

Hot Rolled Products of Structural Steels

Part 2: Technical delivery conditions for non-alloy structural steels



EN10025-2 is Standard specifies the technical delivery conditions for flat and long products and semi-finished products which are meant for further processing to flat and long products of hot rolled non-alloy quality steels in the grades and qualities given chemical composition and Tables mechanical properties in the delivery conditions as given. EN10025-2 Standard main steel grade: S235JR, S235JO, S235J2, S420JO, S355J2, S355K2, S355JR, S355JO, S275JO, S275J2 and so on.

Standard: EN10025-2

Grade :S235JR, S235JO, S235J2,S420JO, S355J2, S355K2, S355JR, S355JO, S275JO, S275J2

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 flat and long products of steel grades and qualities with values for the impact strength ^a

Designation		Method of deoxidation ^b	C in % max. for nominal product thickness in mm			Si % max.	Mn % max.	P % max. ^d	S % max. ^{e, f}	N % max. ^g	Cu % max. ^h	Other % max. ⁱ
According EN 10027-1 and CR 10260	According EN 10027-2		≤ 16	> 16 ≤ 40	> 40 ^f							
S235JR	1.0038	FN	0,17	0,17	0,20	-	1,40	0,035	0,035	0,012	0,55	-
S235J0	1.0114	FN	0,17	0,17	0,17	-	1,40	0,030	0,030	0,012	0,55	-
S235J2	1.0117	FF	0,17	0,17	0,17	-	1,40	0,025	0,025	-	0,55	-
S275JR	1.0044	FN	0,21	0,21	0,22	-	1,50	0,035	0,035	0,012	0,55	-
S275J0	1.0143	FN	0,18	0,18	0,18	-	1,50	0,030	0,030	0,012	0,55	-
S275J2	1.0145	FF	0,18	0,18	0,18	-	1,50	0,025	0,025	-	0,55	-
S355JR	1.0045	FN	0,24	0,24	0,24	0,55	1,80	0,035	0,035	0,012	0,55	-
S355J0	1.0553	FN	0,20 ^j	0,20 ^k	0,22	0,55	1,80	0,030	0,030	0,012	0,55	-
S355J2	1.0577	FF	0,20 ^j	0,20 ^k	0,22	0,55	1,80	0,025	0,025	-	0,55	-
S355K2	1.0598	FF	0,20 ^j	0,20 ^k	0,22	0,55	1,80	0,025	0,025	-	0,55	-
S450J0 ^l	1.0590	FF	0,20	0,20 ^k	0,22	0,55	1,70	0,030	0,030	0,025	0,55	^m

^a See 7.2.

^b FN = rimming steels not permitted; FF = fully killed steel (see 6.2.2).

^c For sections with nominal thickness > 100 mm the C content by agreement.

See option 26.

^d For long products the P and S content can be 0,005 % higher.

^e For long products the max. S content can be increased for improved machinability by 0,015 % by agreement if the steel is treated to modify the sulphide morphology and the chemical composition shows min. 0,0020 % Ca.

See option 27.

^f The max. value for nitrogen does not apply if the chemical composition shows a minimum total Al content of 0,020 % or alternatively min. 0,015 % acid soluble Al or if sufficient other N binding elements are present. In this case the N binding elements shall be mentioned in the inspection document.

^g Cu content above 0,40 % may cause hot shortness during hot forming.

^h If other elements are added, they shall be mentioned on the inspection document.

ⁱ For nominal thickness > 150 mm: C = 0,20 % max..

^j For grades suitable for cold roll forming (see 7.4.2.2.3): C = 0,22 % max..

^k For nominal thickness > 30 mm: C = 0,22 % max..

^l Applicable for long products only.

^m The steel may show a Nb content of max. 0,05 %, a V content of max. 0,13 % and a Ti content of max. 0,05 %.

Table 7 - Mechanical properties at ambient temperature for flat and long products of steel grades and qualities with values for the impact strength

Designation		Minimum yield strength R_{eH} ^a MPa ^b								Tensile strength R_m ^a MPa ^b					
		Nominal thickness mm								Nominal thickness mm					
		≤ 15	> 15 ≤ 40	> 40 ≤ 63	> 63 ≤ 80	> 80 ≤ 100	> 100 ≤ 150	> 150 ≤ 200	> 200 ≤ 250	> 250 ≤ 400 ^d	< 3	≥ 3 ≤ 100	> 100 ≤ 150	> 150 ≤ 250	> 250 ≤ 400 ^d
According EN 10027-1 and CR 10260	According EN 10027-2														
S235JR	1.0038	235	225	215	215	215	195	185	175	-	360 to 510	360 to 510	350 to 500	340 to 490	-
S235J0	1.0114	235	225	215	215	215	195	185	175	-	360 to 510	360 to 510	350 to 500	340 to 490	-
S235J2	1.0117	235	225	215	215	215	195	185	175	165	360 to 510	360 to 510	350 to 500	340 to 490	330 to 480
S275JR	1.0044	275	265	255	245	235	225	215	205	-	430 to 580	410 to 560	400 to 540	390 to 540	-
S275J0	1.0143	275	265	255	245	235	225	215	205	-	430 to 580	410 to 560	400 to 540	390 to 540	-
S275J2	1.0145	275	265	255	245	235	225	215	205	195	430 to 580	410 to 560	400 to 540	380 to 540	380 to 540
S355JR	1.0045	355	345	335	325	315	295	285	275	-	510 to 680	470 to 630	450 to 600	450 to 600	-
S355J0	1.0553	355	345	335	325	315	295	285	275	-	510 to 680	470 to 630	450 to 600	450 to 600	-
S355J2	1.0577	355	345	335	325	315	295	285	275	205	510 to 680	470 to 630	450 to 600	450 to 600	450 to 600
S355K2	1.0596	355	345	335	325	315	295	285	275	205	510 to 680	470 to 630	450 to 600	450 to 600	450 to 600
S450J0 ^e	1.0590	450	430	410	390	380	380	-	-	-	-	550 to 720	530 to 700	-	-

^a For plate, strip and wide flats with widths ≥ 600 mm the direction transverse (t) to the rolling direction applies. For all other products the values apply for the direction parallel (l) to the rolling direction.

^b 1 MPa = 1 N/mm².

^c The values apply to flat products.

^d Applicable for long products only.

(To be continued)

Table 9 - Mechanical properties - impact strength KV longitudinal for flat and long products^a

Designation		Temperature °C	Minimum energy (J) Nominal thickness in mm		
			≤ 150 ^{a b}	> 150 ≤ 250 ^b	> 250 ≤ 400 ^c
According EN 10027-1 and CR 10260	According EN 10027-2				
S235JR	1.0038	20	27	27	-
S235J0	1.0114	0	27	27	-
S235J2	1.0117	- 20	27	27	27
S275JR	1.0044	20	27	27	-
S275J0	1.0143	0	27	27	-
S275J2	1.0145	- 20	27	27	27
S355JR	1.0045	20	27	27	-
S355J0	1.0553	0	27	27	-
S355J2	1.0577	- 20	27	27	27
S355K2	1.0596	- 20	40 ^d	33	33
S450J0 ^e	1.0590	0	27	-	-

^a For nominal thicknesses ≤ 12 mm see 7.3.2.1 of EN 10025-1:2004.

^b For sections with a nominal thickness > 100 mm the values shall be agreed.

See option 28.

^c The values apply to flat products.

^d This value corresponds with 27J at - 30 °C (see Eurocode 3).

^e Applicable for long products only.