

SuperGlaze® 4043

Aluminum • AWS ER4043

Key Features

- ▶ Designed for welding heat-treatable base alloys and more specifically 6XXX series alloys
- ▶ Lower melting point and more fluidity than 5XXX series filler alloys
- ▶ Low sensitivity to weld cracking with 6XXX series base alloys
- ▶ Suitable for sustained elevated temperature service, i.e. above 65°C (150°F)

Typical Applications

- ▶ For welding 6XXX alloys, and most casting alloys
- ▶ Automotive components such as frame and drive shafts
- ▶ Bicycle frames

Conformances

AWS A5.10/A5.10M: 1999 ER4043
 ASME SFA-A5.10: ER4043
 CWB/CSA W48-06: ER4043

Welding Positions

All

Shielding Gas

100% Argon
 Argon / Helium Mixtures
 Flow Rate: 30 - 50 CFH

Note

- ▶ Typical Operating Procedures on pg. 480-481

DIAMETERS / PACKAGING

Diameter in (mm)	1 lb (0.5 kg) Plastic Spool 20 lb (9.1 kg) Master Carton	16 lb (7.3 kg) Plastic Spool	20 lb (9.1 kg) Plastic Spool	275 lb (125 kg) Accu-Pak® Box	275 lb (125 kg) Gem-Pak™ Box
0.030 (0.8)	ED030307	ED028395	ED029234	ED033117	ED034721
0.035 (0.9)	ED030308				
3/64 (1.2)	ED030310	ED030281	ED030982 ^(a)	ED030983 ^(a)	ED034548
1/16 (1.6)					

^(a)Wire payoff kit K2175-2 sold separately.

WIRE COMPOSITION⁽¹⁾ – As Required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER4043	Remainder	4.50-6.00	0.80 max.	0.30 max.	0.05 max.
Typical Performance⁽²⁾	Remainder	5.26	0.15	0.01	0.01
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER4043	0.05 max.	—	0.10 max.	0.20 max.	0.0008 max.
Typical Performance⁽²⁾	0.03	—	0.001	0.01	<0.0002

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer on pg. 18.

SuperGlaze® 5183

Aluminum • AWS ER5183

Key Features

- ▶ Designed to meet the tensile strength requirements of high magnesium alloys
- ▶ For 5083 and 5654 base materials

Typical Applications

- ▶ Marine fabrication and repair
- ▶ Cryogenic tanks
- ▶ Shipbuilding and other high strength structural aluminum applications
- ▶ Bicycle frames

Conformances

AWS A5.10/A5.10M: 1999	ER5183
ASME SFA-A5.10:	ER5183
ABS:	IACS W26 Grade WC
Lloyd's Register:	WC/-1 S
DNV Grade:	5183
GL:	RAIMg4,5
BV Grade:	WC
CWB/CSA W48-06:	ER5183

Welding Positions

All

Shielding Gas

100% Argon
Argon / Helium Mixtures
Flow Rate: 30 - 50 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	16 lb (7.3 kg) Plastic Spool
3/64 (1.2)	EDS28437
1/16 (1.6)	EDS28438

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER5183	Remainder	0.40 max.	0.40 max.	0.10 max.	0.50 - 1.00
Typical Performance⁽²⁾	Remainder	0.03	0.13	0.001	0.65
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER5183	4.30 - 5.20	0.05 - 0.25	0.25 max.	0.15 max.	0.0008 max.
Typical Performance⁽²⁾	4.99	0.10	0.02	0.07	0.0006

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer below.

SuperGlaze® 4047

AWS ER4047 • Aluminum

Conformances

AWS A5.10/A5.10M: 1999 ER4047
ASME SFA-A5.10 ER4047

Welding Positions

All

Shielding Gas

100% Argon
Argon / Helium Mixtures
Flow Rate: 30 - 50 CFH

Key Features

- ▶ Lower melting point and higher fluidity than 4043 wires
- ▶ Can be used as a substitute for 4043 wires to increase silicon in the weld metal, minimize hot cracking and produce higher fillet weld shear strength

Typical Applications

- ▶ Automotive components
- ▶ Heat exchangers
- ▶ Body panels

DIAMETERS / PACKAGING

Diameter in (mm)	16 lb (7.3 kg) Plastic Spool
3/64 (1.2)	EDS28417
1/16 (1.6)	EDS28418

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER4047	Remainder	11.00-13.00	0.80 max.	0.30 max.	0.15 max.
Typical Performance ⁽²⁾	As Reported per AWS Requirements				
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER4047	0.10 max.	—	0.20 max.	—	0.0008 max.
Typical Performance ⁽²⁾	As Reported per AWS Requirements				

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer below.

SuperGlaze® 5356

AWS ER5356 • Aluminum

Conformances

AWS A5.10/A5.10M: 1999	ER5356
ASME SFA-A5.10:	ER5356
ABS:	IACS W26 Grade WB
Lloyd's Register:	WB/I-1 S
DNV Grade:	5356
GL:	RAIMg4
BV Grade:	WB
CWB/CSA W48-06:	ER5356

Welding Positions

All

Shielding Gas

100% Argon
 Argon / Helium Mixtures
 Flow Rate: 30 - 50 CFH

Note

- ▶ Typical Operating Procedures on pg. 480-481

Key Features

- ▶ General purpose filler alloy for welding 5XXX series alloys

Typical Applications

- ▶ Automotive bumpers and supports
- ▶ Structural frames in the shipbuilding industry
- ▶ Bicycle frames
- ▶ Formed truck panels

DIAMETERS / PACKAGING

Diameter in (mm)	1 lb (0.4 kg) Plastic Spool 20 lb (9.1 kg) Master Carton	16 lb (7.3 kg) Platic Spool	20 lb (9.1 kg) Plastic Spool	300 lb (136 kg) Accu-Pak® Box	300 lb (136 kg) Gem-Pak™ Box
0.035 (0.9)	ED030312	ED028385		ED033178 ^(a)	ED034722
3/64 (1.2)	ED030314		ED030282	ED031826 ^(b)	ED034550
1/16 (1.6)			ED030283	ED030985 ^(b)	ED034551

^(a)This part number is Made-To-Order. ^(b)Wire payoff kit K2175-2 sold separately.

WIRE COMPOSITION⁽¹⁾ – As Required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER5356	Remainder	0.25 max.	0.40 max.	0.10 max.	0.05 - 0.20
Typical Performance⁽²⁾	Remainder	0.05	0.09	0.03	0.12
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER5356	4.50 - 5.50	0.05 - 0.20	0.10 max.	0.06 - 0.20	0.0008 max.
Typical Performance⁽²⁾	4.56	0.08	< 0.01	0.15	0.0007

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer on pg. 18.

SuperGlaze® 5556

AWS ER5556 • Aluminum

Conformances

AWS A5.10/A5.10M: 1999	ER5556
ASME SFA-A5.10:	ER5556
ABS:	IACS W26 Grade WC

Welding Positions

All

Shielding Gas

100% Argon
 Argon / Helium Mixtures
 Flow Rate: 30 - 50 CFH

Key Features

- ▶ Provide matching tensile strengths for 5XXX alloys
- ▶ Increased amounts of magnesium and manganese

Typical Applications

- ▶ 5XXX alloys, such as 5083 and 5654
- ▶ Pressure vessels
- ▶ Storage tanks

DIAMETERS / PACKAGING

Diameter in (mm)	16 lb (7.3 kg) Plastic Spool
3/64 (1.2)	EDS29581
1/16 (1.6)	EDS29582

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER5556	Remainder	0.25 max.	0.40 max.	0.10 max.	0.50 - 1.00
Typical Performance ⁽²⁾	Remainder	0.03	0.13	0.001	0.65
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER5556	4.70 - 5.50	0.05 - 0.20	0.25 max.	0.05 - 0.20	0.0008 max.
Typical Performance ⁽²⁾	5.00	0.10	0.02	0.07	0.0006

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer below.

SuperGlaze® 5554

Aluminum • AWS ER5554

Key Features

- ▶ Matching filler alloy for welding 5454 base alloys
- ▶ Low magnesium content to closely match the base material chemistry

Typical Applications

- ▶ 5454 base alloys
- ▶ Automotive wheels
- ▶ Transportation applications such as over-the-road trailers and rail tank cars
- ▶ Chemical storage tanks

Conformances

AWS A5.10/A5.10M: 1999 ER5554
 ASME SFA-A5.10: ER5554
 CWB/CSA W48-06: ER5554

Welding Positions

All

Shielding Gas

100% Argon
 Argon / Helium Mixtures
 Flow Rate: 30 - 50 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	16 lb (7.3 kg) Plastic Spool
3/64 (1.2)	ED029573

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER5554	Remainder	0.25 max.	0.40 max.	0.10 max.	0.50 - 1.00
Typical Performance⁽²⁾	Remainder	0.06	0.13	0.03	0.51
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER5554	2.40 - 3.00	0.05 - 0.20	0.25 max.	0.06 - 0.20	0.0008 max.
Typical Performance⁽²⁾	2.41	0.06	< 0.01	0.09	0.0006

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer below.

SuperGlaze® 5356 TM™

AWS ER5356



SuperGlaze® 5356 TM™ is an engineered aluminum alloy GMAW wire designed specifically for applications in the trailer manufacturing industry. The engineered alloy system provides optimal puddle clarity and arc action as well as excellent wetting for both semi-automatic and high productivity automatic applications. For an aluminum wire designed to provide superior operating characteristics and improved bead appearance - choose SuperGlaze® 5356 TM™.

KEY FEATURES

- ▶ **Superior Wetting** – Unparalleled bead profile and appearance which are critical for groove and fillet welds on aluminum trailer beds.
- ▶ **Enhanced Puddle Clarity and Control** – SuperGlaze® 5356 TM™ has an engineered chemical composition developed specifically to outperform standard ER5356 electrodes and gives the operator unprecedented control.
- ▶ **Maximum Arc Performance and Stability** – Proprietary manufacturing processes give SuperGlaze® 5356 TM™ the smoothest surface finish in the industry, making it ideal for automatic applications on formed truck panels.

CONFORMANCES

AWS A5.10/A5.10M: 1999 ER5356
ASME SFA-A5.10: ER5356
CWB/CSA W48-06: ER5356

APPLICATIONS

- ▶ High speed groove welds on formed truck panels
- ▶ Multi-pass fillet and lap welds on 6XXX series base materials
- ▶ Robotic fillet welds on trailer tanks requiring minimal post-weld clean up

WELDING POSITIONS

All

SHIELDING GAS

100% Argon
 Argon / Helium Mixtures
 Flow Rate: 30 - 50 CFH

DIAMETERS / PACKAGING

Diameter in. (mm)	1 lb (0.4 kg) Plastic Spool 20 lb (9.1 kg) Master Carton	16 lb (7.3 kg) Steel Spool	20 lb (9.1 kg) Plastic Spool	300 lb (136 kg) Accu-Pak® Box
0.035 (0.9)	ED034064	ED034067	—	ED034090
3/64 (1.2)	ED034065	ED034068	ED034070	ED034091
1/16 (1.6)	ED034066	ED034069	ED034071	ED034092

WIRE COMPOSITION – As required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER5356	Remainder	0.25 max.	0.40 max.	0.10 max.	0.05 - 0.20
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER5356	4.50 - 5.50	0.05 - 0.20	0.10 max.	0.06 - 0.20	0.0008 max.

TYPICAL OPERATING PROCEDURES

Diameter, Polarity CTWD Shielding Gas	Wire Feed Speed in/min (m/min)	Arc Voltage (Volts)	Approx. Current (amps)	Melt-Off Rate lb/hr (kg/hr)
0.035 in. (0.9 mm), DC+ 1/2 in (12 mm) 100% Ar	350 (8.9)	18	100	1.9 (0.9)
	450 (11.4)	20	140	2.5 (1.1)
	550 (14.0)	22	165	3.0 (1.4)
	650 (16.5)	24	195	3.9 (1.8)
3/64 in. (1.2 mm), DC+ 1/2 in (12 mm) 100% Ar	260 (6.6)	19	125	2.9 (1.3)
	350 (8.9)	21	175	3.8 (1.7)
	450 (11.4)	23	225	4.7 (2.1)
	550 (14.0)	25	260	5.8 (2.6)
1/16 in. (1.6 mm), DC+ 3/4 in (19 mm) 100% Ar	210 (5.3)	22	200	4.0 (1.8)
	300 (7.6)	24	270	5.5 (2.5)
	350 (8.9)	27	310	6.1 (2.8)
	425 (10.8)	30	350	7.8 (3.5)

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

CUSTOMER ASSISTANCE POLICY

The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.

SuperGlaze® 5356

AWS ER5356 • Aluminum

Conformances

AWS A5.10/A5.10M: 1999 ER5356
ASME SFA-A5.10: ER5356

Welding Positions

All

Key Features

- ▶ Aluminum-magnesium alloy for use on many weldable cast and wrought aluminum alloys
- ▶ Generally recommended for welding any 5XXX or 6XXX series aluminum alloys
- ▶ Excellent for color matching after anodizing
- ▶ Embossed on each end for easy identification after use

Typical Applications

- ▶ Architectural structures
- ▶ Armored vehicles
- ▶ Gun mount bases

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
1/16 (1.6)	ED031108
3/32 (2.4)	ED031109
1/8 (3.2)	ED031110

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER5356	Remainder	0.25 max.	0.40 max.	0.10 max.	0.05 - 0.20
Typical Performance ⁽²⁾	Remainder	0.06	0.09	0.02	0.12
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER5356	4.05 - 5.5	0.05 - 0.20	0.10 max.	0.06 - 0.20	0.0008 max.
Typical Performance ⁽²⁾	4.84	0.12	0.001	0.09	0.0002

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer on pg. 12.

SuperGlaze® 4043

Aluminum • AWS ER4043

Key Features

- ▶ Use on many weldable cast and wrought aluminum alloys
- ▶ Generally recommended for welding 5052, any 6XXX series alloys and castings
- ▶ Embossed on each end for easy identification after use

Conformances

AWS A5.10/A5.10M: 1999 ER4043
ASME SFA-A5.10: ER4043

Welding Positions

All

Typical Applications

- ▶ Bicycle frames
- ▶ Pressure vessels
- ▶ Electrical bus bars

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
1/16 (1.6)	ED031111
3/32 (2.4)	ED031112
1/8 (3.2)	ED031113

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.10/A5.10M: 1999

	%Al	%Si	%Fe	%Cu	%Mn
Requirements - AWS ER4043	Remainder	4.50-6.00	0.80 max.	0.30 max.	0.05 max.
Typical Performance⁽²⁾	Remainder	5.01	0.13	0.008	0.009
	%Mg	%Cr	%Zn	%Ti	%Be
Requirements - AWS ER4043	0.05 max.	Not Specified	0.10 max.	0.20 max.	0.0008 max.
Typical Performance⁽²⁾	0.03	—	0.002	0.007	0.0002

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer on pg. 12.