

Specification Vs steel grade (Mechanical property & Application)

Type of Steel	Sl No.	Steel Grade	Equivalent Specification	Application	Chemical composition										Mechanical Property				Quarterly Req. (MT)	
					%C	%Mn	%Si	%P	%S	%Cu	%Cr	%Mo	%Ni	%V	%Al	Hardness(HRB)	Y.S(Min)	UTS(Min)		%E(Full section)
CARBON STEEL	1A	SAE1008/ SAE1010	ASTM A179	Heat exchanger & condenser	0.06 - 0.18	0.27 - 0.63	...	0.035 max	0.035 max	...	...	...	...	...	...	72 max	180	325	35	
	1B		EN10305-1,E235	Hydraulic & pneumatic application	0.17 max	1.20 max	0.35 max	0.025 max	0.015 max	...	...	...	...	...	0.025 min	-	235	340 - 480	25	
	1C		EN10305-4,E235		0.17 max	1.20 max	0.35 max	0.025 max	0.015 max	0.025 min	-	235	340 - 480	25
	1D		DIN2391 ST35	Precision tube	0.17 max	1.20 max	0.35 max	0.025 max	0.015 max	...	...	...	...	...	0.025 min	-	235	340 - 480	25	
	1E		BS 3059 PT-2 Gr.360	Boiler & super heater	0.17 max	0.40-0.80	0.035 max	0.035 max	0.10-0.35	...	...	...	...	...	...	-	235	360-500	24	
	2A	SAE1018/ IS2062	ASTM A106 GR.B	High temp service	0.30 max	0.29 - 1.06	0.10 min	0.035 max	0.035 max	0.4 min	0.40 max	0.15 max	0.40 max	0.08 max	...	-	240	415	30	
	2B		ASTM A210 GR.A1	Boiler	0.2 max	0.93 max	0.10 min	0.035 max	0.035 max	...	...	...	...	...	...	79 max	255	415	30	
	2C		ASTM A334 GR.1	Low temp application	0.30 max	0.40 - 1.06	...	0.025 max	0.025 max	...	...	...	...	...	...	85 max	205	380	35	
	2D		ASTM A334 GR.6		0.30 max	0.29 - 1.06	0.10 min	0.025 max	0.025 max	...	...	...	...	...	...	90 max	240	415	30	
	2E		IS 1239 PT-1	Fittings & general application	0.20 max	1.30 max	...	0.040 max	0.040 max	...	...	...	...	...	...	-		320	20	
	2F		IS 3601(HFS310)	Mechanical & general engineering				0.04 max	0.040 max							-	310	450	22	
	2G		IS 3601(HFS240)					0.04 max	0.040 max							-	240	410	22	
	3A	SAE1018M/ ST52/SAE1524M	ASTM A106 GR.B/C	High temp service	0.35 max	0.29 - 1.35	0.10 min	0.035 max	0.035 max	0.4 min	0.40 max	0.15 max	0.40 max	0.08 max	...	-	275	485	30	
	3B		ASTM A210 GR.C	Boiler	0.35 max	0.29 - 1.35	0.10 min	0.035 max	0.035 max	...	...	...	...	...	...	89 max	275	485	30	
	3C		DIN2391 ST52	Precision tube	0.22 max	1.60 max	0.55 max	0.025 max	0.025 max							-	355	490-630	22	
	3D		EN10305-1, E355	Hydraulic & pneumatic application	0.22 max	1.60 max	0.55 max	0.025 max	0.025 max							-	355	490-630	22	
	3E		EN10305-4, E355		0.22 max	1.60 max	0.55 max	0.025 max	0.025 max							-	355	490-630	22	
	4	SAE1541	ASTM A519	Automobile	0.36-0.44	1.35-1.65	-	0.035 max	0.035 max	...	...	...	...	...	...	-	480	650	15	
	5	SAE1020	ASTM A519		0.18 - 0.23	0.30 - 0.60	-	0.045 max	0.045 max	...	...	...	...	...	...	-	345	450	10	
	6	SAE1026	ASTM A519		0.22-0.28	0.60-0.90	0.50 max	0.025 max	0.025 max	...	...	...	...	...	...	-	340	440	10	
7	EN8D/CK45/SAE1045	IS1875-45C8	0.40-0.50		0.60-0.90	0.15-0.35	0.035 max	0.035 max	...	...	...	...	...	...	-	320	660	15		
8	EN1A	EN1A	0.07-0.15		0.80-1.20	0.10 max	0.07 max	0.20-0.30	...	...	...	...	...	...	150 BHN min	305	410	11		

ALLOY STEEL	9	SAE4130	ASTM A519	Automobile	0.28-0.33	0.40-0.60	0.15-0.35	0.025 max	0.025 max	...	0.80-1.10	0.15-0.25	...	...	...	90	650	700	20	
	10	SAE4140	ASTM A519		0.38-0.43	0.75-1.00	0.15-0.35	0.025 max	0.025 max	...	0.80-1.10	0.15-0.25	...	...	...	90	650	700	20	
	11	SAE8620	ASTM A519		0.18-0.23	0.70-0.90	0.15-0.35	0.035 max	0.035 max	...	0.40-0.60	0.15-0.25	0.40-0.60	...	...	90	650	750	15	
	12	16MNCr5	20MNCr5		0.14-0.19	1.0 - 1.30	0.15-0.35	0.035 max	0.035 max	...	0.80-1.10	...	...	...	0.20-0.60	-	550	670	10	
	13	20MNCr5	20MNCr5		0.17-0.22	1.10-1.40	0.40 max	0.025 max	0.035 max	...	1.0 - 1.30	...	...	...	...	-	550	670	10	
	14	SAE52100/100Cr6/102Cr6	ASTM A295		0.93-1.05	0.25-0.45	0.15-0.35	0.025 max	0.015 max	0.30 max	1.35-1.60	0.10 max	0.25 max	-	0.05 max	200 - 300 BHN	-	-	-	
	15A	T11	ASTM A213	Boiler, super heater & heat exchanger	0.05-0.15	0.30-0.60	0.50-1.00	0.025 max	0.025 max	...	1.0-1.50	0.44-0.65	...	...	...	89 max	205	415	30	
	15B	T12			0.05-0.15	0.30-0.61	0.50 max	0.025 max	0.025 max	...	0.80-1.25	0.44-0.65	...	...	...	89 max	205	415	30	
	15C	T22			0.05-0.15	0.30-0.60	0.50 max	0.025 max	0.025 max	...	1.90-2.60	0.87-1.13	...	...	...	89 max	205	415	30	
	15D	T5			0.12 max	0.30-0.60	0.50 max	0.025 max	0.025 max	...	4.0-6.0	0.45-0.65	...	...	...	89 max	205	415	30	
	15E	T9			0.15 max	0.30-0.60	0.25-1.00	0.025 max	0.025 max	...	8.0-10.0	0.90-1.10	...	...	...	89 max	205	415	30	
	15F	T91			0.07-0.14	0.30-0.60	0.20-0.50	0.020 max	0.010 max	...	8.0-9.50	0.85-1.05	0.40 max	0.18-0.25	0.20 max	90 HRB - 25 HRC	415	585	20	