

Equivalents of Carbon Steel Qualities

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Boiler steel

Europe			Germany	France	Italy	Belgium	Sweden	U.K.	Canada	India	Japan		International	USA
EN10025(93)	EN10025(90)	EN10113-2	DIN 17100	NFA 35-501	UNI7070	NBN21-101	MNC810E	BS4360	CSAG40-21	IS	JIS3101	JIS 3106	ISO 630	ASTM
S185	Fe 310-0		St 33	A 33	Fe 320	A 320	SS13,00,00				SS 330		FE 310	A283 A, B, C, D
S235JR(G2)	Fe E360B(FN)		St 37-2	E24-2	Fe 360 B	AE235B	SS 13.11.00	40(A)B	230 G	IS226	SS400	SM 400A	Fe 360 B	A284 gr, C, D
S235 J0	Fe E 360 C		St37-3U	E 24-3	Fe 360 C	AE235 C	SS 13,12,00	40C		Fe 410-S		SM400B	Fe 360C	
S235J2G3	Fe E 360 D1		St 37-3 N	E24-4	Fe 360 D	AE 235 D		40D				SM400C	Fe 360 D	
S235J2G4	FeE360 D2							40 EE						A 36
						AE 255 A, B, C, D								
S275 JR	Fe430 B		ST 44-2	E 28-2	Fe430B	AE295 B	SS14,12,00	43(A)B	260W, WT	IS2062			Fe 430B	A529
S 275 JO	Fe 430 C		St44-3U	E 28-3	Fe 430 C	AE 295C		43 C		Fe410 WA			Fe 430C	GR 42,50
S275 J2G3	Fe430 D1	S 275N	St 44-3N	E 28-4	Fe 430D	AE 295 D	SS14,14,00	43 D		Fe 410 WB			Fe 430D	A572
S275 J2G4	Fe430 D2	S 275NL				AE 295 DD	SS14,14,01	43EE		Fe 410 WC				gr,42,50
							SS26,32,00		300W.WT					
							SS26,34,11							A 573 gr,58,65, 70
							SS21,72,00							
							SS21,74,01							
S 355 JR	Fe510 B			E 36-2	Fe 510 B	AE 355 B	SS21,32,01	50 B	350 W, WT	IS 961	SS490	SM 490A	FE 510 B	A633 gr A, C, D
S 355 JO	Fe 510 C		St 52-3 U	E 36-3	Fe 510C	AE 335 C	SS21,34,01	50 C		Fe 570 HT		SS490B	Fe 510 C	
S 355 J2G3	Fe 510 D1	S 355 N	St 52-3 N		Fe 510D	AE 355 D	SS 21,35,01	50 D		Fe 540 WHT		SS 490 C	Fe 510D	
	Fe 510 D2													

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S 335J2G4	Fe 510 D D1	S 355 NL					SS 26,42,00					SS 490 YA	A 656	A656 gr, 50
S 335K2G3				E 36 -4	Fe 510 DD	AE355DD	SS26,44,11	50 DD				SS490 YB		
S 335K2G4	Fe 510 D D2							50 EE				SM 520 B		
												SM 520 C		A 709 gr.36,50,50 W
														A 808

High Yield Steel

Europe	Germany	France		Sweden	U.K.	Canada	Japan	USA
EN 10028-3	DIN 17102	NFA 36201	NFA 35207	MNC 810E	BS 4360	CSA G40-21	JIS 3101	ASTM
	STE 380	E 375R		SS21,42,01		400 W, WT	SS 540	A 572
	WSt E 380	E 375 FP		SS 21,44,01				gr. 60,65
	T St E 380			SS 21,45,01				
	E St E 380							A 633
								grade E
			A 550 AP, FP	AE 410 DD				
	St E 420	E 420 R		SS 26,52, 00				
	W St E 420	E 420 FP		SS 26,54,11				
	T St E 420							
	E St E 420							
			A 590 AP, FP				(3116) SPV 450	A 656
P 460 N	St E 460	E 460 R			55 C, EE		(3106) SM 570	gr 60,70,80
P 460 NH	W St E 460	E 460 FP						
P 460 NL1	T St E 460							
P 460 NL 2	E St E 460							

Steel for welded Tubes

Germany	U.S.A	EN
DIN 17,172	API 4L, 5L	
St E 210.7	A	
St E 240.7	B	
St E 290, 7 (TM)	X 42	
St E 320, 7 (TM)	X 48	
St E 360, 7 (TM)	X 52	
St E 385, 7 (TM)	X 56	
St E 415, 7 (TM)	X 60	
St E 445, 7 (TM)	X 65	
St E 480, 7 (TM)	X 70	

Steel Resistant to Atmospheric corrosion

Europe	UNI	Germany	France	U.K.	Canada	U.S.A	International	JIS
EN 10155	EU 155	WBL 087	NFA 35502	BS 4360	CSA G 4021	ASTM	ISO 4952	
		WSt 37.2	E 24W 2				Fe 235W	
S 235 JOW	Fe 360 CK1		E 24 W 3					
S 235 J2W	Fe 360 DK1	W St 37.3	E 24 W 4					
S 355 JOW	Fe 510 C2K1		E 36 WB 3	WR 50 B	gr 350 -A AT	A242 gr1	Fe 355 W	
S 355 J2G 1W	Fe 510 D2K1	W St 52.3	E 36 WB 4	WR 50 C	gr 400-A AT	A 600 A, B, C		
S 355 J2G2W								
S 355 K2G1W								
S 366K2G2W								

Steel with Cr., Mo., Cr-Mo.

Europe	Germany	France	Italy	Sweden	Japan	U.K.	U.S.A
EN 10028-2	DIN 17155	AFNOR 36206	UNI 5869	MNC830E	JIS 3103	BS 1501 part 2	ASTM
16 Mo 3	16 Mo 3	15 D 3	16 Mo 3				A202 gr. A, B
		18 MD 4.05	16 Mo 6	22.16.04	450M	271	
		15 MDV 4.05		22.18.04	490 M		A 204 gr. A, B, C
		15 CD 2.05					
14 Cr Mo 45	13 Cr Mo 44	15 CD 4.05	14 Cr Mo 46			620	A 302 gr. A, B
						gr.27,31	
						621 gr. A, B	A 387 gr.2,11,12
						622 gr.31	

General Construction Steel

Europe		Belgium	Germany	France	Sweden	International	Italy	Japan
EN 10025(93)	EN 10025 (90)	NBNA21201	DIN 17100	NFA35501	MNC 850 E	ISO 1052	UNI 7070	JISG
		A 330-1,2						
		A-360 1,2,3						
		A-410 1,2,3						
E 295	Fe 490-2	A 490-1,2	St 50-2	A 60-2	SIS 15,50,00	Fe E 490	Fe 490	SS 500
					SIS 15,50,01	5		
E 335	Fe 590-2	A 590-1,2	St 60-2	A 60-2	SIS 16,50,00	Fe E 690	Fe 590	
					SIS 16,50,01			
E 360	Fe 690-2	A 690-1,2	St 70-2	A 70-2	SIS 16,55,00	Fe E 690	Fe 690	
					SIS 16,65,01			

Steel for Boilers and Pressure Vessels

Europe			Belgium		Germany			France			Italy	Sweden	India	Japan		U. K	USA	
EN 1002 8-2	EN 1002 8-3	EU 113	NBN6 29	NBN6 30	DIN 1713 5	DIN171 65	DIN171 02	NFA362 01	NFA362 05	NFA362 07	UNI58 59	MNC830 E	IS 200 2	JIS G 311 5	JIS G 310 3	BS 1501	ASTM	
P235 GH		Fe E25 5	D 37 1,2	E37 1,2	A St 35	HI	St E 255		A 37 CP, AP, FP		Fe 360 1 KW	SS 13,30,01	Grade 1	SPV 235	SB 410	151	A 285	
		KG KW, KT					W St E 255				Fe 360 2 KW	SS 13,31,01					gr.360,400,430	Gr. A, B, C
							T St E 255				Fe 360 1 KG							A299
							E St E 255				Fe 360 2 KG			grade 2A			161	A441
P 295 GH	P 275 N	Fe E28 5	D 42- 1,2	E 42- 1,2	A St 41	HI	St E 285		A 42 CP, AP, FP		Fe 410- 1-KW	SS 14,30,01				gr.360,400,430	A442	
	P 275 NH	KG, KW, KT					W St 285				Fe 410- 2-KW	SS 14,31,01	grade 2B					gr.55,60
	P 275 NL 1						T St E 285				Fe 410- 1-KG	SS 14,32,01					154	A455
	P 275 NL 2						E St E 285				Fe 410- 2-KG							gr.360A,400A,430A
P296 GH		Fe E31 5	D 47- 1,2	E47-1,2	A St 45	17 Mn 4	St E 315		A 48 CP, AP, FP		Fe 460- 1-KW	SS 21,01,01		SPV 315	SB45 0	164	A515	
		KG, KW, KT					W St E 315				Fe 460- 2-KW	SS 21,02,01					gr.360,400	gr.55,60,65,70
							T St E 315				Fe 460- 1-KG	SS 21,03,01					223	A 516
							E St E 315				Fe 460- 2-KG	SS 29,12,01						gr.460,490

Europe			Belgium		Germany			France			Italy	Sweden	India	Japan		U.K	USA
P 355 GH	P 355 N	Fe E 355	D52- 1,2	E52- 1,2	A St 52	19 Mn 8	St E 355	E 355 R	A 52 CP, AP, FP	A 510 AP, FP	Fe 510-1- KW	SS 21,06,01		SPV 355	SB 480	224	A 537
	P 355 NH	KG, KW, KT					W St E 355	E 355 FP			Fe 510-2- KW	SS 21,07,01				gr.400,430,460,490	class 1
	P 355 NL1						T St E 355				Fe 510-1- KG					225	A 612
	P 355 NL2						E St E 355				Fe 510- 2—KG					grade 490	A 622
										A 530 AP, FP		SS 21,16,01					Gr. A, B, C
												SS 21,17,01					A737
																	gr. B, C

Steel for Ship Building

Lloyds	Norske Veritas	Germanischer Lloyds	Bureau Veritas	American Bureau of Shipping	USSR Register	Nippon Kaigi Kyoka
A	A	A	A	A	A	A
B	B	B	B	B	B	B
D	D	D	D	SS	D	D
E	E	E	E	E	E	E
				CD/DS		
	NV A 27 S					
	NV D 27 S					
	NV D 27 S					
AH 32	NV A 32	A 32	AH32	AH 32	A32	
DH 32	NV 32	D 32	DH 32	DH 32	D 32	
EH 32	NV E 32	E 32	EH 32	EH 32	E 32	
AH 34 S						
DH 34 S						
EH 34 S						
AH 35	NV A 36	A 36	AH 36	AH 36	A 36	
DH 36	NV D 36	D 36	DH 36	DH 36	D 36	
EH 36	NV E 36	E 36	EH 36	EH 36	E 36	
	NVA 40					
	NVD 40					
	NVE 40					
	NVA 420					
	NVD 420					
	NVE 420					

Stamping and cold forming steels

Material #	EN 10111	DIN 1614/2	NFA 36-301	UNI 5867	BS 1449	UNE 36.093	ASTM - SAE	JIS G3131
1.0332	DD11	StW 22	1 C	FeP 11	HR 3	AP 11	A 621 CQ - SAE 1010	SPHD
1.0398	DD12	RRStW 23					A 621 DQ - SAE 1008	SPHE
1.0335	DD13	StW 24	3 C	FeP 13	HR 1	AP 13	A 622 DQ - SAE 1006 AK	SPHE AK
1.0389	DD14		3 CT					

Fine-grain structural steels, normalized rolled

1.049	S275N	StE 285		Fe E 275 KGN			A 572 Gr. 42	
1.0491	S275NL	TStE 285		Fe E 275 KTN	43 EE		A 633 Gr. A	
1.0545	S355N	StE 355	E 355 R	Fe E 355 KGN	50 E	AE 355 KG	A 572 Gr. 50	
1.0546	S355NL	TStE 355	E 355 FP	Fe E 355 KTN	50 EE	AE 355 KT	A 633 Gr. C, D / A 537 Cl. 1	
1.8902	S420N	StE 420	E 420 R	Fe E 420 KGN		AE 420 KG	A 255 Gr. D	SM 490 A
1.8912	S420NL	TStE 420	E 420 FP		50 F		A 633 Gr. E / A 572 Gr. 60 / A 738 Gr. C	

High yield strength cold forming steels

Material #	EN 10149-2	SEW 092	NFA 36-231	UNI 8890	BS 1449	UNE	A 517 / A 607 / J 1392	JIS
1.0972	S315MC		E 315 D		HR 43F35		045 XLK	
1.0974		QStE 340 TM					Gr. 50 / Gr. 50	
1.0976	S355MC		E 355 D	Fe E 355 TM			050 XLK	
1.0978		QStE 380 TM					Gr. 55	
1.098	S420MC	QStE 420 TM	E 420 D	Fe E 420 TM	HR 50F45		Gr. 60 / Gr. 60 / 060 XLK	
1.0982	S460MC	QStE 460 TM					Gr. 65	
1.0984	S500MC	QStE 500 TM	E 490 D	Fe E 490 TM			Gr. 70 / Gr. 70 / 070 XLK	
1.0986	S550MC	QStE 550 TM	E 560 D	Fe E 560 TM			/ Gr. 80 / 080 XLK	
1.8969	S600MC		E 620 D		HR 68F62			
1.8976	S650MC							
1.8974	S700MC	QStE 690 TM	E 690 D				ASTM A514	

High strength steels for cold-forming, normalized

Material #	EN 10149-3	SEW 092	NFA	UNI	BS 1149	UNE	ASTM	JIS
1.0971	S260NC	QStE 260 N						
					HR 40/30			
1.0973	S315NC							
					HR 43/35			
1.0977	S355NC							
					HR 46/40			
1.0981	S420NC	QStE 420 N						
					HR 50/45			

Structural steels with enhanced resistance to atmosphere corrosion

Material #	EN 10155	SEW 087	NFA 35-502	UNI	BS 4360	UNE	ASTM	JIS G3114
1.8961	S235J2W	WTSt 37-3	E 24 W 4	Fe 360 DK 1				
1.8945	S355J0WP		E 36 WA 3	Fe 510 C1K1	WR 50 A			
1.8946	S355J2WP		E 36 WA 4	Fe 510 D1K1			A 242 Type 1	
1.8959	S355J0W		E 36 WB 3	Fe 510 C2K1	WR 50 B		A 588 - A 242 Gr. 1	SMA 50 AW
1.8963	S355J2G1W	WTSt 52-3		Fe 510 D2K1	WR 50 C		A 588 Gr. A	to
1.8965	S355J2G2W							SMA 50 CP
1.8966	S355K2G1W		E 36 WB 4				A 709 Gr. 50 W	
1.8967	S355K2G2W							

General purpose structural steels

Material #	EN 10025	DIN 17100	NFA 35-501	UNI 7070	BS 4360	UNE 36.080	ASTM	JIS G3101
1.0035	S185	St 33	A 33	Fe 320		A 310-0	A 283 B - A 569 CQ	SS 330
1.0037	S235JR	St 37-2	E 24-2	Fe 360 B	40 A		A 283 C - A 570 Gr. 33	
1.0038	S235JRG2	RSt 37-2	E 24-2 NE		40 B	AE 235 B-FN		
1.0116	S235J2G3	St 37-3 N	E 24-4	Fe 360 D	40 D	AE 235 D		
1.0117	S235J2G4							
1.0044	S275JR	St 44-2	E 28-2	Fe 430 B	43 B	AE 275 B	A 283 D - A 36	SS 400
1.0143	S275JO	St 44-3 U	E 28-3	Fe 430 C	43 C	AE 275 C	A 578 Gr. 70	
1.0144	S275J2G3	St 44-3 N	E 28-4	Fe 430 D	43 D	AE 275 D	A 633 Gr. A	
1.0145	S275J2G4							
1.0045	S355JR		E 36-2	Fe 510 B	50 B	AE 355 B	A 572 Gr. 50 - A 678 Gr. A	SS 490
1.0553	S355JO	St 52-3 U	E 36-3	Fe 510 C	50 C	AE 355 C	A 441	
1.057	S355J2G3	St 52-3 N		Fe 510 D	50 D	AE 355 D		
1.0577	S355J2G4							
1.0595	S355K2G3		E 36-4		50 DD			
1.0596	S355K2G4							
1.005	E295	St 50-2	A 50-2	Fe 490		A 490		SS 500
1.006	E335	St 60-2	A 60-2	Fe 590		A 590		
1.007	E360	St 70-2	A 70-2	Fe 690		A 690		

Fine-grain structural steels, thermomechanical rolled

Material #	EN 10113-3	SEW 083	NFA 36-201	UNI 7382	BS 4360	UNE	ASTM	JIS
1.8818	S275M	StE 275 TM		Fe E 275 KGTM				
1.8819	S275ML	TStE 275 TM		Fe E 275 KTTM				
1.8823	S355M	StE 355 TM	E 355 R	Fe E 355 KGTM			A 572 Gr. C	
1.8834	S355ML	TStE 355 TM	E 355 FP	Fe E 355 KTTM	50 EE		A 633 Gr. C	
1.8825	S420M	StE 420 TM	E 420 R				A 572 Gr. 60	
1.8836	S420ML	TStE 420 TM	E 420 FP				A 633 Gr. E	
1.8827	S460M	StE 460 TM	E 460 R	Fe E 460 KGTM			A 572 Gr. 65	
1.8838	S460ML	TStE 460 TM	E 460 FP	Fe E 460 KGTM	55 EE		A 572 Gr. 65	

Boiler steels

Material #	EN 10028-2	DIN 17155	NFA 36-205	UNI 5869	BS 1501	UNE 36087	ASTM	JIS G3115
1.0345	P235GH	HI	A 37 CP	Fe 360 - 1KW	161 Gr. 360 / 164 Gr. 360	A 37 RCI	A 285 Gr. C-A 414 Gr. C / A 516 Gr. 55	SPV 24
1.0425	P265GH	HI1	A 42 CP	Fe 410 - 1KW	161 Gr. 400 / 164 Gr. 400 / 224 Gr. 400	A 42 RCI	A 414 Gr. E / A 516 Gr. 60	
1.0481	P295GH	17 Mn 4	A 48 CP	Fe 460 - 1KW	224 Gr. 490	A 47 RCI	A 414 Gr. F / A 516 Gr. 65	SPV 32
1.0473	P355GH	19 Mn 6	A 52 CP	Fe 510 - 1KW		A 52 RCI	A 414 Gr. G	SPV 36
1.5415	16Mo3	15 Mo 3	15 D3	15 Mo 3	1503 - 243 B	16 Mo 3	A 204 Gr. B	
1.7335	13CrMo4-5	13CrMo 4 4	15 CD 4-05	14 Cr Mo 4.5	620 Gr. 27	14 Cr Mo 4.5	A 387 Gr. 12	
1.738	10CrMo9-10	10CrMo 9 10	10 CD 9.10		622 Gr. 31		A 387 Gr. 22	
1.7383	11CrMo9-10			12 Cr MO 9.10		12 Cr Mo 9.10		

Weldable normalized fine grained pressure vessel steels

Material #	EN 10028-3	DIN 17102	NFA 36-207	UNI 7382	BS 1501	UNE 36081	ASTM	JIS
1.0486	P275N	StE 285			224 Gr. 400			
1.0487	P275NH	WStE 285			224 Gr. 430		A 516 Gr. 60	
1.0488	P275NL1	TStE 285					A 662 Gr. A	
1.1104	P275NL2	EStE 285						
1.0562	P355N	StE 355	A 510 AP	Fe E 355 KG	223 Gr. 490	AE 355 KG	A 537 CL 1	
1.0565	P355NH	WStE 355	A 510 AP	Fe E 355-2	224 Gr. 490		A 662 Gr. C	
1.0566	P355NL1	TStE 355	A 510 FP 1	Fe E 355-3	224 Gr. 490		A 737 Gr. B	
1.1106	P355NL2	EStE 355						

Simple pressure vessels steel

Material #	EN 10207	DIN EN 10207	NFA 36-205	UNI 5869	BS 1501	UNE 36080	ASTM	JIS
1.0112	P235S	SPH 235	A 37 AP	Fe 360-2KW	164-360B LT20	AE 235 C		
1.013	P265S	SPH 265	A 42 AP	Fe 410-2KW	164-400B LT20	SPH 265		
1.11	P275SL	SPH 275						

Steel for gas cylinders and gas vessels

Material #	EN 10120	DIN 17155	NFA 36-211	UNI 7355	BS 5045	UNE 36129	ASTM	JIS G3116
1.0111	P245NB	H I	BS 1	Fe E 24 KR	Type A	AE 235 KR		SG 255
1.0243	P265NB	H II	BS 2	Fe E 27 KR	Type B	AE 265 KR		SG 295
1.0437	P310NB	17 Mn 4	BS 3	Fe E 31 KR	Type C	AE 345 KR		SG 325
1.0557	P355NB	19 Mn 6	BS 4	Fe E 35 KR	Type E			SG 365

Steel for large diameter pipes

Material #	EN 10208-2	DIN 17172	NFA	UNI	BS	UNE	API 5L	JIS
1.0457	L 245NB	StE 240.7					Gr. B	
1.0484	L 290NB	StE 290.7					X 42	
1.0582	L 360NB	StE 360.7					X 52	
1.8972	L 415NB	StE 415.7					X 60	
1.0418	L 245MB	StE 240.7 TM					Gr. B	
1.0429	L 290MB	StE 290.7 TM					X 42	
1.0578	L 360MB	StE 360.7 TM					X 52	
1.8973	L 415MB	StE 415.7 TM					X 60	
1.8975	L 450MB	StE 445.7 TM					X 65	
1.8977	L 485MB	StE 480.7 TM					X 70	
1.8978	L 555MB						X 80	

High carbon Steel

Material #	EN 10083-2	DIN 17200	NFA 33-101	UNI 7846	BS 970	UNE 36011	SAE J 403-AISI	JIS G 4051
1.0501	C35	C 35	AF55-C35	C 35	070 M 36	C 35 k	1035	S 35 C
1.0511	C40	C 40	AF60-C45	C 40	070 M 40		1038 / 1040	S 40 C
1.0503	C45	C 45	AF65-C45	C 45	070 M 46	C 45 k	1042 / 1045	S 45 C
1.054	C50	C 50			070 M 50		1049 / 1050	S 50 C
1.0535	C55	C 55	AF70-C55	C 55	070 M 55	C 55 k	1055	S 55 C
1.0601	C60	C 60			070 M 60		1060	S 58 C
1.0603	1 C 67	C 67	XC 68	C 67	080A67		1070	
1.0605	1 C 75	C 75	XC 75	C 75	080A72		1074	