

Database of Steel and Alloy (Marochnik)

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Characteristics for grade AL33 (АЛ33).

Grade :	AL33 (АЛ33) (БАП1)
Classification :	Aluminium casting alloys
Equivalent grades:	Is absent

Chemical composition in % for grade AL33 (АЛ33)

Fe	Si	Mn	Ni	Ce	Al	Cu	Zr	Mg	Impurity
max 0.3	max 0.3	0.6 - 1	0.8 - 1.2	0.15 - 0.3	90.6 - 92.9	5.5 - 6.2	0.05 - 0.2	max 0.05	all 0.5

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

Mechanical properties under T=20°C for grade AL33 (АЛ33)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
cast in a metal mould			300	250	2.5			Hardening and ageing
sand (mould) casting			250-300	150	1-3		300	

Brinell hardness for AL33 (АЛ33) , sand (mould) casting	HB 10⁻¹ = 80 - 100 MPa
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Technological properties of the material AL33 (АЛ33) .

Linear shrinkage :	1.3 %
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Physical properties for grade AL33 (АЛ33)

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			2890		56.8
100		23.4	134		922	

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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