

Database of Steel and Alloy (Marochnik)

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Characteristics for grade VSt6sp (BCт6сп).

Grade :	VSt6sp (BCт6сп)
Substitute:	BCт5сп
Classification :	Normal quality structural carbon steel
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Chemical composition in % for grade VSt6sp (BCт6сп)

C	Si	Mn	Ni	S	P	Cr	Cu	As
0.38 - 0.49	0.15 - 0.35	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 VSt6sp (BCт6сп).

$Ac_1 = 725$, $Ac_3(Ac_m) = 790$, $Ar_3(Arc_m) = 780$, $Ar_1 = 690$

Mechanical properties under $T=20^{\circ}C$ for grade VSt6sp (BCт6сп)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m^2	-
Rolled stock			535	325	25	52	630	

Technological properties for grade VSt6sp (BCт6сп)

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

Physical properties for grade VSt6sp (BCт6сп)

T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$
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	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$

Equivalent steels for grade VSt6sp (BCτ6cn)

Warning! Indicated both exact and nearest equivalents.

Inter
ISO
Fe590 Fe690

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 in 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

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