

Aluminium alloy DE53 - S AL 1450 - Al99,5Ti

Reference analysis in wt. %			
Si	≤ 0,25	Zn	≤ 0,07
Fe	≤ 0,40	Ti	0,10 - 0,20
Cu	≤ 0,05	Be	≤ 0,0003
Mn	≤ 0,05	others each	≤ 0,03
Mg	≤ 0,05	Al	min. 99,50

Standard designation

DIN EN ISO 18273 S AL 1450 (Al99,5Ti)

Base materials

Suitable for joint welding of aluminium alloys from 1000 series.

Additional information

Welding of pure Aluminium requires special precautions due to the narrow melting range in order to prevent hot cracking and porosity. The danger of hot cracking is reduced by the addition of titanium. Grain refinement in the weld metal resulting from the addition of Ti.

Physical properties (guideline values, partly calculated)

Modulus of elasticity [MPa]	69000
Electrical conductivity [$S \cdot m / mm^2$]	34 - 36
Heat conductivity at 20°C [$W / (m \cdot K)$]	210 - 230
Coefficient of expansion (20°-100°C) [m/K]	$23,5 \cdot 10^{-6}$
Melting range [°C]	647 - 658
Electrical conductivity [$m / \Omega \cdot mm^2$]	35,0
Density [g / cm^3]	2,71

Mechanical properties (guideline values, without dilution)

Yield strength $R_{p0,2}$ [MPa]	≥ 20
Tensile strength R_m [MPa]	≥ 65
Elongation A_5 [%]	≥ 35
Test temperature [°C]	20

Welding positions

PA, PB, PC, PF

Shielding gas

I1, I2, I3 (argon, helium or argon/helium-mixture)

Polarity

MIG =+, TIG ~

Approvals

TÜV, DB

Dimensions \emptyset

MIG - wires [mm]	0,80 - 2,40
TIG - rods [mm]	1,6 - 6,0

Forms of supply - spools and rods

Standard spools: S 300 / B 300 / BS 300	max. 6,0 kg / max. 7,0 kg / max. 7,0 kg
Special spools: B 435 / B 400	max. 14 kg / max. 40 kg
Small spools: S 100 / S 200	0,5 kg / 2,0 kg
Drums: \emptyset 500 x 800 mm / \emptyset 580 x 890 mm	max. 80 kg / max. 140 kg
TIG - rods: 1000 mm	2,5 kg / 5 kg / 10 kg