DURAMAX NICKEL ALLOY ELECTRODE DM686CPT

Classification: **ENiCrMo-14 AWS A5.11 / ASME SFA 5.11**

Description, Characteristics & Applications:

DURAMAX 686CPT is an all-position shielded-metal-arc welding electrode used to join duplex, super-duplex and super-austenitic stainless steels, as well as nickel alloys such as UNS N06059 and N06022, and nickel-chromium-molybdenum alloys that are used in severe corrosion applications where resistance to reducing, oxidizing, crevice and pitting conditions is required. It is recommended for corrosion-resistant overlay cladding of iron based metals for the same conditions. DM686CPT used for welding operations in pollution control engineering environments as well as the chemical, process, petrochemical, oil and gas, and marine industries. The electrodes provide excellent operability for groove and fillet welding in the downhand position and the smaller diameter electrodes are also suitable for all position welding.

Typical Chemical Composition (%)

AWS Spec.	C	Mn	Fe	P	S	Si	Cu	Ni	Cr	Ti
A5.11	0.02 max	1.0 max	5.0 max	0.02 max	0.02 max	0.25 max	0.50 max	REM	19.0-23.0	0.25 max
Typical	0.005	0.17	0.69	0.003	0.001	0.03	0.01	57.69	20.96	0.01

AWS Spec.	Mo	W	TOE							
A5.11	15.0-17.0	3.0 - 4.4	0.50 max							
Typical	16.33	3.91	<0.50							

Typical Mechanical Properties as Welded

Tensile Strength (n/mm²)	Yield Strength (n/mm²)	Elongation (%)	Typical CVN Impacts @ °C
690	------	30% Min	------

Typical Welding Parameters DCEP

Diameter	Type of Current	Amperage Range		Voltage Range
		Flat	Out of Position	
3/32"	DCEP	70 - 80	65 - 80	20 - 23
1/8"	DCEP	80 - 110	75 - 95	21 - 24
5/32"	DCEP	120 - 160	Not recommended	22 - 25
3/16"	DCEP	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
DCEP: DC, Electrode Positive (reverse polarity) has the most weld penetration
USE LESS AMPS ON THIN METAL; MORE AMPS ON THICK METALS