

Aluminium electrode

Classification

AWS A5.3 : E3003*
ISO 18273 : Al 3103

* Deviations see remarks

General description

Aluminium electrode.

Especially for welding forged and cast aluminium-magnesium alloys and aluminium-manganese alloys.

Good weldability, no porosity.

Welding positions



ISO/ASME PA/1G PB/2F PF/3G up

Current type

DC electr. +

Chemical composition (w%). core wire

Si	Mg	Fe	Cu	Mn	Zn	Others	Al
0.3 max.	0.15 max.	0.6 max.	0.02 max.	0.9-1.2	0.09 max.	0.15 max.	Bal.

Mechanical properties, all weld metal

	Condition	0,2% Proof Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)
Typical values	AW	40	110	20

Packaging, available sizes and identification

	Diameter(mm)	2.5	3.2	4.0
	Length (mm)	350	350	350
Unit: Can	Pieces/unit.	222	146	98
	Net weight/unit (Kg)	2.0	2.0	2.0

Materials to be welded

Aluminium manganese alloys and Aluminium magnesium alloys like:

- AlMn1 (Werkstoff-Nr. 3.0515)
- AlMn1Mg1 (Werkstoff-Nr. 3.0526)
- AlMg1 (Werkstoff-Nr. 3.3315)

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max.current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
2.5x350	60-90	DC+				9.2		
3.2x350	80-110	DC+				14.0		
4.0x350	100-140	DC+				20.4		

* stub end = 35 mm

Welding parameters, optimum fill passes

Welding position Diameter (mm)	PA/1G Current (A)	PB/2F	PF/3G up
2.5	80	80	75
3.2	100	100	95
4.0	130	130	125

Remarks

Deviations: chemical composition:

Cu = max. 0.02%

AWS: Cu = 0.05 - 0.20%

Mn = 0.9 - 1.2%

AWS: Mn = 1.0 - 1.5%

Application advice

If the thickness is more than 10 mm, it is advisable to preheat at 150 - 250°C