

TNC-70C

AWS A5.11 ENiCrFe-3
EN ISO 14172-E Ni 6182
JIS Z 3224 DNiCrFe-3

Characteristics and Applications:

TNC-70C is a low hydrogen type covered electrode containing 65Ni, 15Cr, 8Fe, 7.5Mn, 2Nb. The welding is suitable for all positions with good heat resistance, oxidizations resistance and good corrosion resistance. It produces toughness under low temperature. It is applied in the Inconel welding and dissimilar metals welding. Proper base metals are also including ASTM B163/166/167/168. All-position welding is available when the diameter of TNC-70C is ϕ 3.2(mm) or less, otherwise, horizontal and flat positions are available only.

Notes on usage:

1. Clean up the contaminations on the base metal, groove and pass to pass with stainless steel brush.
2. Dry the electrodes at 350~400°C for 60 minutes before using. Take out a batch of half day consumption and keep at 100~150°C during welding process.
3. Use back-step method to prevent arc starting from blowholes and hold for 3-5 seconds at every end-up.
4. Maintain short arc length to prevent porosity problem.
5. Do not exceed the range of recommended current. Over heat input might decrease the impact value.

Typical chemical composition of weld metal (wt%):

	C	Mn	Si	P	S	Cr	Ni	Nb+Ta	Fe	Co	Ti
AWS	≤0.10	5.0-9.5	≤1.0	≤0.03	≤0.015	13.0-17.0	≥59.0	1.0-2.5	≤10.0	≤0.12	≤1.0
EN ISO	≤0.10	5.0-10.0	≤1.0	-	-	13.0-17.0	≥60.0	(Nb) 1.0-2.5 (Ta) ≤0.3	≤10.0	≤0.12	≤1.0
Typical value	0.03	6.80	0.3	0.01	0.01	14.50	73.50	1.20	3.0	0.02	0.01

Typical mechanical properties of weld metal:

	Yield strength MPa(ksi)	Tensile strength MPa(ksi)	Elongation %	Charpy V-Notch J (ft-lbf) -196°C (-320°F)
AWS	-	≥550(80)	≥30	-
EN ISO	≥360(52)	≥550(80)	≥27	-
Typical value	415(60)	600(87)	34	89(66)

Welding position:



Sizes and recommended operating range (DC <+>):

Diameter (mm)		3.2	4.0
Length (mm)		350	350
Current (Amps)	F	90-120	120-160
	V&OH	70-110	90-130

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