



Quality Management System
in accordance with
ISO 9001
Cert # 05-R0925

309Nb Stainless Steel Coated Electrode

U.S. ALLOY CO.
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ALLOY DESCRIPTION AND APPLICATION;

309Nb(Cb) electrodes are used where maximum corrosion and oxidation resistance at temperatures up to 2000°F is required. The addition for columbium gives the weld deposit excellent resistance to carbide precipitation and greater strength at higher temperatures. 309Nb is used for welding stainless clad steel containing Cb or Ti such as AISI 347 or 321, to mild steel. It is excellent for use on airplane exhaust systems.

TYPICAL WELDING PROCEDURES; DCEP, DCEN or AC

Diameter	Amps (Flat)	Volts
3/32"	60-85	24-26
1/8"	80-125	25-31
5/32"	95-170	26-33
3/16"	125-200	26-33

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

XX = COATING OF;; E309Nb -15;; DCEP =all position;; E309Nb -16 = DCEP or AC = all position;; E309Nb -17 = DCEP or AC =all position (silica replaces some of the Titania) slower freezing slag E309Nb-26= DCEP or AC = F, H-fillet.

TYPICAL WELD METAL CHEMISTRY (%) & PROPERTIES

	AWS Spec.	Weld Metal		AWS Spec.	Weld Metal
Carbon	0.12 max	0.07	Chromium	22.0-25.0	22.92
Manganese	0.5-2.5	1.01	Molybdenum	0.75 max	0.01
Silicon	1.00 max	0.86	Copper	0.75 max	0.04
Phosphorus	0.04 max	0.012	Elongation in 2" (%)	30% min	34.8
Sulphur	0.03 max	0.011	Yield Strength (ksi)	N/A	80
Nickel	12.0-14.0	13.15	Tensile Strength (ksi)	80 min	99
		Niobium (Columbium) + Tantalum		0.70-1.00	0.86

AVAILABLE SIZES: TF309NB = 3/32", 1/8", 5/32"

TF309CB = 1/8", 3/16"

SPECIFICATIONS; ANSI/AWS A5.4 E309Nb-XX (previously E309Cb-XX)

ASME SFA 5.4 E309Nb-XX (previously E309Cb-XX)

ISO 3581A, BS EN 1600: E 23 12 Nb, ISO 3581B: ES309Nb

XX = COATING LISTED ABOVE



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