

# Technical Specification References

Classification	Specification	Designation of Grade	Mechanical Properties				Chemical Composition %								Impact Properties		
			Tensile Strength		Yield Strength Min.	Elongation Min.		C	Si	Mn	P	S	Mo	Al	CEV	Test Temperature	Min average absorbed energy for standard test piece
			N/mm <sup>2</sup>			CHS	RHS or SHS										
			< 3mm	3mm ≤ t ≤ 40mm	N/mm <sup>2</sup>	%	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
Cold formed welded structural hollow sections of non-alloy and fine grain steels	BS EN 10219	S235JRH	360-510	340-470	235	24	0.17	-	1.40	0.045	0.045	-	-	0.35	20	27	
		S275J0H	430-580	410-560	275	20	0.20	-	1.50	0.040	0.040	-	-	0.40	0	27	
		S275J2H	430-580	410-560	275	20	0.20	-	1.50	0.035	0.035	-	-	0.40	-20	27	
		S355J0H	510-680	490-630	355	20	0.22	0.55	1.60	0.040	0.040	-	-	0.45	0	27	
		S355J2H	510-680	490-630	355	20	0.22	0.55	1.60	0.035	0.035	-	-	0.45	-20	27	
Structural Steel Hollow Sections for Australian Standard	AS 1163	C 250	320	250	22	18	0.12	0.05	0.50	0.040	0.030	0.10	0.10	0.25	-	-	
		C 250 L0	320	250	22	18	0.12	0.05	0.50	0.040	0.030	0.10	0.10	0.25	0	27	
		C 350	430	350	20	16	0.20	0.25	1.60	0.040	0.030	0.10	0.10	0.39	-	-	
		C 350 L0	430	350	20	16	0.20	0.25	1.60	0.040	0.030	0.10	0.10	0.39	0	27	
		C 450	500	450	16	14	0.20	0.45	1.60	0.040	0.030	0.35	0.10	0.39	-	-	
		C 450 L0	500	450	16	14	0.20	0.45	1.60	0.040	0.030	0.35	0.10	0.39	0	27	
Carbon Steel Square Pipes for General Structural Purposes	JIS G 3466	STKR 400	400	245	-	23 (N1)	0.25	-	-	0.04	0.04	-	-	-	-	-	
		STKR 490	490	325	-	23 (N1)	0.18	0.55	1.50	0.04	0.04	-	-	-	-	-	
Carbon Steel Tubes For General	JIS G 3444	STK 290	290	-	30 (N1) 20 (N2)	-	-	-	0.050	0.050	-	-	-	-	-	-	
		STK 400	400	235	23 (N2) 18 (N2)	-	0.250	-	-	0.040	0.040	-	-	-	-	-	
		STK 500	500	355	15 (N1) 10 (N2)	-	0.300 to 1.00	0.300	0.350	0.040	0.040	-	-	-	-	-	
		STK 540	540	390	20 (N1) 16 (N2)	-	0.230	1.500	0.550	0.040	0.040	-	-	-	-	-	
Square & Rectangular Hollow Sections	ASTM A-500	Grade A	310	269	As specified in A-500 specification		0.30	-	-	0.045	0.045	-	-	-	-	-	
		Grade B	400	317	As specified in A-500 specification		0.30	-	-	0.045	0.045	-	-	-	-	-	
		Grade C	427	345	As specified in A-500 specification		0.27	-	1.35	0.035	0.035	-	-	-	-	-	
		Grade D	400	250	As specified in A-500 specification		0.30	-	-	0.045	0.045	-	-	-	-	-	
Lipped Channels & Plain Channels	JIS G 3350	SSC 400	400-540	245	21 (N2)	0.25	-	-	0.05	0.05	-	-	-	-	-		
High Tensile C Purlin	Equivalent to ASTM A446 Gr. B			450	345	12	0.40	-	-	0.20	0.04	-	-	-	-		

- NOTES :
- The impact properties of steel qualities JR and J0 are verified by laboratory testing only when specified at at the time of the inquiry and order.
  - The steel qualities J0 and J2 can be produced upon request with extra cost.
  - (N1) Test piece No. 11 and 12
  - (N2) Test piece No. 5
    - When the tensile test is carried out on No. 5 and 12 test piece for the tube under 8mm in wall thickness, the minimum elongation value shall be determined by reducing 1.5% per 1mm of decrease in wall thickness from the values given in the Table above and rounding off the value obtained to integer in accordance with JIS Z 8401.
  - t - thickness  
 CHS - Circular Hollow Sections  
 RHS - Rectangular Hollow Sections  
 SHS - Square Hollow Sections