

Database of Steel and Alloy (Marochnik)

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Characteristics for grade D19 (Д19).

Grade :	D19 (Д19) (1190)
Classification :	Aluminium wrought alloys
Equivalent grades:	Is absent

Chemical composition in % for grade D19 (Д19)

Fe	Si	Mn	Ti	Al	Cu	Be	Mg	Zn	Impurity
max 0.5	max 0.5	0.5 - 1	max 0.1	91.095 - 94	3.8 - 4.3	0.0002 - 0.005	1.7 - 2.3	max 0.1	other, each 0.05; all 0.1

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

Mechanical properties under T=20°C for grade D19 (Д19)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Profile			460	340	12			
Plate , GOST 17232-99			345-420	245-275	3-7			Hardening and ageing

Physical properties for grade D19 (Д19)

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	0.7			2760		61
100		20.3	138		880	

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]

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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