



Smoothcor® 2553-T1

Classification: AWS A5.22/ASME SFA 5.22 E2553T1-1, E2553T1-4

UNS W39533

Description: Smoothcor® 2553-T1 is a gas-shielded, flux cored, stainless steel for welding duplex stainless steel base metals in all positions. The microstructure of the weld deposit consists of a mixture of austenite and ferrite. This duplex stainless steel combines high tensile and yield strength with improved resistance to pitting corrosion and stress corrosion cracking. If postweld annealing is required, this weld metal will require a higher annealing temperature than that required by the base metal. Applications include chemical and fertilizer industries and many offshore applications including piping systems, pumps, valves and heat exchangers.

Chemical Composition: (75-80% Ar/Bal CO₂)

	C	Cr	Ni	Mo	Mn	Si	P	S	N	Cu
Requirement	.04 max	24.0- 27.0	8.0- 10.5	2.9- 3.9	.50- 1.5	.75 max	.04 max	.03 max	.10- .25	1.5- 2.5
Typical Results	.03	25.2	10.2	3.46	.86	.70	.02	.009	.12	2.0

WRC 1992: 42 FN (see WRC 1992 diagram)

Typical PRE_N (Cr + 3.3Mo + 16N): ~40

Mechanical Properties: (75-80% Ar/Bal CO₂)

	Requirement	Typical Results
Tensile Strength	110,000 psi min. (760 MPa)	124,000 psi (875 MPa)
Yield Strength	Not Required	97,000 psi (670 MPa)
Elongation	15% min.	24%

Optimum Welding Parameters: (75-80% Ar/Bal CO₂)

Diameter	Amps	Volts	WFS (IPM)
.045"	160	26	300
.045"	200	28	425
1/16"	215	27	195
1/16"	250	28	240

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.