

SUPERGLAZE[®]

ALUMINUM WELDING WIRE



LINCOLN[®]
ELECTRIC

SuperGlaze products help prevent the common issues associated with aluminum wire feeding such as birdnesting, tangling, and burnbacks. The key lies with a smooth surface finish and consistent alloying chemical composition. The result is a stable arc, improved feedability, and exceptional control with every weld!

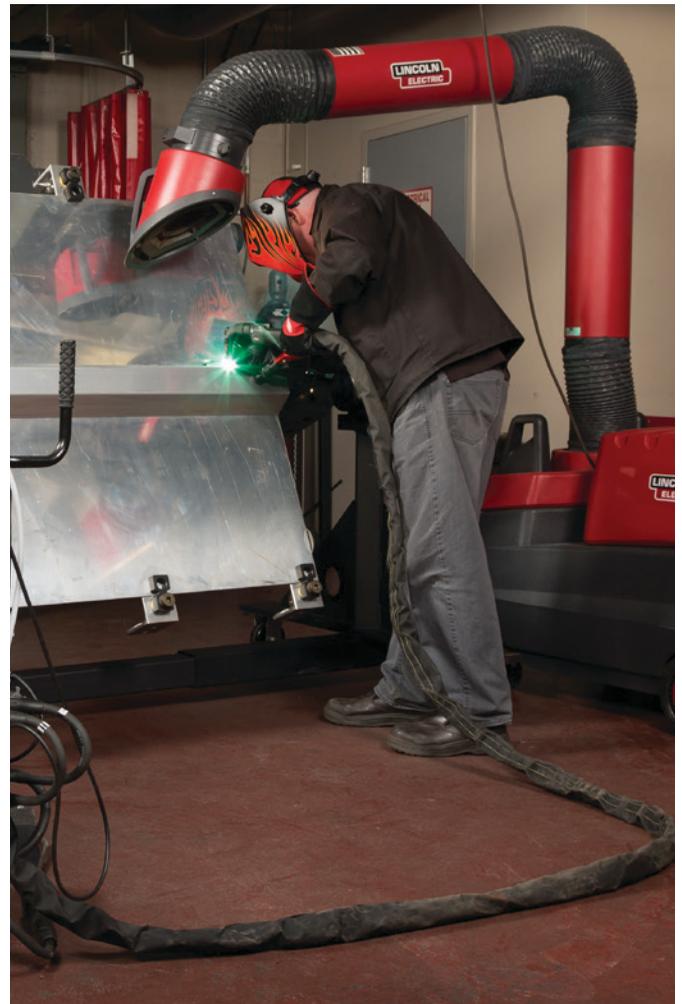


What Makes SuperGlaze Stand Out From the Rest?

Three unique features:

1. A proprietary process which gives SuperGlaze a superior surface finish for optimum surface integrity.
2. A manufacturing process that precisely controls the alloy chemical composition to produce consistent welding wire characteristics.
3. State of the art testing equipment to evaluate the composition, surface condition, and feedability of the wire to help achieve problem-free welding.

What all this means for you is outstanding welding wire characteristics, spool to spool, time after time. Welding aluminum can be as easy as any other material when using Lincoln's aluminum welding wire coupled with our advanced welding equipment...making Lincoln the one source for all your aluminum welding needs.



IMPROVE FEEDABILITY WITH HD™

ALUMINUM WIRE SURFACE TREATMENT

Key Benefits:

- Consistent arc performance with improved feedability
- Increased total arc-on time and productivity
- Up to 80% reduction in shavings[1]

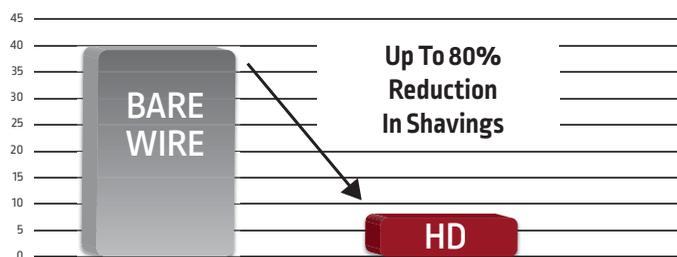
This proprietary aluminum wire surface treatment is designed to reduce shavings and liner clogging while improving feedability.

Backed by Lincoln Electric's continual stringent Quality Assurance process controls, a proprietary application method was developed to improve aluminum wire performance.

These improvements to your aluminum wire allow you to focus on the weld, improve arc starts and increase productivity.

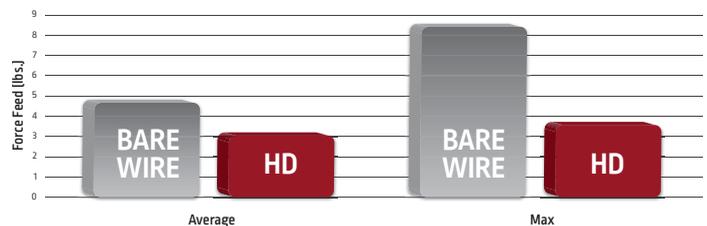
HD will provide premium feedability while maintaining all of the reliable arc performance characteristics of our Lincoln Electric aluminum wire. HD is available for all 5000 series aluminum MIG wire.

Aluminum Shavings Bare Wire vs HD



[1] Shaving analysis was performed using a push pull gun, comparing Lincoln Electric standard aluminum wire with HD against industry standard aluminum bare wire.

Achieves Up To 4.74 lbs Force Feed Reduction



[2] Feed Force Reduction analysis compared Lincoln Electric aluminum wire with HD against industry standard aluminum bare wire.



HERE'S HOW OUR PROCESS WORKS

Controlling Alloys

The process of making aluminum welding alloys is a complex one, but one in which Lincoln has a clear and distinct advantage. Unlike other manufacturers, Lincoln Electric is the only one in the world that starts at the source with pure aluminum ingots and the right alloying components. First, we utilize automated titling furnaces to efficiently produce the aluminum alloys that are optimized and designed for welding. With this equipment, we are able to hold tight tolerances in the composition. The alloy is carefully refined prior to casting to minimize hydrogen, alkaline metals, and inclusions.

Continuous Casting

Second, we use a continuous casting process specially configured for high alloy materials. This process keeps the rod surface free from imperfections and impurities creating world-class rod for our wire drawing process.

Drawing the Wire

In the last manufacturing step of the process, we use advanced wire drawing technology to preserve both surface integrity and internal soundness.

Testing the Wire

To help ensure superior quality of welding wire, continuous finished product inspection is done. Surface quality is evaluated along with feedability and welding performance.

Welding Performance

Most aluminum MIG welding problems are caused by poor feeding. Since aluminum is relatively soft, it is important that the wire surface be as smooth as possible for best feedability. SuperGlaze products provide easier feeding than competitive products because they have fewer surface imperfections as shown below. SuperGlaze wire also feeds with less force than typical competitive products as the feedability test graph on previous page shows. This helps the operator have better control of the weld puddle. It also means longer life for gun liners and less likelihood of tip burnback.

With Lincoln's aluminum welding process knowledge, we understand that welding performance is one of the most important criteria used when selecting a wire.

Aluminum welding wire tends to produce a welding arc that is more sensitive to changes than other materials due to its high conductivity. Small changes in wire diameter, wire feed speed, and current produce dramatic changes in weld bead profile, arc length and can even cause equipment downtime due to wire burnback and fusing to tip. Our continuous evaluation of finished product ensures consistency in manufacturing. You can count on Lincoln aluminum MIG wire for superior arc stability, weld appearance, integrity and productivity.

The SuperGlaze® Advantage

5356 Wire Surfaces

Magnified 60x



Typical Competitive Product



SuperGlaze
"Best in Class"

Aluminum MIG Wire Selection Guide

Electrode Name	AWS Number	Recommended Polarity	General Description	Page Number
SuperGlaze® 4043	ER4043	DC+	SuperGlaze 4043 is a great choice for the welding of heat-treatable base alloys and more specifically the 6XXX series alloys. It has a lower melting point and more fluidity than the 5XXX series filler alloys and is preferred by welders because of its favorable operating characteristics. ER4043 type wires may reduce crack sensitivity with the 6XXX series base alloys. SuperGlaze 4043 is suitable for sustained elevated temperature service, i.e. above 150°F (65°C).	6
SuperGlaze® 4047	ER4047	DC+	A lower melting point and higher fluidity are possible advantages SuperGlaze 4047 has over SuperGlaze 4043. SuperGlaze 4047 produces very clean weld deposits and possesses excellent operator appeal. It can be used as a substitute for an ER4043 type wire to increase silicon in the weld metal, minimize hot cracking, and produce higher fillet weld shear strength. SuperGlaze 4047 is suitable for sustained elevated temperature service, i.e. above 150°F (65°C).	7
SuperGlaze® 5183	ER5183	DC+	SuperGlaze 5183 is designed to weld high magnesium alloys to meet higher tensile strength requirements. Use on 5083 and 5654 base materials when required tensile strengths are 40,000 psi (276 MPa) or greater. Typical applications are in the marine and cryogenic industries, and high strength structural aluminum fabrication.	8
SuperGlaze® 5356	ER5356	DC+	SuperGlaze 5356 is our most popular aluminum MIG wire. It is a great general purpose filler alloy designed for the welding of 5XXX series alloys when 40,000 psi (276 MPa) tensile strength is not required.	9
SuperGlaze® 5554	ER5554	DC+	SuperGlaze 5554 is intended as a matching filler alloy when welding 5454 base alloys. This alloy is a lower magnesium content alloy and is often used for automotive wheels, over-the-road trailers, and rail tank cars where the weld may be exposed to high service temperatures, i.e above 150°F (65°C)	10
SuperGlaze® 5556	ER5556	DC+	SuperGlaze 5556 weld deposits will provide matching tensile strengths for the 5XXX alloys, such as 5083 and 5654. Contains increased amounts of magnesium and manganese.	11
SuperGlaze® 2319	ER5556	DC+	SuperGlaze 2319 is a copper welding wire that provides high strength to aluminum and is heat-treatable. Often used for aircraft parts, rivets and screw products and welded fabrication.	12

Aluminum MIG HD Wire Selection Guide

Electrode Name	AWS Number	Recommended Polarity	General Description	Page Number
SuperGlaze® HD™ 5183	ER5183	DC+	SuperGlaze HD 5183 is designed for heavy duty applications. SuperGlaze HD 5183 can help reduce shavings and improved feedability. Use 5083 and 5456 base materials. Well suited for aggressive work environments and applications with long conduit lengths, marine fabrication and repair cryogenic tanks, shipbuilding and other high strength structural aluminum applications, railcars, and the offshore industry.	7
SuperGlaze® HD™ 5356	ER5356	DC+	SuperGlaze HD 5356 is designed for heavy duty applications. SuperGlaze HD 5356 can help reduce shavings and improved feedability. General purpose filler alloy for welding 5XXX series alloys. Well suited for aggressive work environments and applications with long conduit lengths. Applications most suitable are automotive bumpers and supports, structural frames in the shipbuilding industry, formed truck panels, railcars, power industry, and trailer manufacturing.	8
SuperGlaze® HD™ 5556	ER5556	DC+	SuperGlaze HD 5556 is designed for heavy duty applications. SuperGlaze HD 5556 can help reduce shavings and improved feedability. SuperGlaze HD 5556 provides increased amounts of magnesium and manganese. Well suited for aggressive work environments and applications with long conduit lengths, pressure vessels and storage tanks.	10

Alloys Not Listed: 1070, 1098, 1350, 1100, 4145, 5087, 5556A, 5754, others.*

Lincoln Electric produces a variety of alloys in its globally unique vertically integrated aluminum welding wire facility. The ability to manufacture alloy and cast rods internally allows Lincoln Electric to produce many alloy chemical compositions not listed in this brochure. Additionally, tailored alloy and product requirements can be met for specific applications*. Please contact a Lincoln Electric representative or contact the Aluminum Solutions Group at: info_indalco@lincolnelectric.com

*Minimum order quantities apply.

SUPERGLAZE[®] 4043

Aluminum MIG Wire

[AWS ER4043]

SuperGlaze 4043 is a great choice for the welding of heat-treatable base alloys and more specifically the 6XXX series alloys. It has a lower melting point and more fluidity than the 5XXX series filler alloys and is preferred by welders because of its favorable operating characteristics. ER4043 type wires are also less sensitive to weld cracking with the 6XXX series base alloys. SuperGlaze 4043 is suitable for sustained elevated temperature service, i.e. above 150°F [65°C].

Advantage Lincoln

- All-position aluminum MIG wire.
- Superior wire surface finish for the best feedability and arc performance.
- Optimal manufacturing process to precisely control chemical composition.
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire.
- Manufactured under a quality system certified to ISO 9001 requirements.

Typical Applications

- For welding 6XXX alloys, and most casting alloys.
- Good all purpose filler alloy.
- Automotive components such as frame and drive shafts.
- Bicycle frames.

Welding Positions

All Position

Shielding Gas

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

Conformance

AWS A5.10: ER4043
CWB

DIAMETERS/PACKAGING

Diameter in. (mm)	1 lb (0.4 kg) Spool 20 lb (9.1 kg) Carton	16 lb (7.3 kg) Spool	20 lb (9.1 kg) Spool
0.030 (0.8)	ED030307	ED028395	ED029234
0.035 (0.9)	ED030308	ED028397	ED030281
3/64 (1.2)	ED030310		
1/16 (1.6)			

WIRE COMPOSITION

	%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Requirements AWS ER4043	Remainder	4.50 - 6.00	0.80 max.	0.30 max.	0.05 max.	0.05 max.	-	0.10 max.	0.20 max.	0.0008 max.
Test Results⁽²⁾	Remainder	5.26	0.15	0.006	0.01	0.03	-	0.001	0.009	<0.0002

NOTE: Typical Operating Procedures can be found on page 14

SUPERGLAZE® 4047

Aluminum MIG Wire

[AWS ER4047]

A lower melting point and higher fluidity are possible advantages SuperGlaze 4047 has over SuperGlaze 4043. SuperGlaze 4047 produces very clean weld deposits and possesses excellent operator appeal. It can be used as a substitute for an ER4043 type wire to increase silicon in the weld metal, minimize hot cracking, and produce higher fillet weld shear strength. SuperGlaze 4047 is suitable for sustained elevated temperature service, i.e. above 150°F (65°C).

Advantage Lincoln

- All-position aluminum MIG wire.
- Similar to SuperGlaze 4043, with even higher crack resistance.
- Superior wire surface finish for the best feedability and arc performance.
- Optimal manufacturing process to precisely control chemical composition.
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire.
- Manufactured under a quality system certified to ISO 9001 requirements.

Welding Positions

All Position

Shielding Gas

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

Conformance

AWS A5.10: ER4047

Typical Applications

- Automotive components, heat exchangers.
- Body panels.

DIAMETERS/PACKAGING

DIAMETERS in. (mm)	16 lb (7.3 kg) Spool
3/64 (1.2) 1/16 (1.6)	16 lb (7.3 kg) Spool

WIRE COMPOSITION

	%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Requirements AWS ER4047	Remainder	11.00 - 13.00	0.80 max.	0.30 max.	0.15 max.	0.10 max.	-	0.20 max.	-	0.0008 max.

Test Results^[2]

As Reported per AWS Requirements

NOTE: Typical Operating Procedures can be found on page 14

SUPERGLAZE® / SUPERGLAZE® HD™ 5183

Aluminum MIG Wire

[AWS ER5183]

SuperGlaze 5183 is designed to weld high magnesium alloys to meet higher tensile strength requirements. Use on 5083 and 5654 base materials when required tensile strengths are 40,000 psi (276 MPa) or greater. Typical applications are in the marine and cryogenic industries, and high strength structural aluminum fabrication.

Advantage Lincoln

- All-position aluminum MIG wire.
- Superior wire surface finish for the best feedability and arc performance.
- Optimal manufacturing process to precisely control chemical composition.
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire.
- Manufactured under a quality system certified to ISO 9001 requirements.

Typical Applications

- For welding high magnesium 5XXX alloys.
- Marine fabrication and repair.
- Cryogenic tanks.
- Shipbuilding and other high strength structural aluminum applications.
- Bicycle frames.

Welding Positions

All Position

Shielding Gas

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

Conformance

AWS A5.10:	ER5183
ABS:	IACS Grade WC
Lloyd's Register:	WC
DNV:	5183
G.L.:	S-ALMg 4.5Mn
Bureau Veritas:	WC
TUV	

DIAMETERS/PACKAGING

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

WIRE COMPOSITION

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

NOTE: Typical Operating Procedures can be found on page 14

SUPERGLAZE® / SUPERGLAZE® HD™ 5356

Aluminum MIG Wire

[AWS ER5356]

SuperGlaze 5356 is our most popular aluminum MIG wire. It is a great general purpose filler alloy designed for the welding of 5XXX series alloys when 276 MPa (40,000 ksi) tensile strength is not required.

Advantage Lincoln

- All-position aluminum MIG wire.
- Superior wire surface finish for the best feedability and arc performance.
- Optimal manufacturing process to precisely control chemical composition.
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire.
- Manufactured under a quality system certified to IS 9001 requirements.

Typical Applications

- For welding most 5XXX alloys when 276 MPa (40,000 ksi) tensile strength is not required.
- Automotive bumpers and supports.
- Structural frames in the shipbuilding industry.
- Bicycle frames.
- Formed truck panels.

Welding Positions

All Position

Shielding Gas

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

Conformance

AWS A5.10:	ER5356
ABS:	IACS WB
Lloyd's Register:	WB
DNV:	5356
G.L.:	S-AIMg 5
Bureau Veritas:	WB
CWB	
TUV	

DIAMETERS/PACKAGING

Diameter in. (mm)	1 lb (0.4 kg) Spool 20 lb (9.1 kg) Carton	16 lb (7.3 kg) Spool	20 lb (9.1 kg) Spool
0.035 (0.9) 3/64 (1.2) 1/16 (1.6)	ED030312 ED030314	ED028385 ED028387	ED030282 ED030283

WIRE COMPOSITION

	%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Requirements AWS ER5356	Remainder	0.25 max.	0.40 max.	0.10 max.	0.05 - 0.20	4.50 - 5.50	0.05 - 0.20	0.10 max.	0.06 - 0.20	0.0008 max.
Test Results⁽²⁾	Remainder	0.05	0.09	0.03	0.12	4.56	0.08	0.003	0.15	0.0007

NOTE: Typical Operating Procedures can be found on page 14

SUPERGLAZE® 5554

Aluminum MIG Wire

[AWS ER5554]

SuperGlaze 5554 is intended as a matching filler alloy when welding 5454 base alloys. This alloy is a lower magnesium content alloy and is often used for automotive wheels, over-the-road trailers, and rail tank cars where the weld filler metal chemistry must closely match the base material chemistry to maximize corrosion performance.

Advantage Lincoln

- All-position aluminum MIG wire.
- Superior wire surface finish for the best feedability and arc performance.
- Optimal manufacturing process to precisely control chemical composition.
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire.
- Manufactured under a quality system certified to ISO 9001 requirements.

Typical Applications

- Matching filler alloy for 5454 base alloys.
- Automotive wheels.
- Transportation industry applications such over-the-road trailers and rail tank cars.
- Chemical storage tanks.

Welding Positions

All Position

Shielding Gas

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

Conformance

AWS A5.10: ER5554
CWB

DIAMETERS/PACKAGING

Diameter in. (mm)	16 lb (7.3 kg) Spool
3/64 (1.2)	ED029573
1/16 (1.6)	ED029574

WIRE COMPOSITION

	%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Requirements AWS ER5554	Remainder	0.25 max.	0.40 max.	0.10 max.	0.50 - 1.00	2.40 - 3.00	0.05 - 0.20	0.25 max.	0.06 - 0.20	0.008 max.
Test Results⁽²⁾	Remainder	0.13	0.09	0.03	0.51	2.41	0.06	0.005	0.09	0.0006

NOTE: Typical Operating Procedures can be found on page 14

SUPERGLAZE® / SUPERGLAZE® HD™ 5556

Aluminum MIG Wire

[AWS ER5556]

SuperGlaze 5556 weld deposits will provide matching tensile strengths for the 5XXX alloys, such as 5083 and 5654. Contains increased amounts of magnesium and manganese.

Advantage Lincoln

- All-position aluminum MIG wire.
- Superior wire surface finish for the best feedability and arc performance.
- Optimal manufacturing process to precisely control chemical composition.
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire.
- Manufactured under a quality system certified to ISO 9001 requirements.

Typical Applications

- For welding the higher strength 5XXX alloys, such as 5083 and 5654.
- Pressure vessels.
- Storage tanks.

Welding Positions

All Position

Shielding Gas

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

Conformance

AWS A5.10: ER5556

DIAMETERS/PACKAGING

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

WIRE COMPOSITION

	%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Requirements AWS ER5556	Remainder	0.25 max.	0.40 max.	0.10 max.	0.50 - 1.00	4.70 - 5.50	0.05 - 0.20	0.25 max.	0.05 - 0.20	0.008 max.
Test Results⁽²⁾	Remainder	0.03	0.13	0.001	0.65	5.00	0.10	0.02	0.07	0.0006

NOTE: Typical Operating Procedures can be found on page 14

SUPERGLAZE[®] 2319

Aluminum MIG Wire

[AWS ER2319]

SuperGlaze 2319 is primarily used as the filler metal for alloy 2219. SuperGlaze 2319 provides higher strength and better ductility than 4XXX filler alloys when welding on 2XXX base materials. SuperGlaze 2319 also provides superior resistance to stress corrosion cracking where high temperature properties are required.

Advantage Lincoln

- All-position aluminum MIG wire
- Superior wire surface finish for the best feedability and arc performance
- Optimal manufacturing process to precisely control chemical composition
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire
- Manufactured under a quality system certified to ISO 9001 standard

Typical Applications

- Aircraft and aerospace industries
- High strength structural application
- Military

Welding Positions

All Position

Shielding Gas

- 100% Argon
- Argon/Helium Mixtures
- Flow Rate: 30 - 50 CFH (14.2 - 23.6 L/min)

Conformance

- AWS/ASTM A5.10/A5.10M:2012
- EN ISO 18273:2004

TYPICAL OPERATING PROCEDURES FOR GROOVE WELDING

Metal Thickness (in.)	Weld Position ⁽¹⁾	Edge Preparation ⁽²⁾	Joint Spacing (in.)	Weld Passes	Electrode Diameter (in.)	DC+ Current ⁽³⁾ (Amps)	Arc Voltage ⁽³⁾ (Volts)	Argon Gas Flow (cfh)	Arc Travel Speed (ipm/pass)	Approx. Electrode Consump. (lb/100 ft.)
1/16	F F	A G	None 3/32	1	0.030	70 - 110	15 - 20	25	25 - 45	1.5
				1	0.030	70 - 110	15 - 20	25	25 - 45	2
1/8	F, V, H F, V, H, O	A G	0 - 3/32 3/16	1	0.030 - 3/64	120 - 150	20 - 24	30	24 - 30	2
				1	0.030 - 3/64	110 - 135	19 - 23	30	18 - 28	3
3/16	F, V, H F, V, H O F, V H, O	B F F H H	0 - 1/16 0 - 1/16 0 - 1/16 3/32 - 3/16 3/16	1F, 1R	0.030 - 3/64	130 - 175	22 - 26	35	24 - 30	4
				1	3/64	140 - 180	23 - 27	35	24 - 30	5
				2F	3/64	140 - 175	23 - 27	60	24 - 30	5
				2	3/64 - 1/16	140 - 185	23 - 27	35	24 - 30	8
				3	3/64	130 - 175	23 - 27	60	25 - 35	10
1/4	F F V, H O F, V O, H	C-90° F F F H H	0 - 3/32 0 - 3/32 0 - 3/32 0 - 3/32 1/8 - 1/4 1/4	1F, 1R	3/64 - 1/16	175 - 200	24 - 28	40	24 - 30	6
				2	3/64 - 1/16	185 - 225	24 - 29	40	24 - 30	8
				3F, 1R	3/64	165 - 190	25 - 29	45	25 - 35	10
				3F, 1R	3/64 - 1/16	180 - 200	25 - 29	60	25 - 35	10
				2 - 3	3/64 - 1/16	175 - 225	25 - 29	40	24 - 30	12
3/8	F F V, H O F, V O, H	C-90° F F F H H	0 - 3/32 0 - 3/32 0 - 3/32 0 - 3/32 1/4 - 3/8 3/8	1F, 1R	1/16	225 - 290	26 - 29	50	20 - 30	16
				2F, 1R	1/16	210 - 275	26 - 29	50	24 - 35	18
				3F, 1R	1/16	190 - 220	26 - 29	55	24 - 30	20
				5F, 1R	1/16	200 - 250	26 - 29	80	25 - 40	20
				4	1/16	210 - 290	26 - 29	50	24 - 30	35
3/4	F F V, H, O F V, H, O	C-60° F F E E	0 - 3/32 0 - 1/8 0 - 1/16 0 - 1/16 0 - 1/16	3F, 1R	3/32	340 - 400	26 - 31	60	14 - 20	50
				4F, 1R	3/32	325 - 375	26 - 31	60	16 - 20	70
				8F, 1R	1/16	240 - 300	26 - 30	80	24 - 30	75
				3F, 3R	1/16	270 - 330	26 - 30	60	16 - 24	70
				6F, 6R	1/16	230 - 280	26 - 30	80	16 - 24	75

TYPICAL OPERATING PROCEDURES FOR GROOVE WELDING

Metal Thickness ⁽⁴⁾ (in.)	Weld Position ⁽¹⁾	Weld Passes ⁽⁵⁾	Electrode Diameter (in.)	DC+ Current ⁽³⁾ (Amps)	Arc Voltage ⁽³⁾ (Volts)	Argon Gas Flow (cfh)	Arc Travel Speed (ipm/pass)	Approx. Electrode Consump. ⁽⁵⁾ (lb/100 ft.)
1/8	F V, H O	1	0.030 - 3/64	125 - 150	20 - 24	30	24 - 30	2
		1	0.030	110 - 130	19 - 23	30	24 - 30	2
		1	0.030 - 3/64	115 - 140	20 - 24	40	24 - 30	2
3/16	F V, H O	1	3/64	180 - 210	22 - 26	30	24 - 30	4.5
		1	0.030 - 3/64	130 - 175	21 - 25	35	24 - 30	4.5
		1	0.030 - 3/64	130 - 190	22 - 26	45	24 - 30	4.5
1/4	F V, H O	1	3/64 - 1/16	170 - 240	24 - 28	40	24 - 30	7
		1	3/64	170 - 210	23 - 27	45	24 - 30	7
		1	3/64 - 1/16	190 - 220	24 - 28	60	24 - 30	7
3/8	F V, H O	1	1/16	240 - 300	26 - 29	50	18 - 25	17
		3	1/16	190 - 240	24 - 27	60	24 - 30	17
		3	1/16	200 - 240	25 - 28	85	24 - 30	17
3/4	F V, H O	4	3/32	360 - 380	26 - 30	60	18 - 25	66
		4 - 6	1/16	260 - 310	25 - 20	70	24 - 30	66
		10	1/16	275 - 310	25 - 29	85	24 - 30	66

(1) F - Flat, V = Vertical, H = Horizontal, O = Overhead.

(2) See joint designs on page 13.

(3) For 5XXX series wires, use a welding current on the high side of the range and an arc voltage in the lower portion of the range. For 1XXX, and 4XXX series wires, use the lower currents and higher arc voltages.

(4) Metal thickness of 3/4" or greater for fillet welds sometimes employs a double vee bevel of 50° or greater included vee with 3/32" to 1/8" land thickness on the abutting member.

(5) Number of weld passes and electrode consumption given for weld on one side only.

PACKAGING AND ACCESSORIES

Gem-Pak® Aluminum Wire Bulk Packaging System

The patented Gem-Pak system consists of a unique core structure and glass gems that are weighted based on alloy and wire diameter, which lay on top of the wire as it unreels during use.

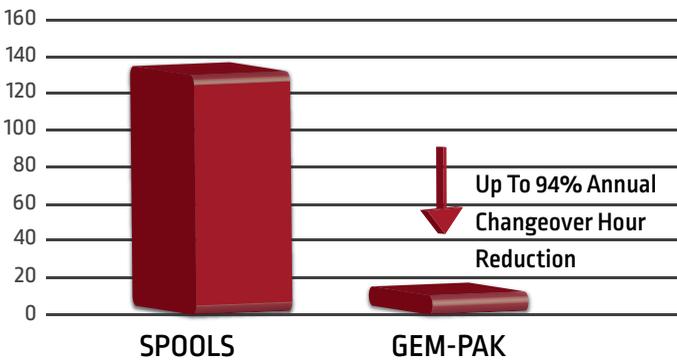
Most commonly used alloy is SuperGlaze aluminum wire, a Lincoln Electric premium aluminum MIG and TIG wire that leads the industry in consistency and performance. Although, Gem-Pak is available for most alloys.

Long Term Advantages:

- Improves aluminum wire feedability
- Increases contact tip lifespan
- Improves arc starts
- Helps prevent tip burnbacks
- Reduces weld defects and repairs
- Reduces set-up costs
- Improves productivity
- Ideal for high volume applications and long welds

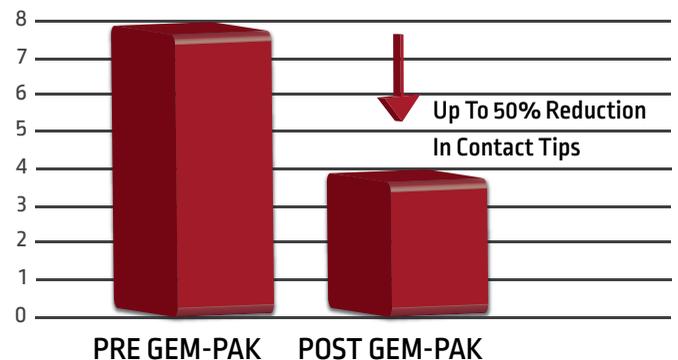


CHANGEOVER TIME (HOURS ANNUALLY)



[3] Changeover Time analysis was performed at a customer site with multiple automated systems

CONTACT TIP USAGE/SHIFT



[4] Contact Tip Usage analysis was performed at a customer site with multiple automated systems

PACKAGING PALLET WEIGHTS

Packaging Type lb (kg)	Package / Carton Weight lb (kg)	Pallet Weight lb (kg)
1 lb (0.5) Spool	20 lb (9.1)	2000 lb (907)
5 lb (2.3) Spool	5 lb (2.3 kg)	900 lb (408 kg)
16 lb (7.3) Spool	16 lb (7.3)	1872 lb (849)
20 lb (9.1) Spool	20 lb (9.1)	2340 lb (1061)
300 lb Gem-Pak	300 lb (136)	600 (272)

DIAMETERS AND PACKAGING

Product Name	0.035 in (0.9 mm) 300 lb (136 kg) Gem-Pak® Box	3/64 in (1.2 mm) 300 lb (136 kg) Gem-Pak® Box	1/16 in (1.6 mm) 300 lb (136 kg) Gem-Pak® Box
SuperGlaze® 4043	ED036609	ED036610	ED036611
SuperGlaze® 4047	-	ED036613	ED036612
SuperGlaze® 5356	ED034722	ED034550	ED034551
SuperGlaze® 5356	ED034723	ED034724	ED034729
SuperGlaze® 5554	-	ED034725	ED034730
SuperGlaze® 5556	-	-	ED034731
SuperGlaze® HD™ 5183	ED035341	ED035342	ED035343
SuperGlaze® HD™ 5356	ED036335	ED036336	ED036337
SuperGlaze® HD™ 5356	ED036338	ED036339	ED036340
SuperGlaze® HD™ 5556	ED036380	ED036381	ED036382



LINCOLN ELECTRIC GLOBAL



[1] Test results were obtained from a weld produced and tested in a lab 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. [1] Shaving analysis was performed using a push pull gun, comparing Lincoln Electric standard aluminum wire with HD against industry standard aluminum bare wire. [2] Feed Force Reduction analysis compared Lincoln Electric aluminum wire with HD against industry standard aluminum bare wire. [3] Changeover Time analysis was performed at a customer site with multiple automated systems. [4] Contact Tip Usage analysis was performed at a customer site with multiple automated systems.

CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company of Canada® 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.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

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

All trademarks and registered trademarks are the property of their respective owners.