

MEDIUM CARBON STEEL**DSM 1.9.1****Definition:****Medium carbon** (0,45 % - 1,4 %):

Similar specification to **DSM 1.1.9** but with slightly higher carbon content, providing better mechanical capabilities.

A medium carbon steel available in two types which relate to the process only **not** the grade or specification:-

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 improved strength and a superior finish.

Features:

Can be **flame or induction hardened** to produce a high wear resistance surface for a carbon steel. Flame cut profiles (flats, rounds) can be supplied precision 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:	0.27 - 0.3
YIELD STRENGTH	186 - 758 MPa
TENSILE STRENGTH	276 - 1882 MPa

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

Rounds (mm)_Black_Hot Rolled

45	50	55	60	65	70	75	80	85	90
Gp	100	105	110	115	120	125	130	135	140
145	150	155	160	165	170	180	185	190	200
210	220	230	249	250	260	270	280	300	

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DCR	7135	30040	44682						



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CHEMICAL ANALYSIS		BENEFIT
Carbon	0.50/0.60	Med. Content: Better mechanical properties.
Silicon	0.10/0.40	Principle deoxidizer improves purity.
Mang	0.50/0.90	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: 070M55
GERMAN: DIN	C55
AMERICAN: SAE	1055
EUROPEAN STEEL No.	1.0535
JAPANESE GRADE	JIS G 4051 S55C
CHINA GRADE	GB 55

REPLACES

BS970 1955	BS970 1991	COLOUR CODE		DESCRIPTION
EN9				Black: 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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