



Unibrazed® 312-T1

Classification: AWS A5.22/ASME SFA 5.22 E312T1-1, E312T1-4

UNS W31331

Description: Unibrazed® 312-T1 is a gas-shielded, flux cored, stainless steel designed to weld in all positions. The nominal composition of this weld metal is 30% Cr and 9% Ni. It is most often used in dissimilar applications where one of the metals is high in nickel. Unibrazed 312-T1 gives a two-phase weld deposit with substantial amounts of ferrite in an austenitic matrix. Even with considerable dilution by the austenite-forming elements, such as nickel, the microstructure remains two-phase and is highly resistant to weld metal cracks and fissures.

Chemical Composition: (100% CO₂)

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
Requirement	.15 max	28.0- 32.0	8.0- 10.5	.75 max	.50- 2.5	1.0 max	.04 max	.03 max	.75 max
Typical Results	.03	28.41	9.32	.12	.82	.05	.02	.005	.21

Mechanical Properties: (100% CO₂)

	Requirement	Typical Results
Tensile Strength	95,000 psi min. (660 MPa)	114,000 psi (786 MPa)
Elongation	22% min.	25%

NOTE: Strength will be slightly higher with Ar + 20~25% CO₂

Optimum Welding Parameters: DC+ (100% CO₂)

Diameter	Amps	Volts	WFS (IPM)	ESO	Deposition Rate (lbs/hr)
.035"	150	26	500	5/8" -3/4"	5.4
.035"	165	27	600	5/8" -3/4"	6.3
.045"	160	26	300	5/8" -3/4"	6.3
.045"	200	28	425	5/8" -3/4"	9.2
1/16"	215	27	195	3/4" - 1"	7.0
1/16"	250	28	240	3/4" - 1"	8.6

NOTE: Lower by ~2 volts when using Ar + 20~25% CO₂

Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus, the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.