

Flux Cored Stainless Steel Electrodes

(Gas Shielded)

Alloy: WW312T-1

Class: E312TX-X

Conforms to Certification: AWS A5.22

ASME SFA A5.22

Alloy: E312T-1

Weld Process: Gas Metal Arc

AWS Chemical Composition Requirements

C = 0.15 max	Si = 1.0 max
Cr = 28.0 – 32.0	P = 0.04 max
Ni = 8.0 – 10.5	S = 0.03 max
Mo = 0.75 max	Cu = 0.75 max
Mn = 0.5 – 2.5	

Deposited Chemical Composition % (Typical)

C = 0.11	Mn = 1.2	Si = 0.60
Cr = 29.0	Ni = 9.0	P = 0.01
Mo = 0.28	S = 0.01	

Deposited All Weld Metal Properties %

As-Welded

Tensile Strength	100,000psi
Yield Strength	77,000psi
Elongation	24%
Ferrite	50 FN

Deposited Charpy-V-Notch Impact Properties %

Not applicable

Application

These electrodes most often are used to weld dissimilar metal compositions of which one component is higher in nickel. This alloy gives a two phase weld deposit with substantial amounts of ferrite in an austenite matrix.

Suggested Welding Parameters

Diameter .035

	<u>Optimum Parameters</u>			<u>Operating Range</u>	
	Wire Feed Speed	Amps	Volts	Amps	Volts
Flat	365" / minute	130-140	24-25	100-170	21-26
Horizontal	365" / minute	130-140	24-25	100-170	21-26
Vertical-Up	310" / minute	110-120	22-23	110-120	21-23
Overhead	320" / minute	120-130	23-24	120-130	22-24

Diameter .045

	<u>Optimum Parameters</u>			<u>Operating Range</u>	
	Wire Feed Speed	Amps	Volts	Amps	Volts
Flat	450" / minute	180-200	25-27	135-250	24-32
Horizontal	450" / minute	180-200	25-27	135-250	24-32
Vertical-Up	325" / minute	150-170	24-26	135-200	24-26
Overhead	425" / minute	175-195	25-27	155-200	25-28

Diameter 1/16

	<u>Optimum Parameters</u>			<u>Operating Range</u>	
	Wire Feed Speed	Amps	Volts	Amps	Volts
Flat	264" / minute	220-240	25-27	170-300	24-31
Horizontal	235" / minute	200-220	25-27	170-270	24-29
Vertical-Up	220" / minute	190-210	25-26	170-230	24-27
Overhead	235" / minute	200-220	25-26	170-270	24-29

For best results, set the wire feed speed and adjust the voltage for smoothest operation. Electrode extension range is from 1/2" to 1," with an optimum range of 5/8" to 3/4." Weld using reverse polarity DC(+).

Shielding Gas

75% argon / 25% CO₂ (or nearest equivalent) shielding gas; however, straight CO₂ may also be used. The 75/25 mixture will produce a smoother arc with virtually no spatter and slightly higher yield and tensile strengths than CO₂. The mechanical properties and deposit analyses will meet AWS A5.22 specifications with either gas.

