

Hybox® S500MH

High strength cold formed hollow sections

Hybox® is our range of high-grade cold formed hollow sections to EN 10219, available with minimum yield strengths ranging from 355 MPa to 700 MPa.

Using the latest advances in high strength steel, Hybox S500MH enables lighter-weight and longer spans from structural hollow sections.

Hybox® S500MH is available in a range of popular sizes as well as with the option for superior TT tolerances and finish.



For cranes, scissor-lifts, telehandlers, agricultural equipment and many other applications, efficiency in use depends on gaining the maximum reach, but without the weight penalty of bulky structures. This is where high strength steel is very beneficial and in particular when combined with the high quality of Hybox® structural hollow sections.

High-strength Hybox is available in grades S500MH, S500MLH, S550MH, S550MLH, S600MH, S600MLH, S650MH, S650MLH, S700MH and S700MLH please contact us for details.

Inspection & Testing

Hybox® hollow sections are subject to specific inspection and testing and are supplied with an inspection certificate type 3.1 to EN 10204.

Hybox® TT

High strength hollow sections are also available with Hybox® TT for tight tolerances and a superior finish to aid efficiency in manufacturing. Hybox® TT specifications benefit from half-norm tolerances in most dimensions, plus an extra-smooth surface to enable the best showroom finish, even without shot-blasting.

Technical Support

We want you to get the best from Hybox® hollow sections. Our technical engineers and trained sales staff are always happy to answer your questions on steel selection and application. Our engineers are available to assist you with the application of high strength Hybox® for efficient and lightweight design.

High strength Hybox is manufactured under IATF 16949 - 2016 for ultimate confidence in quality.

Tolerances

Dimensional tolerances are to EN 10219.

Sustainability

The essential properties of steel make it the sustainable choice for a wide range of applications. Steel is strong, durable, versatile, re-usable and most importantly, it is 100% recyclable. We take sustainability very seriously and have gained a 'very good' rating for responsible sourcing according to BES 6001. Hybox® is also available with an Environmental Product Declaration (EPD).



Mechanical properties

Grade	Min. yield strength (MPa)		Tensile strength (MPa)		Min. elongation (%)		Min. impact energy KV ₂ (J) at test temperature of -20°C	
	R _{eH}		R _m		A Long	A Trans	Long	Trans
S500 MH	500		580 - 760		11	9	40	20

For thicknesses ≥ 3mm; for section sizes D/T ≤ 10 (circular) and (B+H)/2T ≤ 10 (square and rectangular) the minimum elongation is reduced by 4 and the maximum tensile strength increased by 50 MPa. For section sizes D/T > 10 to <15 (circular) and (B+H)/2T > 10 to <15 (square and rectangular) the minimum elongation is reduced by 2 and the maximum tensile strength increased by 50 MPa. For thicknesses < 3mm values shall be agreed between the purchaser and manufacturer.

Chemical composition

Grade	C max	Si max	Mn max	P max	S max	Cr max	Mo max	Ni max	Al _{tot} min	Cu max	Nb max	Ti max	V max	N max	CEV max
S500 MH	0.16	0.6	1.7	0.02	0.02	0.3	0.2	0.8	0.02	0.55	0.09	0.06	0.12	0.025	0.4

CEV exceeds the requirements of EN10219-3:2020; CEV = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

Rectangular hollow sections (RHS)

mm	2.00	2.50	3.00	3.50	4.00	5.00	6.00	8.00	10.00
30/20	1.36	1.64	1.89						
40/20	1.68	2.03	2.36	2.66					
40/30	1.99	2.42	2.83	3.21	3.57				
50/20	1.99	2.42	2.83	3.21	3.57				
50/25	2.15	2.62	3.07	3.49	3.88				
50/30	2.31	2.82	3.30	3.76	4.20				
60/20	2.31	2.82	3.30	3.76	4.20				
50/40	2.62	3.21	3.77	4.31	4.83				
60/30	2.62	3.21	3.77	4.31	4.83				
60/40	2.93	3.60	4.25	4.86	5.45	6.56			
60/50	3.25	3.99	4.72	5.41	6.08	7.34			
70/40	3.25	3.99	4.72	5.41	6.08	7.34			
70/50	3.56	4.39	5.19	5.96	6.71	8.13			
80/30	3.25	3.99	4.72	5.41	6.08	7.34			
80/40	3.56	4.39	5.19	5.96	6.71	8.13			
80/50		4.78	5.66	6.51	7.34	8.91			
80/60		5.17	6.13	7.06	7.97	9.70			
81/51		4.86	5.75	6.62	7.46	9.07			
90/50		5.17	6.13	7.06	7.97	9.70			
100/40		5.17	6.13	7.06	7.97	9.70			
100/50		5.56	6.60	7.61	8.59	10.5	12.3		
100/60		5.96	7.07	8.16	9.22	11.3	13.2		
100/80			8.01	9.26	10.5	12.8	15.1		
110/70			8.01	9.26	10.5	12.8	15.1		
120/40			7.07	8.16	9.22	11.3	13.2		
120/50			7.54	8.71	9.85	12.1	14.16		
120/60			8.01	9.3	10.5	12.8	15.1		
120/80			8.96	10.4	11.7	14.4	17.0	21.4	
120/100				11.5	13.0	16.0	18.9	23.9	
140/50				9.81	11.1	13.6	16.0		
140/60				10.4	11.7	14.4	17.0		
140/80				11.5	13.0	16.0	18.9	23.9	
150/100					14.9	18.3	21.7	27.7	33.4
160/80					14.2	17.5	20.7	26.4	31.8
160/90					14.9	18.3	21.7	27.7	33.4
180/80					15.5	19.1	22.6	28.9	35.0
180/100					16.8	20.7	24.5	31.4	
200/80					16.8	20.7	24.5	31.4	
200/100						22.3	26.4	33.9	
200/120						23.8	28.3	36.5	
200/150						26.2	31.1	40.2	
220/120						25.4	30.2	39.0	
250/100						26.2	31.1	40.2	
250/150							35.8	46.5	
300/100							35.8	46.5	
300/200								59.1	

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