

Structural Steels

1 Steel description and applications



As a result of joining the forces of NLMK Clabecq, NLMK DanSteel A/S and NLMK Verona into one unique division, we offer one of the largest range of thickness in structural steels.

Our long experience in these steels is another advantage, as we can meet most of your technical requirements.

For a long time, we have proven our know-how in the following sectors:

- earthmoving, mining and quarrying machinery
- mechanical construction
- structural steelwork
- oil & gas storage tanks
- wind energy
- etc.

2 Available grades

NLMK Europe - Plate can produce steel according to numerous norms like EN, BS, ASTM, CSA, DIN grades. If you don't find a particular grade in this table, please check with your sales representative for the feasibility.

EN 10025-2		Japanese JIS 3106	Canada CSA G40-21	USA ASTM
S235JR	1.0038	SM 400 A	230 G	A283 Gr. A,B,C,D
S235JO	1.0114	SM 400 B		
S235 J2	1.0117	SM 400 C		
S275 JR	1.0044		260 W, WT	A572 Gr. 42
S275 JO	1.0143			A36
S275 J2	1.0145			A573 Gr. 65
S355 JR	1.0045	SM 490 A	350 W, WT	A633 Gr. C,D
S355 JO	1.0553	SS 490 B		
S355 J2	1.0577	SS 490 C		A573 Gr. 70
S355 K2	1.0596	SS 490 YB		
S235 JRC	1.0122			
S235 JOC	1.0115			
S235 J2C	1.0119			
S275 JRC	1.0128			
S275 JOC	1.0140			
S275 J2C	1.0142			
S355 JRC	1.0551			
S355 JOC	1.0554			
S355 J2C	1.0579			
S355 K2C	1.0594			

Our structural steels are also developed to enhance processability:

- laser steels make it possible to cut them with high precision
- cold forming steels optimize the forming properties in order to guarantee an excellent finishing
- normalised rolled for surface critical applications
- thermomechanically controlled rolled for improved weldability

As you sometimes expect more of your steel for outside applications, we also propose special solutions:

- steels with improved resistance to atmospheric corrosion combine strength and inner protection against weathering effects
- floor plates, with their numerous combinations of grades and thicknesses, are an answer for higher security in long-lasting hard weather and utilization conditions
- special steel for fracture critical applications
- steel for harsh weather environments

Whether you are looking for a widespread mix of thicknesses, small quantities in any grade or when you have special requirements, our plates and bars keep each time the same high quality which makes their reputation. Our sales representatives help you to find the most appropriate plates to fulfill your specific requirements. Don't hesitate to contact us.

EN 10025-3		USA ASTM
S275 N	1.0490	
S275 NL	1.0491	
S355 N	1.0545	
S355 NL	1.0546	A572 Gr. 50
S420 N	1.8902	A572 Gr. 60
S420 NL	1.8912	
S460 N	1.8901	
S460 NL	1.8903	

EN 10025-5		USA ASTM
S235 JOW	1.8958	
S235 J2W	1.8961	
S355 JOW	1.8959	A588 A,B,C,K
S355 J2W	1.8965	A588 A,B,C,K
S355 K2W	1.8967	A588 A,B,C,K
S355 JOWP	1.8945	
S355 J2WP	1.8946	

EN 10025-6		USA ASTM
S690Q/QL/QL1		A514 S
S890Q/QL		
S960Q/QL		

EN 10025-4		USA ASTM
S275 M	1.8818	
S275 ML	1.8819	
S355 M	1.8823	
S355 ML	1.8834	A945
S420 M	1.8825	
S420 ML	1.8836	A945
S460 M	1.8827	
S460 ML	1.8838	

EN 10149-2		USA ASTM
S315 MC	1.0972	
S355 MC	1.0976	A656 Gr. 50
S420 MC	1.0980	A656 Gr. 60
S460 MC	1.0982	
S500 MC	1.0984	A656 Gr. 70

3 Dimensions

3.1 Hot rolled steels Main produced steels.

Grades			Hot Rolled Steels	
			Thickness	Delivery Conditions ⁽¹⁾
Structural	EN 10025-2	S 235 JR	max. thickness range: 3-200	as rolled (AR), normalized rolled or normalized (N), thermo-mechanically controlled rolled (TM)
		S 235 JO		
		S 235 J2		
		S 275 JR		
		S 275 JO		
		S 275 J2		
		S 355 JR	Please contact us for the feasibility!	
		S 355 JO		
		S 355 J2		
		S 355 K2		
Cold forming	EN 10149-2	S 235 JRC	3-30	normalized rolled or normalized (N)
		S 235 J2C		
		S 275 J2C		
		S 355 JOC		
		S 355 J2C		
		S 355 K2C	3-20	thermo-mechanically controlled rolled
		S 355 MC		
		S 420 MC		
		S 460 MC		
		S 500 MC		
		S 550 MC	5-16	

(1) agreed at the time of the order

Grades			Hot Rolled Steels	
			Thickness	Delivery Conditions ⁽¹⁾
Weldable Fine Grain	EN 10025-3	S 275 N	3 - 200	normalized rolled or normalized (N)
		S 275 NL		
		S 355 N		
		S 355 NL	3 - 200	
		S 420 N		
		S 420 NL		
		S 460 N	3 - 150	
	S 460 NL			
	EN 10025-4	S 275 M	3 - 50	thermomechanically controlled rolled (TM)
		S 275 ML	3 - 100	
		S 355 M		
		S 355 ML		
		S 420 M		
		S 420 ML		
S 460 M				
S 460 ML	8 - 40			
S 500 M				
	S 500 ML			
Atmospheric Corrosion Resistance	EN 10025-5	S 355 JOWP	3 - 12	as rolled (AR), normalized rolled or normalized (N)
		S 355 J2WP	3 - 80 ⁽¹⁾	
		S 235 JOW		
		S 235 J2W		
		S 355 JOW		
		S 355 J2W		
	S 355 K2W	5-30		
	S 420 JOW			
	S 420 J2W			
		S 420 K2W	5 - 25	
		S 460 JOW		
		S 460 J2W		
S 460 K2W				

3.2 Forged Plates & Forged Bars

Grades			Forged Plates			Forged Bars		
			Thickness	Delivery Conditions		Thickness	Delivery Conditions	
				As rolled	Normalized		As rolled	Normalized
Structural	EN 10025-2	S 185	151-360	x	x	361-1000	x	x
		S 235 JR		x			x	
		S 235 JO		x	x		x	x
		S 235 J2			x			x
		S 275 JR		x			x	
		S 275 JO		x	x		x	x
		S 275 J2			x			x
		S 355 JR		x			x	
		S 355 JO		x	x		x	x
		S 355 J2			x			x
		S 355 K2		x	x		x	x

4 Elementary precautions

As the properties of structural steels differ from the one to the other, it is recommended to observe elementary precautions and to strictly follow the instructions given in the norms and

in the technical guides before using advanced techniques for cutting, welding, forming, etc... Our technical experts are at your disposal for any request or requirement.

The elements in the datasheet are given for information only and reflect the information known at the time of publishing. This document is intended to give a general guideline for the purchasing and use of the steels only. The transmitter of this document doesn't accept any liability for any error or omission in the content of this document. Values and components quoted must not be considered as being guaranteed unless specifically confirmed separately in writing.