

THE MISSING
ELEMENT IS



Your single source for alloy consumables.



A large aluminum aircraft fuselage is shown under construction in a factory. The structure is made of polished aluminum and is supported by a network of vertical and horizontal metal beams. The background shows the industrial interior of a large building with a corrugated metal roof and various pipes and cables.

ALUMINUM

From the first stages of the manufacturing process to the last, Lincoln Electric is committed to producing the highest quality aluminum welding rod. The casting of our own aluminum rod enables Lincoln Electric to hold extremely tight tolerances in the chemical composition of its alloys. Our smooth surface finish and consistent manufacturing process ensures the most reliable aluminum MIG wire in the market. Our SuperGlaze® portfolio includes a variety of aluminum alloys allowing our customers to find success in every application.

PROCESS	AWS CLASS	PRODUCT NAME	APPLICATION / BASE METAL	
GMAW	ER4043	SuperGlaze 4043	Heat treatable 6XXX grade series	
	ER4047	SuperGlaze 4047	6XXX grade series with high silicon levels for heat exchangers and the automotive industry	
	ER5183	SuperGlaze 5183	5083 & 5456 grade materials	
		SuperGlaze HD 5183	5083 & 5456 grade materials for demanding applications or long feeding systems	
	ER5356	SuperGlaze 5356	5XXX grade series	
		SuperGlaze 5356 TM™	5XXX grade series for trailer manufacturers	
		SuperGlaze HD 5356	5XXX grade series for demanding applications or long feeding systems.	
		SuperGlaze HD 5356 TM	5XXX grade series for demanding applications or long feeding systems in trailer manufacturing	
	ER5554	SuperGlaze 5554	5454 grade materials	
	ER5556	SuperGlaze 5556	High strength 5XXX grade series, 5083 grade	
		SuperGlaze HD 5556	High strength 5XXX grade series for demanding applications or long feeding systems	
	TIG	ER4043	SuperGlaze 4043	Heat treatable 6XXX grade series
		ER5356	SuperGlaze 5356	5XXX grade series



STAINLESS STEEL

Power generation, chemical processing, and off shore industries present demanding environments where quality of stainless steel is critical. Lincoln Electric performs a unique lot controlled process which provides actual chemistry and typical mechanical properties. With this type of attention to detail we produce the highest quality, most dependable, stainless consumables in the industry.

PROCESS	AWS CLASS	PRODUCT NAME	APPLICATION / BASE METAL
SMAW	E308-15 / E308L-15	EXCALIBUR® 308/308L-15	Cr/Ni for 304L
	E308L-16	EXCALIBUR 308L-16	
	E308-16 / E308H-16	EXCALIBUR 308/308H-16	High Heat for 304H
	E308-17 / E308L-17	EXCALIBUR 308/308L-17	Cr/Ni for 304L
	E309-15 / E309L-15	EXCALIBUR 309/309L-15	Dissimilar Welds
	E309-16 / E309L-16	EXCALIBUR 309/309L-16	
	E309-17 / E309L-17	EXCALIBUR 309/309L-17	
	E310-16	EXCALIBUR 310-16	High Heat Service
	E312-16	EXCALIBUR 312-16	Dissimilar Welds
	E316-15 / E316L-15	EXCALIBUR 316/316L-15	Cr/Ni/Mo for 316L
	E316-16 / E316L-16	EXCALIBUR 316/316L-16	
	E316-17 / E316L-17	EXCALIBUR 316/316L-17	
	E320LR-16	EXCALIBUR 320LR-16	High Heat, Welding Alloy 20
	E330-16	EXCALIBUR 330-16	High Heat Service; Welding 330
	E347-16	EXCALIBUR 347-16	Nb stabilized for 347/321
	E385-16	EXCALIBUR 385-16	904L Welding
	E410-16	EXCALIBUR 410-16	Martensitic Stainless
	E410NiMo-16	EXCALIBUR 410NiMo-16	Martensitic Stainless
	E630-16	EXCALIBUR 630-16	PH for 15/5 & 17/4
	E2209-16	EXCALIBUR 2209-16	22Cr Duplex for 2205
	E2594-16	EXCALIBUR 2594-16	25Cr Super Duplex for 2507
	E308L-16	ULTRAMET® 308LCF	Controlled FN for Cryo
	E316L-16	ULTRAMET 316LCF	Controlled FN for Cryo
	Similar to E316LMn-15	ULTRAMET B™ 316NF	Non-magnetic 316L
	E16-8-2-15*	E16.8.2 - 15	304H/316H Welding
	E16-8-2-15*	SUPERMET™ 16.8.2	304H/316H Welding
	N/A	THERMET™ 22H	Welding heat resistant castings
	N/A	THERMET 25.35Nb	Welding HP100b high heat castings
	N/A	THERMET 35.45Nb	Welding heat resistant castings
	N/A	THERMET 800Nb	Welding Alloy 800
BS 25.35.H.Nb.B*	THERMET HP40Nb	Welding heat resistant castings	
N/A	THERMET HP50WCO	Welding heat resistant castings	
GTAW	ER308 / ER308H	LINCOLN® ER308/308H	High Heat
	ER308 / ER308L	LINCOLN ER308/308L	Cr/Ni for 304L
	ER308 / ER308L	LINCOLN ER308/308LCF	Controlled Ferrite for Cryo
	ER309 / ER309L	LINCOLN ER309/309L	Dissimilar Welds
	ER310	LINCOLN ER310	High Heat Service
	ER312	LINCOLN ER312	Dissimilar Welds
	ER316 / ER316L	LINCOLN ER316/316L	Cr/Ni/Mo for 316L
	ER316 / ER316L	LINCOLN ER316/316LCF	Controlled Ferrite for Cryo
	ER317 / ER317L	LINCOLN ER317/317L	Cr/Ni/Mo for 317L
	ER320LR	LINCOLN ER320LR	High Heat, Welding Alloy 20
	ER347	LINCOLN ER347	Nb stabilized for 347 and 321
	ER385	LINCOLN ER385	Welding 904L Stainless
	ER409Nb	LINCOLN ER409Nb	Ferritic Stainless for Exhausts
	ER410	LINCOLN ER410	Martensitic Stainless
	ER410NiMo	LINCOLN ER410NiMo	Martensitic Stainless
	ER630	LINCOLN ER630	PH Stainless for 17-4 and 15-5
	ER2209	LINCOLN ER2209	22 Cr Duplex for 2209
	ER2594	LINCOLN ER2594	25 Cr Super Duplex for 2507
	ER16.8.2	ER16.8.2	High Heat for 304H and 316H
	ORBITAL GTAW	ER308 / ER308L	BLUE MAX® ORBITAL TIG 308/308L
ER309 / ER309L		BLUE MAX ORBITAL TIG 309/309L	Dissimilar Welds
ER316 / ER316L		BLUE MAX ORBITAL TIG 316/316L	Cr/Ni/Mo
GMAW-C	EC409	PRIMALLOY™ T-409Ti	Ferritic Stainless for Automotive Exhausts
	EC439	PRIMALLOY T-439Ti	

*Conforms to BS-EN or EN-ISO Standard

PROCESS	AWS CLASS	PRODUCT NAME	APPLICATION / BASE METAL
GMAW	Similar to ER307	BLUE MAX MIG 307_MOD	Dissimilar Welds
	ER308H	BLUE MAX MIG 308H	High Heat
	ER308L	BLUE MAX MIG 308L	Cr/Ni
	ER308SI / ER308LSI	BLUE MAX MIG 308LSI	
	ER308L	BLUE MAX MIG 308LCF	Controlled Ferrite for Cryo
	ER309L	BLUE MAX MIG 309L	Dissimilar Welds
	ER309SI / ER309LSI	BLUE MAX MIG 309LSI	
	Similar to ER309LMO	BLUE MAX MIG 309LMO_MOD	Dissimilar Welds and buffer layer for overlays
	ER310	BLUE MAX MIG 310	High Heat
	ER312	BLUE MAX MIG 312	Dissimilar Welds
	ER316L	BLUE MAX MIG 316L	Cr/Ni/Mo
	ER316SI / ER316LSI	BLUE MAX MIG 316LSI	
	ER316L	BLUE MAX MIG 316LCF	Controlled Ferrite for Cryo
	ER317L	BLUE MAX MIG 317L	Cr/Ni/Mo
	ER320LR	BLUE MAX MIG 320LR	High Heat, Welding Alloy 20
	ER330	BLUE MAX MIG 330	High Heat Service; Welding 330
	ER347	BLUE MAX MIG 347	Nb stabilized for 321 and 347
	ER385	BLUE MAX MIG 385	Welding 904L Stainless
	ER409NB	BLUE MAX MIG 409NB	Ferritic stainless for Exhausts
	ER410	BLUE MAX MIG 410	Martensitic Stainless
	ER410NiMo	BLUE MAX MIG 410NiMo	Martensitic Stainless
	ER420	BLUE MAX MIG 420	Martensitic Stainless
	ER630	BLUE MAX MIG 630	PH Stainless for 17-4 and 15-5
	ER2209	BLUE MAX MIG 2209	Duplex
	ER2594	BLUE MAX MIG 2594	Super Duplex
FCAW	E308T0-1 / E308T0-4	ULTRACORE® FC 308L	Flat Position; Cr/Ni
	E308LT0-1 / E308LT0-4		
	E308T1-1 / E308T1-4	ULTRACORE FCP 308L	Positional; Cr/Ni
	E308LT1-1 / E308LT1-4		
	E309T0-1 / 309T0-4	ULTRACORE FC 309L	Flat position; Dissimilar Welds
	E309LT0-1 / E309LT0-4		
	E309T1-1 / E309T1-4	ULTRACORE FCP 309L	Positional; Dissimilar Welds
	E309LT1-1 / E309LT1-4		
	E316T0-1 / E316T0-4	ULTRACORE FC 316L	Flat position; Cr/Ni/Mo
	E316LT0-1 / E316LT0-4		
	E316T1-1 / E316T1-4	ULTRACORE FCP 316L	Positional; Cr/Ni/Mo
	E316LT1-1 / E316LT1-4		
	E308LT1-1/4J	SUPERCORE™ 308LCF	All position;
	E316LT1-1/4J	SUPERCORE 316LCF	Controlled Ferrite for Cryo
	E347T0-1/4	SUPERCORE 347	Flat position; Cr/Ni
	E2209T1-1/4	SUPERCORE 2205P	All position; Duplex
	E2594T0-4	SUPERCORE 2507	Flat position; Super Duplex
	E2594T1-4	SUPERCORE 2507P	All position; Super Duplex
	E308HT1-1/4	SUPERCORE 308HP	All position; High Heat
	E317LT1-1/4	SUPERCORE 317LP	All position; Cr/Ni/Mo
E410NiMoT1-1/4	SUPERCORE 410NiMo	All position; Specialty Stainless	
N/A	SUPERCORE 16.8.2P	All position; High Heat, 304H/316H	
E2594T1-4	SUPERCORE Z100XP	All position; Super Duplex	
SAW	ER308 / ER308L	LINCOLNWELD® 308/308L	Cr/Ni
	ER308H	LINCOLNWELD 308/308H	High Heat
	ER308 / ER308L	LINCOLNWELD 308/308LCF	Controlled Ferrite for Cryo
	Similar to ER309LMO	LINCOLNWELD 309LMO_MOD	Dissimilar Welds
	ER310	LINCOLNWELD 310	High Heat
	ER309 / ER309L	LINCOLNWELD 309/309L	Dissimilar Welds
	ER316 / ER316L	LINCOLNWELD 316/316L	Cr/Ni/Mo
	ER316 / ER316L	LINCOLNWELD 316/316LCF	Controlled Ferrite for Cryo
	ER317L	LINCOLNWELD 317/317L	Cr/Ni/Mo
	ER320LR	LINCOLNWELD 320LR	High Heat
	ER347	LINCOLNWELD 347	Nb stabilized for 321 and 347
	ER385	LINCOLNWELD 385	Welding 904L Stainless
	ER410NiMo	LINCOLNWELD 410NiMo	Martensitic Stainless
	ER630	LINCOLNWELD 630	PH Stainless for 17-4 and 15-5
	ER2209	LINCOLNWELD 2209	Duplex
	ER2594	LINCOLNWELD 2594	Super Duplex
	ER16-8-2	ER16.8.2	High Heat; Welding 304H and 316H
	ISO 760 - SA AF 2	LINCOLNWELD P2000™	Flux
	ISO 760 - SA AF 2	LINCOLNWELD P2007™	
	ISO 760 - SA AS 2	LINCOLNWELD ST-100™	



HARDFACING

IRON & COBALT BASED

Whether your application is for build-up, abrasion, impact, or high temperature, we have the hardfacing products you need. Lincoln Electric continues to invest in R&D to provide some of the most innovative products to the market. Our portfolio includes iron, cobalt, and nickel based products to cover a wide range of applications.

BASE	PROCESS	APPLICATION	PRODUCT NAME	AWS CLASS	
IRON	SMAW	Build-Up	WEARSHIELD® BU	N/A	
		Build-Up Rail Road Frogs	WEARSHIELD FROG MANG®		
			WEARSHIELD SUPER RAIL™		
		Metal-to-Metal	WEARSHIELD MI		
		Severe Impact	WEARSHIELD MANGJET®		
		Severe Impact + Joining MN Steels	WEARSHIELD 15CRMN		
		Moderate Impact + Abrasion	WEARSHIELD ABR		
		Abrasion + Impact	WEARSHIELD 44		
		Metal-to-Earth	WEARSHIELD ME		
		Severe Abrasion	WEARSHIELD 60		
			WEARTECH® SHS® 9700E		
	Joining Hard to Weld Materials	BLUE MAX 2100			
	SAW-C	Build-Up	LINCORE® 30-S		
			LINCORE 32-S		
			LINCORE 35-S		
		Build-Up - Roll Rebuilding	LINCORE 20		
			LINCORE 4130		
			LINCORE 8620		
		Metal-to-Metal	LINCORE 40-S		
			LINCORE 42-S		
		Metal-to-Metal - Roll Rebuilding	LINCORE 410		
			LINCORE 410NiMo		
			LINCORE 423L		
			LINCORE 423CR		
			LINCORE 420		
			LINCORE 414N		
			LINCORE 423N		
			LINCORE 96-S		
			LINCORE 102W		
			LINCORE 102HC		
		ALLOY FLUX	Severe Abrasion		LINCORE GATORBACK-S™
			Type 420 stainless deposit with a carbon content near the high side for as-welded hardness		LINCOLNWELD A-96-S
			Good metal-to-metal wear; allows for some machinability		LINCOLNWELD H-535™
	High alloy flux, excellent for severe abrasion		LINCOLNWELD H-560™		
	NEUTRAL FLUX	Use with Lincore® 20, 30-S, 35-S, 40-S, 42-S, 4130, 8620, 410, 410NiMo, 420, 96S	LINCOLNWELD 801®		
		Use with Lincore 102W, 423L, 423Cr & 102HC	LINCOLNWELD 802®		
	GMAW-C	Build-Up	LINCORE® BU-G		
		Metal-to-Metal	LINCORE 55-G		
		Hardbanding Drill Pipe	WEARTECH GUARDIAN™ HB		
		Hardbanding Drill Pipe	WEARTECH GUARDIAN CF		

BASE	PROCESS	APPLICATION	PRODUCT NAME	AWS CLASS	
IRON	FCAW-S	Build-Up	LINCORE BU	N/A	
			LINCORE 33		
		Metal-to-Metal	LINCORE 40-0		
			LINCORE 55		
			LINCORE T & D		
			LINCORE M		
		Impact	LINCORE 15CRMN		
			LINCORE FROG MANG		
		Build-Up Rail Road Frogs	LINCORE SUPER RAIL		
			LINCORE 50		
		Abrasion + Impact	LINCORE 60-0		
			LINCORE ULTRA K		
			LINCORE 65-0		
			LINCORE BCR-0		
			LINCORE BNB-0		
			LINCORE GATORBACK-0		
			LINCORE ULTRA R		
			LINCORE TICORE™		
		Severe Abrasion	WEARTECH SHS® 9800U		
			WEARTECH SHS 9700U		
	WEARTECH SHS 9192U				
	WEARTECH SHS 9500U				
	THSP-ASP (ARC SPRAY WIRE)	Severe Abrasion	WEARTECH SHS 7570W		
			WEARTECH SHS 8000W		
			WEARTECH SHS 9172W		
	PAW (PLASMA ARC POWDER)	Severe Abrasion	WEARTECH SHS 9290P		
			WEARTECH SHS 9700P		
	THSP-HVOF (THERMAL SPRAY POWDER)	Severe Abrasion	WEARTECH SHS 7574HV		
			WEARTECH SHS 8000HV		
			WEARTECH SHS 9172HV		
	COBALT BASED	SMAW	High Heat Abrasion Resistance	WEARTECH WT®-1 SMAW	ECoCr-C
			High Heat Metal-to-Metal	WEARTECH WT-6 SMAW	ECoCr-A
Abrasion & Erosion			WEARTECH WT-12 SMAW	ECoCr-B	
High Heat Abrasion & Impact			WEARTECH WT-21 SMAW	ECoCr-E	
GTAW		High Heat Abrasion Resistance	WEARTECH WT-1 TIG	ERCoCr-C	
		High Heat Metal-to-Metal	WEARTECH WT-6 TIG	ERCoCr-A	
		Abrasion & Erosion	WEARTECH WT-12 TIG	ERCoCr-B	
		High Heat Abrasion & Impact	WEARTECH WT-21 TIG	ERCoCr-E	
GMAW-C		High Heat Abrasion Resistance	WEARTECH WT-1 GMAW-C	ERCCoCr-C	
		High Heat Metal-to-Metal	WEARTECH WT-6 GMAW-C	ERCCoCr-A	
		Abrasion & Erosion	WEARTECH WT-12 GMAW-C	ERCCoCr-B	
		High Heat Abrasion & Impact	WEARTECH WT-21 GMAW-C	ERCCoCr-E	
NICKEL BASED	GTAW	Abrasion & Corrsion	WEARTECH WT-40 TIG	ERNiCr-A	
		Abrasion Metal-to-Metal	WEARTECH WT-50 TIG	ERNiCr-B	
		Abrasion, Pitting & Corrsion	WEARTECH WT-56 TIG	N/A	
		Abrasion, Gallling & Metal-to-Metal	WEARTECH WT-60 TIG	ERNiCr-C	



NICKEL

Our commitment to perfecting the consumable manufacturing process has allowed Lincoln Electric to build the most complete portfolio of nickel welding alloys in the industry. Extensive nickel alloy grades offered in stick, TIG, MIG, sub-arc, and flux-cored forms serves any application or environment.

Pairing our consumables with our advanced equipment and engineered waveforms provides an unparalleled nickel welding experience.

PROCESS	AWS CLASS / BS-EN OR EN-ISO STANDARD	PRODUCT NAME	APPLICATION / BASE METAL
SMAW	ENiFe-CI	TECH-ROD® 55	Cast iron
	ENi-CI	TECH-ROD 99	Machinable deposit on cast iron
	ENiCrMo-3	TECH-ROD 112	Welding 625 and other Ni/Cr alloys
	ENiCrMo-3	TECH-ROD 112LFe	
	ENiCrCoMo-1	TECH-ROD 117	Welding high temperature Ni
	ENiCrMo-10	TECH-ROD 122	Welding C-22
	ENi-1	TECH-ROD 141	Ni Alloys (Alloy 200)
	ENiCrFe-3	TECH-ROD 182	Welding Ni/Cr Alloys; dissimilar Ni welds
	ECuNi	TECH-ROD 187	Cu/Ni Alloys
	ENiCu-7	TECH-ROD 190	Ni/Cu alloys (Alloy 400)
	ENiCrMo-4	TECH-ROD 276	Ni/Cr/Mo; Welding 276
	ENiCrFe-2	TECH-ROD WELD A	Ni/Cr/Fe; Welding dissimilar Metals
GMAW/GTAW/SAW	Similar to ErNiFe-CI	TECHALLOY® 55	Cast iron
	ERNi-CI	TECHALLOY 99	Machinable Deposit on Cast Iron
	ERNi-1	TECHALLOY 208	Ni Alloys (Alloy 200)
	ERNiCrMo-4	TECHALLOY 276	Ni/Cr/Mo; Welding Alloy 276
	ERCuNi	TECHALLOY 413	Cu/Ni Alloys
	ERNiCu-7	TECHALLOY 418	Ni/Cu (Alloy 400)
	ERNiCr-3	TECHALLOY 606	Ni/Cr Alloys; Welding dissimilar Metals
	ERNiCrCoMo-1	TECHALLOY 617	Welding High Temperature Ni
	ERNiCrMo-10	TECHALLOY 622	Welding Alloy 625 and other NiCr Alloys
	ERNiCrMo-3	TECHALLOY 625	
	ERNiFeCr-2	TECHALLOY 718	PH Nickel for Alloy 718
	ERNiFeCr-1	TECHALLOY 825	Ni/Cr/Fe
ERNiCrMo-2	TECHALLOY X	Ni/Cr/Mo	
FCAW	ENiCrMo3T1-4	SUPERCORE 625P	All position; Welding Alloy 625

PREMIUM ALLOY WELDING SOLUTIONS

Lincoln Electric is your single source for alloy welding consumables. We make it easy to access our comprehensive portfolio of standard and specialty alloys to meet all applications.

Industrial projects require a broad range of consumables; whether it is a corrosion resistant weld for a trailer with Aluminum MIG wire, or a wear-resistant cladded surface on a truck bed, it is available through Lincoln Electric.

Aluminum, stainless, nickel and hardfacing welding consumables are offered in any product form - SMAW, GMAW, GTAW, FCAW, and SAW - Whatever it takes to keep projects efficient, simple, and timely.

- **Save Time** - You no longer have to locate special suppliers for small batches.
- **Prepaid Freight** - Lincoln Electric pays for the freight on all alloy product orders in excess of \$250.
- **Efficient Order Process** - Efficient Order Process - Place a single PO for all alloy and non-alloy Lincoln Electric products.
- **In Stock Availability** - We have all alloys in stock so you don't have to stock expensive materials.
- **Advanced Technology Solutions** - Partnering with Lincoln Electric allows you access to the foremost technical alloy experts in the industry.

CUSTOMER ASSISTANCE POLICY

The business of 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.

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.com for any updated information.