cr % max.	Cu % max.	Mo % max.	Nb % max. b	Ni % max.	Ti % max. b	V % max. b	Zr % max. b
All grades	(no symbol) L L1	0,20	0,80	1,70	0,025 0,020	0,015 0,010	0,015	0,005 0	1,50	0,50	0,70	0,06	2,0	0,05	0,12	0,15

^a Depending on the thickness of the product and the manufacturing conditions, the manufacturer may add to the steel one or several alloying elements up to the maximum values given in order to obtain the specified properties (see 7.2.2).

^b There shall be at least 0,015 % of a grain-refining element present. Aluminium is also one of these elements. The minimum content of 0,015 % applies to soluble aluminium, this value is regarded as attained if the total aluminium content is at least 0,018 %, in case of dispute the soluble aluminium content shall be determined.

Table 3 - Chemical composition of the product analysis based on Table 2 ^a

Grade	Quality	C % max.	Si % max.	Mn % max.	P % max.	S % max.	N % max.	B % max.	Cr % max.	Cu % max.	Mo % max.	Nb % max. b	Ni % max.	Ti % max. b	V % max. b	Zr % max. b
All grades	(no symbol) L L1	0,22	0,86	1,80	0,030 0,025	0,017 0,012	0,016	0,006 0	1,60	0,55	0,74	0,07	2,1	0,07	0,14	0,17

^a Depending on the thickness of the product and the manufacturing conditions, the manufacturer may add to the steel one or several alloying elements up to the maximum values given in order to obtain the specified properties (see 7.2.2).

^b There shall be at least 0,010% of a grain-refining element present. Aluminium is also one of these elements. The minimum content of 0,010 % applies to soluble aluminium, this value is regarded as attained if the total aluminium content is at least 0,013 %, in case of dispute the soluble aluminium content shall be determined.

Table 4 - Maximum CEV based on the ladle analysis for quenched and tempered steel ^a

Designation		Maximum CEV in % for nominal product thickness in mm		
According EN 10027-1 and CR 10260	According EN 10027-2	≤ 50	> 50 ≤ 100	> 100 ≤ 150
S460Q S460QL S460QL1	1.8908 1.8906 1.8916	0,47	0,48	0,50
S500Q S500QL S500QL1	1.8924 1.8909 1.8984	0,47	0,70	0,70
S550Q S550QL S550QL1	1.8904 1.8926 1.8986	0,65	0,77	0,83
S620Q S620QL S620QL1	1.8914 1.8927 1.8987	0,65	0,77	0,83
S690Q S690QL S690QL1	1.8931 1.8928 1.8988	0,65	0,77	0,83
S890Q S890QL S890QL1	1.8940 1.8983 1.8925	0,72	0,82	-
S960Q S960QL	1.8941 1.8933	0,82	-	-

^a For the optional increase of elements which influence the CEV see 7.4.3.

Table 5 - Mechanical properties at ambient temperature for quenched and tempered steel

Designation		Minimum yield strength R_{eH} MPa ^a			Tensile strength R_{m} MPa ^a			Minimum percentage elongation after fracture % $L_0 = 5,65 \sqrt{S_0}$
		Nominal thickness mm			Nominal thickness mm			
According EN 10027-1 and CR 10260	According EN 10027-2	≥ 3 ≤ 50	> 50 ≤ 100	> 100 ≤ 150	≥ 3 ≤ 50	> 50 ≤ 100	> 100 ≤ 150	
S460Q S460QL S460QL1	1.8908 1.8906 1.8916	460	440	400	550 to 720		500 to 670	17
S500Q S500QL S500QL1	1.8924 1.8909 1.8984	500	480	440	590 to 770		540 to 720	17
S550Q S550QL S550QL1	1.8904 1.8926 1.8986	550	530	490	640 to 820		590 to 770	16
S620Q S620QL S620QL1	1.8914 1.8927 1.8987	620	580	560	700 to 890		650 to 830	15
S690Q S690QL S690QL1	1.8931 1.8928 1.8988	690	650	630	770 to 940	760 to 930	710 to 900	14
S890Q S890QL S890QL1	1.8940 1.8983 1.8925	890	830	-	940 to 1 100	880 to 1 100	-	11
S960Q S960QL	1.8941 1.8933	960	--	-	980 to 1 150	-	-	10

^a 1 MPa = 1 N/mm²

Table 6 - Minimum values of impact energy for impact tests on longitudinal V-notch test pieces for quenched and tempered steel

Designation		Minimum values of impact energy in J at test temperatures, in °C			
According EN 10027-1 and CR 10260	According EN 10027-2	0	- 20	- 40	- 60
S460Q S500Q S550Q S620Q S690Q S890Q S960Q	1.8908 1.8924 1.8904 1.8914 1.8931 1.8940 1.8941	40	30	-	-
S460QL S500QL S550QL S620QL S690QL S890QL S960QL	1.8906 1.8909 1.8926 1.8927 1.8928 1.8983 1.8933	50	40	30	-
S460QL1 S500QL1 S550QL1 S620QL1 S690QL1 S890QL1	1.8916 1.8984 1.8986 1.8987 1.8988 1.8925	60	50	40	30