DURAMAX STAINLESS ELECTRODE DM309-16

Classification: **E309-16** **AWS A5.4 / ASME SFA 5.4**

Description, Characteristics & Applications:

DURAMAX E309-16 has a nominal composition (wt.-%) of 23.5 Cr, 13 Ni, with 0.12 max carbon. This carbon content ensures weld deposits with a higher ferrite content than E309H, usually greater than 8 FN, and reduce the possibility of intergranular carbide precipitation. This thereby increases the resistance to intergranular corrosion without the use of niobium (columbium).
DM309-16 deposits are not as strong at elevated temperatures as the niobium-stabilized alloy or E309H deposits. This electrode is commonly used for welding dissimilar steels, such as joining Type 304 to mild or low-alloy steel, the welding of clad steel to Type 304 clad steels, welding the first layer of E308L, welding and applying stainless steel sheet linings to carbon steel.

Typical Chemical Composition (%)

AWS Spec.	C	Cr	Ni	Mo	Mn	Si	P	S	Cu	
A5.4	0.15 max	22.0-25.0	12.0-14.0	0.75 max	0.5 - 2.5	1.00 max	0.04 max	0.03 max	0.75 max	
Typical	0.033	24.20	12.35	0.06	1.02	0.80	0.026	0.010	0.05	

Typical Mechanical Properties as Welded

Tensile Strength (n/mm²)	Yield Strength (n/mm²)	Elongation (%)	Hardness	Ferrite WRC (FN)	CVN Impacts (J) @ °C
550 Min	300 Min	30% Min	-------	Typically > 8	-------

Typical Welding Parameters DCEP or AC

Diameter	Type of Current	Amperage Range		Voltage Range
		Flat	Out of Position	
3/32"	DCEP or AC	70 - 80	65 - 80	20 - 23
1/8"	DCEP or AC	80 - 110	75 - 95	21 - 24
5/32"	DCEP or AC	120 - 160	100 - 120	22 - 25
3/16"	DCEP or AC	170 - 190	Not recommended	23 - 25

NOTE: Maintaining a proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of material being welded.
POLARITY: DCEP or AC
DCEP = DC, Electrode Positive (reverse polarity) has the most weld penetration.
AC: medium weld penetration (can have more spatter)
WELDING POSITIONS: All Positions
USE LESS AMPS ON THIN METAL; MORE AMPS ON THICK METAL