

Carbon/Alloy Steel Tubes and Pipes for Heat Exchanger and Boilers

Chemical Composition												Mechanical Properties				
CS :- Carbon Steel		AS :- Alloy Steel										Tensile Strength	Impact Test	Yield Strength	Elongation In	Hardness
SPECIFICATION	TYPE	C%	Mn%	P%	S%	Si%	Cr%	Cu%	Mo%	Ni%	Va%	Mpa	50° f 40 x 10	Mpa	50mm Longi.	
Standard Specification Of Carbon Steel Seamless Tubes/Pipes for Steam, Water Gas and Air Lines																
ASTM A53/A		0.25 MAX	0.95 MAX	0.05 MAX	0.045 MAX	-	0.4 MAX	-	0.15 MAX	-	0.08 MAX	330 MIN	-	205 MIN	36	-
ASTM A53/B	CS	0.30 MAX	1.2 MAX	0.05 MAX	0.045 MAX	-	0.4 MAX	-	0.15 MAX	-	0.08 MAX	415 MIN	-	240 MIN	29.5	-
Standard Specification of Carbon Steel Seamless Tubes/Pipes for High Temperature Services																
ASTM A106/A		0.25 MAX	0.27-0.93	0.035 MAX	0.035 MAX	0.10 MIN	0.40 MAX	0.4 MAX	0.15 MAX	0.4 MAX	0.8 MAX	330 MIN	-	205 MIN	35	-
ASTM A106/B	CS	0.30 MAX	0.29-1.06	0.035 MAX	0.035 MAX	0.10 MIN	0.40 MAX	0.4 MAX	0.15 MAX	0.4 MAX	0.8 MAX	415 MIN	-	240 MIN	30	-
ASTM A106/C		0.35 MAX	0.29-1.06	0.035 MAX	0.035 MAX	0.10 MIN	0.40 MAX	0.4 MAX	0.15 MAX	0.4 MAX	0.8 MAX	485 MIN	-	275 MIN	30	-
Standard Specification for Carbon Steel Seamless Tubes/Pipes for Heat Exchanger and condensers																
ASTM A179	CS	0.06-0.18	0.27-0.63	0.035	0.058	-	-	-	-	-	-	-	-	-	-	72HRB MAX
Standard Specification for Carbon Steel Seamless Tubes/Pipes for High Pressure Services																
ASTM A192	CS	0.06-0.18	0.27-0.63	0.035MAX	0.035 MAX	0.25MAX	-	-	-	-	-	-	-	-	-	77HRB MAX
Standard Specification For Seamless Carbon - Molybdenum Alloy - Steel Boiler and Superheater Tubes																
ASTM A209/T1		0.10-0.20	0.30-0.80	0.045	0.045	0.10-0.50	-	-	0.44-0.65	-	-	380MIN	-	205MIN	30	80HRB MAX
ASTM A209/T1a	AS	0.15-0.25	0.30-0.80	0.045	0.045	0.10-0.50	-	-	0.44-0.65	-	-	365MIN	-	195MIN	30	81HRB MAX
ASTM A209/T1b		0.14MAX	0.30-0.80	0.045	0.045	0.10-0.50	-	-	0.44-0.65	-	-	415MIN	-	220MIN	30	77HRB MAX
Standard Specification For Seamless Carbon Steel Boiler and Superheater Tubes																
ASTM A210/A1	CS	0.27MAX	0.93MAX	0.035 MAX	0.035 MAX	0.10MIN	-	-	-	-	-	415MIN	-	255MIN	30	79HRB MAX
ASTM A210/C		0.35MAX	0.29-1.06	0.035 MAX	0.035 MAX	0.10MIN	-	-	-	-	-	485MIN	-	275MIN	30	89HRB MAX
Standard Specification For Seamless Carbon Steel Boiler and Superheater Tubes																
ASTM A213/T2		0.10-0.20	0.30-0.61	0.025	0.025 MAX	0.10-0.30	0.50-0.81	-	0.44-0.65	-	-	415MIN	-	205MIN	30	85HRB MAX
ASTM A213/T5		0.15MAX	0.30-0.60	0.025	0.025 MAX	0.50MAX	4.0-6.0	-	0.45-0.65	-	-	415MIN	-	205MIN	30	85HRB MAX
ASTM A213/T9	AS	0.15MAX	0.30-0.60	0.025	0.025 MAX	0.25-1.0	8.0-10.0	-	0.9-1.10	-	-					
ASTM A213/T11		0.05-0.15	0.30-0.60	0.025	0.025 MAX	0.50-1.0	1.0-1.5	-	0.44-0.65	-	-	415MIN	-	205MIN	30	85HRB MAX
ASTM A213/T12		0.05-0.15	0.30-0.61	0.025	0.025 MAX	0.50MAX	0.80-1.25	-	0.44-0.65	-	-	415MIN	-	205MIN	30	85HRB MAX
ASTM A213/T22		0.05-0.15	0.30-0.60	0.025	0.025 MAX	0.50MAX	1.9-2.6	-	0.87-1.13	-	-	415MIN	-	205MIN	30	85HRB MAX
Standard Specification For Seamless Carbon Steel Pipes for Low Temp. Services																
ASTM A333/1	CS	0.30MAX	0.40-1.06	0.025	0.025	-	-	-	-	-	-	380MIN	50°f	205MIN	35	-
ASTM A333/6		0.30MAX	0.29-1.06	0.25	0.025	0.10MIN	-	-	-	-	-	415MIN	50°f	240MIN	30	-
Standard Specification For Seamless Carbon and Alloy Steel Tubes for Low - Temperature Service																
ASTM A334/1	CS	0.30MAX	0.40-1.06	0.025	0.025	-	-	-	-	-	-	380MIN	J14	205MIN	35	85HRB MAX
ASTM A334/6		0.30MAX	0.29-1.06	0.025	0.025	0.10MIN	-	-	-	-	-	415MIN	J14	240MIN	30	90HRB MAX
Standard Specification For Seamless Ferrite and Alloy Steel Pipes for Low - Temperature Service																
ASTM A335/P1		0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.50	-	-	0.44-0.65	-	-	380MIN	-	205MIN	30	-
ASTM A335/P2		0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	-	0.44-0.65	-	-	380MIN	-	205MIN	30	-
ASTM A335/P5	AS	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	4.00-6.00	-	0.45-0.65	-	-	415MIN	-	205MIN	30	-
ASTM A335/P11		0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	-	0.44-0.65	-	-	415MIN	-	205MIN	30	-
ASTM A335/P12		0.05-0.15	0.30-0.61	0.025	0.025	0.50MAX	0.80-1.25	-	0.44-0.65	-	-	415MIN	-	205MIN	30	-
ASTM A335/P22		0.05-0.15	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	-	0.87-1.13	-	-	415MIN	-	205MIN	30	-
Standard Specification For Seamless Carbon and Alloy Steel Tubes for Boiler and Superheater																
BS 3059/1/320	CS	0.16MAX	0.30-0.70	0.04	0.04 MAX	0.1-0.35	-	-	-	-	-	320-480	-	195MIN	25	-
BS 3059/2/360	CS	0.17MAX	0.40-0.80	0.035	0.035	0.10-0.35	-	-	-	-	-	360-500	-	235MIN	24	-
BS 3059/2/440	AS	0.12-0.18	0.90-1.20	0.035	0.035	0.10-0.35	-	-	-	-	-	440-580	-	245MIN	21	-
BS 3059/2/620	AS	0.10-0.15	0.40-0.70	0.03	0.03	0.10-0.35	0.70-1.10	-	0.45-0.65	-	-	460-610	-	180MIN	22	-
Standard Specification For Seamless Alloy Steel Tubes for Boiler, Pipelines, Pressure Vessel for Temperature upto 600°C																
DIN/17175/ST35.8		0.17MAX	0.4-1.20	0.04	0.04	0.1-0.35	-	-	-	-	-	360-480	-	235MIN	25	-
DIN/17175/ST45.8		0.21MAX	0.4-1.2	0.04	0.04	0.10-0.35	-	-	-	-	-	410-530	-	235MIN	21	-
DIN/17175/15MO3	AS	0.12-0.20	0.4-0.8	0.035	0.035	0.10-0.35	-	-	0.25-0.35	-	-	450-600	-	285MIN	21	-
DIN/17175/13CMO44		0.10-0.18	0.40-0.70	0.04	0.10-0.18	0.10-0.35	0.7-1.10	-	0.45-0.65	-	-	440-590	-	290MIN	22	-
DIN/17175/10CRM0910		0.08-0.15	0.40-0.70	0.035	0.035	MAX0.50	2.0-2.5	-	0.90-1.20	-	-	450-600	J34	280MIN	20	-