

Database of Steel and Alloy (Marochnik)

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Characteristics for grade U8A (Y8A).

Grade :	U8A (Y8A)
Classification :	Carbon tool steel
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Chemical composition in % for grade U8A (Y8A)

C	Si	Mn	Ni	S	P	Cr	Cu
0.75 - 0.84	0.17 - 0.33	0.17 - 0.28	max 0.25	max 0.018	max 0.025	max 0.2	max 0.25

Temperature of critical points for grade U8A (Y8A).

$A_{c1} = 720$, $A_{r1} = 700$, $M_n = 245$

Mechanical properties under T=20°C for grade U8A (Y8A)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Band cold-worked , GOST 2283-79			740-1180					
Band annealed , GOST 2283-79			640-740		10-15			

Brinell hardness for U8A (Y8A) (annealing) , GOST 1435-99

HB 10⁻¹ = 187 MPa

Physical properties for grade U8A (Y8A)

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				7830		140

Equivalent steels for grade U8A (Y8A)

Warning! Indicated both exact and nearest equivalents.

USA	Germany
-	DIN, WNr
W108	1.1525 C80W1

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]

Physical properties :

T	- Test temperature , [Grade]
E	- Young modulus , [MPa]
α	- Coefficient of linear expansion (range 20° - T) , [1/Grade]
λ	- Termal (heat) condition coefficient , [Watt/(m·Grade)]
ρ	- Density , [kg/m ³]
C	- Specific heat (range 20° - T) , [J/(kg·Grade)]
R	- Electrical resistance , [Ohm·m]

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more then 2500 steels and alloys (stainless steel, alloy steel, carbone 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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