

EN10025-4, Hot Rolled Products of Structural Steels

Part 4: Technical delivery conditions for thermomechanically rolled weldable fine grain structural steels



EN10025-4 is Standard specifies Hot rolled products of structural steels. Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels. EN10025-4 Standard main steel grade: S275M, S355M, S275ML, S355ML, S420ML, S420M, S460M, S460ML and so on.

Standard: EN10025-4

Grade :S275M, S355M, S275ML, S355ML, S420ML, S420M, S460M, S460ML

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)

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Stock : Available

MTC: Available

Delivery condition: AS REQUIREMENTS

Table 2 - Chemical composition of the ladle analysis for thermomechanical rolled steel

Designation		C % max.	Si % max.	Mn % max.	P % max. ^a	S % max. ^b	Nb % max.	V % max.	Al _{tot.} % min. ^c	Ti % max.	Cr % max.	Ni % max.	Mo % max.	Cu % max. ^d	N % max.
According EN 10027-1 and CR 10260	According EN 10027-2														
S275M	1.8818	0,13 ^e	0,50	1,50	0,030	0,025	0,05	0,08	0,02	0,05	0,30	0,30	0,10	0,55	0,015
S275ML	1.8819				0,025	0,020									
S355M	1.8823	0,14 ^e	0,50	1,60	0,030	0,025	0,05	0,10	0,02	0,05	0,30	0,50	0,10	0,55	0,015
S355ML	1.8834				0,025	0,020									
S420M	1.8825	0,16 ^f	0,50	1,70	0,030	0,025	0,05	0,12	0,02	0,05	0,30	0,80	0,20	0,55	0,025
S420ML	1.8836				0,025	0,020									
S460M	1.8827	0,16 ^f	0,60	1,70	0,030	0,025	0,05	0,12	0,02	0,05	0,30	0,80	0,20	0,55	0,025
S460ML	1.8838				0,025	0,020									

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

^b For railway applications a maximum S content of 0,010 % may be agreed at the time of enquiry and order.
See option 32.

^c If sufficient other N-binding elements are present the minimum total Al content does not apply.

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

^e For long products a maximum C content of 0,15 % for grade S275 and a maximum C content of 0,16 % for grade S355 applies.

^f For long products of the grades S420 and S460 a maximum C content of 0,18 % applies.

Table 5 - Mechanical properties at ambient temperature for thermomechanical rolled steel

Designation		Minimum yield strength R _{0.2} ^a MPa ^b						Tensile strength R _m ^a MPa ^b					Minimum percentage elongation after fracture ^c % L ₀ = 5,65 √S ₀
According EN 10027-1 and CR 10260	According EN 10027-2	Nominal thickness mm						Nominal thickness mm					
		≤ 16	> 16 ≤ 40	> 40 ≤ 63	> 63 ≤ 80	> 80 ≤ 100	> 100 ≤ 120	≤ 40	> 40 ≤ 63	> 63 ≤ 80	> 80 ≤ 100	> 100 ≤ 120	
S275M	1.8818	275	265	255	245	245	240	370 to 530	360 to 520	350 to 510	350 to 510	350 to 510	24
S275ML	1.8819												
S355M	1.8823	355	345	335	325	325	320	470 to 630	450 to 610	440 to 600	440 to 600	430 to 590	22
S355ML	1.8834												
S420M	1.8825	420	400	390	380	370	365	520 to 680	500 to 660	480 to 640	470 to 630	460 to 620	19
S420ML	1.8836												
S460M	1.8827	460	440	430	410	400	385	540 to 720	530 to 710	510 to 690	500 to 680	490 to 660	17
S460ML	1.8838												

^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 For product thickness < 3 mm for which test pieces with a gauge length of L₀ = 80 mm shall be tested, the values shall be agreed at the time of the enquiry and order.

^d For long products a thickness ≤ 150 mm applies.

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Table 6 - Minimum values of impact energy for impact tests on longitudinal V-notch test pieces for thermomechanical rolled 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	+ 20	0	- 10	- 20	- 30	- 40	- 50
S275M S355M S420M S460M	1.8818 1.8823 1.8825 1.8827	55	47	43	40 ^a	-	-	-
S275ML S355ML S420ML S460ML	1.8819 1.8834 1.8836 1.8838	63	55	51	47	40	31	27
^a This value corresponds with 27J at - 30 °C (see Eurocode 3).								