



Unibraze® 316L-T1

Classification: AWS A5.22/ASME SFA 5.22 E316LT1-1, E316LT1-4

UNS W31635

Description: Unibraze® 316L-T1 is a gas-shielded, flux cored, stainless steel designed to weld in all positions.

By specifying the low carbon in this alloy, it is possible to obtain resistance to intergranular corrosion due to carbide precipitation without the use of Nb or Ti stabilizers, however the lower carbon is not as strong at elevated temperatures. The Mo content improves resistance pitting and crevice corrosion.

Chemical Composition: (100% CO₂)

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
Requirement	.04 max	17.0- 20.0	11.0- 14.0	2.0- 3.0	.50- 2.5	1.0 max	.04 max	.03 max	.75 max
Typical Results	.03	18.58	11.22	2.15	1.09	.57	.03	.01	.24

Mechanical Properties: (100% CO₂)

	Requirement	Typical Results
Tensile Strength	70,000 psi min. (485 MPa)	85,000 psi (586 MPa)
Elongation	30% min.	37%

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

Radiographic, Face and Fillet Weld Tests: Meets requirements of the specification.

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 purpose with respect to its products.