



CSA Specification (Square & Rectangular Tubing)

CSA G40. 21																									
Chemical Composition	<table border="1"> <thead> <tr> <th rowspan="2">Grade Designation</th> <th colspan="4">Chemical Composition Limits, % by heat Analysis</th> </tr> <tr> <th>C Max</th> <th>Mn</th> <th>P Max</th> <th>S Max</th> </tr> </thead> <tbody> <tr> <td>350W</td> <td>0. 23</td> <td>0. 50 – 1. 50</td> <td>0. 04</td> <td>0. 05</td> </tr> <tr> <td>350AT</td> <td>0. 20</td> <td>0. 75 – 1. 35</td> <td>0. 03</td> <td>0. 04</td> </tr> <tr> <td>480AT</td> <td>0. 20</td> <td>1. 75 Max</td> <td>0. 03</td> <td>0. 03</td> </tr> </tbody> </table>	Grade Designation	Chemical Composition Limits, % by heat Analysis				C Max	Mn	P Max	S Max	350W	0. 23	0. 50 – 1. 50	0. 04	0. 05	350AT	0. 20	0. 75 – 1. 35	0. 03	0. 04	480AT	0. 20	1. 75 Max	0. 03	0. 03
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Tensile Requirements	<table border="1"> <thead> <tr> <th>Shaped Structural Tubing</th> <th>350W</th> <th>350AT</th> <th>480AT</th> </tr> </thead> <tbody> <tr> <td>YS(psi) MIN</td> <td>50, 000</td> <td>50, 000</td> <td>70, 000</td> </tr> <tr> <td>TS(psi)</td> <td>65, 000–90, 000</td> <td>70, 000–95, 000</td> <td>85, 000–115, 000</td> </tr> <tr> <td>EL (%) MIN(*)</td> <td>22%</td> <td>21</td> <td>17</td> </tr> </tbody> </table> <p>(*) For Gauges . 313 and up. Under . 313 have lower specified limits . . 250 = 20% . 188 = 17% . 125 = 15%</p>	Shaped Structural Tubing	350W	350AT	480AT	YS(psi) MIN	50, 000	50, 000	70, 000	TS(psi)	65, 000–90, 000	70, 000–95, 000	85, 000–115, 000	EL (%) MIN(*)	22%	21	17								
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Convexity and Concavity	** Tolerance includes allowance for convexity or concavity																								



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Wall Thickness	-5% +10% of Nominal Wall Thickness		
Length	24' and under = -1/4" +1/2" over 24' = -1/4" +3/4"		
Straightness	Max(Inches) = (Length(ft) / 5) x 1/8 (Length 20ft ⇒ Max 0.500in)		
Squareness of Sides	±2° Max from square (90 degrees)		
Radius of Corners	Nominal Wall Thickness	Perimeter to 24" inclusive	Perimeter over 24"
	0.109 and under	0.218 (7/32")	-
	Over 0.109 – 0.134 incl	0.268 (17/64")	-
	Over 0.134 – 0.156 incl	0.312 (5/16")	-
	Over 0.156 – 0.188 incl	0.47 (15/32")	-
	Over 0.188 – 0.250 incl	0.625 (5/8")	0.75 (3/4")
	Over 0.250 – 0.313 incl	0.785 (25/32")	0.94 (15/16")
	Over 0.313 – 0.375 incl	0.938 (15/16")	1.125 (1-1/8")
	Over 0.375 – 0.500 incl	1.25 (1-1/4")	1.5 (1-1/2")
	Over 0.500	-	3 x wall thickness
Twist	Largest outside dimension (inches)		Max in 3ft (inches)
	1-1/2 and under		0.050
	Over 1-1/2 – 2-1/2 incl		0.062
	Over 2-1/2 – 4 incl		0.075
	Over 4 – 6 incl		0.087
	Over 6 – 8 incl		0.100
	Over 8		0.112