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Cert # 05-R0925

Ni-Fe 36 Welding Wire

U.S. ALLOY CO.
dba Washington Alloy
7010-G Reames Rd.
Charlotte, NC 28216
www.weldingwire.com



American Welding Society
Sustaining Company Member



ALLOY DESCRIPTION AND APPLICATION;

Ni-Fe 36 aka INVAR® is a nickel-iron low-expansion alloy containing roughly 36% nickel. This alloy is designed to have similar properties of the base metal which maintains nearly constant dimensions over the range of normal atmospheric temperatures, and has a low coefficient of expansion from cryogenic temperatures to about 500°F (260°C). The alloy also retains good strength and toughness at cryogenic temperatures. Similar base metals used for standards of length, measuring devices, laser components, bi-metal thermostat strip, thermostat rods, and tanks and piping for storing and transporting liquefied gases.

TYPICAL GMAW WELDING PROCEDURES; DCEP (Spray arc)

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Argon (cfh)
0.035	395-525	175-250	26-32	35-45
0.045	295-425	200-275	29-33	40-50
1/16"	175-275	250-325	29-33	40-50

TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2 truncated conical tip

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
.045	1/16"	45-85	12	3/8"	20	1/16
1/16"	1/16"	80-150	12	3/8"	20	1/16-1/8"
3/32"	3/32"	150-250	12	3/8"	20	1/8- 3/16"
1/8"	1/8"	200-375	12	1/2"	25	1/4-1/2"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

INVAR 36 TYPICAL CHEMISTRY (%) AND WELD METAL PROPERTIES;

Nickel	35.0-38.0	Cobalt	1.00 max.
Carbon	0.10 max	Molybdenum	0.50 max.
Manganese	0.60 max		
Silicon	0.35 max	Tensile Strength (psi)	70-80,000
Copper	0.50 max.	Yield Strength (psi)	40-60,000
Chromium	0.50 max.	Elongation in 2"	24-42 %

AVAILABLE SIZES: TN INVAR36= Spools of .045, 1/16", 3/32"

Tig wire of .045, 1/16", 3/32", 1/8"

Other sizes available – please inquire Invar-36® is a registered trademark of Carpenter Technology Corporation

SPECIFICATIONS; WASHINGTON ALLOY

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