

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 40KH5MF (40X5MΦ).

Grade :	40KH5MF (40X5MΦ)
Substitute:	3X2B8Φ
Classification :	Die tool steel
Equivalent grades:	Go here

Chemical composition in % for grade 40KH5MF (40X5MΦ)

C	Si	Mn	Ni	S	P	Cr	Mo	V
0.35 - 0.45	0.17 - 0.37	0.5 - 0.8	max 0.3	max 0.03	max 0.03	4.5 - 5.5	1.2 - 1.6	0.4 - 0.6

Temperature of critical points for grade 40KH5MF (40X5MΦ).

$A_{c1} = 810$, $A_{c3}(A_{cm}) = 855$

Mechanical properties under T=20°C for grade 40KH5MF (40X5MΦ)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Forging	to 400		1400	1300	7			Normalizing and drawing

Technological properties for grade 40KH5MF (40X5MΦ)

Weldability:	hard weldability.
Flakes :	weakly predisposed
Temper brittleness:	weakly predisposed

Equivalent steels for grade 40KH5MF (40X5MΦ)

Warning! Indicated both exact and nearest equivalents.

Germany	England
DIN,WNr	BS
1.8523 39CrMoV13-9	897M39

Specification : Mechanical properties :

- σ_B - Tensile strength , [MPa]
 σ_T - Yield stress , [MPa]
 δ_5 - Specific elongation at fracture , [%]

ψ	- Reduction of area , [%]
KCU	- Impact strength , [kJ / m ²]
HB	- Brinell hardness , [MPa]

Weldability :

without limitations	- welding is done without heating and subsequent heat treating
limited weldability	- welding is possible under heating up to 100-120 grade and subsequent heat treating
hard weldability	- obtaining the quality welding needs the additional operations: heating up to 200-300 grade; the heat treating is annealing

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more than 2500 steels and alloys (stainless steel, alloy steel, carbon steel, structural steel, tool steel, cast iron, aluminum alloy, titanium alloy, copper alloy, nickel alloy, magnesium alloy and others).
Helpful for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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