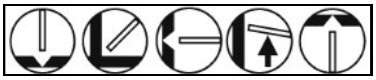
Hobart® Maxal® 5356

AWS A5.10: ER5356, R5356

WELDING POSITIONS:



FEATURES:

- High strength (40 ksi typical)
- High ductility/fatigue strength/very high toughness
- Moderate ductility/formability
- Lower electrical conductivity and thermal conductivity

BENEFITS:

- Higher column strength/better feedability
- Very good color match after anodizing with 5xxx/6xxx base materials

APPLICATIONS:

- 5086 and lower strength alloys (35 ksi minimum UTS)
- Truck frames
- Shipbuilding
- Rail cars/Bus panels

SHIELDING GAS: 100% Argon (Ar) or Argon/Helium mixtures, typical: GMAW - 35-50 cfh (14-24 l/min)
GTAW - 20-30 cfh (10-14 l/min)

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP) for GMAW, AC for GTAW

STANDARD DIAMETERS: 0.035" (0.9 mm), 3/64" (1.2 mm), 1/16" (1.6 mm), 3/32" (2.4 mm), 1/8" (3.2 mm), 5/32" (4.0 mm)

STORAGE: Product should be stored in a dry, enclosed environment, and in its original intact packaging

TYPICAL CHEMICAL VALUES*:

Weld Metal Analysis (%)	ER & R 5356
Silicon (Si)	0.25
Iron (Fe)	0.40
Copper (Cu)	0.10
Manganese (Mn)	0.05-0.20
Magnesium (Mg)	4.5-5.5
Chromium (Cr)	0.05-0.20
Zinc (Zn)	0.10
Titanium (Ti)	0.06-0.20
Beryllium (Be)	<0.0003
Others Each	0.05
Others Total	0.15
Aluminum (Al)	Remainder

*Unless noted-single values are maximums.

TYPICAL MECHANICAL PROPERTIES:

Mechanical Tests	ER & R 5356	AWS Spec
Tensile Strength	40,000 psi (275 MPa)	35,000 psi (240 MPa)

TYPICAL PHYSICAL PROPERTIES:

Melting Range	Density	Electrical/Thermal Conductivity	Anodized Color	Elevated Temp. Applications +150°F (+66°C)
1060-1175°F (570-635°C)	0.096 lbs/in^3 (2.657 g/cm^3)	29% IACS/820 EU	White	NO

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Diameter Inches (mm)	Weld Position	Amps	Volts	Wire Feed Speed in/min	(m/min)	Deposition Rate lbs/hr	(kg/hr)	CTWD Inches	(mm)
0.035" (0.9 mm)	All Position	135	22.5	500	(12.7)	8.0	(3.6)	1/2	(13)
0.035" (0.9 mm)	All Position	145	22.6	550	(14.0)	8.8	(4.0)	1/2	(13)
0.035" (0.9 mm)	All Position	150	23.0	600	(15.2)	9.6	(4.3)	5/8	(16)
0.035" (0.9 mm)	All Position	165	23.4	650	(16.5)	10.4	(4.7)	5/8	(16)
0.035" (0.9 mm)	All Position	175	24.0	700	(17.8)	11.2	(5.1)	5/8	(16)
3/64" (1.2 mm)	All Position	180	21.4	400	(10.2)	10.5	(4.8)	5/8	(16)
3/64" (1.2 mm)	All Position	195	22.4	450	(11.4)	11.9	(5.4)	5/8	(16)
3/64" (1.2 mm)	All Position	210	23.3	500	(12.7)	13.2	(6.0)	5/8	(16)
3/64" (1.2 mm)	All Position	250	24.4	550	(14.0)	14.5	(6.6)	5/8	(16)
3/64" (1.2 mm)	All Position	260	24.5	600	(15.2)	15.8	(7.2)	5/8	(16)
1/16" (1.6 mm)	All Position	200	22.9	250	(6.4)	12.5	(5.7)	3/4	(19)
1/16" (1.6 mm)	All Position	230	24.0	300	(7.6)	15.1	(6.8)	3/4	(19)
1/16" (1.6 mm)	All Position	270	25.0	350	(8.9)	17.6	(8.0)	3/4	(19)
1/16" (1.6 mm)	All Position	300	25.0	400	(10.2)	20.1	(9.1)	3/4	(19)
1/16" (1.6 mm)	All Position	330	25.0	450	(11.4)	22.6	(10.2)	3/4	(19)

Maintaining a proper welding procedure - including cleaning, oxide removal, pre-heat and interpass temperatures - may be critical depending on the type and thickness of aluminum being welded.
See Above: This information was determined by welding using 100% Argon shielding gas with a flow rate between 35-50 cfh (14-24 l/min).

AVAILABLE DIAMETERS AND PACKAGES: For a complete list of diameters and packaging, please contact Hobart Brothers at (800) 424-1543 or (937) 332-5188 for International Customer Service.

Diameter Inches (mm)	1-lb. (0.45 kg) Plastic Spool	16-lb. (7.3 kg) Plastic Spool	16-lb. (7.3 kg) Wire Basket	22-lb. (10 kg) Plastic Spool	32-lb. (14.5 kg) Plastic Spool	100-lb (45 kg) Drum	300-lb. (136 kg) Drum	10-lb. (4.5 kg) Box 36-in Length TIG Rod
Net Pallet Weight	1458-lb. (661 kg)	1296-lb. (588 kg)	1296-lb. (588 kg)	1782-lb. (808 kg)	2016-lb. (914 kg)	200-lb (91 kg)	600-lb. (272 kg)	2160-lb (980 kg)
0.035 (0.9)	535603504	535603512P	535603512	—	—	—	—	—
3/64 (1.2)	535604704	535604712P	535604712	535604712P22	535604714P	535604723L	535604723	—
1/16 (1.6)	—	—	535606212	535606212P22	535606214P	—	535606223	535606270
3/32 (2.4)	—	—	—	—	—	—	—	535609470
1/8 (3.2)	—	—	—	—	—	—	—	535612570
5/32 (4.0)	—	—	—	—	—	—	—	535615670

300 lb drum dimensions: diameter = 23-1/2"; height = 36"
100 lb drum dimensions: diameter = 23-1/2"; height = 18"

CONFORMANCES AND APPROVALS:

- **AWS A5.10,** ER5356, R5356
- **ASME SFA 5.10,** ER5356, R5356
- **CWB,** ER5356 (0.9 mm - 2.4 mm), R5356 (1.6 mm - 4.0 mm)
- **ABS,** ER5356 (0.035" - 0.062"), R5356, (0.062" - 0.125")
- **CE Marked** per CPR 305/2011
- **DB,** EN ISO 18273-S Al 5356 (AlMg5Cr)

TECHNICAL QUESTIONS? For technical support of Hobart Filler Metals products, contact the Applications Engineering department by phone toll-free at 1-800-532-2618 or by e-mail at Applications.Engineering@hobartbrothers.com

CAUTION:
Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standard Z49.1, "Safety in Welding and Cutting," published by the American Welding Society, 8669 NW 36th St., Miami, FL 33166 (can also be downloaded online at www.aws.org); OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210

Safety Data Sheets on any Hobart Brothers LLC product may be obtained from Hobart Customer Service or at www.hobartbrothers.com.

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HOBART FILLER METALS