

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 55L (55Л).

Grade :	55L (55Л)
Substitute:	50Л
Classification :	Non-alloy casting steel
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Chemical composition in % for grade 55L (55Л)

C	Si	Mn	Ni	S	P	Cr	Cu
0.52 - 0.6	0.2 - 0.52	0.4 - 0.9	max 0.3	max 0.045	max 0.04	max 0.3	max 0.3

Temperature of critical points for grade 55L (55Л).

$Ac_1 = 725$, $Ac_3(Ac_m) = 770$, $Ar_3(Arc_m) = 755$, $Ar_1 = 690$

Mechanical properties under $T=20^{\circ}\text{C}$ for grade 55L (55Л)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m^2	-
Casting	to 100		600	350	10	18	240	Normalizing 840 - 860°C, Drawing 600 - 630°C,

Brinell hardness for 55L (55Л) ,

$HB\ 10^{-1} = 159 - 255\ \text{MPa}$

Technological properties for grade 55L (55Л)

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

Technological properties of the material 55L (55Л) .

Linear shrinkage :	2.2 - 2.3 %
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Physical properties for grade 55L (55Л)

T	$E\ 10^{-5}$	$\alpha\ 10^6$	λ	ρ	C	$R\ 10^9$
Grade	MPa	1/Grade	Watt/(m·Grade)	kg/m^3	J/(kg·Grade)	Ohm·m
20				7820		

100		11	68		479	
200		11.8	55		487	
300						
400		13.4	36		525	
500			32			
600		14.5			571	
T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$

Equivalent steels for grade 55L (55Л)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	Czechia
-	DIN,WNr	JIS	AFNOR	BS	CSN
Gr.105-85	1.0554 GS62	SCC5	E26-52-M	AW3	422670

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

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