



81T1-B2

Specifications / Certifications:

AWS A5.29 E81T1-B2

Features

- Smooth arc
- Low spatter levels
- Good weldability
- Good bead appearance

Applications

- High pressure vessels
- Oil refining industries
- Steam Pipes

Technical Specifications

- Gas flow rate is proper 20-25 ℓ /min.
- Shielding gas should be used 100% CO₂ or AR+20% CO₂.
- Preheat at 302-572°F (150-300°C) and PWHT 1274°F (690°C)

Typical Chemical Composition:

Chemical	C	Mn	Si	P	S	Mo	Cr
AWS	0.05-0.12	1.25 max	0.80 max	0.30 max	0.030 max	0.40-0.65	1.00-1.50
100% CO₂	0.07	0.52	0.50	0.016	0.006	0.51	1.18
Ar+20% CO₂	0.07	0.63	0.61	0.015	0.006	0.52	1.22

Recommended GMAW Weld Parameters:

Flat		
Diameter	Amps	Volts
0.045"	180-340A	24-36V
0.052"	200-360A	26-38V
0.062"	200-420A	26-42V
Horizontal Fillet		
Diameter	Amps	Volts
0.045"	180-340A	24-36V
0.052"	200-360A	26-38V
0.062"	200-420A	26-42V
Vertical Up		
Diameter	Amps	Volts
0.045"	120-220A	24-30V
0.052"	140-260A	26-30V
0.062"	160-280A	26-32V

Typical Mechanical Properties:

	Tensile Strength (psi)	Yield Strength (psi)	Elongation	Heat Treatment
AWS	79,770-100,076 psi	68,167 min psi	19% min	
100% CO₂	98,625 psi	87,022 psi	21%	AW
	93,984 psi	82,536 psi	22%	PWHT (690°C X 1Hr)
Ar+20% CO₂	96,015 psi	84,121 psi	24%	PWHT (690°C X 1Hr)

Diameters & Packages

Diameter		Lbs	Pkg
0.035"	7/200"	33	Spool
0.045"	3/64"	11	Spool
		33	Spool

Welding positions



1G

2F

3G

V-UP

V-DOWN

4G