



Smoothcor 81T1-Ni2

Classification:

E81T1-Ni2C/E81T1-Ni2M per AWS A5.29, ASME SFA 5.29

Description:

Smoothcor 81T1-Ni2 is an excellent selection for welding steels which require good CVN toughness and tensile strength in the range of 80,000-100,000 psi. **Smoothcor 81T1-Ni2** is designed for single and multiple pass welding of carbon and certain low alloy steels such as ASTM A572, A575 and A734 in all positions. Its combination of strength and CVN toughness makes Smoothcor 81T1-Ni2 ideal for applications such as offshore platform construction, shipbuilding, earthmoving and mining machinery.

Characteristics:

Smoothcor 81T1-Ni2 contains 2 1/2% nickel in the weld deposit which gives it excellent low temperature CVN toughness. It also has high welder appeal and very little spatter during welding.

Diameters: .045", .052", 1/16"

Shielding Gas: 100% CO₂, 75-80% Ar/balance CO₂, 35-50 cfm

Welding Positions: All positions

Typical Mechanical Properties:

	As Welded- <u>All Weld Metal</u>	
	<u>CO₂</u>	<u>75%Ar/25%CO₂</u>
Ultimate Tensile Strength (psi)	87,000	90,000
Yield Strength (psi)	73,000	80,000
Percent Elongation	26.0	22
CVN (ft-lb f) @-40°F	50.0	40

Typical Deposit Composition:

Wt%	<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>P</u>	<u>S</u>	<u>Ni</u>
100% CO ₂	0.05	0.83	0.29	.010	.010	2.40
75Ar/25 CO ₂	0.04	0.90	0.30	.010	.010	2.40

Typical Welding Parameters:

<u>Diameter</u>	<u>Position</u>	<u>Optimum</u>			<u>Range</u>	
		<u>Amperage</u>	<u>WFS</u>	<u>Voltage</u>	<u>Amperage</u>	<u>Voltage</u>
1/16"	Flat	350	300	29	150-400	22-34
	Overhead	225	160	26	150-310	22-28
	Vertical up	225	160	25	150-280	22-27
.052"	Flat	300	360	28	100-330	19-32
	Overhead	225	245	26	150-310	21-28
	Vertical up	225	245	25	150-280	21-27
.045"	Flat	250	282	28	100-300	21-32
	Overhead	200	265	26	150-280	21-29
	Vertical up	200	265	25	100-230	21-28

Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.