

Aluminium alloy DE33 - S AL 4020 - AlSi3Mn1

Reference analysis in wt. %

Si	2,5 - 3,5	Ti	≤ 0,005
Fe	≤ 0,20	Zr	≤ 0,01
Cu	≤ 0,03	Be	≤ 0,0003
Mn	0,8 - 1,2	others each	≤ 0,02
Mg	≤ 0,01	others together	max. 0,10
Cr	≤ 0,01	Al	Rest

Standard designation

DIN EN ISO 18273 S AL 4020 (AlSi3Mn1)

Base materials

Suitable for joint welding of aluminium alloys from 3000, 5000 and 6000 series.

Additional information

This alloy is mainly being used for welding applications. The material can be used for a wide range of welding applications. Under consideration of intermetallic phases this alloy can also be used for joining of aluminium alloys and zinc coated steel. Most suitable for the last named application are the so called "cold arc" welding processes, e.g. CMT by Fronius.

Physical properties (guideline values, partly calculated)

Modulus of elasticity [MPa]	69000
Heat conductivity at 20°C [W/(mK)]	168
Coefficient of expansion (20°-100°C) [10 ⁻⁶ /K]	23,4*10 ⁻⁶
Melting range [°C]	577 - 640
Electrical conductivity [m/Ω*mm ²]	30,6
Density [g/cm ³]	2,71

Mechanical properties (guideline values, without dilution)

Yield strength R _{p0,2} [MPa]	≥ 50
Tensile strength R _m [MPa]	≥ 120
Elongation A5 [%]	≥ 25
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 Ø

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: Ø 500 x 800 mm / Ø 580 x 890 mm	max. 80 kg / max. 140 kg
TIG - rods: 1000 mm	2,5 kg / 5 kg / 10 kg