

2. Reference Tables of Standards

(1) Steel Plates for Structural Use

Strength Level (T.S. N/mm ²)	Standards					
	Sumitomo Standards	JIS	ASTM	DIN & VDEh	BS EN	ISO
≥330	—	G3101 SS330	A283 Gr.B, C	DIN17100 U, RSt34-1, St37-1, 2, 3	BS EN10025 Gr. S185	ISO R630 Fe33, 37A, B, C, D
≥400	—	G3101 SS400	A36 A283 Gr.D	DIN17100 U, RSt42-1	BS EN10025 Gr. S275JR	ISO R630 Fe42A, 44A
		G3106 SM400A	A572 Gr.42 A633 Gr.A	DIN17100 RSt42-2 St42-3 RSt46-2	BS EN10025 Gr. S275JO	ISO R630 Fe42B, 44B
		G3106 SM400B	A573 Gr.58, 65	DIN17100 RSt42-3 RSt46-3	BS EN10025 Gr. S275J2G3	ISO R630 Fe42C, 44C
		G3106 SM400C	A529 Gr.50, 55	DIN17100 RSt42-3 RSt46-3	BS EN10025 Gr. S275J2G4	ISO R630 Fe42D, 44D
≥490	—	G3106 SM490A B, C	A573 Gr.70	DIN17100 St50-1, 2	BS EN10025 Gr. S355JR	—
	—	G3106 SM490YA, B G3106 SM520B, C	A572 Gr.50, 60 A633 Gr.C, D	DIN17100 St52-3	BS EN10025 Gr. S355J0, S355J2G3	ISO R630 Fe52B, D ISO R630 Fe52, C, D
	SUMITEN540	—	A572 Gr.65 A633 Gr.E A678 Gr.B	—	BS EN10025 Gr. S355J2G4, S355K2G3, S355K2G4	—
≥590	SUMITEN590	G3106 SM570	A678 Gr.C	DIN17100 St60-1, 2	BS EN10025 Gr. E335	—
≥685	SUMITEN690 SUMITEN730 SUMITEN780 SUMITEN950	G3128 SHY685 N, NS	A514 Gr.A~T A517 Gr.A~T	DIN17100 St70-2	BS EN10025 Gr. E360	—

(2) Carbon Steel for Boilers and Pressure Vessels

Strength Level (N/mm ²)		Standards				
Y.P.	T.S.	JIS	ASTM	DIN & VDEh	BS EN	ISO
165	310	—	A285 Gr.A	DIN17155-HI	—	—
185	340	—	A285 Gr.B	DIN17155-HI	—	—
205	380	—	A285 Gr.C	DIN17155-HII	BS EN10028 Gr.P275N, NH	—
295	520	—	A299	DIN17155 19Mn6	—	—
205	380	—	—	DIN17155-HII(Si Killed)	—	—
225	410	G3103 SB410	A515 Gr.60	DIN17155-HIII(Si Killed)	—	—
245	450	G3103 SB450	A515 Gr.65	DIN17155-17Mn4	—	—
265	480	G3103 SB480	A515 Gr.70	DIN17155 19Mn6	—	—
205	380	—	A516 Gr.55	DIN17155-HII	BS EN10028 Gr.P275N, NH	ISO 2604/IV P 5
225	410	G3118 SGV410	A516 Gr.60	DIN17155-HIII	—	ISO 2604/IV P 7
245	450	G3118 SGV450	A516 Gr.65	DIN17155-17Mn4	—	ISO 2604/IV P 11
265	480	G3118 SGV480	A516 Gr.70	DIN17155-19Mn6	BS EN10028 Gr.P275N, NH	ISO 2604/IV P 16
205	380	—	A442 Gr.55	DIN17155-HII	BS EN10028 Gr.P275N, NH	—
225	410	G3115 SPV235	A442 Gr.60	VDEhW680 TTSt41 DIN17155-HII	—	—
345	480	G3115 SPV355	A537 Cl.1, A841 Cl.1	VDEhW680 TTSt45 DIN17155 19Mn6	BS EN10028 Gr.P355N, NH	—
355	450	—	—	—	BS EN10028 Gr.P355M, MH	—
345	560	—	A612	—	—	—
415	550	G3115 SPV410	A537 Cl.2, A841 Cl.2	—	—	—
420	500	—	—	—	BS EN10028 Gr.P420M, MH	—
450	570	G3115 SPV450	—	—	BS EN10028 Gr.P460N, NH	—
345, 430	480, 550	—	A737 Gr.B, C	—	—	—

(3) Low-Alloy Steel for Boilers and Pressure Vessels

Strength Level (N/mm ²)		Standards					Remarks	
Y.P.	T.S.	JIS	ASTM	DIN & VDEh	BS EN	ISO		
255	450	G3103 SB450M	A204 Gr.A	WSN5423 16Mo5	—	ISO 2604/IV P28	1/2 Mo	
275	440	—	—	—	BS EN10028 Gr.16Mo3(1/4Mo)	—		
275	480	G3103 SB480M	A204 Gr.B	DIN17155 15Mo3 (1/4Mo)	—	—		
295	520	—	A204 Gr.C		WSN5423 16Mo5	—		—
315	520	G3119 SBV1A	A302 Gr.A	—	—	ISO 2604/IV P30		
345	550	G3119 SBV1B	A302 Gr.B	—	—	—		
345	550	G3119 SBV2	A302 Gr.C	—	—	—		
345	550	G3119 SBV3	A302 Gr.D	—	—	—		
225, 315	380, 480	G4109 SCMV-1	A387 Gr.2 Class 1, 2	—	—	ISO 2604/IV P33		2/3Cr-1/2Mo
225, 275	380, 450	G4109 SCMV-2	A387 Gr.12 Class 1, 2	DIN17155 13CrMo44	BS EN10028 Gr.13CrMo4.5	ISO 2604/IV P32		1Cr-1/2Mo
245, 315	410, 520	G4109 SCMV-3	A387 Gr.11 Class 1, 2	—	—	—	1·1/4 Cr-1/2Mo	
245, 315	410, 520	G4109 SCMV-4	A387 Gr.22 Class 1, 2	WSN7380 10CrMo9 10	BS EN10028 Gr.11CrMo9-10	ISO 2604/IV P34	2·1/4 Cr-1Mo	
205, 315	410, 520	G4109 SCMV-5	A387 Gr.21 Class 1, 2	—	—	—	3Cr-Mo	
205, 315	410, 520	G4109 SCMV-6	A387 Gr.5 Class 1, 2	WSN7362 12CrMo19 5	—	—	5Cr-1/2Mo	
205, 315	410, 520	—	A387 Gr.7 Class 1, 2	—	—	—	7Cr-1/2Mo	
205, 315	410, 520	—	A387 Gr.9 Class 1, 2	—	—	—	9Cr-1Mo	
345, 480	550, 620	G3120 SQV1A	A533 Type A	—	—	—	Mn-1/2Mo	
570	690	or 1B	Class 1, 2, 3	—	—	—	—	
345, 480	550, 620	G3120 SQV3A	A533 Type C	—	—	—	Mn-1/2Mo-3/4Ni	
570	690	or 3B	Class 1, 2, 3	—	—	—	—	
345, 480	550, 620	—	A533 Type D	—	—	—	Mo-1/2Mo-1/3Ni	
380	580	G4110 SCMQ4E	A542 Type A, B, Cl.4	—	—	—	2·1/4Cr-1Mo QT	
415	580	G4110 SCMQ4V	A832 Gr.22V	—	—	—	2·1/2Cr-1Mo-V NT	
—	—	G4110 SCMQ5V	A832 Gr.21V, 23V	—	—	—	3Cr-1Mo-V NT	
570	690	—	Class 1, 2, 3	—	—	—	—	
585, 690	725, 795	—	A542 Class 1, 2	—	—	—	2·1/4Cr-1Mo	
515, 415	655, 585	—	A542 Class 3, 4a	—	—	—		

(4) Steel for Low-Temperature Service

Strength Level (N/mm ²)		Standards						Remarks
Y.P.	T.S.	Sumitomo Standards	JIS	ASTM	DIN & VDEh	BS EN	ISO	
275	400	SLT285	G3126 SLA235A	A662 Gr.A	VDEh W680	—	—	2·1/4Ni
325	450	SLT325A	G3126 SLA235B	A662 Gr.B	TTSt41	—	—	
350	490	SLT325B	G3126 SLA325A	A662 Gr.B	VDEh W680	—	—	
355	450	—	SLA325B	A537 Cl.1, A841 Cl.1	TTSt45	BS EN10028 Gr.P355NL1, NL2	—	
365	480	SLT360	G3126 SLA365	A662 Gr.C	—	BS EN10028 Gr.P355ML1, ML2	ISO 2604/1V P16	
255	450	SLT2N255	G3127 SL2N255	A203 Gr.A	—	—	—	
275	490	—	—	A203 Gr.B	—	—	—	
255	450	SLT3N255	G3127 SL3N255	A203 Gr.D	VDEh W680	—	ISO 2604/1V P43	
275	490	SLT3N275	G3127 SL3N275	A203 Gr.E	IONi 14	—	—	
520	690	SLT9N520	G3127 SL9N520	A353	—	—	ISO 2604/1V P44	
590	690	SLT9N590	G3127 SL9N590	A553, A844	VDEh W680	BS EN10028 Gr.X8Ni9(HT680), X7Ni9	ISO 2604/1V P45	
345-570	550-690	—	G3120 SQV2A or 2B	A533 Type B Class 1,2,3	—	—	—	Mn-1/2Mo-1/2Ni
480-685	620-790	—	—	A543 Type B, C Class 1,2,3	—	—	—	3Ni-1·3/4Cr-1/2Mo

(5) Corresponding Industry Codes for Ship Building Standards

Steel type: Rolled Steel Plate for Hulls (mild steel)

Strength Level (N/mm ²)		Corresponding ASTM	Grade	NK	AB	LR	BV	GL	NV	CR	RS	KR	CCS
Y.P.	T.S.			Japan	USA	UK	France	Germany	Norway	Taiwan	Russia	ROK	China
≥235	400/490	ASTM A131	A	KAM KAS KAK KAN	AAM AAS AAK	LAM LAS LAK	BAM BAS BAK	GAM GAS GAK	NAM NAS NAK	CAM CAS CAK	PAM PAS PAK	KRAM KRAS KRAK	CSAM CSAS CSAK
			B	KBS KBK KBN	ABS ABK	LBS LBK	BBS BBK	GBS GBK	NBS NBK	CBS CBK	PBS PBK	KRBS KRBK	
			D	KDK KDN	ADK ADN	LDS LDK LDN	BDS BDK BDN	GDK GDN	NDK NDN	CDK CDN	PDS PDK PDN	KRDK KRDN	CSDK CSDN
			E	KEN	AEN	LEN	BEN	DEN	NEN	CEN	PEN	KREN	CSEN

Steel type: Rolled Steel Plate for Hulls (high tensile strength steel)

Strength Level (N/mm ²)		Corresponding ASTM	Grade	NK	AB	LR	BV	GL	NV	CR	RS	KR	CCS
Y.P.	T.S.			Japan	USA	UK	France	Germany	Norway	Taiwan	Russia	ROK	China
≥265	400/510	—	—	—	—	—	—	—	N27A N27D N27E	—	—	—	—
≥315	470/590	ASTM A131	AH32	K32A	A32A	L32A	B32A	G32A	N32A	C32A	P32A	KR32A	CS32A
			DH32	K32D	A32D A32DN	L32D	B32D	G32D	N32D	C32D	P32D	KR32D	CS32D
			EH32	K32E	A32E	L32E	B32E	G32E	N32E	C32E	P32E	KR32E	DS32E
≥355	490/620	ASTM A131	AH36	K36A	A36A	L36A	B36A	G36A	N36A	C36A	P36A	KR36A	CS36A
			DH36	K36D	A36D A36DN	L36D	B36D	G36D	N36D	C36D	P36D	KR36D	CS36D
			EH36	K36E	A36E	L36E	B36E	G36E	N36E	C36E	P36E	KR36E	CS36E
≥390	530/650	ASTM A131	AH40 DH40 EH40	K40A K40D K40E	A40A A40D A40E	L40A L40D L40E	—	—	N40A N40D N40E	—	—	—	

Steel type: Steel for Boilers and Pressure Vessels

Strength Level (N/mm ²)		Corresponding ASTM, JIS	NK Japan	AB USA	LR UK	BV France	GL Germany	NV Norway	CR Taiwan	RS Russia	KR ROK	CCS China
Y.P.	T.S.											
≥165	310/450	(ASTM) A285 Gr.A		APMA								
≥185	345/485	A285 Gr.B		APMB								
≥205	380/515	A285 Gr.C		APMC								
≥205	380/520			APMD	LP360, AR	—		NP360-ON		—		—
≥225	410/550	A515 Gr.60	KP42	APME	LP410, AR		—	NP410-ON	CP1410		KRP42	
≥245	450/590	A515 Gr.65	KP46	APMF	LP460, AR			NP460-ON	CP1450		KRP46	
≥265	480/620	A515 Gr.70	KP49	APMG				NP490-ON	CP1480		KRP49	
≥205	380/520	A516 Gr.55		APK	LLT0-360 LP360FG	BP360		NP360-IFN NP410-IFN				
≥225	410/550	A516 Gr.60	—	APL	LP410FG	BP410		NP460-IFN				
≥245	450/590	A516 Gr.65		APM	LP460FG	BP410		NV490-IFN	CP2450	—	—	—
≥265	480/620	A516 Gr.70		APN	LP490FG	BP510	—	NV510-IFN	CP2480			
≥235	410/510	(JIS) G3115 SPV235	KPV24		LLT0-410			NP410-IFN	CPV0235		KRPV24	
≥315	490/610	SPV315	KPV32		LLT20-410			NP460-IFN	CPV0315		KRPV32	
≥355	520/640	SPV355	KPV36	—	LLT0-490	—		NP490-IFN	CPV0355	—	KRPV36	—
≥450	570/700	SPV450	KPV46		LLT20-490		—	NP510-IFN	CPV0450		KRPV46	
≥490	610/740	SPV490	KPV50					CPV0490			KRPV50	
	1/2Mo	(ASTM) A204 Gr.A	KPA46	APH		BPM430		NPM440 (0.3Mo)			KRP46A	
		A204 Gr.B	KPA49	API	—	BPM510			—	—	KRP49A	—
		A204 Gr.C		APJ		BPMV510	—					
	2/3Cr-1/2Mo	(ASTM) A387 Gr.2				BPCM450						
	1Cr-1/2Mo	A387 Gr.12			LPCM470	BPCM470		NPCM470				
	11/4Cr-1/2Mo	A387 Gr.11	—	—								
	21/4Cr-1Mo	A387 Gr.22			LPCM480	BPCM480	—	NPCM480	—	—	—	—
	3Cr-1Mo	A387 Gr.21										
	5Cr-1/2Mo	A387 Gr.5										

Steel type: Steel for Low-Temperature Service

Strength Level (N/mm ²)		Corresponding JIS	NK Japan	AB USA	LR UK	BV France	GL Germany	NV Norway	CR Taiwan	RS Russia	KR ROK	CCS China
Y.P.	T.S.											
≥235	400/510	G3126 SLA235	KL24A, B	ABV	—			NL23, 24, 24L			KRL24A KRL24B	
≥325	440/560	SLA325	KL33	—	LT-EH32, -FH32	—		NL43, 44, 44L	—	—	KRL33	—
≥365	490/610	SLA365	KL37	ABVH	LT-EH36, -FH36						KRL37	
	1/2Ni	—	—	—	—	BLNA BLNB	—	—	—	—	—	—
	1 1/2~21/4Ni	G3127 SL2N255	KL2N30		1 1/2Ni	BL1N		NLN1N			KRL2N30	
	31/2Ni	SL3N255, 275	KL3N32		31/2Ni	BL3N		NLN3N			KRL3N32	
	5Ni	SL5N590,	KL5N43	—	5Ni	BL5N		NLN5N	—	—	KRL5N43 KRL9N53	—
	9Ni	SL9N520, 590	KL9N53 KL9N60		9Ni	BL9N	—	NLN9N			KRL9N60	