CONSUMABLES
SELECTION TOOL

LINCOLN ELECTRIC

STICK ELECTRODES

SELECTION DIAGRAM

- STANDARD CERTIFICATES : AVAILABLE
- ESPECIAL CERTIFICATES : ON REQUEST
- APPROVALS (TÜV, DNV, DB) : CONSULT US

STEEL

Rutile* (6013)

Metal Work
(Ironworks, Maintenance, Sheet Metal Workshop...)

Omnia®46
Pantafix®
Supra®

Basic (7018)**

Boiler Making
(Structural steel, Piping, Transportation...)

Basic 7018
Conarc® 49

REDRYING NEEDED
(except in vacuum packaging : PROTECH or SRP)

STAINLESS STEEL

304/308

Linox 308L
Arosta® 304L
Limarosta® 304L

316

Linox 316L
Arosta®316L
Limarosta® 316L

Limarosta®/Linox : Downhand welding

Arosta®/Linox P : Positional welding

Limarosta®309S/Arosta®309S/Linox 309L
for stainless steel to carbon steel

Limarosta®312 : Steels difficult to weld

HARDFACING

«Impact»

Metal to metal

Wearshield®MM

«Abrasion»

Metal to earth

Wearshield®ME

RepTec® CAST 1 / RepTec® CAST 31
Welding of cast iron

* No mechanical and impact properties required
** Special mechanical and impact properties required (KCV)

SELECTION TABLE

STICK ELECTRODES

STEEL

Rutile Electrodes

		Standards	Painted or rusty materials	Positional welding (pipe)	Easy to weld	Diameters (mm)	Lengths (mm)	Packaging
OMNIA®46	· General purpose, all positions electrode. · Applicable for "clean" structural steel.	E6013	●	●●●	●●●	Ø1.6 Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	250 - 300 350 - 450	Linc Pack / Cardboard
PANTAFIX®	· All position electrode, including vertical down. · Soft arc therefore suitable for relative thin plates and bridging wide gaps.	E6013	●●	●●	●●	Ø2.5 Ø3.2 Ø4.0 Ø5.0	300 - 350	Cardboard
SUPRA®	· All position electrode with excellent vertical down welding properties · Excellent on painted or rust covered steel, recommended for bridging wide gaps	E6013	●●●	●●●	●●	Ø2.5 Ø3.2 Ø4.0 Ø5.0	350	Cardboard

Basic Electrodes

		Standards	Mechanical properties KCV	Redrying	Easy to weld	Diameters (mm)	Lengths (mm)	Packaging
BASO® G	· Extremely low hydrogen electrode, 115 - 120% recovery. · Good pipe welding, Good impact values down to -50°C.	E7018 H4	●●●	2 to 6 hours @ 250-375°C (except vacuum packs)	●●	Ø2.5 Ø3.2 Ø4.0 Ø5.0	350 - 450	Cardboard / Protech™
CONARC®49	· Very low hydrogen electrode. · Very good weldability in all positions, almost no spatter nice wetting and full weld pool control, good impact values down to -30°C.	E7018 H4	●●		●●●	Ø2.5 Ø3.2 Ø4.0 Ø5.0	350 - 450	Cardboard / Protech™

STAINLESS STEEL

		Standards	Painted or rusty materials	Positional welding (pipe)	Easy to weld	Diameters (mm)	Lengths (mm)	Packaging
LINOX 308L	· **All position stainless steel electrode for 304L or equivalent steels.** · Excellent corrosion resistance in oxidizing environments such as nitric acid · High resistance to intergranular corrosion. · Smooth bead appearance, easy slag release.	E308L-17	●●●	●	●●●	Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	300 - 350 450	Cardboard / Protech™
AROSTA®304L	· All position stainless steel electrode for 304L or equivalent steels. · Excellent corrosion resistance in oxidizing environments such as nitric acid · High resistance to intergranular corrosion. · Smooth bead appearance, easy slag release.	E308L-16	●	●●●	●●	Ø1.5 Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	250 - 300 450	Cardboard + PE foil Linc Can / SRP
LIMAROSTA®304L		E308L-17	●●●	●	●●●	Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	300 - 350 450	Cardboard + PE foil Linc Can / SRP
LINOX 316L	· **All position stainless steel electrode for 316L or equivalent steels.** · Smooth weld appearance, minimum spatter and high resistance to porosity. · Good side wall wetting, no undercut, easy slag release.	E316L-17	●●●	●	●●●	Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	300 - 350 450	Cardboard / Protech™
AROSTA®316L	· **All position stainless steel electrode for 316L or equivalent steels.** · Molybdenum level min. 2.7%. · Smooth bead appearance, easy slag release.	E316L-16	●	●●●	●●	Ø1.5 Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	250 - 300 350	Cardboard + PE foil Linc Can / SRP
LIMAROSTA®316L		E316L-17	●●●	●	●●●	Ø1.5 Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	250 - 300 350 - 450	Linc Pack / Cardboard + PE foil Linc Can
LINOX 309L	· **A rutile all position CrNi over-alloyed buffer electrode.** · Smooth weld appearance, minimum spatter and high resistance to porosity. · Good side wall wetting, no undercut, easy slag release.	E309L-17	●●●	●	●●●	Ø2.5 Ø3.2 Ø4.0	350 - 400	Cardboard / Protech™
AROSTA®309S	· **A rutile-basic high CrNi alloyed buffer electrode.** · For welding stainless steel to mild steel and root runs in clad steel. · Applicable for root passes in N alloyed AISI 304LN steels.	E309L-16	●	●●●	●●	Ø2.5 Ø3.2 Ø4.0 Ø5.0	350	Cardboard + PE foil SRP
LIMAROSTA®309S		E309L-17	●●●	●	●●	Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	300 - 350 450	Cardboard + PE foil Linc Can / SRP
LIMAROSTA®312	· Especially developed for steels difficult to weld, such as armour plates, austenitic Mn-steels and high C-steels. · Excellent for repair welding.	E312-17	●●●	●	●●	Ø2.0 Ø2.5 Ø3.2 Ø4.0 Ø5.0	300 - 350	Linc Pack / Cardboard + PE foil SRP

HARDFACING

		Standards	Types	Examples	Easy to weld	Diameters (mm)	Lengths (mm)	Packaging
WEARSHIELD®MM	· **Produces a crack-free wear resistant deposit with a hardness of 55-57HRc .** · Designed for rolling, sliding and metal to metal wear resistance.	E2-UM-55-G*	Metal on Metal	Crane and mine car wheels, Sprockets and gear teeth, Skip guides, Dredger buckets	●●	Ø3.2 Ø4.0 Ø5.0 Ø6.0	350 - 450	Linc Pack / PE Tube
WEARSHIELD®ME	· **Designed for metal to earth application to provide abrasion resistance.** · To be used on carbon and low alloy, austenitic manganese and austenitic stainless steels.	E10-UM-60-GRZ	Metal on Earth	Ingot tongs, Scrapper blades, Rolling mill guides, Screw flights, Coal mining chutes	●●	Ø3.2 Ø4.0 Ø5.0	450	PE Tube
REPTEC CAST 1	· Ni-electrode for repair welding of lamellar cast iron, malleable cast iron and cast iron to steel. Produces a soft malleable weld deposit.	ENi-CI	Cast iron		●●	Ø2.5 Ø3.2 Ø4.0	300 - 350 400	Linc Pack / PE Tube
REPTEC CAST 31	· For repair welding of cast iron, malleable cast iron and cast iron to steel. · Excellent current carrying capacity due to bi-metal core wire.	ENiFe-CI	Cast iron		●●●	Ø2.5 Ø3.2 Ø4.0	300 - 350 400	Linc Pack / PE Tube

● Good
●● Very good
●●● Excellent

MIG & FLUX-CORED WIRES

SELECTION DIAGRAM

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SOLID WIRES

STEEL

- 4Si1 (SG3)
  - **Ultramag® SG3** — Standard quality
  - **Supramig Ultra®** — Superior quality
  - **Supramig Ultra® HD** — High deposition rate
- 3Si1 (SG2)
  - **Ultramag®** — Standard quality
  - **Supramig®** — Superior quality
  - **Supramig® HD** — High deposition rate

LOW ALLOY STEEL

- ER80S-G — **LNM 28**
- ER100S-G — **LNM MoNi**
- ER100S-G — **LNM MoNiVa**
- ER120S-G — **LNM MoNiCr**

STAINLESS STEEL

- 304/308 — **LNM 304LSi**
- 316 — **LNM 316LSi**

Dissimilar metals (mild steel on stainless steel)

LNM 309LSi

ALUMINIUM

- AlSi 5 (4043) — **Superglaze® MIG 4043**
- AlMg 5 (5356) — **Superglaze® MIG 5356**

HARDFACING

- STEELS
  - Hardness 600HRC — **LNM 420FM**
  - Buffer layer — **LNM 307**

FLUX-CORED WIRES

- **Outershield® MC710-H** — Gas-shielded metal cored wire
- **Outershield® 71E-H** — Gas-shielded all position rutile cored wire
- **Outershield 71M-H** — Gas-shielded all position cored wire
- **Innershield® NR® 211MP** — Self-shielded all position cored wire

- **Cor-A-Rosta® 304L**
- **Cor-A-Rosta® 316L**
- **Cor-A-Rosta® P304L/P316L** — Positional welding

- **LINCORE® 55** — gas-shielded
- **LINCORE® 60** — self-shielded

SELECTION TABLE MIG & FLUX-CORED WIRES

				Standards	Diameters (mm)	Packaging
STEEL	MAG WIRES	ULTRAMAG®	· For semi-automatic and automatic welding applications. · High productivity, good feedability, consistent welding performance, stable arc, and low spatter).	ER70S-6/3Si1	Ø0.6 Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil S200 / S300 / B300 AccuTrak drum
		SUPRAMIG®	· For welding of structural steels (Tensile strength up to 590 N/mm²). · Excellent feedability and very consistent welding performance. · Tight and stable arc with extremely low spatter – better bead profile and appearance. · Ultimate GMAW wire for robotics and hard automation.	ER70S-6/3Si1	Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil S300 / B300 AccuTrak drum
		SUPRAMIG® HD	· For welding of structural steels. · Excellent feedability and very consistent welding performance. · Tight and stable arc with extremely low spatter. Self releasing silicate islands. · Deep root penetration and improved fatigue life.	ER70S-6/3Si1	Ø1.0 Ø1.2 Ø1.6	Coil S300 / B300 AccuTrak drum
		ULTRAMAG® SG3	· Good feedability, consistent welding performance. · Very good weldability, stable arc, and low spatter · High productivity.	ER70S-3/4Si1	Ø0.6 Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil S200 / S300 / B300 AccuTrak drum
		SUPRAMIG ULTRA®	· For semi-automatic welding and robotic applications. · Excellent feedability and very consistent welding performance. · Tight and stable arc with extremely low spatter.	ER70S-3/4Si1	Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil S300 / B300 AccuTrak drum
		SUPRAMIG ULTRA® HD	· For semi-automatic welding and robotic applications. · Excellent feedability and very consistent welding performance. · Good weld bead aspect. · Tight and stable arc with extremely low spatter.	ER70S-3/4Si1	Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil S300 / B300 AccuTrak drum
	FLUX-CORED WIRES	OUTERSHIELD® MC710-H	· All position high efficiency gas shielded metal cored wire. · Superior on scaled plate, good resistance to porosity. · Very few silicates, virtually no spatter, fast travel speed, excellent wire feeding.	E70C-6M H4	Ø1.2 Ø1.4 Ø1.6	Coil S200 / B300 AccuTrak drum
		OUTERSHIELD® 71M-H	· Excellent operator appeal due to superior welding characteristics and premium slag system. · Specially developed for welding with 100% CO_2 and optimised for Ar/CO_2 mix gas; smooth arc with low spatter.	E71T-1/9C-H4 / E71T-1/9M-H4	Ø1.2 Ø1.4 Ø1.6	Coil S200 / B300 AccuTrak drum
		OUTERSHIELD® 71E-H	· All position gas shielded flux cored wire for high quality welding. · Full out-of-position capability with higher deposition rate (up to 3.2 kg/h). · Exceptional mechanical properties (CVN > 47J at -30°C with M21 shielding gas	E71T-1M-JH5	Ø1.2	Coil S200 / S300 / B300 AccuTrak drum
		INNERSHIELD® NR®211MP	· General purpose welding. · Recommended for sheets from 2.5 to 12mm. · With electrode diameter 0.9mm: excellent for sheets from 1.2mm. Welding galvanized steel.	E71T-11	Ø0.9 Ø1.1 Ø1.7 Ø2.0	Coil S200 / S300

				Standards	Diameters (mm)	Packaging
ALLOY STEEL	MAG WIRES	LNM 28	· Welding of weather resisting steels; Contains a small % of copper to help preventing further oxidation of the weld bead.	G Z MN3NiCu	Ø1.0 Ø1.2	Coil B300
		LNM MoNi	· Welding of high strength steels with a yield up to 620 Mpa. Good impact values at -40°C	G 62 4 M Mn3NiCrMo	Ø0.8 Ø1.0 Ø1.2	Coil B300 AccuTrak drum
		LNM MoNiVa		G 69 4 M Mn3Ni1CrMo	Ø0.8 Ø1.0 Ø1.2 Ø1.4	Coil B300 AccuTrak drum
		LNM MoNiCr	· Welding of high strength steels with yield strength up to 890MP. Can be used as well as for welding grade S960.	G 89 4 M Mn4Ni2CrMo	Ø1.0 Ø1.2	Coil B300
STAINLESS STEEL	MIG WIRES	LNM 304LSI	· Extra low carbon for welding austenitic CrNi-steels. With increased silicon for improved wettability.	ER308LSi	Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil BS300 AccuTrak drum
		LNM 316LSI	· Extra low carbon for welding austenitic CrNiMo-steels. With increased silicon for improved wettability.	ER316LSi	Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil BS300 / AccuTrak drum
		LNM 309LSI	· Solid wire for welding stainless steel to carbon steel.	ER309LSi	Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil BS300 / AccuTrak drum
	FLUX-CORED WIRES	COR A ROSTA® 304L	· Gas shielded flux cored wire for downhand welding (304L or equivalents).	E308LT0-1/-4	Ø1.2 Ø1.6	Coil S200 / BS300
		COR A ROSTA® 316L	· Gas shielded flux cored wire for downhand welding (316L or equivalents).	E316LT0-1/-4	Ø1.2 Ø1.6	Coil BS300
ALUMINIUM	MIG WIRES	SUPERGLAZE® MIG 4043	· **Designed for welding heat treatable base alloys and more specifically 6xxx Series Alloys** · Suitable for sustained elevated temperature service. i.e. above 65°C.	ER4043	Ø1.0 Ø1.2 Ø1.6	Coil BS300 / S300 / GemPak
		SUPERGLAZE® MIG 5356	· **General purpose filler alloy for welding 5XXX series alloys when 276 MPa tensile strength is not required.** · Excellent colour match after anodizing.	ER5356	Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil BS300 / S300 / GemPak
HARDFACING	MIG WIRES	LNM 420FM	· For wear resistant overlays. · High resistance against corrosion, abrasion and impact deformation. · Hardness approximately 55-60HR, optimal weldability.	S Fe8	Ø1.0 Ø1.2 Ø1.6	Coil B300
		LNM 307	· **Welding steel with difficult weldability.** · Often used as a buffer layer in hardfacing applications.	ER307*	Ø0.8 Ø1.0 Ø1.2 Ø1.6	Coil BS300 / AccuTrak drum
	FLUX-CORED WIRES	LINCORE® 55	· Produces a deposit which resists metal-to-metal wear and mild abrasion. Used on carbon steel and low alloy steel.	T Fe2	Ø1.1 Ø1.6 Ø2.0	Coil S300
		LINCORE® 60-0	· Deposits feature higher alloy levels than to resist both abrasion and moderate impact. · Can be used at temperatures up to 700°C. · To be used on carbon, low alloy, manganese and stainless steels and cast iron.	T Fe15	Ø1.6 Ø2.0	Coil S300

TIG RODS

SELECTION DIAGRAM

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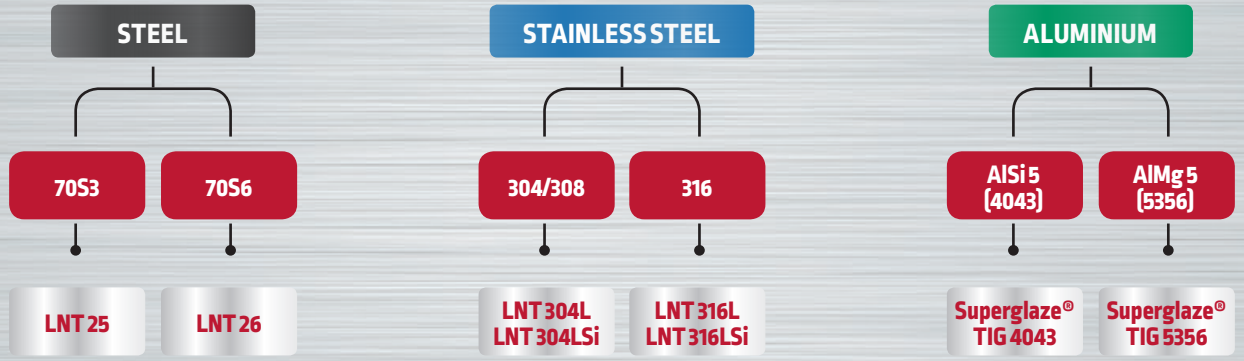

TIG RODS

SELECTION TABLE

			Standards	Diameters (mm)	Packaging
STEEL					
TIG rods	**LNT 25**	· General construction in mild steel. · High impact values.	W 42 5 W2Si	Ø1.6 Ø2.0 Ø2.4 Ø3.0	PE tube
	LNT 26	· General construction in mild steel. · Smooth bead appearance.	W 42 5 W3Si1	Ø1.6 Ø2.0 Ø2.4 Ø3.2	PE tube
STAINLESS STEEL					
TIG rods	**LNT 304LSI**	· Extra low carbon for welding austenitic CrNi-steels. · With increased silicon for improved wettability.	ER308LSi	Ø1.2 Ø1.6 Ø2.0 Ø2.4 Ø3.2	PE tube
	LNT 316LSI	· Extra low carbon for welding austenitic CrNiMo-steels. · With increased silicon for improved wettability.	ER316LSi	Ø1.2 Ø1.6 Ø2.0 Ø2.4 Ø3.2	PE tube
ALUMINIUM					
TIG rods	**SUPERGLAZE® TIG 4043**	· For welding heat treatable base alloys and more specifically 6xxx Series alloys. · Suitable for sustained elevated temperature service. i.e. above 65°C.	R4043	Ø1.6 Ø2.0 Ø2.4 Ø3.2 Ø4.0	Cardboard
	SUPERGLAZE® TIG 5356	· General purpose filler alloy for welding 5XXX series alloys when 276 MPa tensile strength is not required. · Excellent colour match after anodizing.	R5356	Ø1.6 Ø2.0 Ø2.4 Ø3.2	Cardboard

PACKAGING SOLUTIONS

STICK ELECTRODES

LINC PACK :
1kg pack

CARDBOARD :
The cost effective solution

PE TUBE

LINC CAN™ :
High quality packaging

PROTECH™ :
Vacuum packaging

SAHARA READYPACK®
The best vacuum pack

MIG & FLUX-CORED WIRES

ACCUTRAK DRUM®

S 200 S 300

BS 300

B 300

GEM-PAK™

PE TUBE

CARDBOARD

TIG RODS

ROD OVEN HYDROGUARD™

Protect your stick electrodes from moisture pick up and prevent weld cracking and porosity

BEING PRESENT LOCALLY
MAKES US MORE AWARE GLOBALLY

2.6 BILLION USD REVENUE

160 ACTIVE IN 160 COUNTRIES WORLDWIDE

11 000 EMPLOYEES WORLDWIDE

120 YEARS OF EXPERIENCE

CUSTOMER ASSISTANCE POLICY

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