

MEDIUM CARBON STEEL**DSM 1.1.9****Definition:****Medium carbon** (0,45 % - 1,4 %):

Similar specification to **DSM 1.5.1** but with a slightly higher carbon content, providing better mechanical & heat treatment capabilities.

Suitable for applications where better properties (strength) than low carbon steel are required, but costs of an alloy steel are not justified.

Available in black and bright rounds and cold rolled plate; suitable for oil hardening & tempering, giving good wear properties.

Black Steel: Use only for components that are not stock sized.

Direct from hot rolling mill, coated in scale & not precise in form. Cheaper.

Bright Drawn/Cold Rolled: Use only for components that are stock sized.

Essentially black steel that has had further processing, including cold rolling & annealing, to produce a consistent, closer tolerance form with a superior finish.

Features:

Can be **flame or induction hardened** to produce good surface hardness with moderate wear resistance for a carbon steel.

Flame cut profiles can be supplied as surface ground.

Can be welded but not recommended.

ASM (DEK) Applications:

Hardened precision shafts/guide bars.

These values are representative and should not be considered as definitive. For critical applications, refer to material data-sheet.

TYPICAL MECHANICAL PROPERTIES @25°C	
DENSITY:	7860 Kg/m ³
YOUNGS MODULUS:	202 GPa
POISSONS RATIO:	0.29
YIELD STRENGTH	460 MPa
TENSILE STRENGTH	790 MPa

Issue	01	02	03	04	05	06	07	08	09
DCR	7135	30040	44682						



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CHEMICAL ANALYSIS		BENEFIT
Carbon	0.45/0.55	Med. content: Better mechanical & heat treatment
Silicon	0,10/0,40	Good for galvanising purposes
Mang	0.60/1.0	Combines with sulphur: good machining & finish.
Phos	0.05 max	Increases resistance to corrosion.
Sulphur	0.05 max	Good for machining.

CURRENT INTERNATIONAL SPECIFICATION COMPARISON	
BRITISH: BS	BS 970: 1991: 080M50
GERMAN: DIN	C50
AMERICAN: SAE	G 10500
EUROPEAN STEEL No.	1.0540
JAPANESE GRADE	JIS G 4051 S50C
CHINA GRADE	GB 50

REPLACES

BS970 1955	BS970 1991	COLOUR CODE		DESCRIPTION
EN43A				Black/Bright: Med Carbon

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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These sizes are given in good faith and should not be considered as definitive

Rounds (mm)_ Black _Hot Rolled

60	65	70	75	80	85	90	95	100	105
110	115	120	125	130	135	140	145	150	155
160	165	170	180	190	200	210	220		

Rounds (mm)_Bright_ Drawn/Turned

2	2.5	3	4	5	6	6,5	7	8	9
10	11	12	13	14	15	16	17	18	19
20	22	24	25	26	28	30	32	35	36
38	40	42	45	46	48	50	52	55	56
58	60	65	70	75	80	85	90	100	105
110	120	125	130	140	150				

Hexagons (mm)_Bright_ Drawn

5	6	7	8	10	11	12	13	14	15
16	17	18	19	20	22	24	25	26	27
30	32	35	36	41	46	50	55	60	65
70	75								

Squares (mm)_Bright_ Drawn

5	6	7	8	10	12	14	15	16	18
20	22	25	30	32	40	45	50	60	

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Flats (mm)_Bright_ Drawn												
10	3	5										
12	3	5	6									
13	3											
16	3											
20	3	5	6	8	10	12						
25	3	5	6	8	10	12	16	20				
30	3	5	6	8	10	12	16	20	25			
40	3	5	6	8	10	12	16	20	25	30		
50	3	5	6	8	10	12	16	20	25	30		
60	3	5	6	8	10	12	16	20	25	30		
70	3	5	6	8	10	12	16	20	25			
80		5	6	8	10	12	16	20	25			
90			6		10	12	16					
100	3	5	6	8	10	12	16	20	25	30	40	50
125					10				25			50
150			6		10	12	16	20	25	30	40	50
200					10	12		20	25	30		50

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