

Марочник стали и сплавов

1 - Free Cutting Steel

China GB 8731-88	Russia GOST 1414-75	Japan JIS G4804-83	USA ASTM A297-93 ASTM A108-95	British BS 970 part1-96	Germany DIN 1651-88	France NF A35-562-92	ISO 683-988
Y12	A12	SUM 12	1108	210M15	10S20	13MF4	10S20
		SUM 21	1211				
Y12Pb	-	SUM 22L	12L13	-	10SPb20	-	10SPb20 11SMnPb28
Y15	-	SUM 22	1213 G12130	230Mo7	10S20	S250Si	11SMn28
Y15Pb	-	SUM 24L	12L13	-	9SMnPb28	S300Pb	11SMnPb28
		SUM 22L	12L14				12SMnPb35
Y20	A20	SUM 32	1117 G11170	210M15 C22	C22	C22	-
Y30	A30	-	1132	C30	C30	C30	35S20
Y35	A35	SUM 41	1137 G 11370	C35	C35	C35	35S20
Y40Mn	A40G	SUM 43	1144 G11440	226M44	-	45MF6-3	44SMn28
Y45Ca	-	-	1145	C45	C45	C45	-

EURONORM	UNI	W.NR.	DIN	AFNOR	BS	ASTM	AISI SAE	ISO	NOTE
12SMnPb35	9SMnPb36	1.0737	9SMnPb36	S300Pb	-	12L14	-	-	-
11SMnPb28	9SMnPb28	1.0718	9SMnPb28	S250Pb	-	12L13	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
18NiCrMo5	-	1.6587	-	18NCD6	815M17	-	-	-	-
20NiCrMo2	-	1.6523	21NiCrMo2	-	805H20	-	9820	683-11	-
39NiCrMo3	-	1.6511	36CrNiMo4	40NCD3	816M40	-	9840	-	-
36NiCrMo16	-	-	-	-	835M30	-	-	-	-
36NiCrMo4	-	-	-	-	-	-	-	-	put sost.39NiCrMo

2 - Cold Rolled Steel Sheets/Coil/Strip

Country	Standard	Analysis %	Physical properties
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		Steel grade	C max.	Si max.	Mn max.	P max.	S max.	N max.	Others	Yield strength N/mm ²	Tensile strength N/mm ²	Elongation %			Test direction	Hardness HB	Bend test 180°	Deoxy-dation				
China	GB699-88	08	0.05-0.12	0.17-0.37	0.35-0.65	0.035	0.040	-	-	200	Min. 330	33			-	131	-	-				
		08F	0.05-0.11	0.03	0.25-0.50					0.035	180	Min. 300	35									
		08Al	0.05-0.12		0.25-0.65					0.040	-	-	-						-			
		10	0.02-0.14	0.17-0.37	0.35-0.65					0.040	210	Min. 340	51			137						
		10F	0.07-0.14	0.07	0.25-0.50					0.035	190	Min. 320	33									
Russia	Gost 19904-90 Gost 1050-88	08YU	0.07	0.03	0.35	0.020	0.025	-	-	195	250-350	-			-	-	-	-				
		08KP	0.05-0.12		0.25-0.50	0.035	0.040			-	-	-			-	-	-					
		08PS	0.05-0.11	0.05-0.17	0.35-0.65	0.040	0.050			-	-	-			-	-	-					
Japan	JIS G 3141	Class 1 SPCC	0.12	-	0.50	0.040	0.045	-	-	Not specified	Not usually applied for Class 1	L = 50 mm	39/32	Dependent on thickness	long.	Refer to JIS table	Close contact	Not specified				
		Class 2 SPCD	0.10		0.45	0.035	0.035						41/34									
		Class 3 SPCE	0.08		0.40	0.030	0.030						43/36									
USA	SAE 1006 SAE 1008 SAE 1010	-	0.08	-	0.45	0.030	0.035	-	-	-	-	-	-	-	-	-	-	-				
		-	0.10		0.50														0.035	-	-	-
		-	0.08-0.13		0.60														0.30	-	-	-
British	BS 1449	CR4	0.12	-	0.60	0.050	1.020	-	-	(140)	(280)	L = 50 mm	-	-	-	-	-0 t	-				
		CR3	0.10		0.50	0.040	0.040						(34)									
		CR2	0.08		0.45	0.035	0.030						36									
	BS970 Part 1 96	040°10	0.08-0.13	0.10-0.40	0.30-0.50	0.05	0.05	-	-	-	-	-	-	-	-	-	-	-				
		040°12	0.10-0.15	-																		
Germany	DIN 1623, Part 1 (2.83)	St 12	0.10	-	-	-	-	0.007	Not solved N ₂	0.02 Al min	280 max.	270 to 370	L = 80 mm	28	transv.	Refer to DIN table	No bend test but cupping test required	Not specified				
		Ust 13									250 max.			32				Rimmed				
		RRSt 13									240 max. 210 max. (225 for t>=1.5 mm)			34				Full killed				

Remarks: (): For reference - t: Thickness - L: Length - f: Diameter

3 - Cold Heading Steels

China GB/T 6478-86	Russia GOST 10702-78 GOST 1050-88	Japan JIS G 357-91	USA ASTM A29M-93a	British BS3111-1-87	Germany DIN1654-2-89	France NFA35-564-83 NFA35-053-84	ISO 4954-93(E)
ML08	08KP	SWRCH 8R SWRCH 10R	1010	0/1	QST34-3	XC6,FB8,FR8	CC8X(A2R)
ML10	10KP	SWRCH 10R SWRCH 12R	1012	0/2	QST36-2	XC10,FB10, FR10	CC11X(A3R)
ML15	15PS	SWRCH 15R SWRCH 17R	1015	0/3	QST38	XC18,FB18 FR18,FR15	CC15X
ML20	20PS	SWRCH 17R	1020	0/4	-	XC18,FR20	CC21A(A5A0)
ML25	25	SWRCH 25K	1025	-	-	XC25,FR28	CE28E4(C2)
ML30	30	SWRCH 30K SWRCH 33K	1030	-	-	XC32,FR32	CE28E4(C2)
ML35	35	SWRCH 35K SWRCH 38K	1034	-	CQ35	XC38H1,FR36	CE28E4(C3)
ML40	40	SWRCH 38K SWRCH 40K	1040	-	-	XC38H1,FR38	CE40E4
ML45	45	SWRCH 45K SWRCH 48K	1044	-	CQ45	-	CD45E4(C6)
ML25Mn	-	SWRCH 30K SWRCH 33K	1030	1/1	-	1C32	CD28E4(C2)
ML35Mn	-	SWRCH 35K SWRCH 38K	1034	-	CQ35	1C38	CD35E4(C3)
ML40Mn	40G GOST4543-71	SWRCH 40K SWRCH 43K	1040	-	-	XC38H1,FR38	CE40E4
ML45Mn	45G	SWRCH 45K SWRCH 48K	1045	BS1506-90 1/2	CQ45	-	CE45E4 (C6)
ML15Cr	15KH	-	5115	-	17Cr3	-	20CrE4(B10)
ML20Cr	20KH	-	5120	-	-	-	20CrE4(B10)
ML40Cr	40KH	-	5140	3/2	37Cr4	41Cr4	41CrE4(16)
ML15MnB	-	JISG3508-91 SWRCHB620	1518	-	-	-	CE20 BG2 (E2)
ML30CrMo	30KHMA	-	4130	34CrMo4	34CrMo4	34CrMo4 34CD4	34CrMo4 (C31)
ML35CrMo	-	-	4135	34CrMo4	34CrMo4	34CrMo4 34CD4	34CrMo4 (C31)
ML42CrMo	-	-	4140	42CrMo4	4CrMo4	42CrMo4 42CD4	42CrMo4 (C32)

4 - Alloy structural steel

China GB/T 3077-88	Russia GOST 4543-71	Japan JIS G4160-79	USA ASTM A29-93a	British BS EN10028-2-92	Germany DIN EN10028-2-92	France NF EN10028-2-92	ISO 682-1-87(E)
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20Mn2	-	SMn420	1524	P355GH	P355GH	P355GH	22Mn6
30Mn2	30G2	SMn433	1330	28Mn6	28Mn6	28Mn6	28Mn6
35Mn2	35G2	SMn438	1335	150M36	-	-	36Mn6
40Mn2	40G2	SMn443	1340	150M36	-	-	42Mn6
45Mn2	45G2	SMn443	1345	-	-	-	42Mn6
50Mn2	50G2	-	1345	-	-	-	-
40B	-	-	1040B	-	-	-	-
45B	-	-	1045B	-	-	-	-
50B	-	-	1050B	-	-	-	-
40MnB	-	-	1541B	39MnCr-B6-2	39MnCr-B6-2	39MnCr-B6-2	-
45MnB	-	-	1547B	-	-	-	-
15Cr	15KH	SCr415	5115	527A17	17Cr3	-	-
15CrA	15KHA	SCr415	5115	527A17	17Cr3	-	-
20Cr	20KH	SCr420	5120	BS970 Part1-96	DIN17210-86	-	20Cr4
-	-	-	-	590H17	20Cr4	-	-
-	-	-	-	590M17	-	-	-
30Cr	30KH	SCr430	5130	BSEN10083-1-91	DIN EN100831-91	NF EN10083-1-91	34Cr4
-	-	-	-	34Cr4	34Cr4	34Cr4	-
35Cr	35KH	SCr435	5135	34Cr4	34Cr4	34Cr4	37Cr4
40Cr	40KH	SCr440	5140	41Cr4	41Cr4	41Cr4	41Cr4
45Cr	45KH	SCr445	5145	-	-	-	41Cr4
38CrSi	38KHS	-	-	-	-	-	-
15CrMo	15KHM	-	-	-	-	-	-
20CrMo	20KHM	SCM420	-	BS970 Part1	25CrMo4	25CrMo4	18CrMo4
-	-	-	-	708H20	-	-	-
-	-	-	-	708M20	-	-	-
30CrMo	30KHM	SCM430	4130	25CrMo4	25CrMo4	25CrMo4	25CrMo4
30CrMoA	30KHMA	SCM430	4130	34CrMo4	34CrMo4	34CrMo4	34CrMo4
35CrMo	35KHM	SCM435	4137	34CrMo4	34CrMo4	34CrMo4	34CrMo4
42CrMo	38KHM	SCM440	4140	42CrMo4	42CrMo4	42CrMo4	42CrMo4
38CrMoAl	38KH2MYUA	SACM645	-	BS970Part1-96 905M39	-	-	41CrAlMo74
40CrV	40KHF	-	-	-	-	-	-
50CrVA	50KHF	JIS G4801-84 SUPIO	6150	51CrV4	51CrB4	51CrV4	51CrV4
20CrMn	18KHG	-	-	DIN17210-86	DIN17210-86	NF A35-551-86	20MnCr5
-	-	-	-	20MnCr5	20MnCr5	20MCS	-
40CrMn	-	-	-	41Cr4	41Cr4	41Cr4	41Cr4
20CrMnSi	20KHGSA	-	-	-	-	-	-
25CrMnSi	25KHGSA	-	-	-	-	-	-
30CrMnSi	30KHGS	-	-	-	-	-	-
30CrMnSiA	30KHGSA	-	-	-	-	-	-
35CrMnSiA	35KHGS	-	-	-	-	-	-
20CrMnMo	-	JIS G4102179 SCM421	-	-	-	NF A35-551-86 18CD4	-

40CrMnMo	-	-	4140	42CrMo4	42CrMo4	42CrMo4	42CrMo4
20CrMnTi	18KHGT	-	-	-	-	-	-
30CrMnTi	30KHGT	-	-	-	-	-	-
20CrNi	20KHH	-	-	637H17	-	-	-
40CrNi	40KHH	SNC236	-	-	-	-	-
45CrNi	45KHH	-	-	-	-	-	-
50CrNi	50KHH	-	-	-	-	-	-
C2CrNi	12KHH2	-	-	-	-	-	-
12CrNi3	12KHH3A	SNC815	-	655M13	-	14NC11	15NiCr13
20CrNi3	20KHH3A	-	-	-	-	-	-
30CrNi3	30KHH3A	SNC631	-	-	-	-	-
12CrNi4	12KH2H4A	-	-	-	-	-	-
20CrNi4	20KH2H4A	-	-	-	-	-	-
20CrNiMo	-	JISG4103-79	8615	BS970 Part3-91	BS970 Part3-91	NF A35-551-86	20NiCrMo2
		SNCM220		805 M20	805 M20	20NCD2	
40CrNiMoA	40KHH2MA	-	-	-	-	-	-
45CrNiMoVA	45KHH2MFA	-	-	-	-	-	-
18Cr2Ni4WA	18KH2H4MA	-	-	-	-	-	-
25Cr2Ni4WA	25KH2H4MA	-	-	-	-	-	-

5 - Alloy Tool Steel

China GB1299-85	Russia GOST 5950-73	Japan JIS G4401-83	USA ASTM 681-94	British BS 4659-89	Germany DIN 17350-80	France NF A35-590-92	ISO 4957
9SiCr	9KHS	-	-	-	90CrSi5	-	-
8MnSi	-	-	-	BW1A	C75W	-	-
Cr06	KH05	SKS8	-	-	140Cr3	130Cr3	-
Cr2	KH	SUJ2	L3	BL1	100Cr6	100Cr6	100Cr2
9Cr2	9KH1	-	-	BL3	90Cr3	-	-
W	V1	~SKS21	F1	BF1	120W4	100WC10	-
4CrW2Si	4KHV2S	~SKS41	-	-	35WCrV7	-	-
5CrW2Si	5KHV2S	-	S1	BS1	45WCrV7	45WCrV8	45WCrV2
6CrW2Si	6KHV2S	-	-	-	60WCrV7	(55WC20)	60WCrV2
Cr12	KH12	SKD1	D3	BD3	X210Cr12	X200Cr12	210Cr12
Cr12MoV	KH12M	SKD11	-	-	X165CrMoV12	-	-
Cr12MoV	-	SKD11	D2	BD2	X155CrMoV12-1	X160CrMoV12	160CrMoV12
Cr5Mo1V	-	SKD12	A2	BA2	X100CrMoV5-1	X100CrMoV5	100CrMoV5
9Mn2V	-	-	O2	B02	90MnCrV8	90MnV8	90MnV2
CrWMn	KHVG	SKS31	-	-	105WCr6	105WCr5	105WCr1
9CrWMn	9KHVG	SKS3	01	B01	100MnCrW4	90MnWCrV5	95MnWCr1

5CrMnMo	5KHGM	-	-	-	40CrMnMo7	-	-
5CrNiMo	5KHNM	SKT4	L6	BH224/5	55NiCrMoV6	55NiCrMoV7	55NiCrMoV2
3Cr2W8V	3KH2V8F	SKD5	H21	BH21	X30WCrV9-3	X30WCrV9	30WCrV9
8Cr3	8KH3	-	-	-	-	-	-
4Cr3Mo3SiV	3KH3M3F	-	H10	BH10	X32CrMoV3-3	32CrMoV12-28	-
4Cr5MoSiV	4KH5MFS	SKD6	H11	BH11	X38CrMoV5-1	X38CrMoV5	35CrMoV5
4Cr5MoSiV1	4KH5MF1S	SKD61	H13	BH13	X40CrMoV5-1	X40CrMoV5	40CrMoV5
4Cr5W2VSi	4KH5V2FS	-	-	-	-	-	-
3Cr2Mo	-	-	P20	BP20	35CrMo4	35CrMo8	35CrMo2
-	-	-	-	-	X210CrW12	210CrW12-1	210CrW12
-	-	SKD4	-	-	X30WCrV5-3	X32WCrV5	30WCrV5
-	-	SKD62	H12	BH12	X37CrMoW5-1	X35CrWMoV5	-

6 - Carbon Tool Steel

China GB 1298-86	Russia GOST 1435-90	Japan JIS G4401-83	USA ASTM A686-92	British BS 970-96	Germany DIN 17350-80	France NF A35-590-92	ISO 4957-80
T7	U7	SK7	-	060A67 060A72	C70W2	C70E2U	TC70
T8	U8	SK5 SK6	W1A-8	060A78 060A81 ?/td>	C80W1 ?/td>	C80E2U	TC80
T8Mn	U8G	SK5	W1A-8	060A81	C85W	X75	-
T9	U9	SK4 SK5	W1A-9	-	-	C90E2U	TC90
T10	U10	SK3 SK4	W1A-9	1407 -	C105W1 -	C105E2U	TC105
T11	U11	SK3	W1A-10	1407	C105W1	C105E2U	TC105
T12	U12	SK2	W1A-11	1407	C125W2	C120E3U	TC120
T13	U13	SK1	-	-	C130W2	C140E3U	TC140

7 - Carbon Structural Steel

China GB 700-88	Russia GOST 380-94	Japan JIS G3101-95	USA ASTM A283-93 ASTM A573-93	British BJ 970 Part 1-96 BS EN 10025-93	Germany DIN 17100 DIN EN 10025-94	France NF EN 10025-93	ISO 630-95
Q195	ST1KP ST1SP ST1PS	SS300 JIS G3131-96 SPHC SPHD	Gr. B Gr. C	040A10 S185	S185	S185	-

Q215A	ST2KP-2 ST2PS-2 ST2SP-2	SS330 SPHC SPHD	Gr. C Gr. 58	040A12	USt34-2 RSt34-2	-	-
Q215B	ST2KP-3 ST2PS-3 ST2SP-3	SS300 SPHC SPHD	Gr. 58	040A12	-	-	-
Q235A	ST3KP-2 ST3PS-2 ST3SP-2	SS400 JIS G3106-95 SM 400A	Gr. D	080A15	-	-	E235B
Q235B	ST3KP-3 ST3PS-3 ST3SP-3	SS400 SM400A	Gr. D	080A15 S235JR S235JRG1 S235JRG2	S235JR S235JRG1 S235JRG2	S235JR S235JRG1 S235JRG2	E235B
Q235C	ST3KP-4 ST3PS-4 ST3SP-4	SM400A SM400B	Gr. D Gr. 65	080A15 S235J0	S235J0	S235J0	E235C
Q255A	ST4KP-2 ST4PS-2 ST4SP-2	SS400 SM400A	-	-	-	-	-
Q255B	ST4KP-3 ST4PS-3 ST4SP-3	SS400 SS400A	-	-	-	-	-
Q275	ST5PS-2 ST5SP-2	SS490	-	-	-	-	E275A

8 - Cast Iron

China	Russia	Japan	USA	British	Germany	France
GB 1348	GOST 7293	JIS G5502	ASTM A536	BS 2789	DIN 1693	NF A32-201
QT400-18	VT38-17	FCD40	60-40-18	Cr.370-17	GGG40	FGS370-17
QT450-10	VT42-12	-	65-45-12	Cr.420-12	-	FGS400-12
QT500-7	VT50-7	FCD45	80-55-06	Cr500-7	GGG50	FGS500-7
	VT50-2	FCD50				
QT600-3	VT60-2	FCD60	80-55-06	Cr.600-3	GGG60	FGS600-3
QT700-2	VT70-2	FCD70	100-70-03	Cr.700-2	GGG70	FGS700-2
QT800-2	VT80-2	-	120-90-02	Cr.800-2	GGG80	FGS800-2

9 - Cold Rolled Grain-Oriented Magnetic Steel Sheet Strip

Normal Thickness (mm)	China GB 2521-96	Russia GOST 21427.1-83	Japan JS G2553-86	USA ASTM A876M-92	British		Germany DIN EN10107-96	France NF EN 10107-96	ISO IEC 329-71
					BS 640418.7	BSEN 10107-96			
0.27	27QG100	3414	27P100	-	-	M103-27P	M103-27P	M103-27P	-
	27QG110	3408	27P110	27P146M	-	M103-27P	M103-27P	M103-27P	-

	27QG120	3407	27G120	27H163M	-	-	-	-	-
	27QG130	3406	27G130	27H163M	130-275	M130-275	M130-27S	M130-27S	C-Core
	27QG140	3405	27G140	-	089-27N5	M089-27N	M089-27N	M089-27N	-
0.3	30QG110	3408	30P110	30P154M	-	M111-30P	M111-30P	M111-30P	-
	30QG120	3408	30P120	30P154M	-	M117-30P	M117-30P	M117-30P	-
	30QG130	3405	-	30H183M	-	-	-	-	C-Core
	30Q130	3406	30G130	30H183M	-	-	-	NFC-28-920	C-Core
								FEM140-30-3	
	30Q140	3405	30G140	30H183M	140-30S5	M140-30S	M140-30S	M140-30S	C-Core
	30Q150	3404	30G150	-	097-30-N5	M098-30N	M097-30N	M097-30N	-
0.35	35QG125	3408	35P125	-	-	-	-	-	C-Core
	35QG135	3407	35P135	-	-	-	-	-	C-Core
	35Q135	3407	-	-	-	-	-	-	C-Core
	35Q145	3406	35G145	-	-	M15035S	M150-35S	M150-35S	-
	35Q155	3405	35G155	35H207M		M15035S	M150-35S	M150-35S	-
	35Q165	3404	35G165	-	111-35-N5	M111-35N	M111-35N	M111-35N	-

10 - Gray Cast Iron

China	Russia	Japan	USA	British	Germany	France
GB 9439	GOST 1412	JIS G5501	ASTM A48	BS 1452	DIN 1491	NF A32-101
HT150	ST15-32	FC15	20B	Cr.150	GG15	FGL150
HT200	ST18-36	FC20	25B	Cr.180	GG20	FGL200
-	ST21-40	-	30B	Cr.220	-	-
HT250	ST24-44	FC25	35B	-	GG25	FGL250
-	ST28-48	-	40B	Cr.260	-	-
HT300	ST32-52	FC30	45B/50B	Cr.300	GG30	FGL300
HT350	ST36-56	FC35	55B	Cr.350	GG35	FGL350
-	ST40-60		60B	Cr.400	GG40	FGL400

11 - Hot Rolled Steel Sheet/Coil/Strip/Plate

Country	Standard	Steel grade	Analysis %						Physical properties						
			C max.	Si max.	Mn max.	P max.	S max.	Others	Yield strength	Tensile strength	Elongation %		Direction of test	Radius bend Tests 180°	
									N/mm ² min	N/mm ² min	-	-			
		Q195	0.06-0.12	0.30	0.25-0.50	0.045	0.05	-	195	315-390	-	-	-	-	-

China	GB 700-88	Q235	0.14-0.22	0.12-0.30	0.30-0.65	0.045	0.050		235	375-406	24	21	-	Trans	1.5 t												
		Q255	0.18-0.28	0.30	0.40-0.70				255	410-510	22	19		-	2.0 t												
Russia	Gost 380-88	3KP		0.05	0.30-0.60	0.040	0.050	-			22			-	-	2.0 t											
		3PS	0.14-0.22	0.05-0.15	0.40-0.65											-	-	-	-								
		3SP		0.15-0.30																						-	
		5PS	0.28-0.37	0.05-0.15	0.50-0.80											285	490-630	20									3.0 t
		5SP		0.15-0.30												295											
Japan	JIS G 3101	Thickness (t)		-	-	0.050	0.050	-	206	333 to 431	26	21	Dependent on thickness and test piece	Long.	0.5 t												
		t ≤ 16 mm																									
		Class 1 SS 330																									
		Class 2 SS 400																									
		Class 3 SS 490																									
	Class 4 SS 540		0.30		1.60	0.040	0.040	402	539	16	13	2.0 t															
	JIS G 3131	SPHC	-	0.15	-	0.60	0.050	0.050	-	-	270	-	-	-	In rolling direction	-											
SPHD		-	0.10	0.50		0.040	0.040																				
SPHE		-				0.030	0.035																				
USA	ASTM A 570	Grade 30	Thickness (t) t = 5.8mm max.	0.25	-	0.040	0.050	0.20 Cu when specified	210	340	25/21	19/17	Dependent on thickness and test piece	Long.	1 t												
		Grade 33							230	360	23/18	18/16															
		Grade 36							250	365	22/17	17/15															
		Grade 40							280	380	21/15	16/14															
		Grade 45							310	410	19/13	14/12															
		Grade 50							340	450	17/11	12/10			2.5 t												
British	BS 1449	HR 34/20	0.15	-	1.20	0.050	0.050	-	200	340	29	21	-	-	2.0 t												
		HR 37/23	0.20						230	370	28	20															
		HR 43/25	0.25						250	430	25	16			3.0 t												

Germany	DIN 17100	t ≤ 16 mm	0.17	-	-	0.050	0.050	0.009	235	340 to 470	24	L = 5 t	Transv.	1 t			
		St 37.2						N max									1.5 t
		St 44.2	0.21						275	410 to 540	20						
		St 52.3	0.20	0.55	1.60	0.040	0.040	0.02 Al min	355	490 to 630							

12 - Low Carbon Structural Steel

China GB 699-88	Russia GOST 1050/88	Japan JIS G3131/96	USA ASTM A29M/93	British BS 970 part1-96	Germany	France NF A35-511/86	ISO 683-11/87
08F	08KP	SPHD SPHE	1008 1010	040A10	-	-	-
10F	10KP	SPHD SPHE	1008 1010	040A10	-	-	-
15F	15KP	-	1015	-	-	-	-
08	08	SPHE	1008 1010	040A10	-	-	-
10	10	JIS G4051/79 S10C	1010	040A12	-	XC10	C101
15	15	S15C S17C	1015	BS970 Part 3 080M15	-	XC12	C15E4
20	20	S20C S22C	1020	BS EN10083-2/96 1C22	DIN EN10083/96 C22	NF EN10083-2/97 C22	-
25	25	S25C S28C	1025	1C25	C25	C25	C25E4

13 - Seamless Steel Pipe for High Pressure Gas Cylinder

China GB 13447-92	Russia GOST 4543-71	Japan JIS G3429-88	U.S.A. ASTM A372M-95	British BS EN10083:1	Germany DIN EN10083-1-96	France NF A36-211-90	ISO
40Mn2	40G2	STH11	Gr.C	-	-	-	-
40Mn2A	40G2A	STH12	Cr.D	-	-	-	-
34Mn2V	-	STH11,12	-	-	-	-	-
30CrMo	30KHM	STH21	-	30CrMo4	30CrMo4	30GrMo4	-

14 - Seamless Steel Tube for High Pressure Boilers

China GB 5310-95	Russia GOST 1050-88	Japan JIS G3461-88	U.S.A ASTM A192M-91	British	Germany	France NF49-215-81	ISO 260412-75
20G	20	STB410	A192M	-	-	TU42C	TS9, TS9H
20MnG	20G	JIS G3416-88 STB510	-	BS3059 Part-2 90 440	-	NF49-215-81 TU48C	TS9, TS9H

25MnG	25G	JIS G3461-88 STB410	-	-	-	-	-
15CrMoG	-	-	-	BS3059 Part-2 243	DIN1715-79 15Mo3	NF A36-602-88 15D3	TS26
20MoG	-	JIS G3462-88 STBA13	ASTM A209M-95 G1:T1a	-	-	-	-
12CrMoG	-	JIS G3462-88 STBA20	ASTM A213M-95 T2	-	-	NF A36-602-88 15CD2,05	-
10Cr9Mo1VNb	-	-	T91	-	-	-	-
1Cr18Ni9	GOST 5632-72 12KHN9	JIST G3463-94 SUS304HTB SUS304TB	ASTM A213M-95 TP304H TP304	304S51	-	NF A49-117-85 TU6CN18- 09	ISO 2604/2-75 TS48
1Cr19Ni11Nb	08KH18N12	SUS347HTB SUS347TB	TP347H TP347	347S51	-	-	TS50 TS56

15 - Spring Steel

China GB1222-84	Russia GOST 14959-79	Japan JIS G 4801-84	USA ASTM A29-93	British BS 1429-80	Germany DIN 17222-79	France NF A35-057-79	ISO 8458-3-92
65	65	Sup2	1064	060A67	C67 CK 67	FMR 66 FMR 68	Type DC
70	70	-	1070	070A72	C67	FMR 70	Type DC
85	85	Sup3	1080	060A86	CK85	FMR 86	Type DC
65Mn	65G	-	1066	080A67	-	-	Type DC
55Si 2Mn	55S2G	Sup6	ASTM A304/95	BS 970- Part 2-98	60SiCr7	NF A35571/96	ISO 683-14/92
		Sup 7	H92600	251H60		61SiCr7	56SiCr7
60Si2Mn	60S2A	Sup6		251H60	60SiCr7		
60Si2MnA	60S2G	Sup7	H92600	-	-	61SiCr7	59SiCr7 ISO 683-14/92
60Si2CrA	60S2HA	Sup12	-	685H57	60SiCr7	60SC7	55SiCr63
55CrMnA	-	Sup9	H51550 G51550	525A58 -	55Cr3 -	55Cr3	55Cr3
60CrMnA	-	Sup9A	H51600 G51600	527A60 -	55Cr3 -	55Cr3	55Cr3
60CrMnMoA	-	Sup13	H41610 G41610	705H60 -	51CrMoV4 -	60CrMo4	60CrMo33
50CrVA	50HFA	Sup10	H61500 G61500	735A51 735h51	50CrV4 -	50CrV4	51CrV4
60CrMnBA	55XGP	Sup11A	H51601	-	58CrMnB4	-	60CrB3

16 - Stainless Steel

China GB 1220-92	Russia GOST 5632-72	Japan JIS G4303-91	USA ASTM A276-96	British BS970Part1 BSEN10088-1-95	Germany DIN17400-96 DINEN10088-1-95	France NFA35-578-91 NFEN10088-1-95	ISO 683/13-86 TR4956/84
1Cr17Mn6Ni5N	-	SUS201	201	X12CrMnNiN 17-7-5	X12CrMnNiN 17-7-5	X12CrMnNiN 17-7-5	A-2
1Cr18Mn8Ni5N	12KH17G9AH4	SUS202	202	X12CrMnNiN 18-9-5	X12CrMnNiN 18-9-5	X12CrMnNiN 18-9-5	A-3
1Cr17Ni7	-	SUS301	301	BS970Part1-96 301S21	-	NFA35-574-95 Z12CN17.07	14
1Cr18Ni9	12KH18H9	SUS302	302	302S31	DIN17440-96 X12CrNi18-9	Z10CN18.09	12
Y1Cr18Ni9	-	SUS303	303	303S31	X12CrNi18-9	Z10CNF18.09	17
Y1Cr18Ni9Se	12KH18H10E	SUS303Se	303Se	303S42	-	-	17a
0Cr18Ni9	08KH18H10	SUS304	304	304S31	X5CrNi18-10	Z7CN18.09	11
00Cr19Ni11	03KH18H11	SUS304L	304L	304S11	X2CrNi19-11	X2CrNi19-11	10
0Cr19Ni9N	-	SUS304N1	304N	-	-	-	-
0Cr19Ni10NbN	-	SUS304N2	XM21	-	-	-	-
00Cr18Ni10N	-	SUS304LN	-	X2CrNi18-10	X2CrNi18-10	X2CrNi18-10	10N
1Cr18Ni12	12KH18H12T	SUS305	305	X4CrNi18-12	X4CrNi18-12	X4CrNi18-12	13
0Cr23Ni13	-	SUS309S	309S	-	-	NFA35-578-91 Z15CN23-13	15
0Cr25Ni20	-	SUS310S	310S	310S31	-	Z8CN25-20	16
0Cr17Ni12Mo2	08KH17H13M2T	SUS316	316	316S31	X5CrNiMo17-12-2	Z7CND17-12-2	20 20a
0Cr18Ni12Mo2Ti	08KH17H13M2T	SUS316Ti	316Ti S31635	320S31	X6CrNiMoTi17-12-2	X6CrNiMoTi17-12-2	21
00Cr17Ni14Mo2	03KH17H14M2	SUS316L	316L	316S13	X2CrNiMo18-14-3	X2CrNiMo17-12-2	19 19a
0Cr17Ni12Mo2N	-	SUS316N	316N	X5CrNiMo17-12-2	X5CrNiMo17-12-2	X5CrNiMo17-12-2	-
00Cr17Ni13Mo2N	-	SUS316LN	316LN	X2CrNiMo17-11-2	X2CrNiMoN17-11-2	X2CrNiMo17-11-2	19N 19aN
0Cr18Ni12Mo2Cu2	-	SUS316J1	-	-	-	-	-
00Cr18Ni14Mo2Cu2	-	SUS316JIL	-	-	-	-	-
0Cr19Ni13Mo3	08KH17H15M3T	SUS317	317	316S33	X5CrNiMo17-13-3	-	-
00Cr19Ni13Mo3	03KH16H15M3	SUS317L	317L	Part-4 317S12	X2CrNiMo18-15-4	X2CrNiMo18-15-4	24
0Cr18Ni16Mo5	-	SUS317J1	-	-	-	-	-
1Cr18Ni9Ti	12KH18H10T	-	321	321S31	X6CrNiTi18-10	X6CrNiTi18-10	11

0Cr18Ni10Ti	08KH18H10T	SUS321	321	321S31	X6CrNiTi18-10	X6CrNiTi18-10	15
0Cr18Ni11Nb	08KH18H12B	SUS347	347	347S31	X6CrNiNb18-10	X6CrNiNb18-10	16
0Cr18Ni9Cu3	-	SUSXM7	XM7	X3CrNiCu18-9-4	X3CrNiCu18-9-4	X3CrNiCu18-9-4	-
0Cr18Ni13Si4	-	SUSXM15J1	XM15	-	-	-	-
0Cr26Ni5Mo2	-	SUS329J1	-	-	-	-	-
1Cr18Ni11Si4AlTi	15KH18H12G4TYU	-	-	-	-	-	-
0Cr13Al	-	SUS405	405	405S31	X6CrAl13	X6CrAl13	5
00Cr12	-	SUS410L	-	-	-	Z3CT12	-
1Cr17	12KH17	SUS430	430	430S17	X6Cr17	X6Cr17	8
YCr17	-	SUS430F	-	-	X6CrMoS17	-	8a
1Cr17Mo	-	SUS434	-	X6CrMo17-1	X6CrMo17-1	X6CrMo17-1	9c
00Cr30Mo2	-	SUS447J1	-	-	-	-	-
00Cr27Mo	-	SUSXM27	XM27	-	-	-	-
1Cr12	-	SUS403	403	410S21	X6Cr13	X6Cr13	3
1Cr13	12KH13	SUS410	410	410S21	X12Cr13	-	3
0Cr13Ae	-	SUS405	405	403S17	X6Cr13	X6Cr13	1
Y1Cr13	-	SUS416	-	416S21	-	X12CrS13	7
1Cr13Mo	-	SUS410J1	-	-	-	-	X12CrM126
2Cr13	20KH13	SUS420J1	420	420S37	X20Cr13	X20Cr13	4
3Cr13	30KH13	SUS420J2	420	420S37	X30Cr13	X30Cr13	5
Y3Cr13	-	SUS420F	-	-	-	-	-
4Cr13	40KH13	-	-	X46Cr13	X46Cr13	X46Cr13	-
1Cr17Ni2	14KH17H2	SUS431	431	431S29	X17CrNi16-2	X17CrNi16-2	96
7Cr17	-	SUS440A	-	-	-	-	-
8Cr17	-	SUS440B	-	-	-	-	-
9Cr17	95KH18	SUS440C	-	-	-	-	-
11Cr17	-	SUS440C	-	-	-	-	-
Y11Cr17	-	SUS440F	-	-	-	-	-
9Cr18Mo	-	SUS440C	440C	-	-	-	-
9Cr18MoV	-	-	-	X90CrMoV18	X90CrMoV18	X90CrMoV18	-
0Cr17Ni4Cu4Nb	-	SUS630	ASTM A564M-95 S17400		-	-	ISO683/16-76 1
0Cr17Ni7Al	09KH17H7YU	SUS631	17700	X7CrNiAl17-7	X7CrNiAl17-7	X7CrNiAl17-7	2

17 - Steel Bars for Concrete Reinforcement (Deformed Bars and Plain Bars)

Country	Standard	Steel grade	Analysis (product analysis) %						Physical properties					Surface condition							
			C max.	Mn	P max.	S max.	Si	Others	Yield strength N/mm ²	Tensile strength N/mm ²	Elongation %	Bend test dia./180°									
Russia	Gost 5781-82	3SP/PS							440	550	16										
	Class A400S	3SP/PS	0.22	1.60	0.05	0.05	0.09	-	500	600	14	90°;a=3d	deformed								
	Class A500S																				
China	GB1499-91	20MnSi	0.17-0.25	1.20-1.60	0.045	0.045	0.20-0.80	V:0.04-0.12	335	510	16	a=3d	deformed								
		20MnSiV							0.40-0.80	400	570			14							
		25MnSi	0.20-0.30						0.60-1.00												
USA	ASTM A 615-96 hot rolled (equiv, metric standard ASTM A 615 M-96)	40	*	*	0.050	(0.062)	*	-	300	500	L=200mm	12/7	4 d/5 d	Dependent on nominal dia.	deformed or plain						
		300 (=equiv. Metric)																			
		60																			
		400 (=equiv. Metric)														0.050	(0.062)	400	600	9/7	4 d/8 d
		75																			
520 (=equiv. Metric)	-	-	-	520	-	-	-	-	-												
Japan	JIS G 3112 (1975)	SR235 SR 24 = Type 1	-	-				C + Mn/6 max.	235	382 to 520	L=8 d OR (L = 4 d)	20 (24)	3 d	Plain							
		SR295 SR 30 = Type 2							294	480 to 618		16 (20)	4 d								
		SD345 SD35 = Type 3	0.27	1.60	-	-	-	0.50	343	490		18 (20)	4 d/5 d*	deformed							
		SD390 SD40 = Type 4	0.29	1.80				0.55	392	559		16 (18)	5 d								
		SD490 SD50 = Type 5	0.32	1.80				0.60	490	618		12 (14)	90° 5 d/6 d*								
British	BS 4449 (1988)	250	0.25	-	0.060	0.060	-	-	250 to 425	1.15 x ReH	L=5.65√ So	22	2 d	plain							

	Hot Rolled			(0.068)	(0.068)									
		460/425	0.40	0.050	0.050		CE max.	460 (dEQ16mm)			12 (dEQ16)			
				(0.058)	(0.058)		0.51	425 (dEQ16mm)			14 (dEQ16)	3 d		deformed
Germany	DIN 488	BSt 420 S	0.22	0.050	0.050		0.12	Nitrogen	420	500	L = 10 d	10		plain or deformed
		BSt 500 S	(0.24)	(0.055)	(0.055)	(0.13)	500		550					
	DIN 17100 (1980)	St 37-2 f EQ16 mm	0.17 (0.21)	-	0.050	0.050	-	N	235	340 to 470	L=5.65L So	26		plain
		f>16 mm	0.20 (0.25)		(0.065)	(0.065)		0.009 (0.010)	225					

18 - Steel Wire Rods

Country	Standard	Steel grade	Analysis %					
			C max.	Mn	P max.	S max.	N max.	Si: max.
China	GB 701-88	Q195	0.06-0.12	0.25-0.50				
		Q215	0.09-0.15	0.25-0.55	0.045	0.050		0.30
		Q235	0.14-0.22	0.30-0.65				
Russia	GOST 380-88	1KP	0.06-0.12	0.25-0.50				
		2KP	0.09-0.15	0.25-0.50	0.040	0.050	-	-
		3KP	0.14-0.22	0.30-0.60				
Japan	JIS G 3505-1980	SWRM 6	0.08	0.60 max.	0.045	0.045	-	-
		SWRM 8	0.10					
		SWRM 10	0.08-0.13	0.30-0.60				
		SWRM 12	0.10-0.15					
		SWRM 15	0.13-0.18					
		SWRM 17	0.15-0.20					
		SWRM 20	0.18-0.23					
SWRM 22	0.20-0.25							
USA	SAE J 403 identical with ASTM A 510-82	SAE/AISI No. 1005	0.06	0.35	0.040	0.050	-	-
		1006	0.08	0.25-0.40				
		1010	0.08-0.13	0.30-0.50				
		1008	0.10	0.30-0.50				
		SAE/AISI No. 1010 G 1010	0.08-0.13	0.30-0.60				
			(0.06-0.15)	(0.27-0.63)				

Germany	DIN 17100	St 37.2EQ16mm	0.17 (0.21)	-	0.050 0.065	0.050 (0.065)	0.009 (0.010)	-
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