

Database of Steel and Alloy (Marochnik)

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Characteristics for grade VT22 (BT22).

Grade :	VT22 (BT22)
Classification :	Titanium wrought alloy
Equivalent grades:	Is absent

Chemical composition in % for grade VT22 (BT22)

Fe	C	Si	Cr	Mo	V	N	Ti	Al	Zr	O	H	Impurity
0.5 - 1.5	max 0.1	max 0.15	0.5 - 1.5	4 - 5.5	4 - 5.5	max 0.05	79.4 - 86.3	4.4 - 5.7	max 0.3	max 0.18	max 0.015	other 0.3

Comment: Ti is a basis; the percentage of Ti is given approximately.

Mechanical properties under T=20°C for grade VT22 (BT22)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 26492-85			1030		6-8	14-20	200-250	Annealing
Bar, GOST 26492-85			1080-1280		7-10	17-30	250-300	Annealing
Bar, GOST 26492-85			1280		6-7	16-18	180-200	Hardening and ageing

Brinell hardness for VT22 (BT22) (annealing), Bar

HB 10⁻¹ = 285 MPa

Physical properties for grade VT22 (BT22)

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			8.32	4620		1530
100		8	9.21			
200		8.2	10.5		0.565	
300		8.4	11.7		0.586	
400		8.6	13.4		0.649	
500		8.8	14.6		0.712	
600			15.9			
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

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	- Thermal (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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