Date: 1/4/2016
Product: **DM5356**

PRODUCT DATA SHEET

DURAMAX ALUMINUM BARE WIRE DM5356

Classification: ER5356 AWS A5.10 / ASME SFA 5.10

Description, Characteristics & Applications:

DURAMAX ER5356 has a nominal composition (wt.-%) of 5 Mg, balance Al. This filler metal is a non-heat-treatable wire used to weld the 5XXX series base metals to themselves and other alloys. It has become the most commonly used of all filler alloys because of its compatibility with most base alloys, its good strength, and its good feedability when used as a GMAW electrode wire. DM5356 typical applications include boats, ships, bicycles, trucks, pressure vessels, and automotive parts and equipment. This filler metal has one important limitation, which is its unsuitability at service temperatures exceeding 150°F. This is due to the formation of Al2Mg at elevated temperatures at the grain boundaries, which makes the alloy prone to stress corrosion. This restricts its use when post-weld artificial aging. After anodizing, the color typically appears white.

Typical Chemical Composition (%)

AWS Spec.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Be
A5.10	0.25 max	0.40 max	0.10 max	0.05 - 0.20	4.5 - 5.5	0.05 - 0.20	0.10 max	0.06 - 0.20	Remainder	0.0003 max
Typical	0.06	0.12	0.01	0.15	4.80	0.08	0.004	0.077	REM	< 0.0001
TOE:	0.05 each / 0.15 max									

Typical Mechanical Properties as Welded

Ultimate Tensile Strength:	29,000 - 45,000 psi (200-310 MPa)	Density:	0.096 lbs/in³
Yield Strength:	12,000 - 30,000 psi (83 -207 MPa)	Melting Range:	1,060 - 1,175°F
Elongation in 2 inch (%):	10 - 18%	Post Color:	White

Typical Welding Parameters (GMAW) DCEP :

DIAMETER	WFS (imp)	AMPERAGE	VOLTS	Consumption lb/100ft	ARGON (cfh)
0.030"	480 - 625	60 - 175	15 - 24	0.65 - 1.25	25 - 30
0.035"	450 - 750	70 - 185	15 - 27	1.00 - 4.25	30 - 35
3/64"	330 - 500	125 - 260	20 - 29	1.00 - 4.25	35 - 45
1/16"	250 - 450	170 - 300	24 - 30	3.80 - 6.6	45 - 75
3/32"	160 - 200	275 - 400	26 - 31	3.5 - 6.6	60 - 85

Typical Welding Parameters (GTAW) ACHF (-) :

BASE	Filler Size	Tungsten	AMP's	Consumption lb/100ft	Gas Cup Size	ARGON (cfh)
1/16"	1/16"	1/16"	60 - 80	0.75	3/8"	20
3/32"	3/32"	3/32"	85 - 120	1.00	3/8"	20
1/8"	3/32"	3/32"	125 - 160	1.50	3/8"	20
3/16"	1/8"	1/8"	190 - 220	4.5 - 6.0	7/16"	25
1/4"	5/32"	5/32"	200 - 300	8.0 - 10.0	1/2"	30

Note: Maintaining proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of material to be welded.