



**WILLIAMS METALS
AND WELDING ALLOYS INC.**

www.wmwa.net

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Call us today!

sales@wmwa.net

Nickel Filler Metals

ENi-1 (FM 141) ERNi-1 (FM 61)	Electrode -all position, DC, electrode positive Bare Wire	Ni 200 and 201 dissimilar combinations of nickel alloys and steels. Cladding of steels. Corrosion resistance especially alkaline environments.
ENiCu-7 (FM 190) ERNiCu-7 (FM 60)	Electrode -all position, DC, electrode positive Bare Wire	Alloys 400, R405 and K500, Copper and Copper nickel alloys. Cladding of steels. Welds on K500 produce sound joints that are lower in strength compared to the base metal. Not age hardenable. Common uses are sea water, reducing acid and salts applications.
ECuNi (FM 187) ERCuNi (FM 67)	Electrode -all position, DC, electrode positive Bare Wire	Alloy 450 and Copper nickel alloys 70/30, 80/20, 90/10. Fouling and corrosion resistant. Common uses are sea water, marine and desalination applications.
ENiCrFe-3 (FM 182) ERNiCr-3 (FM 82)	Electrode -all position, DC, electrode positive Bare Wire	Alloys 600 and 601, 800, 800HT and 330. Dissimilar combinations of steels and nickel alloys. Good corrosion and oxidation resistance, high temperature strength, with FM 182 often meeting radiographic requirements.
ENiCrMo-3 (FM 112) ERNiCrMo-3 (FM 625)	Electrode -all position, DC, electrode positive Bare Wire	Alloys 625, 601, 686, 622, C-276 and other pit-resistant alloys, such as corrosion resistant alloy 20. Dissimilar combinations of steels and nickel-base alloys. Cladding and surfacing of steels. Crevice, stress corrosion cracking, corrosion, and pitting resistant with high strength noted at room and higher temperatures.
ENiCrCoMo-1 (FM 117) ERNiCrCoMo-1 (FM 617)	Electrode -all position, DC, electrode positive Bare Wire	Alloys 617, 800HT dissimilar combinations of high temperature alloys. Resistance to oxidation at high temperatures and corrosion resistance is excellent, offering metallurgical stability and high strength.
ENiCrMo-4 (FM C-276) ERNiCrMo-4 (FM C-276)	Electrode -all position, DC, electrode positive Bare Wire	Alloy 276 and other pit-resistant alloys. Cladding of steels. Dissimilar combinations of steels and nickel-base alloys with resistance to crevice corrosion and pitting.
ENiCrFe-2 (WELD A)	Electrode -all position, DC, electrode positive	Alloys 800 and 800HT, 600 and 601. Joining dissimilar combinations of carbon, stainless, and nickel-base alloys. Versatile alloy often used for repairs/maintenance of equipment exposed to severe service conditions.
ENiFe-CI (FM Ni 55)	Electrode -all position, DC, electrode positive AC may also be used	Cast iron alloys that are nickel resistant, high phosphorus irons. Also well suited for joining cast iron to nickel, wrought iron, carbon and low alloy steels.
ENiFeT3-CI (FM Ni FC-55)	Flux Cored Wire	Cast iron alloys, high phosphorus irons. Also well suited for joining cast iron to wrought iron, carbon and low alloy steels.

The Williams Advantage Includes:

- Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) forms upon request.
- Tech support for applications regarding joint design and repairs.
- Williams Metals & Welding Alloys proudly carries a full range of nickel welding products.
- Most nickel alloys are available for immediate shipment.
- Materials are available in spooled wire, electrodes and straight lengths.

**Non-Ferrous Metals Also Available-See Back for Details.
Metal Inquiries Please Call 877-499-1544**

• Birmingham, AL • Concord, NC • Garrettsville, OH • Mansfield, OH • Pittsburgh, PA • St. Louis, MO • Wayne, PA Corporate





Copper

C101, C102, C103, C107, C110, C116, C122, C145, C147, C172, C17510, C18150, C182, C706, C715
Rod * Bar * Plate * Strip * Sheet * Pipe * Coil * Extruded Shapes * *Machined to Print Services Available*

Brass

C210, C220, C230, C260, C272, C353, C360, C385, C464, C485

Coil * Rod * Bar * Plate * Pipe * Sheet

Bronze

C314, C510, C544, C630, C655, C673, C954, C959, C863, C89835,
C932 (SAE 660), C936 (Modified SAE 64), SAE 841, SAE 863

Rod * Bar * Plate * Continuous Cast Tube * Centrifugal Cast Tube * Sand Casting

Aluminum

6061, 6063, 6101

Pipe * Angles * UABC * Bar * Rod

BAR & ROD PRODUCTS

Copper	Sizes Available
101, 110, 145, 147 Round	1/8" thru 8"
110, 107, 116 Square	1/4" thru 3"
110 Rectangular Bus	1/16" thru 2" thick, 1/2" thru 12" wide
<i>Square, Full Round, Radius *Silver Plated *Tin Plated 12 foot and 20 foot lengths</i>	
Class III Round C17510	.50" thru 5.5"
Class II Round 18150, 182	5/16" thru 4"

Brass	Sizes Available
360	
Round	1/4" thru 10"
Hex	3/16" thru 2.5"
Flat Bar	1/16" thru 2.5" thick, 1/4" thru 6" wide
464 Round	1/4" thru 6"
544 Round	3/16" thru 6"

Aluminum	Sizes Available
6101, 6061, 6063 Rectangle Bar	1/8" thru 1"
T61, 63, 65	
<i>Square, Full Round, Radius, *Tin Plated</i>	
6101, 6061, 6063 Round	.250" and Up

TUBE PRODUCTS

260	1/8" OD thru 3" OD
272	1/16" OD thru 4.25" OD
330	1/16" OD thru 4.25" OD

PIPE PRODUCTS

Copper	Sizes Available
102, 110, 715 Schedule 40 and 80 20 and 40 foot lengths	.250" thru 10"
Aluminum	Sizes Available
6063, 6061, 6101 Schedule 40 and 80 20, 30, and 40 foot lengths	.250" thru 12"

SHEET & PLATE PRODUCTS

Copper	Sizes Available
101, 102, 103, 110, 706	.016" thru 6"
Brass	Sizes Available
210, 220	.020" thru .625"
260	.020" thru .750"
464	.250" thru 2"

COIL & STRIP PRODUCTS

Copper	Sizes Available
110	.005" thru .125"
Brass	Sizes Available
220, 230, 260	.010" thru .125"
All Tempers	

Welding Filler Metals

Stainless Steel Solid, Metal Cored Wires/Electrodes
AWS A5.4, A5.9

Stainless Steel Flux Cored Wires
AWS A5.22

Aluminum Wires/Electrodes
AWS A5.3, A5.10

Mild & Low Alloy Steel Flux Cored Wires
AWS A5.13

Carbon, Mild & Low Alloy Steel Solid, Metal Cored Wires/Electrodes
AWS A5.17, A5.18, A5.23, A5.1, A5.5

Copper & Copper Alloy Wire/Electrodes
AWS A5.6, A5.7, A5.27

Titanium & Titanium Alloy Filler Metals
AWS A5.16

Nickel Alloy Wires/Electrodes
AWS A5.11, A5.14, A5.15

Silver Brazing Filler Metals
AWS A5.8

Cobalt Alloys
AWS A5.13