



Example:

S		355		J2		H																
Structural steel grade	Mechanical properties	Notch toughness (J)			Special requirements																	
					Group 1	Group 2																
S= Structural steel symbol	Min. Yield strength in N/mm² Re	Notch toughness (J)			M = Thermomechanical rolling	C = Grade suitable for cold forming																
					N = Normalised rolling	D = Galvanizing																
					G1=Rimmed	E = Enamelled																
					G2=Killed	H = Hollow section																
					G3 = Indicates delivery conditions are at the manufacturer’ s discretion	L = Minimum value of impact energy a a temp. of -50° C																
						M = Thermomechanical rolling																
						O = Offshore																
						S = Shipbuilding																
						W = Atmospheric corrosion resistant																
		<table><tr><th>Min 27 J</th><th>Min 40 J</th><th>Temp ° C</th></tr><tr><td>JR</td><td>KR</td><td>20</td></tr><tr><td>J0</td><td>K0</td><td>0</td></tr><tr><td>J2</td><td>K2</td><td>-20</td></tr><tr><td>J3</td><td>K3</td><td>-30</td></tr><tr><td>J4</td><td>K4</td><td>-40</td></tr></table>			Min 27 J	Min 40 J	Temp ° C	JR	KR	20	J0	K0	0	J2	K2	-20	J3	K3	-30	J4	K4	-40
Min 27 J	Min 40 J	Temp ° C																				
JR	KR	20																				
J0	K0	0																				
J2	K2	-20																				
J3	K3	-30																				
J4	K4	-40																				

STRUCTURAL STEEL

MECHANICAL PROPERTIES

MATERIAL	Yield (ReH) min. N/mm ² Thickness in mm						Tensile (Rm) N/mm ² Thickness in mm		A — min. elongation Lo=80mm (%) Thickness in mm				Charpy V-notch longitudinal Thickn. >10≤150	
	≤16	>16 ≤40	>40 ≤63	>63 ≤80	>80 ≤100	>100 ≤150	≥3 ≤100	>100 ≤150	≥3 ≥40	>40 ≤63	>63 ≤100	>100 ≤150	Temp ° C	Energy J
S185	185	175					290-510							
S235JR	235	225					340-470						20	27
S235JRG1	235	225					340-470						20	
S235JRG2	235	225	215	215	215	195	340/470		26	25	22		20	
S235J0	235	225	215	215	215	195							0	
S235J2G3	235	225	215	215	215	195							-20	
S235J2G4	235	225	215	215	215	195						22	-20	
S275JR													20	27
S275J0	275	265	255	245	235	225	410/560	400-540	22	21	20	18	0	
S275J2G3													-20	
S275J2G4									20	19	18	18	-20	
S355JR													20	27
S355J0	355	345	335	325	315	295	490-630	470-630	22	21	20	18	0	
S355J2G3/G4													-20	
S355K2G3/G4									20	19	18	18	-20	40

CHEMICAL COMPOSITION

MATERIAL	C Max. % For nominal thickness in mm			Mn % Max.	Si % Max.	P % Max	S % Max	N % Max	CEV Max. % For nominal thickness in mm			
	≤16	>16 ≤40	>40						≤16	>16 40	>40 ≤63	>63 ≤150
S185												
S235JR	0.21	0.25		1.5	0.6	0.055	0.055	0.011	0.35	0.35		
S235JRG1	0.21	0.25				0.055	0.055	0.009	0.35	0.35		
S235JRG2	0.19	0.19	0.23			0.055	0.055	0.011	0.35	0.35	0.38	0.38
S235J0	0.19	0.19				0.050	0.050		0.35	0.35	0.38	0.38
S235J2G3	0.19	0.19	0.19			0.045	0.045		0.35	0.35	0.38	0.38
S235J2G4	0.19	0.19				0.045	0.045		0.35	0.35	0.38	0.38
S275JR	0.24	0.24	0.25	1.6	0.6	0.055	0.055	0.011	0.40	0.40	0.42	0.42
S275J0						0.050	0.050		0.40	0.40		
S275J2G3	0.21	0.21	0.21			0.045	0.045		0.40	0.40		
S275J2G4						0.045	0.045		0.40	0.40		
S355JR	0.27	0.27	0.27	1.7	0.55	0.055	0.055	0.011	45	0.45	0.47	0.47
S355J0	0.24	0.23				0.050	0.050			0.47		
S355J2G3/G4	0.24	0.23	0.24			0.045	0.045			0.45		
S355K2G3/G4	0.24	0.23				0.045	0.045			0.45		

STRUCTURAL STEEL

STEEL GRADE EQUIVALENT TABLES

EUROPE					GERMANY	FRANCE	ITALY	BELGIUM	SWEDEN	U.K.	CANADA	CHINA	JAPAN		INTERNATIONAL	USA
EN 10025(93)	EN 10025-2	EN 10025(90)	DIS.NE	EN 10113-2	DIN 17100	NFA 35 501	UNI 7070	NBN21-101	SS14	BS 4360	CSAG40-21	GB700/GB-T 1591	JIS 3101	JIS 3106	ISO630	ASTM
S185	1.0035	Fe 310-0			St33	A 33	Fe320	A 320	13.00.00			Q 185	SS330			A283 A,B,C,D
S235JR	1.0037	Fe360 B			St37-2	E 24-2	Fe 360 B	AE 235-B				Q235 A			Fe 310	A283 A,B,C,D
S235JRG1	1.0036	Fe 360 B	FU		Ust 37-2							Q 235 B				
S235JRG2	1.0038	Fe 360 B	FN		RSt 37-2		Fe360		13.11.00	40(A) B	230G	Q 235 B	SS400	SM400A	Fe 360 B	A284 gr,C,D
S235J0	1.0114	Fe360 C	FN		St37-3 U	E24-3	Fe 360 C	AE235-C	13.12.00	40 C		Q 235 C		SM400B	Fe 360 C	
S235J2G3	1.0116	Fe 360 D1	FF		St 37-3 N	E 24-4	Fe 360 D	AE 235-D		40 D		Q 235 D		SM400C	Fe 3610 D	
S235J2G4	1.0117	Fe 360 D2	FF							40 EE		Q 235 D				A 36
S275JR	1.0044	Fe 430 B	FN		St 44-2	E 28-2	Fe 430B	AE 255-B	14.12.00	43 (A) B	260W,WT	Q 275 Z			Fe 430 B	A529 GR 42.50
S275J0	1.0143	Fe 430 C	FN		St 44-3 U	E 28-3	Fe 430 C	AE255-C		43C		Q275			Fe 430 C	
S275J2G3	1.0143	Fe 430 D1	FF	S 275N	St 44-3N	E 28-4	Fe 430 D	AE 255-D	14.14.00	43 D		Q 275			Fe 430 D	A572 gr,42,50
S275J2G4	1.0145	Fe 430 D2	FF	S 275 NL				AE 255-DD	14.14.01 26.34.11 21.72.00 21.47.01	43 EE		Q275				
											300W.WT					A 573 GR,58,65,70
S355JR	1.0045	Fe 510 B	FN			E 36-2	Fe 510 B	AE 355-B	21.32.01	50 B	350 W,WT	Q 345 C	SS490	SM490A	Fe 510 B	A633 GR,A,C,D
S355J0	1.0553	Fe 510 C	FN		St 52-3 U	E 36-3	Fe 510 C	AE 335-C	21.34.01	50 C		16Mn		SS490B	Fe510 C	
S355J2G3	1.0570	Fe 510 D1	FF	S 355 N	St 52-3N		Fe 510 D	AE 355 - D	21.35.01	50D				SS490C	Fe 510 D	

STRUCTURAL STEEL

EUROPE					GERMANY	FRANCE	ITALY	BELGIUM	SWEDEN	U.K.	CANADA	CHINA	JAPAN		INTERNATIONAL	USA
EN 10025(93)	EN 10025- 2	EN 10025(90)	DIS.NE	EN 10113- 2	DIN 17100	NFA 35 501	UNI 7070	NBN21- 101	SS14	BS 4360	CSAG40- 21	GB700/GB- T 1591	JIS3101	JIS3106	ISO630	ASTM
S355J2G4	1.0577	Fe 510 D2	FF	S355 NL					26.42.00			Q 345 D		SS 490YA	A 656	A656 GR,50
S355K2G3	1.0595	Fe 510 DD1	FF			E 36-4	Fe 510 DD	AE 355- DD	26.44.11	50 DD				SS490YB		
S355K2G4	1.0596	Fe 510 DD2	FF							50 EE				SM520B		
S275N(K2)	1.0493	ACCIAI SPECIALI A GRANO FINE NORMALIZZATI	GF					A 330-1/2								A 709 GR,36,50,50 W
S275NL(J5)	1.0497		GF					A 360- 1/2/3								
S355N (K2)	1.0539		GF					A 410- 1/2/3				Q 345 D				A 808
S355NL(J5)	1.0549		GF									Q 345 E				
S460N (K2)	1.8953		GF		St E 460 N							Q 460 D				
S460NL(J5)	1.8956		GF		TSt E 460N							Q 460 E				
E295	1.0050	Fe 490-2	FN		St 50-2	A 50-2	Fe 490	Fe 490-2	15 50- 00/01				SS500		Fe 490	
E335	1.0060	Fe 590-2	FN		St 60-2	A 60-2	Fe 590	Fe 590-2	16 50- 00/01						Fe 590	
E360	1.0070	Fe 690-2	FN		St 70-2	A 70-2	Fe 690	Fe 690-2	16 55- 00/01						Fe 6901	

STRUCTURAL STEEL

HIGH STRENGTH MICRO ALLOYED STEEL GRADES (UNI EN 10149-2:1997)									
ALFANUMERICA	NUMERICA	EU 149-2 1980	GERMANY SEW 092		FRANCE		U.K.	SWEDEN	ITALY
		Fe E 275-TM	QStE 260 TM	1.0970		E 275 D	40F30		Fe E 275-TM
S315MC	1.0972		QStE300 TM	1.0972	E 315 D	E 335 D	43F35		
S355MC	1.0976	Fe E 355-TM	QStE 360 TM	1.0976	E 355 D	(E 390 D)	46F40	26 42-00	Fe E 355-TM
S420MC	1.0980	Fe E 420-TM	QStE 420 TM	1.0980	E 420 D	E 445 D	(50F45)	26 52-00	Fe E 420-TM
S460MC	1.0982		QStE 460 TM	1.0982					
		Fe E 490-TM			E 490 D	E 490 D			Fe E 490-TM
S500MC	1.0984		QStE 500 TM	1.0984				26 62-00	
S550MC	1.0986	(Fe E 560-TM)	QStE 550 TM	1.0986	(E 560 D)		60F55		(Fe E 560-TM)
					E 620 D		68F62		
S600MC	1.8969		QStE 600 TM	1.0988					
S650MC	1.8976		QStE 650 TM	1.0989					
S700MC	1.8974		QStE690TM	1.0966	(E 690 D)		75F70		

HOT ROLLED DRAWING AND FORMING STEEL GRADES (UNI EN 10111:2000)								
EUROPE		ITALY	GERMANY	FRANCE	U.K.	SPAIN	USA	JAPAN
EN 10027-1 E CR 10260	EN 10027-2	EU 111.77	DIN 1614	NF A 36-301	BS 1449	UNE 36.086	ASTM	JIS G 3131
DD11	1.0332	FeP11	StW22	1C	HR3	AP11	A 569 CQ	SPHC
DD12	1.0398	FeP12	RRStW23				A621 DQ	
DD13	1.0335	FeP13	StW24	3C	HR1	AP13	A 622 DQAK	SPHE
DD14	1.0389			SCT				

STRUCTURAL STEEL

COLD ROLLED DRAWING AND FORMING STEEL GRADES (UNI EN 10111:2000)						
EUROPE	ITALY	GERMANY	FRANCE	U.K.	USA	JAPAN
EN 10130	UNI 5866	DIN 1623	NFA 36 401	BD 1449	ASTM	JIS
DC01	P01	St12	C	CR SP4	A 366.85	ci 1 SPCCT
DC03	P02	St13	E	CR SP3	A 619.82	Ci 2 SPCCD
DC04	P04	St14	ES	CRSP1	A 620.84	Ci 3 SPCEN

METAL COATED FORMABLE STEELS (UNI EN 10111:2000)						
EUROPE	ITALY	GERMANY	FRANCE	U.K.	USA	JAPAN
EN 10142	UNI 5753 (1984)	DIN 17.162-1(1977)	NFA 36.321 (1985)	BS 2989 (1982)	ASTM A 653-97	JIS 3302 (1987)
DX51D	Fe P02 G	St 02 Z	GC	Z2	CS	SGCC
DX52D	Fe P03 G	St 03 G	GE	Z3	CS	SG CD 1
DX53D	Fe P05G	St 04 or 05 Z	GES	Z4	FS	SG CD 2
DX54D	Fe P06 G				DDS	SG CD 3

METAL COATED STRUCTURAL STEELS						
EUROPE	ITALY	GERMANY	FRANCE	U.K.	USA	JAPAN
EN 10147	UNI 5753 (1984)	DIN 17.162-2(1980)	NFA 36.322 (1978)	BS 2989 (1982)	ASTM A 653-97	JIS 3302 (1987)
S220 GD	Fe E 220 G		C 230	Z 22	SQ- Gr . 230	
S250 GD	Fe E 250 G	St E 250-2Z	C 250	Z 25	SQ- Gr .255	SGC 340
S280 GD	Fe E 280 G	St E 280-2Z/3Z	C 280	Z 28	SQ- Gr. 275	SGC 400
S320 GD	Fe E 320 G	St E 320-3Z	C 320			SGC 440
S350 GD	Fe E 350 G	St E 350-3Z	C 350	Z 35	SQ- Gr. 340	SGC 490
S550 GD	Fe E 550 G		C 550	Z 55	SQ- Gr. 550	SGC 570