

Alumaxx[®] Plus

The universal gas for aluminium

Specially designed for MIG and TIG welding aluminium, Alumaxx[®] Plus is the only gas that you need for the high quality welding of aluminium and its alloys. The higher ionisation potential of helium, mixed with argon, produces a higher arc voltage, which increases the temperature of the weld pool. This also increases the welding speed and improves penetration.

The best and only gas you need

- Improves weld quality and reduces rejects through excellent penetration. Reduces spatter in MIG welding and produces high quality TIG welds.
- Higher productivity - increases the weld speed by almost 24% in MIG welding and up to 35% in TIG welding when compared with argon.
- Cuts cylinder stocks, multi-purpose shielding gas (MIG and TIG. Weld thicknesses of over 3 mm).
- Protects the work environment - minimal ozone generation.



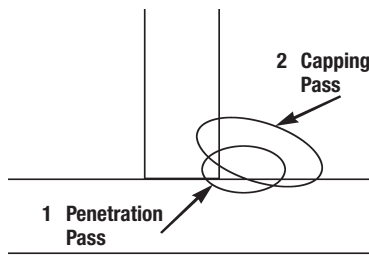
Approved MIG welding procedure Alumaxx® Plus

Manufacturer:	Air Products PLC Air Products Ireland Ltd
Welding process:	MIG 131
Root welding process:	MIG 131
Joint type:	Fillet

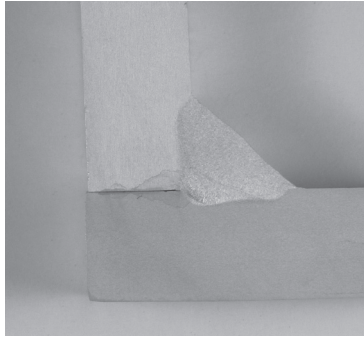
Welded joint design

Preparation of parts	Solvent degrease and oxide removal
Parent material and specification	Aluminium - AWS SB 209 Grade 5083
Composition	Si - 0.40% max. Fe - 0.40% max. Cu - 0.045% max. S - 0.10% max. Mn - 0.40-1.0% Mg - 4.0-4.9% Cr - 0.05-0.25% Zn - 0.25% max. Ti - 0.15% max. Al remainder
Material thickness	10 mm
Outside diameter	n/a
Welding position	Flat (PB)

Welding sequence



Macrography



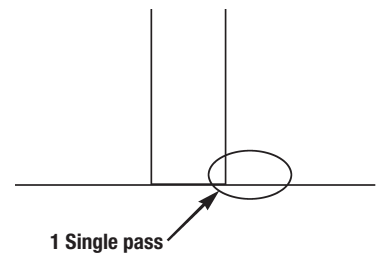
Approved TIG welding procedure Alumaxx® Plus

Manufacturer:	Air Products PLC Air Products Ireland Ltd
Welding process:	TIG 141
Root welding process:	n/a
Joint type:	Fillet

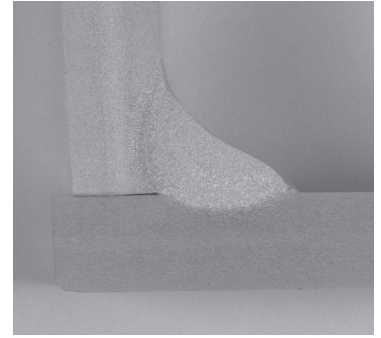
Welded joint design

Preparation of parts	Solvent degrease and oxide removal
Parent material and specification	Aluminium - AWS SB 209 Grade 5083
Composition	Si - 0.40% max. Fe - 0.40% max. Cu - 0.045% max. S - 0.10% max. Mn - 0.40-1.0% Mg - 4.0-4.9% Cr - 0.05-0.25% Zn - 0.25% max. Ti - 0.15% max. Al remainder
Material thickness	6 mm
Outside diameter	n/a
Welding position	flat (PB)

Welding sequence



Macrography



Welding details

Run	Process	Diameter of filler metal (mm)	Current (A)	Voltage (V)	Type of Current & Polarity	Wire feed Speed (m/min)	Travel Speed (mm/min)	Heat Input (KJ)
1	MIG	1.6	290	25	DC+	10	625	0.70
2	MIG	1.6	282	24	DC+	9.5	555	0.73
3								
4								
5								
6								

Filler metal and specification	AWS SFA - 5.10 Grade 5556
Filler metal composition	Si - 0.25% max. - Fe 0.40% max. Cu - 0.10% max. - Mn - 0.50-1.0% Mg - 4.7-5.5% - Cr - 0.05-0.2% Zn - 0.25% max. - Ti - 0.05-0.20% Al
Classification of shielding gas	EN 439-I3
Shielding gas	Alumaxx® Plus
Gas flow rate – Shield	18 to 22 l/max
Purge	n/a
TIG electrode type	n/a
Underside protection	n/a
Preheat temperature	Ambient
Interpass temperature	60°C max
Heat treatment	n/a
Stand off distance	12 mm
Torch angle	15° in the direction of welding
Nozzle bore diameter	20 mm

*n/a : non applicable

Welding details

Run	Process	Diameter of filler metal (mm)	Current (A)	Voltage (V)	Type of Current & Polarity	Wire feed Speed (m/min)	Travel Speed (mm/min)	Heat Input (KJ)
1	TIG	2.4	230	19	AC	n/a	90	2.91
2								
3								
4								
5								
6								

Filler metal and specification	AWS SFA - 5.10 Grade 5356
Filler metal composition	Si - 0.25% max. - Fe 0.40% max. Cu - 0.10% max. - Mn - 0.50-1.0% Mg - 4.7-5.5% Cr - 0.05-0.2% Zn - 0.25% max. - Ti - 0.05-0.20% Al
Classification of shielding gas	EN 439-I3
Shielding gas	Alumaxx® Plus
Gas flow rate – Shield	8 to 12 l/max
Purge	n/a
TIG electrode type	3.2 mm zirconiated electrode
Underside protection	n/a
Preheat temperature	Ambient
Interpass temperature	60°C max
Heat treatment	n/a
Stand off distance	n/a
Torch angle	15° in the direction of welding
Nozzle bore diameter	20 mm

*n/a: not applicable