

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 3KH2V8F (3X2B8Φ).

Grade :	3KH2V8F (3X2B8Φ)
Substitute:	4X5B2ΦC, 4X2B2MΦC, 5X3B3MΦC
Classification :	Die tool steel
Equivalent grades:	Go here

Chemical composition in % for grade 3KH2V8F (3X2B8Φ)

C	Si	Mn	Ni	S	P	Cr	Mo	W	V	Cu
0.3 - 0.4	0.15 - 0.4	0.15 - 0.4	max 0.35	max 0.03	max 0.03	2.2 - 2.7	max 0.5	7.5 - 8.5	0.2 - 0.5	max 0.03

Temperature of critical points for grade 3KH2V8F (3X2B8Φ).

$A_{c1} = 800$, $A_{c3}(A_{cm}) = 850$, $A_{r3}(A_{rcm}) = 750$, $A_{r1} = 690$, $Mn = 380$

Mechanical properties under T=20°C for grade 3KH2V8F (3X2B8Φ)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Steel			1530	1390	12	36	200	Guenching 1130°C, oil, Drawing 650°C, 2h,

Brinell hardness for 3KH2V8F (3X2B8Φ) (annealing) ,	HB 10 ⁻¹ = 241 MPa
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Technological properties for grade 3KH2V8F (3X2B8Φ)

Weldability:	is not used.
Flakes :	predisposed
Temper brittleness:	predisposed

Physical properties for grade 3KH2V8F (3X2B8Φ)

T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹
Grade	MPa	1/Grade	Watt/(m·Grade)	kg/m ³	J/(kg·Grade)	Ohm·m
20	2.24					
100	2.18		25			250
200	2.11		27			200
300	2.04		29			170
400	1.96		40			140
500	1.87		46			120
600	1.77		50			
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 3KH2V8F (3X2B8Φ)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Spain	China	Bulgaria	Poland	Romania	Czechia	Austria	South Korea
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	UNE	GB	BDS	PN	STAS	CSN	ONORM	KS

H21 T20821	1.2581 30WCrV17- 2 X30WCrV5- 3 X30WCrV9- 3	SKD5	X30WCrV9 Z30WCV9	2581 BH21	1.2581 X30WCrV9- 3	X30WCrV9- 3KU	F.5323 X30WCrV9	3Cr2W8V	3Ch2B8F X30WCrV9- 3	WWW	30VCrW85	19721	BOHLERW100 W100	STD5
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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 / m²]
HB - Brinell hardness , [MPa]

Physical properties :

- T** - Test temperature , [Grade]
E - Young modulus , [MPa]
 α - Coefficient of linear expansion (range 20° - T) , [1/Grade]
 λ - Thermal (heat) condition coefficient , [Watt/(m·Grade)]
 ρ - Density , [kg/m³]
C - Specific heat (range 20° - T) , [J/(kg·Grade)]
R - Electrical resistance , [Ohm·m]

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).
 Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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