



TECHNICAL DATA OF NON ALLOY AND FINE GRAIN STEEL HOLLOW SECTIONS CONFORMING TO EN 10219-1&2: 2006

SCOPE : Cold-formed Welded Structural Hollow Sections of Non-Alloy and Fine Grain Steels of Circular, Square or Rectangular forms and applies to Structural Hollow Sections formed cold without subsequent heat treatment.

SIZE RANGE : CHS: Size 21.3-219.1 mm & Thickness 2.00-8.20 mm, SHS: Size 16X16-200X200 mm; RHS: Size 30X15-200X100 mm & Thickness 1.00-8.50 mm

TOLERANCES :

Circular Section - Tolerances on Dimensions

Characteristics / Tolerances

External Dimensions (D) : $\pm 1\%$, with a minimum of ± 0.5 mm
 Thickness (T) : For $T \leq 5$ mm : $\pm 10\%$, $T > 5$ mm ± 0.5 mm;
 Out-of-roundness : 2% for hollow sections having $d/t \leq 100$
 Straightness (e) : 0.20% of total length and 3 mm over any 1 m length
 Mass per unit length : $\pm 6\%$ on individual delivered lengths

Square / Rectangular Section - Tolerances on Dimensions

Characteristics / Tolerances

External Dimensions (H/B) : For H, B < 100 $\pm 1\%$, with a minimum of ± 0.5 mm $100 \leq H, B \leq 200 : \pm 0.8\%$;
 Thickness (T) : For $T \leq 5$ mm : $\pm 10\%$, $T > 5$ mm ± 0.5 mm
 Concavity/convexity (x1/x2) : Max. 0.8% with a minimum of 0.5 mm
 External Corner Profile (R) : For $T \leq 6$ mm:1.6T to 2.40T, For $6 < T \leq 6$ mm:2.0T to 3.0T
 Squareness of side (θ) : $90^\circ \pm 1^\circ$; Twist (v) : 2mm plus 0.5mm/m length
 Straightness (e) : 0.15% of total length and 3 mm over any 1 m length
 Mass per unit length : $\pm 6\%$ on individual delivered lengths

STEEL GRADE	CHEMICAL COMPOSITION															MECHANICAL PROPERTIES							
	C	Si	Mn	P	S	Nb	V	Al (t)	Ti	Cr	Ni	Mo	Cu	N	CEV	YS Min	UTS		EI Min	MIN IMPACT ENERGY			
	Max	Max	Max	Max	Max	Max	Max	Min	Max	Max	Max	Max	Max	Max	Max	t \leq 16mm	t<3mm	3 \leq t \leq 40mm	t \leq 40mm	-50°C	-20°C	0°C	20°C
%																MPa			%	Joule			
S235 JRH	0.170	--	1.400	0.040	0.040	--	--	--	--	--	--	--	--	0.009	0.350	235	360-510	360-510	24	--	--	--	27
S275 JOH	0.200	--	1.500	0.035	0.035	--	--	--	--	--	--	--	--	0.009	0.400	275	430-580	410-560	20	--	--	27	--
S275 J2H	0.200	--	1.500	0.030	0.030	--	--	--	--	--	--	--	--	0.400	--					27	--	--	
S355 JOH	0.220	0.550	1.600	0.035	0.035	--	--	--	--	--	--	--	--	0.009	0.450	355	510-680	470-630	20	--	--	27	--
S355 J2H	0.220	0.550	1.600	0.030	0.030	--	--	--	--	--	--	--	--	0.450	--					27	--	--	
S355 K2H	0.220	0.550	1.600	0.030	0.030	--	--	--	--	--	--	--	--	0.450	--					40	--	--	
S275NH	0.200	0.400	0.50-1.40	0.035	0.030	0.050	0.050	0.020	0.030	0.300	0.300	0.100	0.350	0.015	0.400	275	370-510		24	--	40	--	--
S275NLH	0.200	0.400	0.50-1.40	0.030	0.025	0.050	0.050	0.020	0.030	0.300	0.300	0.100	0.350	0.015	0.400					27	--	--	--
S355NH	0.200	0.500	0.90-1.65	0.035	0.030	0.050	0.120	0.020	0.030	0.300	0.500	0.100	0.350	0.015	0.430	355	470-630		22	--	40	--	--
S355NLH	0.180	0.500	0.90-1.65	0.030	0.025	0.050	0.120	0.020	0.030	0.300	0.500	0.100	0.350	0.015	0.430					27	--	--	--
S460NH	0.200	0.600	1.00-1.70	0.035	0.030	0.050	0.200	0.020	0.030	0.030	0.800	0.100	0.700	0.025	0.530	460	540-720		17	--	40	--	--
S460NLH	0.200	0.600	1.00-1.70	0.030	0.025	0.050	0.200	0.020	0.030	0.030	0.800	0.100	0.700	0.025	0.530					27	--	--	--
S275MH	0.130	0.500	1.500	0.035	0.030	0.050	0.080	0.020	0.050	--	0.300	0.200	--	0.020	0.340	275	360-510		24	--	40	--	--
S275MLH	0.130	0.500	1.500	0.030	0.025	0.050	0.080	0.020	0.050	--	0.300	0.200	--	0.020	0.340					27	--	--	--
S355MH	0.140	0.500	1.500	0.035	0.030	0.050	0.100	0.020	0.050	--	0.300	0.200	--	0.020	0.390	355	450-610		22	--	40	--	--
S355MLH	0.140	0.500	1.500	0.030	0.025	0.050	0.100	0.020	0.050	--	0.300	0.200	--	0.020	0.390					27	--	--	--
S420MH	0.160	0.500	1.700	0.035	0.030	0.050	0.120	0.020	0.050	--	0.300	0.200	--	0.020	0.430	420	500-660		19	--	40	--	--
S420MLH	0.160	0.500	1.700	0.030	0.025	0.050	0.120	0.020	0.050	--	0.300	0.200	--	0.020	0.430					27	--	--	--
S460MH	0.160	0.600	1.700	0.035	0.030	0.050	0.120	0.020	0.050	--	0.300	0.200	--	0.025	0.460	460	530-720		17	--	40	--	--
S460MLH	0.160	0.600	1.700	0.030	0.025	0.050	0.120	0.020	0.050	--	0.300	0.200	--	0.025	0.460					27	--	--	--

IN-LINE NDT : Full body for NPS 1/2" to 4" and Weld Seam for NPS 3" to 8" tested by Eddy Current Test Machine

WORKMANSHIP : All Sections are finished with Bare, Black Lacquer Coated or Galvanizing (EN 10240 / EN ISO 1461)

MARKING : Each Pipe shall be stencilled as per EN 10219 / Client Requirement: "TIGER/MADE IN UAE EN 10219 GRADE ---- / SIZE---/LENGTH---"

Value Addition: We are limiting the out-of-roundness for CHS section upto 0.75%D. For SHS/RHS section, side tolerances $\pm 0.5\%$, Concavity/convexity 0.50mm max, External Corner Profile 2T average, Twist 2mm/6mtr max and Straightness 1 mm per meter