

**MIDALLOY MASTERCOR® E2594T1-1/4 AP FLUX-CORED WIRE**

**CLASSIFICATION**

- AWS Class E2594T1-1 and E2594T1-4 / ASME SFA 5.22 Class E2594T1-1 and E2594T1-4
- UNS# W39594 A#8 F#6

**DESCRIPTION**

- MIDALLOY MASTERCOR E2594T1-1/4 AP is a flux-cored stainless steel wire designed to run with 75% Ar-25% CO<sub>2</sub> or 100% CO<sub>2</sub> in all positions.
- This wire has a smooth spray like arc transfer at higher amperages. At lower amperages it has a globular transfer. The slag is easily removed at all amperages.

**APPLICATIONS**

- MIDALLOY MASTERCOR E2594T1-1/4 AP is used for welding “super duplex” alloys with approximately 25% chrome to themselves and for overlay.
- Applications requiring high strength and resistance to pitting and stress corrosion for use in marine, chemical and petroleum industries.

**PROCEDURE**

- No preheat. Maximum interpass temperature of 300° F.
- Annealing may be required to achieve uniform corrosion resistance, ferrite content and hardness for multipass weldments.
- Heat input should be limited to 5-40 KJ/IN.

**TYPICAL CHEMISTRY (DEPOSIT WITH 75%AR - 25%CO2)**

C	Cr	Ni	Mo	Mn	Si	P	S	N
0.033	24.8	8.9	4.0	0.75	0.61	0.019	0.008	0.22

Duplex weld metal microstructure with ferrite range approx. 45-55% ferrite

**TYPICAL ALL WELD METAL MECHANICAL PROPERTIES**

<b>TENSILE STRENGTH</b>	120,000 PSI
<b>YIELD STRENGTH</b>	96,500 PSA
<b>ELONGATION</b>	15 % Min.
<b>CHARPY IMPACT -40F</b>	30 FT-LBS WITH 21 MILS LATERAL EXPANSION
<b>HARDNESS</b>	25 RC as welded 35 RC work hardened

**CORROSION DATA WELD METAL AND SAF 2507 BASE METAL**

<b>ASTM G 48 Method A @40°C</b>	Mass Loss 0.000934 g/ cm <sup>2</sup> ,No Pits Observed
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**WELDING PARAMETERS**

SIZE	VOLTS	AMPS	WIRE FEED IPM	STICKOUT	POLARITY	SHIELDING GAS /FLOW
.045"	24-33	150-220	240-560	3/4" – 1"	DCRP	75%Argon 25% CO2/35 cfh
.045" Vertical	24-26	120-190	225-450	3/4" – 1"	DCRP	75%Argon 25% CO2/35 cfh
1/16"	25-28	160-300	155-320	3/4-1"	DCRP	75%Argon 25% CO2/35 cfh
1/16" Vertical	25-27	170-250	150-250	3/4" – 1"	DCRP	75%Argon 25% CO2/35 cfh

100% CO<sub>2</sub> may be used for flat and horizontal positions.

**STANDARD PACKAGING**

- 33 lb. spool

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