SSAB Domex Tube Double Grade

General Product Description

SSAB Domex Tube Double Grade is structural hollow section.

It meets or exceeds the requirements of standard EN 10219 and includes two separate modern steel grades: S355J2H and S420MH. The choice of grade depends on the customer's or designer's application and requirements.

When your main goal is excellent usability or simplicity of design, grade S355 presents the best choice. If you are looking for considerable weight reduction and longer spans, consider selecting grade S420MH.

Welding and other workshop instructions and regulations like welding procedure test (ISO 15614-1), material classification (ISO 15608), welding qualification (EN 287-1; ISO 9606-1) and EN 1090 certification procedure must follow the appropriate steel grade S355 or S420 selected.

Welding in corner areas is always permitted when using SSAB steels.

Dimension Range

SSAB Domex Tube Double Grade is available at circular, square and rectangular shapes.

Circular	26.9- 323.9 mm
Square	25x25- 300x300 mm
Rectangular	40x20- 400x200 mm
Wall thickness	2.0- 12.50 mm
Mill length	6000- 12 000/18 000 mm

Other shapes and sizes are available upon request.

Dimensions

Circular

Diameter	2.0mm (kg/m)	2.5mm (kg/m)	3.0mm (kg/m)	4.0mm (kg/m)	5.0mm (kg/m)	6.0mm (kg/m)	6.3mm (kg/m)	8.0mm (kg/m)	10.0mm (kg/m)	12.5mm (kg/m)
26.9 mm	1.23	1.50								
33.7 mm	1.56	1.92	2.27							
42.4 mm	1.99	2.46	2.91	3.79						
48.3 mm	2.28	2.82	3.35	4.37						
60.3 mm	2.88	3.56	4.24	5.55	6.82					
76.1 mm	3.65	4.54	5.41	7.11	8.77		10.8			
88.9 mm		5.33	6.36	8.38	10.4	12.3	12.8			
101.6 mm		6.11	7.29	9.63	11.9	14.2	14.8			
108 mm		6.50	7.77	10.3	12.7	15.1	15.8			
114 mm		6.89	8.23	10.9	13.5	16.0	16.8			
127 mm		7.68	9.17	12.1	15.0	17.9	18.8			
133 mm		8.05	9.62	12.7	15.8	18.8	19.7			
139.7 mm			10.1	13.4	16.6	19.8	20.7	26.0	32.0	
152.4 mm			11.1	14.6	18.2	21.7	22.7			
159 mm			11.5	15.3	19.0	22.6	23.7	25.9	36.7	
168.3 mm			12.2	16.2	20.1	24.0	25.2	31.6	39.0	
193.7 mm				18.7	23.3	27.8	29.1	36.6	45.3	55.9
219.1 mm				21.2	26.4	31.5	33.1	41.7	51.6	63.7
244.5 mm						35.3		46.7	57.8	71.5
273 mm				26.5	33.1	39.5	41.4	52.3	64.9	80.3
323.9 mm				31.6	39.3	47.0	49.3	62.3	77.4	96.0

Square

Height x Width	2.0mm (kg/m)	2.5mm (kg/m)	3.0mm (kg/m)	4.0mm (kg/m)	5.0mm (kg/m)	6.0mm (kg/m)	7.1mm (kg/m)	8.0mm (kg/m)	8.8mm (kg/m)	10.0mm (kg/m)	12.5mm (kg/m)
25 x 25 mm	1.36	1.64	1.84								
30 x 30 mm	1.68	2.03	2.36								
40 x 40 mm	2.31	2.82	3.30	4.20							
50 x 50 mm	2.93	3.60	4.25	5.45	6.56						
60 x 60 mm	3.56	4.39	5.19	6.71	8.13						
70 x 70 mm		5.17	6.13	7.97	9.70						
80 x 80 mm		5.96	7.07	9.22	11.3	13.2					
90 x 90 mm		6.74	8.01	10.5	12.8	15.1					
100 x 100 mm		7.53	8.96	11.7	14.4	17.0	19.4	21.4			
110 x 110 mm		8.31	9.90	13.0	16.0	18.9					
120 x 120 mm			10.8	14.3	17.6	20.8	23.8	26.4		31.8	
140 x 140 mm				16.8	20.7	24.5	28.3	31.4	34.2	38.1	
150 x 150 mm				18.0	22.3	26.4	30.5	34.0	36.9	41.3	48.7
160 x 160 mm				19.3	23.8	28.3	32.7	36.5	39.7	44.4	52.6
180 x 180 mm					27.0	32.1	37.2	41.5	45.2	50.7	60.5
200 x 200 mm					30.1	35.8	41.6	46.5	50.8	57.0	68.3
220 x 220 mm						39.6	46.1	51.5	56.3	63.2	76.2
250 x 250 mm						45.2	52.8	59.1	64.6	72.7	88.0
260 x 260 mm						47.1	55.0	61.6	67.3	75.8	91.9
300 x 300 mm						54.7	63.9	71.6	78.4	88.4	108

Rectangular

Height x Width	2.0mm (kg/m)	2.5mm (kg/m)	3.0mm (kg/m)	4.0mm (kg/m)	5.0mm (kg/m)	6.0mm (kg/m)	7.1mm (kg/m)	8.0mm (kg/m)	8.8mm (kg/m)	10.0mm (kg/m)	12.5mm (kg/m)
40 x 20 mm	1.68	2.03	2.36								
40 x 30 mm	1.99	2.42	2.83								
50 x 30 mm	2.31	2.82	3.30	4.20							
60 x 40 mm	2.93	3.60	4.25	5.45	6.56						
70 x 50 mm	3.56	4.39	5.19	6.71	8.13						
80 x 40 mm	3.56	4.39	5.19	6.71	8.13						
80 x 60 mm		5.17	6.13	7.97	9.70						
90 x 50 mm		5.17	6.13	7.97	9.70						
100 x 40 mm		5.17	6.13	7.97	9.70						
100 x 50 mm		5.6	6.60	8.59	10.5	12.3					
100 x 60 mm		5.95	7.07	9.22	11.3	13.2					
100 x 80 mm		6.74	8.01	10.5	12.8	15.1					
120 x 40 mm		5.96	7.07	9.22	11.3	13.2					
120 x 50 mm		6.35	7.54	9.85	12.1	14.2					
120 x 60 mm		6.74	8.01	10.5	12.8	15.1					
120 x 80 mm		7.53	8.96	11.7	14.4	17.0	19.4	21.4	23.1	25.6	
120 x 100 mm		8.31	9.90	13.0	16.0	18.9					
140 x 60 mm			8.96	11.7	14.4	17.0					
140 x 70 mm		7.92	9.43	12.4	15.2	17.9					
140 x 80 mm			9.90	13.0	16.0	18.9					
150 x 50 mm		7.53	8.96	11.7	14.4	17.0					
150 x 100 mm			11.3	14.9	18.3	21.7	24.9	27.7	30.0	33.4	
160 x 70 mm				13.6	16.8	19.8		25.2			
160 x 80 mm				14.3	17.6	20.8	23.8	26.4	28.6	31.8	
160 x 90 mm				14.9	18.3	21.7	24.9	27.7	30.0		
180 x 100 mm				16.8	20.7	24.5	28.3	31.4	34.2	38.1	
180 x 120 mm				18.0	22.3	26.4	30.5	34.0	36.9	41.3	48.7

Height x Width	2.0mm (kg/m)	2.5mm (kg/m)	3.0mm (kg/m)	4.0mm (kg/m)	5.0mm (kg/m)	6.0mm (kg/m)	7.1mm (kg/m)	8.0mm (kg/m)	8.8mm (kg/m)	10.0mm (kg/m)	12.5mm (kg/m)
200 x 80 mm				16.8	20.7	24.5	28.3	31.4	34.2	38.1	
200 x 100 mm				18.0	22.3	26.4	30.5	34.0	36.9	41.3	48.7
200 x 120 mm					23.8	28.3	32.7	36.5	39.7	44.4	52.6
220 x 120 mm					25.4	30.2	35.0	39.0	42.5	47.5	
250 x 100 mm					26.18	31.11		40.23		49.11	
250 x 150 mm					30.1	35.8	41.6	46.5	50.8	57.0	68.3
260 x 140 mm						35.8	41.6	46.5	50.8	57.0	68.3
260 x 180 mm						39.6	46.1	51.5	56.3	63.2	
300 x 100 mm					30.1	35.8	41.6	46.5	50.8	57.0	68.3
300 x 150 mm						40.5	47.2	52.8		64.8	78.1
300 x 200 mm						45.2	52.8	59.1	64.6	72.7	88.0
400 x 200 mm						54.7	63.9	71.6	78.4	88.4	108

Mechanical Properties

Grade	Thickness (mm)	Yield Strength Rp0.2 (min MPa)	Tensile Strength Rm (MPa)	Elongation A_5 [2] (min %)	Charpy-V **-40°C** 10x10 mm test specimen [1] (J)
S355J2H	2- 2.99	355	510- 680	20	**27**
S355J2H	3- 12.5	355	470- 630	20	**27**
S420MH	2- 12.5	420	500- 660	19	**40**

Mechanical properties meet or **exceed** the requirements of EN 10219.
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 ≥ 6mm. The specified minimum value corresponds to a full-size specimen.
[2] The hollow sections with D/T < 15 (round) or (B + H)/2T < 12,5 (rectangular and square), the minimum value of elongation is reduced by 2.

Chemical Composition

Grade	C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)
S355J2H	**0.16**	**0.25**[1]	1.60	**0.020**	**0.012**
S420MH	**0.16**	**0.25** [1]	1.60	**0.020**	**0.012**

Chemical composition meets or **exceeds** the requirements of EN 10219.
Chemical analyses enables welding in the corner area without restrictions (EN 1993-1-8).
The steel is aluminium-killed.
1) Si content guaranteed at 0.15–0.25 %.

Carbon Equivalent Values

CEV (max %)	**0.39**

CEV value **exceeds** the requirements of EN 10219.

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

Tolerances

Characteristic	Circular hollow sections Tolerances meet or **exceed** the requirements of EN 10219
Outside diameter (D) [1]	±1%, however a minimum of ±0.5 mm and a maximum of ±10 mm
Out-of-roundness	2%, when D/T ≤ 100
Thickness (T)	When D ≤ 323.9 mm: **-5%**/+10%, with a minimum of ±0.2 mm and maximum ±0.5 mm When 355.6 ≤ D ≤ 406.4 mm[3]: ±10%, when T ≤ 5 mm / ±0.5 mm, when T > 5 mm When D > 406.4 mm[3]: ±10%, with a maximum of ±2 mm
Straightness	0.20% of total length and 3 mm over any 1 m length
Mass per unit length	Individual tube: ±6%
Mill length	0/+50 mm, 6000 ≤ L ≤ 12000- 18000 mm (standard lengths 6000 & 12000 mm)
Exact length	Agreed at the time of enquiry and order

[1] All external dimensions are measured with a minimum distance from the end of the section. The distance must be a minimum of 100 mm.

Characteristic	Square hollow sections Tolerances meet or **exceed** the requirements of EN 10219
Outside dimensions (B, H) [1]	When B, H < 100 mm ±1 % minimum ±0.5 mm When 100 mm ≤ B, H ≤ 200 mm: ±0.8% When B, H > 200 mm: ±0.6%
Thickness (T)	**-5%**/ +10 %, with a minimum of ±0.2 mm and maximum ±0.5 mm
External corner profile	When T ≤ 6 mm: 1.6 x T–2.4 x T When 6 mm < T ≤ 10 mm: 2.0 x T-3.0 x T When T > 10 mm: 2.4 x T–3.6 x T
Squareness of side	90° ±1°
Concavity/convexity	0.8%, with a minimum of 0.5 mm
Twist	2 mm + 0.5 mm/m
Straightness	0.15% of total length and 3 mm over any 1 m length
Mass per unit length	Individual tube: ±6%
Mill length	0/+50 mm, 6000 ≤ L ≤ 12000- 18000 mm (standard lengths 6000 & 12000 mm)
Exact length	Agreed at the time of enquiry and order

[1] All external dimensions are measured with a minimum distance from the end of the section. The distance must be a minimum of 100 mm.

Characteristic	Rectangular hollow sections Tolerances meet or **exceed** the requirements of EN 10219
Outside dimensions (B, H) [1)]	When B, H < 100 mm ±1 % minimum ±0.5 mm When 100 mm ≤ B, H ≤ 200 mm: ±0.8% When B, H > 200 mm: ±0.6%
Thickness (T)	**-5%**/ +10 %, with a minimum of ±0.2 mm and maximum ±0.5 mm
External corner profile	When T ≤ 6 mm: 1.6 x T–2.4 x T When 6 mm < T ≤ 10 mm: 2.0 x T-3.0 x T When T > 10 mm: 2.4 x T–3.6 x T
Squareness of side	90° ±1°
Concavity/convexity	0.8%, with a minimum of 0.5 mm
Twist	2 mm + 0.5 mm/m
Straightness	0.15% of total length and 3 mm over any 1 m length
Mass per unit length	Individual tube: ±6%
Mill length	0/+50 mm, 6000 ≤ L ≤ 12000- 18000 mm (standard lengths 6000 & 12000 mm)
Exact length	Agreed at the time of enquiry and order

[1)] All external dimensions are measured with a minimum distance from the end of the section. The distance must be a minimum of 100 mm.

Contact Information

www.ssab.com/contact

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