

Flux Cored Stainless Steel Electrodes

(Gas Shielded)

Alloy: WW2553T-1

Class: E2553TX-X

Conforms to Certification: AWS A5.22

ASME SFA A5.22

Alloy: E2553T-1

Weld Process: Gas Metal Arc

AWS Chemical Composition Requirements

C = 0.04 max	Si = 0.75 max
Cr = 24.0 – 27.0	P = 0.04 max
Ni = 8.5 – 10.5	S = 0.03 max
Mo = 2.9 – 3.9	Cu = 1.5 – 2.5
Mn = 0.50 – 1.5	N = 0.10 – 0.25

Deposited Chemical Composition % (Typical)

C = 0.02	Cr = 25.5	Ni = 9.5
Mo = 3.4	Mn = 1.0	Si = 0.50
P = 0.02	S = 0.01	N = 0.12
Cu = 1.75		

Deposited All Weld Metal Properties %

As-Welded

Tensile Strength	119,000psi
Yield Strength	89,000psi
Elongation	18%

Deposited Charpy-V-Notch Impact Properties %

Not applicable

Application

This electrode is used to join duplex stainless steel base material containing approximately 25% chromium. This alloy is in one of the family of duplex stainless steel alloys. Has improved resistance to pitting corrosion and stress corrosion cracking.

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% CO<sub>2</sub> (or nearest equivalent) shielding gas; however, straight CO<sub>2</sub> 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 CO<sub>2</sub>. The mechanical properties and deposit analyses will meet AWS A5.22 specifications with either gas.

