



Smoothcor 91T1-K2

Classification: AWS A5.29/ASME SFA 5.29 E91T1-K2C, E91T1-K2M

Description: **Smoothcor 91T1-K2** is an excellent choice 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. It 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. **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. Shielding Gases: 100% CO₂, 75%Ar/25%CO₂, 40-55 cfh.

Typical Deposit Chemistry: %

	C	Mn	P	S	Si	Ni	Mo
CO ₂	.05	1.32	.01	.01	.51	1.64	.24
75Ar/25CO ₂	.04	1.40	.01	.01	.55	1.60	.27

Typical Mechanical Properties:

	CO ₂	75Ar/25CO ₂
Tensile Strength(psi)	103,400	105,000
Yield Strength (psi)	91,700	96,000
Elongation	22	21
CVN (ft•lb f) @ 0°F	37	39

Typical Welding Parameters – Carbon & Low Alloy – Flux Cored -All position-CO₂*- DCEP

Dia.	Position	Operating Range		Optimum			
		Amps	Volts	Amps	WFS (ipm)	Volts	ESO
.045"	Flat	130-300	21-32	250	450	28	½ - 1"
	Overhead	150-280	21-30	190	305	26	½ - 1"
	Vertical Up	130-260	21-29	190	305	26	½ - 1"
.052"	Flat	140-330	19-32	275	400	28	½ - 1"
	Overhead	150-290	21-28	200	245	26	½ - 1"
	Vertical Up	140-270	21-27	200	245	25	½ - 1"
1/16"	Flat	150-400	22-34	330	330	29	½"-1"
	Overhead	150-310	22-28	225	180	26	½ -1"
	Vertical Up	150-280	22-27	225	180	25	½ - 1"

*For 75Ar/25CO₂ decrease voltage by 1 to 1.5 volts.

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 purpose with respect to its products.