

## Aluminium alloy DE51 - S AL 1080 A - Al 99,8 (A)

| Reference analysis in wt. % |        |             |            |
|-----------------------------|--------|-------------|------------|
| Si                          | ≤ 0,15 | Ga          | ≤ 0,03     |
| Fe                          | ≤ 0,15 | Ti          | ≤ 0,02     |
| Cu                          | ≤ 0,03 | Be          | ≤ 0,0003   |
| Mn                          | ≤ 0,02 | others each | ≤ 0,02     |
| Mg                          | ≤ 0,02 | Al          | min. 99,80 |
| Zn                          | ≤ 0,06 |             |            |

### Standard designation

DIN EN ISO 18273 S AL 1080 A (Al99,8 (A))

### Base materials

Suitable for joint welding of aluminium alloys from 1000, 3000 and 5000 series.

### Additional information

Welding of pure Aluminium requires special precautions due to the narrow melting range in order to prevent hot cracking and porosity. This alloy substitutes for Al 99.5.

### Physical properties (guideline values, partly calculated)

|  |                       |
|--|-----------------------|
| Modulus of elasticity [MPa]                | 70000                 |
| Heat conductivity at 20°C [W/(m*K)]        | 225                   |
| Coefficient of expansion (20°-100°C) [m/K] | 23,5*10 <sup>-6</sup> |
| Melting range [°C]                         | 659                   |
| Electrical conductivity [m/Ω*mm²]          | 34,5 - 35,0           |
| Density [g/cm³]                            | 2,70                  |

### Mechanical properties (guideline values, without dilution)

|  |      |
|--|------|
| Yield strength R <sub>p0,2</sub> [MPa] | -    |
| Tensile strength R <sub>m</sub> [MPa]  | ≥ 60 |
| Elongation A <sub>5</sub> [%]          | ≥ 40 |
| 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                   |