Strenx Tube 100XF

General Product Description

Strenx Tube 100XF is an HF-welded cold-formed structural hollow section made of hot-rolled high-strength steel with a minimum yield strength of 100 ksi.

Its high strength combined with naturally stiff form of welded hollow section enables construction of stronger and lighter structures. Strenx Tube 100XF meets or exceeds the requirements of ASTM A1011/A1018 and ASTM A500. Typical applications include load-bearing structures in the lifting, handling and transportation segments, especially in conditions that require extremely good toughness.

Strenx Tube 100XF is available in circular, square and rectangular shapes. Other shapes and sizes are available upon request.

The maximum length of the tubes is 40'-59', depending on the size. Longer or cut-to-length tubes are available upon request.

Hot dip galvanizing Strenx Tube 100XF hollow sections may lead to cracking. Please consult SSAB Tech Support prior galvanization.

Dimension Range

Strenx Tube 100XF is available at circular, square and rectangular shapes.

Circular	2.375"- 12.75"
Square	2"x 2"- 10"x 10"
Rectangular	4"x 2"- 12"x 8"
Wall thickness	.125"- .375"
Mill length	20'- 40'/59'

Other shapes and sizes are available upon request.

Dimensions

Circular

Diameter	0.125" (lb/ft)	0.160" (lb/ft)	0.188" (lb/ft)	0.250" (lb/ft)	0.313" (lb/ft)	0.375" (lb/ft)
2.375 Inches	3.01	3.79				
3.0 Inches	3.84	4.86				
3.5 Inches	4.51	5.71	6.66			
4.0 Inches	5.18	6.57	7.65			
4.5 Inches	5.84	7.42	8.66			
5.0 Inches		8.28	9.67			
5.5 Inches		9.13	10.65	14.03	17.36	
6.0 Inches		7.85	11.68			
6.625 Inches		11.06	12.92	17.04	21.12	25.06
7.625 Inches			14.93	19.69	24.44	29.04
8.625 Inches			16.92	22.38	27.81	33.07
9.625 Inches			18.92	22.38	27.81	37.09
10.75 Inches			21.23	28.07	34.93	41.59
12.75 Inches				33.41	41.55	49.62

Square

Height x Width	0.125" (lb/ft)	0.160" (lb/ft)	0.188" (lb/ft)	0.250" (lb/ft)	0.313" (lb/ft)	0.375" (lb/ft)
2 x 2 Inches		3.78				
3 x 3 Inches	7.07	8.85	10.22			
3.5 x 3.5 Inches	5.61	7.05	8.15			
4 x 4 Inches	6.46	8.14	9.42	12.21	14.83	17.27
5 x 5 Inches		8.14	11.97	15.62	19.08	22.37
6 x 6 Inches			14.53	19.02	23.34	27.48
8 x 8 Inches						37.69
9 x 9 Inches						42.80
10 x 10 Inches						47.90

Rectangular

Height x Width	0.125" (lb/ft)	0.160" (lb/ft)	0.188" (lb/ft)	0.250" (lb/ft)	0.313" (lb/ft)	0.375" (lb/ft)
4 x 2 Inches	4.75	5.95	6.87			
4 x 3 Inches	5.61	7.05	8.15			
5 x 2 Inches	5.61	7.05	8.15			
5 x 3 Inches	6.46	8.14	9.42	12.21	14.83	17.27
5 x 4 Inches		9.23	10.72	13.90		
6 x 2 Inches	6.46	8.14	9.42			
6 x 3 Inches			9.23	10.70		
6 x 4 Inches		8.14	11.97	15.62	19.08	22.37
7 x 5 Inches			14.53	19.02	23.34	27.48
8 x 4 Inches			14.53	19.02	23.34	27.48
8 x 6 Inches				19.02	23.34	32.58
10 x 4 Inches				19.02	23.34	32.58
10 x 6 Inches						37.69
10 x 8 Inches						42.80
12 x 6 Inches						42.80
12 x 8 Inches						47.90

Mechanical Properties

Yield Strength Rp0.2 (min ksi)	Tensile Strength Rm (min ksi)	Elongation A (min %)	Charpy-V -40°F 10x10 mm test specimen [1) 2)] (ft-lbs)
100	110	10	20

Mechanical properties meet the requirements of ASTM A1011/AA1018.
The mechanical properties for rectangular hollow sections are tested by SSAB on the longer side of the cross section.
[1)]Impact testing according to EN ISO 148-1 is performed on thicknesses ≥ .25". The specified minimum value corresponds to a full-size specimen.
[2)] Corresponds 27 J at-40°F.

Chemical Composition (ladle analysis)

C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Al_{tot} (min %)	Nb (max %)	V (max %)	Ti [1)] (max %)
0.12	**0.25**	2.00	0.020	**0.010**	**0.015**	**0.090** [1)]	**0.20** [1)]	**0.15** [1)]

Chemical composition meets or **exceeds** the requirements of ASTM A1011/A1018 (type 2)
The steel is grain refined.
1) Sum of Nb, V and Ti = max 0.22%

Typical Carbon equivalent

Typical CET	0.24
Typical CEV	0.38

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40} \qquad CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

Tolerances

Characteristic	**Circular hollow sections** Tolerances meet the requirements of ASTM A500
Outside diameter (D) [1)]	D > 1.9”: ±0.75%, rounded to the nearest 0.005”
Thickness (T)	±10% of the specified nominal wall thickness
Straightness	0.025” per ft.
Mill length	20 ft. to 40 ft., -0/+2”
Exact length	Agreed at the time of enquiry and order

[1)]The outside diameter measurements shall be made at positions at least 2 in. from the ends of the tubing.

Characteristic	**Rectangular hollow sections** Tolerances meet the requirements of ASTM A500
Outside large flat dimension (B, H) [1)]	When (B,H) ≤ 2.5”: ± 0.020” When 2.5” < (B, H) ≤ 3.5”: ±0.025” When (B, H) > 3.5”: ±1.0%
Thickness (T)	±10 **%** of the specified nominal wall thickness
External corner profile	Rmax = 3.0 x T
Squareness of side	90° ± 2°
Concavity/convexity	The permissible variations in outside flat dimensions include allowances for convexity and concavity.
Twist	When (B, H) ≤ 1.5”: 0.050” When 1.5” < (B, H) ≤ 2.5”: 0.062” When 2.5” < (B, H) ≤ 4.0”: 0.075” When 4.0” < (B, H) ≤ 6.0”: 0.087” When 6.0” < (B, H) ≤ 8.0”: 0.100” When (B, H) > 8.0”: 0.112”
Straightness	0.025” per ft.
Mill length	20 ft. to 40 ft.,-0/+2”
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Delivery Conditions

The tubes are cold formed and high frequency welded from thermomechanically rolled steel.

Fabrication and Other Recommendations

Welding, bending and machining

StrenxTube 100XF has good weldabilility, including corner region, and it is suitable for thermal cutting. All the common welding methods are suitable with matching or undermatching consumables.

Tubes can also be sawed and machined with regular tools. Bending of the tubes is also possible, typically at least 5xD (five times the diameter) bending radius can be achieved with regular draw bending tooling.

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For information concerning fabrication, see SSAB´s brochures on www.ssab.com or consult Tech Support, techsupport@ssab.com.

Appropriate health and safety precautions must be taken when bending, welding, cutting, grinding or otherwise working on the product.

Contact Information

www.ssab.com/contact