

NICKEL ALLOY (187, 117, 135) ELECTRODES FOR ARC WELDING

ALLOY 187 AWS/SFA5.6 Class ECuNi †MIL-E-22200/4 Type MIL-CuNi (70/30) UNS # W60715

1 LB CONTAINER (Not Available)			10 LB CONTAINER	
SIZE	PART No.	PRICE	PART No.	PRICE
3/32	-	-	187-332-10	\$247.00
1/8	-	-	186-18-10	\$242.00
5/32	-	-	187-532-10	\$242.00
3/16	-	-	187-316-10	\$242.00

DESCRIPTION

Alloy 187 is a 70% copper 30% nickel flux coated electrode designed for welding wrought or cast forms of 70/30, 80/20 and 90/10 copper-nickel alloys. This electrode is also used for many dissimilar applications such as joining nickel-copper Monel® 400, R-405 and K500 or high nickel alloy 200 to the copper-nickel alloys.

APPLICATIONS

The most popular use of Alloy 187 would involve marine applications where it offers excellent resistance to the corrosive effects of salt water. Also used for welding the clad side of copper-nickel clad steel.

TYPICAL WELD METAL CHEMISTRY (%)

*Ni	29.0-33.0
Mn	1.00-2.50
Fe	0.40-0.75
Si	0.50 max.
Cu	Balance
Ti	0.50 max.
Pb	0.02 max.
P	0.020 max.
Other (total)	0.50 max.

*Includes Cobalt (Co)

TYPICAL MECHANICAL PROPERTIES OF WELD DEPOSIT (as welded)

Tensile strength (psi)	50,000 min.
Yield strength (psi)	20,000 min.
Elongation in 2" (%)	30

AVAILABLE SIZES AND OPERATING RANGES (DCEP) (DC+)

3/32 (2.4mm)	50-75 amps
1/8 (3.2mm)	75-110 amps
5/32 (4.0mm)	110-145 amps
3/16 (4.8mm)	145-185 amps

WELDING PROCEDURES

Flat, horizontal, vertical, overhead.

ALLOY 117 AWS A5.11-90 Class ENiCrCoMo-1

1 LB CONTAINER (Not Available)			10 LB CONTAINER	
SIZE	PART No.	PRICE	PART No.	PRICE
3/32	-	-	117-332-10	\$420.00
1/8	-	-	117-18-10	\$392.00
5/32	-	-	117-532-10	\$392.00
3/16	-	-	117-316-10	\$392.00

DESCRIPTION

Alloy 117 is a nickel-chromium-cobalt-molybdenum flux coated electrode designed for shielded metal-arc welding of Inconel® 617 to itself or to dissimilar metals such as Inconel® 600, 601 and Incoloy® 800 HT. The weld deposits of Alloy 117 have excellent mechanical stability, oxidation and corrosion resistance as well as good stress rupture properties at temperatures above 1500°F up to 2100°F.

APPLICATIONS

Alloy 117 is commonly used to weld cast alloys such as HK-40, HP and HP45 modified. Excellent for joining Inconel® 617 to steel in high temperature applications. Alloy 117 is used in the aerospace industry for engine components, afterburners, turbine seals; heat-treating equipment and many other high temperature service applications.

TYPICAL WELD METAL CHEMISTRY (%)

Ni	Balance
Cr	21.0-26.0
Mo	8.0-10.0
Cu	0.50 max.
Fe	5.0 max.
*Cb	1.0 max.
C	0.05-0.15
Mn	0.30-2.50
P	0.03 max.
S	0.015 max.
Si	0.75 max.
Co	9.0-15.0
Other (totals)	0.50 max.

*Includes Tantalum (Ta)

TYPICAL MECHANICAL PROPERTIES OF WELD DEPOSIT (as welded)

Tensile strength (psi)	90,000 min.
Elongation in 2" (%)	25 min.

AVAILABLE SIZES AND OPERATING RANGES (DC+ ELECTRODE POSITIVE)

3/32 (2.4mm)	60-80 amps 22-24 volts
1/8 (3.2mm)	80-110 amps 22-24 volts
5/32 (4.0mm)	105-135 amps 23-25 volts
3/16 (4.8mm)	125-165 amps 24-26 volts

WELDING PROCEDURES

All positions for 3/32 and 1/8.
5/32 and 3/16 for flat position only.

NICKEL ALLOY ELECTRODES

WELDING Ni & HIGH Ni ALLOYS INFO.



ALLOY 135

1 LB CONTAINER (Not Available)			10 LB CONTAINER	
SIZE	PART No.	PRICE	PART No.	PRICE
3/32	-	-	135-332-10	\$395.00
1/8	-	-	135-18-10	\$390.00
5/32	-	-	135-532-10	\$390.00
3/16	-	-	135-316-10	\$390.00

DESCRIPTION

Alloy 135 is a nickel-iron chromium flux coated electrode used primarily for welding Incoloy® 825 to itself or to other similar base metals such as nickel-iron chromium-molybdenum-copper alloys.

TYPICAL WELD METAL CHEMISTRY (%)

Ni	35.0-40.0
C	0.08 max.
Mn	1.25-2.50
Fe	Balance
S	0.03 max.
Si	0.75 max.
Cu	1.0-2.50
Cr	26.5-30.5
Mo	2.75-4.50
P	0.03 max.
Others (total)	0.50 max.

MINIMUM MECHANICAL PROPERTIES OF WELD DEPOSIT (as welded)

Tensile strength (psi)	85,000
Elongation in 2" (%)	

† Nickel Based and Cobalt-Based Alloys can be certified to most commercial and aircraft specifications, however material supplied to both ASME and MIL specifications are considered nonstandard and must be tested to the applicable specification. Such testing will necessitate additional charges to the buyer. It is the responsibility of the buyer to state these ASME or MIL specification requirements at the time of inquiry.

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