

Database of Steel and Alloy (Marochnik)

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Characteristics for grade VSt6ps (BCт6пс).

Grade :	VSt6ps (BCт6пс)
Classification :	Normal quality structural carbon steel
Equivalent grades:	Is absent

Chemical composition in % for grade VSt6ps (BCт6пс)

C	Si	Mn	Ni	S	P	Cr	Cu	As
0.38 - 0.49	0.05 - 0.17	0.5 - 0.8	max 0.3	max 0.05	max 0.04	max 0.3	max 0.3	max 0.08

Temperature of critical points for grade VSt6ps (BCт6пс).

$Ac_1 = 725$, $Ac_3(Ac_m) = 790$, $Ar_3(Arc_m) = 780$, $Ar_1 = 690$
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Mechanical properties under T=20°C for grade VSt6ps (BCт6пс)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Steel hotrolled	to 20		590	315	15			As-delivered state
Steel hotrolled	20 - 40		590	305	14			As-delivered state

Technological properties for grade VSt6ps (BCт6пс)

Weldability:	limited weldability.
Flakes :	not predisposed
Temper brittleness:	not predisposed

Physical properties for grade VSt6ps (BCт6пс)

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	1.97			7850		
100	1.97					
200	1.86					
300	1.75					
400	1.68					
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]

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 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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