

MILD STEEL: BOX SECTION_ WELDED**DSM 1.1.3****Definition:**

The manufacture of **welded COLD** formed steel products occurs at room temperature. Hollow sections are made from flat sheet. A typical circular section is rolled at a radius and welded along its length. Rectangular hollow sections are made by deforming circular sections through forming rollers.

Cold formed:

This process increases yield strength & hardness to produce a consistent, closer tolerance form with a superior finish that is better suited to painting. An economically attractive wide range of available profiles, typically 10-20% cheaper & 30% lighter than **DSM 1.1.2** (EN 10210) seamless hot formed. More susceptible to local buckling effects than seamless hot formed sections.

Features:

S – Structural Steel

275 – Minimum yield strength (MPa) at ≤ 16 mm wall thickness.

J0 - Impact test value: 0° C min. 27 Joules

H – Hollow section

ASM (DEK) Applications:

Preferred material for box section welded fabrications.

These values are representative and are dependent on section. For critical applications, refer to material data-sheet.

TYPICAL MECHANICAL PROPERTIES @25°C			
DENSITY:	7860 Kg/m ³		
YOUNGS MODULUS:	200 GPa		
POISSONS RATIO:	0.27 – 0.3		
	WALL THICKNESS		
	< 3mm	≤ 16mm	>16mm≤40mm
Min. YIELD STRENGTH	275 MPa	275 MPa	265 MPa
TENSILE STRENGTH	430 -580 MPa	410 MPa	560 MPa

Note: Yield strength is reduced as material thickness is increased.

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CHEMICAL ANALYSIS		BENEFIT
Carbon	0,25	Good for machining & welding.
Silicon	0,5 max	Good for galvanising purposes
Mang	1,6 max	Combines with sulphur: good machining & finish.
Phos	0.04 max	Increases resistance to corrosion.
Sulphur	0.05 max	Good for machining.

CURRENT INTERNATIONAL SPECIFICATION COMPARISON	
BRITISH: BS	BS 10219: 2006: S275JOH
GERMAN: DIN	St44 –3
AMERICAN: ASTM	A36
EUROPEAN STEEL No.	1.0149
EUROPEAN STANDARD	EN 10025: 2004
JAPANESE GRADE	JIS G 3101
CHINESE GRADE	Q275

REPLACES

BS6363 1983	BS 4360 1990	DESCRIPTION
43C	43C	Rolled Hollow Section: Cold Formed

Alternatives:

Alternative materials are allowed only with the express written permission of ASMPT. Please email details of your request to engineering_enquiries@asmpt.com

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Rectangular Hollow Section (RHS)_ Cold Formed					
Size	Thick	Size	Thick	Size	Thick
50 x 25	2,0	100 x 40	3,0	120 x 40	6,3
50 x 25	2,5	100 x 40	3,6	120 x 60	3,0
50 x 25	3,0	100 x 40	4,0	120 x 60	3,6
50 x 30	2,5	100 x 40	5,0	120 x 60	4,0
50 x 30	3,0	100 x 50	3,0	120 x 60	5,0
50 x 30	3,2	100 x 50	3,6	120 x 60	6,0
50 x 30	4,0	100 x 50	4,0	120 x 60	6,3
60 x 40	2,5	100 x 50	5,0	120 x 80	3,0
60 x 40	3,0	100 x 50	6,0	120 x 80	4,0
60 x 40	3,2	100 x 50	6,3	120 x 80	5,0
60 x 40	4,0	100 x 60	3,0	120 x 80	6,0
80 x 40	3,0	100 x 60	3,6	120 x 80	6,3
80 x 40	3,2	100 x 60	4,0	150 x 100	3,0
80 x 40	4,0	100 x 60	5,0	150 x 100	4,0
80 x 60	2,5	100 x 60	6,0	150 x 100	5,0
80 x 60	3,0	100 x 60	6,3	150 x 100	6,0
80 x 60	3,6	100 x 80	3,0	150 x 100	6,3
80 x 60	4,0	100 x 80	3,6	160 x 80	3,0
80 x 60	5,0	100 x 80	4,0	160 x 80	4,0
90 x 50	2,5	120 x 40	3,0	160 x 80	5,0
90 x 50	3,0	120 x 40	3,6	160 x 80	6,0
90 x 50	3,6	120 x 40	4,0	160 x 80	6,3
90 x 50	4,0	120 x 40	5,0	200 x 100	4,0
90 x 50	5,0	120 x 40	6,0	200 x 100	5,0

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Rectangular Hollow Section (RHS)_ Cold Formed

Size	Thick	Size	Thick	Size	Thick
200 x 100	6,0	200 x 100	16,0	250 x 150	16,0
200 x 100	6,3	250 x 150	6,3	300 x 200	6,3
200 x 100	8,0	250 x 150	8,0	300 x 200	8,0
200 x 100	10,0	250 x 150	10,0	300 x 200	10,0
200 x 100	12,5	250 x 150	12,5		

Square Hollow Section (SHS)_ Cold Formed

Size	Thick	Size	Thick	Size	Thick
20 x 20	2,0	50 x 50	4,0	90 x 90	5,0
20 x 20	2,5	50 x 50	5,0	90 x 90	6,0
25 x 25	2,0	60 x 60	3,0	100 x 100	4,0
25 x 25	2,5	60 x 60	4,0	100 x 100	5,0
25 x 25	3,0	60 x 60	5,0	100 x 100	6,0
30 x 30	2,5	70 x 70	3,0	100 x 100	8,0
30 x 30	3,0	70 x 70	3,6	100 x 100	10,0
40 x 40	2,0	70 x 70	5,0	120 x 120	3,0
40 x 40	2,5	80 x 80	3,0	120 x 120	4,0
40 x 40	3,0	80 x 80	3,6	120 x 120	5,0
40 x 40	4,0	80 x 80	5,0	120 x 120	6,0
50 x 50	2,0	80 x 80	6,0	150 x 150	5,0
50 x 50	2,5	90 x 90	3,0	150 x 150	6,0
50 x 50	3,0	90 x 90	3,6	150 x 150	8,0
				150 x 150	10,0

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Circular Hollow Section (CHS)_Cold Formed											
WALL STOCK											
DIA.	2.0	2.5	3.0	3.6	4.0	5.0	6.0	6.3	8.0	10	12.5
21.3			✓								
26.9		✓	✓								
33.7		✓	✓		✓						
42.4	✓	✓	✓		✓						
48.3			✓		✓						
60.3			✓		✓	✓					
76.1			✓		✓	✓					
88.9			✓		✓	✓					
101.6											
114.3			✓	✓	✓	✓	✓	✓			
139.7					✓	✓	✓		✓	✓	
152.4											
168.3						✓	✓		✓	✓	✓
193.7						✓	✓		✓	✓	
219.1						✓	✓		✓	✓	✓
244.5										✓	✓
273.1										✓	✓
323.9										✓	✓

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