



# Smoothcor 91T1-K2

**Classification:**

E91T1-K2C per AWS A5.29, ASME SFA 5.29

**Description:**

**Smoothcor 91T1-K2** proves an ideal selection for weldments requiring 90,000 psi minimum tensile strength and good CVN toughness values. This gas-shielded, flux cored electrode is intended for single and multiple pass welding of certain low alloy steels in all positions.

**Characteristics:**

**Smoothcor 91T1-K2** has a rutile based slag system that facilitates all position welding with excellent subzero CVN toughness and exceptional weld bead geometry. Welding produces a smooth spray arc transfer with low spatter.

**Applications:**

**Smoothcor 91T1-K2** is typically used to weld steels involved in the fabrication of submarines, offshore platforms and leg assemblies, earthmoving machinery and specialized structural applications. These steels are usually types such as HY-80, HY-100, ASTM A710, A514 and other similar high strength steels.

**Typical Mechanical Properties:**

	<u>CO<sub>2</sub></u>	<u>75%Ar/25%CO<sub>2</sub></u>
Ultimate Tensile Strength (psi)	103,400	105,000
Yield Strength (psi)	91,700	96,000
Percent Elongation	22	21.5
CVN (ft-lb f) @ -0°F	32	33

**Typical Deposit Composition:**

	<u>Wt%</u>	<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>P</u>	<u>S</u>	<u>Ni</u>	<u>Mo</u>
100% CO <sub>2</sub>		.05	1.32	.51	.010	.010	1.64	.24
75Ar/25 CO <sub>2</sub>		.04	1.40	.55	.010	.010	1.60	.27

**Typical Welding Parameters:** (With CO<sub>2</sub> shielding gas. For 75Ar/25CO<sub>2</sub> decrease voltage by 1 to 1.5 volts)

<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.