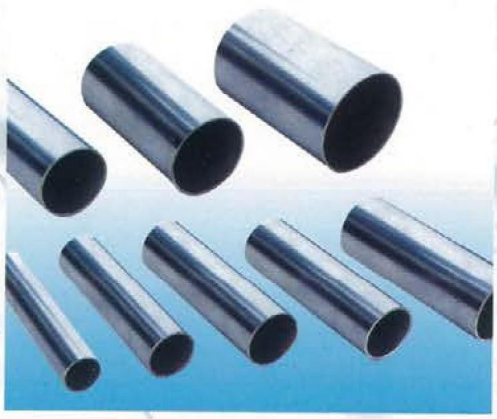
BOILER TUBE

STANDARD:

DIN17175, SA192, SA210/213.....National Standard

APPLICATION:

For manufacturing heating-pipelines,containers,
steaming pipelines of low or medium pressure boilers
(p≤450,work pressure≤5.88Mpa)



SPECIFICATION

SRE Range: From 19mm on to 610mm on Wall
Thickness from 2mm to 65mm WT

Technology Data

Standard	Grade	(MPa) Terale Strength	Yield port not less than	Elongation not less than	Impact not less than	Hanchess not less than
DIN17175	St35.8	360-480	235(t≤16mm) 225(t>16mm)	25	—	—
	St45.8	410-530	255(t≤16mm) 245(t>16mm)	21	—	—
	15Mo3	450-600	270	22	—	—
	13CrMo44	440-590	290	22	—	—
	10CrMo910	450-600	280	20	—	—
	14MoV83	460-610	320	20	55	—
	12Cr1MoV	470-640	255	21	41	—
GB17175	20G	410-550	245	纵24 横22	纵40 横27	—
	25MnG	485-640	275	纵20 横18	纵40 横27	—
	15mOG	450-600	270	纵22 横20	纵40 横27	—
	20MoG	415-665	220	纵22横20	纵40 横27	—
	12CrMoG	410-560	205	纵21 横19	纵40 横27	—
	12Cr2MoG	450-600	280	纵22 横20	纵40 横27	—
	12Cr1MoVG	470-640	255	纵21 横19	纵40 横27	—
	12Cr2MoWVTIB	540-735	345	18	纵40 横27	—
	10Cr9Mo1VNb	≥585	415	20	40	
	1Cr18Ni9	≥520	206	35		
	1Cr19Ni11Nb	≥520	206	35		
ASTMA 108M ASME SA-108	A 106B/SA-106B	≥415	240	30	—	—
	A 108C/SA-106C	≥485	275	30	—	
ASTMA 192M ASME SA-192M	A 192/SA-192	≥325	180	35	—	77HRB(137HBW)
ASTMA 209M ASME SA-209M	A 209T1/SA-209T1	≥380	205		—	80HRB(146HBW)
	A 209T1b/SA-209T1b	≥385	195		—	77HRB(137HBW)
	A 209T1a/SA-209T1a	≥415	220		—	81HRB(153HBW)
ASTMA 210M ASME SA-210M	A 210A1/SA-210A1	≥415	255		—	79HRB(143HBW)
	A 210C/SA-210C	≥485	275		—	89HRB(179HBW)
ASTMA 213M ASME SA-213M	A 213T2/SA-213T2	≥415	205		—	85HRB(163HBW)
	A 213T11/SA-213T11	≥415	205		—	85HRB(163HBW)
	A 213T22/SA-213T22	≥415	205		—	85HRB(163HBW)
	A 213T23/SA-213T23	≥510	400	20	—	97HRB(220HBW)
	A 213T24/SA-213T24	≥585	415	20		25HRB(250HBW)
	A 213T91/SA-213T91	≥585	415	20		25HRB(250HBW)
	A 213T911/SA-213T911	≥620	440	20		25HRB(250HBW)
	A 213T92/SA-213T92	≥620	440	20	—	25HRB(250HBW)
	A 213T122/SA-213T122	≥620	400	20	—	25HRB(250HBW)
	TP304H	≥515	205	35	—	90HRB(192HBW)
	TP318H	≥515	205	35		90HRB(192HBW)
	TP321H	≥515	205	35		90HRB(192HBW)
	TP347H	≥515	205	35		90HRB(192HBW)
	S30432	≥590	235	35		95HRB(219HBW)
	TP310HCbN	≥655	295	30		100HRB(256HBW)

● Chemical Composition(%)

Grade		C	Si	Mn	S	P	Cr	Mo	V	Ti	B	W	Ni	Al	Nb	N	Others
Standard	Steel Grade				Max												
GB5310	12Cr2MoWVTB	0.08-0.05	0.45-0.75	0.45-0.65	0.015	0.025	1.60-2.10	0.50-0.65	0.28-0.42	0.03-0.18	0.002-0.008	0.30-0.55	—				
	10Cr9Mo1VNON	0.08-0.12	0.20-0.50	0.30-0.60	0.010	0.020	8.00-9.50	0.35-1.05	0.18-0.25	—	—	—	≤0.040	≤0.040	0.06-0.10	0.03-0.07	
	07Cr19Ni10	0.04-0.10	≤0.75	≤2.00	0.015	0.035	17.00-20.00		8.00-11.00	—	—	—					
	07Cr13Ni11No	0.04-0.10	≤0.75	≤2.00	0.15	0.03	17.00-19.00			—	—	—	9.00-13.00		3C-1.10		
ASTM A 106M	A 106B SA-106B	≤0.30	≥0.10	0.20-1.06	0.020	0.025	—		—	—	—	—	—				
ASME SA-106	A 106C SA-106C	≤0.35	≥0.10	0.20-1.06	0.020	0.025			—	—	—	—	—				
ASTM A 192M ASME SA-192M	A 192 SA-192	0.06-0.13	≤0.25	0.27-0.63	0.020	0.025	—	—	—	—	—	—	—				
ASTM A 209M ASME SA-209M	A 209T1 SA-209T1	0.10-0.20	0.10-0.50	0.30-0.60	0.020	0.025			—	—	—	—	—				
	A 209T1b SA-209T1b	≤0.14	0.10-0.50	0.30-0.60	0.020	0.025				—	—	—	—				
	A 209T1a SA-209T1a	0.15-0.25	0.10-0.50	0.30-0.60	0.020	0.025				—	—	—	—				
ASTM A 210M	A 210A1 SA-210A1	≤0.27	≥0.10	≤0.93	0.020	0.025											
ASME SA-210M	A 210C SA-210C	≤0.35	≥0.10	0.20-1.06	0.020	0.025	—	—	—	—	—	—	—				
ASTM A 213M ASME SA-213M	A 213T2 SA-213T2	0.10-0.20	0.10-0.30	0.30-0.61	0.020	0.025	0.50-0.61	0.44-0.65	—	—	—	—	—				
	A 213T11 SA-213T11	0.05 0.15	0.50-1.00	0.30-0.60	0.020	0.025	1.00-1.50	0.44-0.65	—	—	—	—	—				
	A 213T12 SA-213T12	≤0.15	≤0.50	0.30-0.61	0.020	0.025	0.30-1.25	0.44-0.65	—	—	—	—	—				
	A 213T22 SA-213T22	0.05-0.15	≤0.50	0.30-0.60	0.020	0.025	1.90-2.60	0.37-1.13	—	—	—	—	—				
	A 213T23 SA-213T23	0.04-0.10	≤0.50	0.10-0.60	0.010	0.025	1.90-2.60	0.05-0.30	0.20-0.30	0.005-0.06	0.005-0.006	1.45-1.75	—	≤0.03	0.02-0.08	≤0.03	Ti/N ≥3.5