

Database of Steel and Alloy (Marochnik)

splat.kharkov.com/en

[Home](#) [European steel grades](#) [Steel and Alloy](#) [Search](#) [Equivalent grades](#) [Grading](#) [GOST Standard](#) [Contacts](#)

YOU HERE: [Steel and Alloy](#) -> [Titanium](#)

Characteristics for grade VT5 (BT5).

Grade :	VT5 (BT5)
Classification :	Titanium wrought alloy
Equivalent grades:	Is absent

Chemical composition in % for grade VT5 (BT5)

Fe	C	Si	Mo	V	N	Ti	Al	Zr	O	H	Impurity
max 0.3	max 0.1	max 0.12	max 0.8	max 1.2	max 0.05	90.63 - 95.2	4.5 - 6.2	max 0.3	max 0.2	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 VT5 (BT5)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 26492-85			715-930		6-10	18-25	300-500	Annealing
Bar annealed, GOST 26492-85			685-735		6-8	15-20	300	

Brinell hardness for VT5 (BT5) ,	HB 10 ⁻¹ = 229 - 321 MPa
------------------------------------	-------------------------------------

Technological properties for grade VT5 (BT5)

Weldability:	without limitations.
---------------------	----------------------

Physical properties for grade VT5 (BT5)

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	1.05			4400		1080
100		8.3				
200		8.9	10.47		0.586	1150
300		9.5	11.3		0.628	1180
400		10.4	12.56		0.67	
500		10.6	14.24		0.712	1200
600		10.8	15.49		0.754	1230

T	E 10⁻⁵	α 10⁶	λ	ρ	C	R 10⁹
----------	--------------------------	---	-----------------------------	--------------------------	----------	-------------------------

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

[Top](#)

© 2003 - 2013 All rights reserved. [About program.](#)

The entire risk as to use of the Database of Steel and Alloy (Marochnik) content is assumed by you the user

