KJELLBERG

MMA ELECTRODES

German-made stick electrodes for fabrication, repair and surfacing.

MADE IN GERMANY · EU MANUFACTURE



FEATURED

OSCAR KJELLBERG — The coated electrode 02

MADE IN GERMANY — Manufacturing & QA 03

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CHOOSE BY APPLICATION

RANGE	APPLICATION	PAGE
Carbon & structural steel	Mild steel, thin sheet, positional work and basic grades.	06–09
Weathering & creep resistance	Weathering steels, molybdenum steels and CrMo alloys.	10–11
Stainless & heat-resistant alloys	304L, 316L, duplex, chromium and heat-resistant steels.	12–15
Dissimilar joints & nickel alloys	Stainless to carbon steel, repair and nickel alloy joining.	16–18
Cast iron repair	Grey, nodular and malleable cast iron.	19
Hardfacing & surfacing	Tool rebuild, abrasion, impact, rails, and Ni/Co overlays.	20–24
Cutting & gouging	Dry-work electrodes for cutting and gouging.	25
Ordering and technical references	How to specify the grade, size, pack and approval.	26

Each grade has its own ordering table and manufacturer datasheet. An asterisk marks a made-to-order size.

Kjellberg electrode catalogue **Shop R H Davey listings**

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THE INVENTOR

OSCAR KJELLBERG

The Swedish engineer whose work on ship repairs led to the coated welding electrode.

1904 — **GOTHENBURG**

Kjellberg and his partners establish ESAB. His early electrode work grew out of practical problems repairing steam machinery.

1908 — **THE GERMAN PATENT**

Kjellberg receives German patent No. 231733 for an electrode and electric joining process.

1922 — **FINSTERWALDE**

A new works is established to make welding generators for Kjellberg electrodes.

1923 — **ELECTRODE PRODUCTION**

Production begins in Finsterwalde. One of its earliest products, the OK G2/1, is a repair electrode.



Oscar Kjellberg · 1870–1931

Gothenburg Maritime Museum · Photo: Raphael Saulus

WHY THE COATING MATTERS

The coating helps control the arc and shields the molten weld pool. Changing the coating changes how the electrode behaves, including arc stability, slag behaviour and the positions it can weld.

Kjellberg company history

Swedish National Museum of Science and Technology

Some electrodes are just ‘OK’.
Ours Are Oscar Kjellberg.

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GERMAN MANUFACTURE

MADE IN GERMANY

Kjellberg's electrode production combines coating design, factory checks and grade-specific technical data. That gives welders and buyers a clear basis for choosing a rod for the job.



RAW MATERIALS

Kjellberg starts its quality checks with the materials used to make the rod and coating.

FACTORY CONTROL

Checks continue during manufacture. Kjellberg states that TÜV monitors and certifies its factory production control.

PRODUCT RELEASE

The manufacturer checks finished products before release and operates an ISO 9001 quality management system.

WHAT THAT MEANS IN THE WORKSHOP

PRIMA BLUE E6013

Easy starting and re-striking suit tack work and short runs. The slag is designed to lift readily during clean-up.

Technical datasheet

GARANT K E7018-1

The low-moisture-absorption coating suits work where the procedure specifies hydrogen control and low-temperature toughness.

Technical datasheet

Kjellberg electrode manufacturing and quality assurance

ISO 9001 quality management

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DOUBLE-COATED E7016

DUOWELD

A concentrated arc for root runs and joints with awkward access.



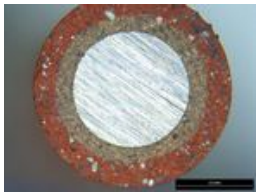
ARC CONTROL IN TIGHT JOINTS

The double coating produces a focused arc. Specify it for suitable root runs and assembly or repair welds on unalloyed and low-alloy steels.

CLEAN-UP BETWEEN PASSES

The smooth bead and easy slag removal are useful on multi-pass joints where the welder has limited access.





TWO COATINGS

Rutile and basic coating materials surround the steel core.

DUOWELD E7016 ORDERING DATA

AWS A5.1 E7016 · ISO 2560-A E 42 2 B 12 H10 · AC or DC+
Kjellberg datasheet values for weld metal: yield strength >430 MPa and tensile strength >490 MPa.

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.134.253*	2.5 × 350	70–100	4.3
00.134.323*	3.25 × 350	90–130	4.3
00.134.404*	4 × 450	110–160	5.6
00.134.504*	5 × 450	150–200	5.6

* Kjellberg makes all listed DUOWELD sizes to order. Confirm lead time for the size required.

DUOWELD technical datasheet **DUOWELD product literature**

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MARINE & HYDRAULIC STEELWORK

UNDERWATER

WELDING & CUTTING

Separate electrodes for wet welding and underwater metal cutting.



WELD UNDERWATER

AQUAWELD suits qualified wet repairs on mild steel in harbours, offshore structures and hydraulic steelwork.

CUT UNDERWATER

KJELCUT AQUA has a water-repellent coating for cutting submerged steelwork and other compatible metals.

AQUAWELD · Wet welding

DIN 2302

Rutile-basic electrode for qualified wet welding of suitable mild steels.

DC− · PA PB PE PG

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.995.323	3.25 × 350	140–190	4.3

Technical datasheet

KJELCUT-AQUA · Underwater cutting

Special-purpose electrode

Electrode for qualified underwater arc cutting of compatible metals.

DC−

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.994.323	3.25 × 450	170–220	1.6

Technical datasheet

SPECIFY THE PROCEDURE AND WORKING DEPTH

For AQUAWELD, Kjellberg's technical sheet records GSI approval to DVS 1801 at depths up to 10 m. Confirm the current certificate and the limits of the qualified welding procedure for the actual job.

For enquiries, include the operation, parent material, working depth, procedure and approval requirements.

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CARBON & STRUCTURAL STEEL

General Fabrication

Compare rutile and rutile-cellulosic grades for everyday steel fabrication. Check the rod size, supply and permitted welding positions.

PRIMA E6013

ISO 2560-A E 38 0 RC 11 · AWS A5.1 E6013

General fabrication and repairs on mild steel, including positional work.

AC / DC− · PA PB PC PE PF PG

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.905.202*	2 × 250	50–80	1.6
00.905.253	2.5 × 350	80–110	4.8
00.905.323	3.25 × 350	110–140	5.0
00.905.403	4 × 350	130–170	5.0
00.905.404*	4 × 450	130–170	6.5
00.905.504*	5 × 450	170–210	6.5

Technical datasheet

PRIMA BLUE E6013

ISO 2560-A E 42 0 RC 11 · AWS A5.1 E6013

All-position mild steel fabrication. Useful for fit-up gaps and stop-start work.

AC / DC− · PA PB PC PE PF PG

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.915.162	1.6 × 250	40–60	1.5
00.915.202	2 × 250	50–80	1.6
00.915.253	2.5 × 350	70–100	4.8
00.915.323	3.25 × 350	110–140	4.8
00.915.403	4 × 350	130–170	4.8

Technical datasheet

TITAN ROT E6013

ISO 2560-A E 35 0 RR 12 · AWS A5.1 E6013

Heavy-rutile E6013 for general-purpose welding of mild steel.

AC / DC− · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.240.253*	2.5 × 350	80–100	4.8
00.240.323*	3.25 × 350	100–130	4.8

Technical datasheet

TITAN S E6013

ISO 2560-A E 42 0 RR 12 · AWS A5.1 E6013

General fabrication and repair where the joint calls for greater deposit strength and toughness.

AC / DC− · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.231.202	2 × 250	60–80	1.7
00.231.253	2.5 × 350	80–100	4.6
00.231.323	3.25 × 350	100–130	4.6
00.231.324	3.25 × 450	100–130	6.0
00.231.403	4 × 350	120–160	4.6
00.231.404	4 × 450	120–160	6.0
00.231.504	5 × 450	160–200	6.0

Technical datasheet

TITAN E6013

ISO 2560-A E 38 2 RB 12 · AWS A5.1 E6013

Rutile-basic E6013 for general joining on unalloyed steel.

AC / DC− · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.200.253	2.5 × 350	80–110	4.8
00.200.323	3.25 × 350	110–140	4.8

Technical datasheet

TITAN K E6013

ISO 2560-A E 42 2 Z RB 12 · AWS A5.1 E6013

Rutile-basic grade for unalloyed steel joints requiring higher strength and toughness.

AC / DC− / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.210.253	2.5 × 350	80–110	5.0
00.210.323	3.25 × 350	110–140	5.0

Technical datasheet

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CARBON & STRUCTURAL STEEL

THIN SHEET

For thin sheet, tube and profiles, choose an electrode that strikes and runs at low current.

OPTIMAL E6013

ISO 2560-A E 42 0 RB 12 · AWS A5.1 E6013

Thin sheet and light fabrication where good control at lower current matters.

AC / DC− / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.400.202	2 × 350	60–80	1.6
00.400.253	2.5 × 350	80–100	4.6
00.400.323	3.25 × 350	110–140	4.6
00.400.403	4 × 350	130–170	4.6

Technical datasheet

LOW-CURRENT STARTING

For lighter work, the 2.0mm OPTIMAL has a published current range of 60–80 A.

PRODUCTION WELDING

Choose KONTAKT 160 for high deposition. Choose TRUMPF for fast travel and cover passes. Both are specified for flat or horizontal welding positions.

KONTAKT 160 E7024

ISO 2560-A E 42 0 Z RR 53 · AWS A5.1 E7024

E7024 with 160% recovery for flat runs and horizontal fillets on mild steel.

AC / DC− · PA PB

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.820.324	3.25 × 450	110–150	6.0
00.820.404	4 × 450	140–190	5.6
00.820.504	5 × 450	180–230	6.0

Technical datasheet

TRUMPF E6027

ISO 2560-A E 35 0 A 13 · AWS A5.1 E6027

Acid-coated E6027 for fast flat and horizontal runs, especially cover passes.

AC / DC− · PA PB

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.970.324*	3.25 × 450	110–140	6.0
00.970.404*	4 × 450	130–170	6.0
00.970.504*	5 × 450	170–210	6.0

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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CARBON & STRUCTURAL STEEL

Basic & Double-Coated Electrodes

For structural joints, match the specified strength, impact class, hydrogen designation and welding position. Compare the exact coating and power-source requirements.

GARANT E7018

ISO 2560-A E 42 2 B 42 H10 · AWS A5.1 E7018

Basic E7018 for structural work in unalloyed and low-alloyed steels.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.100.202	2 × 250	70–90	1.6
00.100.253	2.5 × 350	80–110	4.6
00.100.323	3.25 × 350	110–140	4.5
00.100.324	3.25 × 450	110–140	6.0
00.100.403	4 × 350	140–180	5.0
00.100.404	4 × 450	140–180	6.0
00.100.504	5 × 450	170–220	6.0
00.100.604	6 × 450	210–260	6.0

Technical datasheet

GARANT S E7018-1

ISO 2560-A E 46 4 B 42 H5 · AWS A5.1 E7018-1

Basic E7018-1 for fine-grained steels and low-temperature toughness requirements.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.110.253*	2.5 × 350	90–120	4.6
00.110.323*	3.25 × 350	120–160	4.8
00.110.404*	4 × 450	150–190	6.0

Technical datasheet

GARANT K E7018-1

ISO 2560-A E 46 4 Z B 42 H5 · AWS A5.1 E7018-1

Low-moisture-absorption E7018-1 for fine-grained steels and demanding joints. CTOD tested.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.140.253	2.5 × 350	90–110	4.6
00.140.323	3.25 × 350	110–150	4.5
00.140.324	3.25 × 450	110–150	6.0
00.140.403	4 × 350	140–180	4.8
00.140.404	4 × 450	140–180	6.0
00.140.504	5 × 450	180–220	6.0
00.140.604	6 × 450	210–270	6.0

Technical datasheet

GARANT X E7018-1

ISO 2560-A E 46 3 B 22 H5 · AWS A5.1 E7018-1

Double-coated E7018-1 for fabrication where AC compatibility is useful.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.150.253*	2.5 × 350	80–100	4.3
00.150.323*	3.25 × 350	100–130	4.5
00.150.404*	4 × 450	120–160	5.6

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

GARANT K E7018-1 IN 1 KG VACUUM PACKS

R H Davey also offers GARANT K in 1 kg vacuum packs. Choose the size on the product page.

GARANT K vacuum packs

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CARBON & STRUCTURAL STEEL

E7016 for Assembly & Repair

Compare the two GARANT E7016 grades by coating, impact classification and procedure. See the DUOWELD feature for the double-coated option.

GARANT BR E7016

ISO 2560-A E 42 2 B 12 H10 · AWS A5.1 E7016

E7016 for assembly and repair on unalloyed and low-alloyed steels.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.131.253	2.5 × 350	70–100	4.3
00.131.323	3.25 × 350	90–130	4.3
00.131.404	4 × 450	110–160	5.6

Technical datasheet

GARANT AC/DC E7016

ISO 2560-A E 42 3 B 12 H10 · AWS A5.1 E7016

Basic E7016 for joining unalloyed and low-alloyed steels on AC or DC+.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.130.253	2.5 × 350	80–100	4.3
00.130.323	3.25 × 350	100–130	4.3
00.130.404	4 × 450	120–160	5.3
00.130.504	5 × 450	160–200	5.3

Technical datasheet

DUOWELD DOUBLE-COATED E7016

For the DUOWELD coating, application guidance and order codes, see the feature on page 4.

Choose the double-coated E7016 for control

DUOWELD combines a double coating with a basic E7016 deposit. Check the grade and positions against the procedure when selecting it for a demanding joint.

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WEATHERING & CREEP RESISTANCE

Weathering & Molybdenum Steels

Match the deposit to the parent grade. Weathering steel and pressure equipment call for different filler properties.

KORREX E8018-W

ISO 2560-A E 42 2 Z 1NiCu B 42 · AWS A5.5 E8018-W

For weathering steel structures where the deposit must weather with the parent steel.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.960.253	2.5 × 350	80–110	4.8
00.960.323	3.25 × 350	110–140	5.0

Technical datasheet

KOMPLEX W E7013-G

ISO 3580-A E Mo R 12 · AWS A5.5 E7013-G

Rutile Mo-bearing electrode for molybdenum steel joints such as 16Mo3.

AC / DC− · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.550.253†	2.5 × 350	90–110	4.8
00.550.323†	3.25 × 350	110–150	5.0
00.550.404†	4 × 450	160–190	6.0

Technical datasheet

IMPULS E7018-A1

ISO 3580-A E Mo Z B 42 · ISO 2560-A E 50 4 1NiMo B 42 · AWS A5.5 E7018-A1

Ni-Mo-bearing basic electrode for fine-grained and pressure equipment steels.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.550.253*†	2.5 × 350	90–110	4.6
00.550.323*†	3.25 × 350	110–150	5.0
00.550.404*†	4 × 450	140–180	6.0
00.550.504*	5 × 450	180–220	6.0

Technical datasheet

MOB E7018-A1

ISO 3580-A E Mo B 42 · AWS A5.5 E7018-A1

Basic Mo-bearing electrode for steels such as 16Mo3 in pressure equipment.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.470.253	2.5 × 350	70–100	4.3
00.470.323	3.25 × 350	110–150	4.8
00.470.403	4 × 350	140–180	4.7

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

† Kjellberg publishes these codes for both KOMPLEX W and IMPULS. Quote the grade and size and confirm the code when ordering.

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WEATHERING & CREEP RESISTANCE

Chromium-Molybdenum Steels

For pressure or elevated-temperature work, match the CrMo grade and heat treatment to the welding procedure.

CROMO 1R E8013-G

ISO 3580-A E CrMo 1 R 12 · AWS A5.5 E8013-G

Rutile 1Cr-Mo electrode for heat-resistant steels in boiler and pipe work.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.489.253	2.5 × 350	90–110	4.8
00.489.323	3.25 × 350	110–150	4.8

Technical datasheet

CROMO 1B E8018-B2

ISO 3580-A E CrMo 1 B 42 · AWS A5.5 E8018-B2

Basic 1Cr-Mo electrode for matching boiler and pressure-pipe steels.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.490.253	2.5 × 350	90–110	4.3
00.490.323	3.25 × 350	110–150	4.8
00.490.403*	4 × 350	140–180	4.8

Technical datasheet

CROMO 2B E9018-B3

ISO 3580-A E CrMo 2 B 42 · AWS A5.5 E9018-B3

Basic 2Cr-Mo electrode for matching creep-resistant steels.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.491.253	2.5 × 350	80–110	4.3
00.491.323	3.25 × 350	110–150	4.8
00.491.403*	4 × 350	140–180	4.8

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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STAINLESS & HEAT-RESISTANT ALLOYS

Heat-Resistant Steels

Match the steel and service temperature. Compare the rutile and basic variants where the coating is specified.

FINOX 4829 AC E309-17

ISO 3581-A E 22 12 R 32 · AWS A5.4 E309-17

For joining and overlaying heat-resistant Cr-Ni-Si steel, including 1.4829.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.717.250	2.5 × 300	70–100	4.0
00.717.323	3.25 × 350	100–140	5.0
00.717.403*	4 × 350	130–170	5.0

Technical datasheet

FINOX 4820 AC · 25Cr–4Ni

ISO 3581-A E 25 4 R 52

For welding and surfacing matching heat-resistant 25Cr–4Ni steel.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.711.253*	2.5 × 350	80–110	5.0
00.711.323*	3.25 × 350	110–140	5.0
00.711.403*	4 × 350	130–170	5.0

Technical datasheet

FINOX 4842 AC ≈ E310-16

ISO 3581-A E 25 20 R 12 · AWS A5.4 ≈ E310-16

Rutile 25Cr–20Ni grade for heat-resistant stainless fabrication.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.712.250	2.5 × 300	80–100	4.0
00.712.323	3.25 × 350	110–140	5.0
00.712.403	4 × 350	130–170	5.0

Technical datasheet

FINOX 4842 B E310-15

ISO 3581-A E 25 20 B 22 · AWS A5.4 E310-15

Basic E310-15 for matching heat-resistant Cr–Ni steels.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.713.250*	2.5 × 300	80–100	4.0
00.713.323*	3.25 × 350	100–130	5.0
00.713.403*	4 × 350	120–160	5.0

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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STAINLESS & HEAT-RESISTANT ALLOYS

Ferritic & Martensitic Stainless

Match the chromium steel or overlay requirement. Check the specified heat treatment and dilution.

FINOX 4009 AC E410-26

ISO 3581-A E 13 R 52 · EN 14700 E Fe 7 · AWS A5.4 E410-26

13Cr grade for matching steels and chromium-steel overlays.

AC / DC+ · PA PB PC

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.709.323	3.25 × 350	90–160	5.0
00.709.403	4 × 350	120–220	5.0

Technical datasheet

FINOX 4351 B E410NiMo-15

ISO 3581-A E 13 4 B 52 · AWS A5.4 E410 NiMo-15

Basic 13Cr–4Ni-Mo grade for matching martensitic stainless steel.

DC+ · PA PB PC

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.747.324	3.25 × 450	110–140	5.3
00.747.404	4 × 450	130–170	5.3

Technical datasheet

FINOX 4015 AC E430-26

ISO 3581-A E 17 R 52 · EN 14700 E Fe 7 · AWS A5.4 E430-26

17Cr electrode for matching ferritic stainless steel and surfacing.

AC / DC+ · PA PB

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.770.403	4 × 350	120–160	5.0
00.770.504	5 × 450	160–200	6.0
00.770.604	6 × 450	190–240	6.0

Technical datasheet



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STAINLESS & HEAT-RESISTANT ALLOYS

Austenitic Stainless

Compare low-carbon 308L and 316L grades with niobium-stabilised E347 for matching stainless joints.

FINOX 4316 AC E308L-16

ISO 3581-A E 19 9 L R 12 · AWS A5.4 E308L-16

Low-carbon E308L for 304/304L-type stainless fabrication.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.701.200	2 × 300	60–80	4.0
00.701.250	2.5 × 300	80–100	4.0
00.701.323	3.25 × 350	100–130	5.0
00.701.403	4 × 350	120–160	5.0
00.701.504	5 × 450	160–200	6.0

Technical datasheet

FINOX 4430 AC E316L-16

ISO 3581-A E 19 12 3 L R 12 · AWS A5.4 E316L-16

Low-carbon molybdenum-bearing E316L for 316/316L-type stainless.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.703.162	1.6 × 250	40–60	3.0
00.703.200	2 × 300	60–80	4.0
00.703.250	2.5 × 300	80–100	4.0
00.703.323	3.25 × 350	100–130	5.0
00.703.403	4 × 350	120–160	5.0
00.703.504	5 × 450	160–200	6.0

Technical datasheet

FINOX 4551 AC E347-16

ISO 3581-A E 19 9 Nb R 12 · AWS A5.4 E347-16

Rutile E347 for niobium-stabilised Cr–Ni stainless joints.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.702.250	2.5 × 300	80–100	4.0
00.702.323	3.25 × 350	100–130	5.0
00.702.403*	4 × 350	120–160	5.0

Technical datasheet

FINOX 4551 B E347-15

ISO 3581-A E 19 9 Nb B 22 · AWS A5.4 E347-15

Basic E347 variant for stabilised stainless where the procedure specifies a basic coating.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.705.250*	2.5 × 300	70–100	4.0
00.705.323*	3.25 × 350	100–130	5.0

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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STAINLESS & HEAT-RESISTANT ALLOYS

Positional & Specialist Stainless

Select by corrosion duty, parent grade and position. Use the vertical-down grade when that welding position is specified.

FINOX 4430 F E316L-16

ISO 3581-A E 19 12 3 L R 11 · AWS A5.4 E316L-16

E316L variant designed for vertical-down stainless welding.

AC / DC+ · PG PA PB PC

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.706.250*	2.5 × 300	80–100	4.0
00.706.323*	3.25 × 350	100–130	5.0

Technical datasheet

FINOX 4576 AC E318-16

ISO 3581-A E 19 12 3 Nb R 12 · AWS A5.4 E318-16

Niobium-stabilised E318 for matching Mo-bearing stainless steel.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.704.200	2 × 300	60–80	4.0
00.704.250	2.5 × 300	80–100	4.0
00.704.323	3.25 × 350	100–130	5.0
00.704.403*	4 × 350	120–160	5.0

Technical datasheet

FINOX 4462 AC E2209-17

ISO 3581-A E 22 9 3 N L R 12 · AWS A5.4 E2209-17

E2209 for matching 22Cr duplex stainless, including 1.4462.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.708.250	2.5 × 300	70–100	4.0
00.708.323	3.25 × 350	100–130	5.0
00.708.403	4 × 350	120–160	5.0

Technical datasheet

FINOX 4519 AC E385-16

ISO 3581-A E 20 25 5 Cu N L R 32 · AWS A5.4 E385-16

E385 for 904L-type high-alloy stainless fabrication.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.726.250	2.5 × 300	70–100	4.0
00.726.323	3.25 × 350	110–140	5.0
00.726.403	4 × 350	130–170	5.0

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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DISSIMILAR JOINTS & NICKEL ALLOYS

Dissimilar Steels & Rail Repair

Compare FINOX 4370 variants for joining and rail surfacing. Match the filler to the parent materials, dilution and service conditions.

FINOX 4370 AC ≈ E307-16

ISO 3581-A E 18 8 Mn R 12 · AWS A5.4 ≈ E307-16

Rutile Cr–Ni–Mn grade for dissimilar steel joints and buffer layers.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.721.250	2.5 × 300	70–100	4.0
00.721.323	3.25 × 350	100–140	5.0
00.721.403	4 × 350	130–170	5.0

Technical datasheet

FINOX 4370 B ≈ E307-15

ISO 3581-A E 18 8 Mn B 22 · AWS A5.4 ≈ E307-15

Basic Cr–Ni–Mn variant for dissimilar joints and repair on steel.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.744.250*	2.5 × 300	70–100	4.0
00.744.323*	3.25 × 350	100–130	5.0
00.744.403*	4 × 350	120–160	5.0

Technical datasheet

FINOX 4370 S ≈ E307-16

ISO 3581-A E 18 8 Mn R 12 · EN 14700 E Fe 10 · AWS A5.4 ≈ E307-16

Rail surfacing grade for the specified Cr–Ni–Mn overlay.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.730.504	5 × 450	160–210	6.0
00.730.604	6 × 450	190–240	6.0

Technical datasheet

FINOX 4431 AC E308Mo-16

ISO 3581-A E 20 10 3 R 12 · AWS A5.4 E308 Mo-16

Mo-bearing E308Mo for specified dissimilar joints and austenitic manganese steel.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.707.250*	2.5 × 300	80–100	4.0
00.707.323*	3.25 × 350	100–130	5.0
00.707.403*	4 × 350	120–160	5.0

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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DISSIMILAR JOINTS & NICKEL ALLOYS

Dissimilar Joints & Cladding

Compare 309-type grades for stainless-to-carbon joints with 29Cr–9Ni grades for difficult-to-weld steels and repair.

FINOX 4337 AC E312-16

ISO 3581-A E 29 9 R 12 · AWS A5.4 E312-16

E312-type deposit for difficult-to-weld and dissimilar steels.

PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.723.200	2 × 300	50–70	4.0
00.723.250	2.5 × 300	70–100	4.0
00.723.323	3.25 × 350	100–140	5.0
00.723.403	4 × 350	130–170	5.0

Technical datasheet

FINOX 29/9 GOLD ≈ E312-16

ISO 3581-A E Z 29 9 R 12 · EN 14700 E Fe 11 · AWS A5.4 ≈E312-16

29Cr–9Ni repair grade for difficult steel combinations and build-up.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.732.250	2.5 × 300	80–110	4.0
00.732.323	3.25 × 350	100–140	5.0
00.732.403	4 × 350	130–170	5.0

Technical datasheet

FINOX 4332 AC E309L-16

ISO 3581-A E 23 12 L R 32 · AWS A5.4 E309L-16

Low-carbon E309L for stainless-to-carbon steel joints and cladding.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.722.250	2.5 × 300	80–100	4.0
00.722.323	3.25 × 350	100–130	5.0
00.722.403	4 × 350	120–160	5.0

Technical datasheet

FINOX 4459 AC E309LMo-16

ISO 3581-A E 23 12 2 L R 32 · AWS A5.4 E309L Mo-16

Mo-bearing E309LMo for dissimilar joints and the specified cladding layers.

AC / DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.724.250	2.5 × 300	80–100	4.0
00.724.323	3.25 × 350	100–130	5.0
00.724.403	4 × 350	120–160	5.0

Technical datasheet

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DISSIMILAR JOINTS & NICKEL ALLOYS

Nickel Alloy Joining & Cladding

Choose by alloy and service environment. Confirm the specified classification where the manufacturer quotes an approximate match.

FINOX 82 ≈ ENiCrFe-3

ISO 14172 E Ni 6082 (NiCr 20 Mn 3 Nb) · AWS A5.11 ≈ E NiCrFe-3

Nickel-chromium joining and overlay where the specification calls for Ni 6082.

DC+ · PA PB PC PE PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.765.250	2.5 × 300	70–100	4.0
00.765.323	3.25 × 350	100–130	5.0
00.765.403*	4 × 350	120–160	5.0

Technical datasheet

FINOX 182 ≈ ENiCrFe-3

ISO 14172 ≈ E Ni 6182 (Ni Cr 15 Fe6Mn) · AWS A5.11 ≈ E NiCrFe-3

Nickel-chromium-iron grade for compatible nickel alloys and dissimilar joints.

AC / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.760.253	2.5 × 350	80–110	5.0
00.760.323	3.25 × 350	110–140	5.0
00.760.403	4 × 350	140–180	5.0

Technical datasheet

FINOX 625 ENiCrMo-3

ISO 14172 E Ni 6625 (NiCr 22 Mo 9 Nb) · AWS A5.11 E NiCrMo-3

Nickel-chromium-molybdenum grade for Alloy 625 joining and corrosion-resistant overlay.

AC / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.761.253	2.5 × 350	90–120	5.0
00.761.323	3.25 × 350	120–160	5.0
00.761.403	4 × 350	150–190	5.0

Technical datasheet



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CAST IRON REPAIR

Cast Iron Joining & Build-Up

Identify the casting and the repair area before selecting a filler. The FICAST range includes nickel, nickel-iron and iron-based grades.

FICAST Ni ENi-CI

ISO 1071 E C Ni-CI3 · AWS A5.15 E Ni-CI

Pure-nickel electrode for cold repairs on grey cast iron.

AC / DC− / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.002.253	2.5 × 350	80–100	1.5
00.002.323	3.25 × 350	100–130	1.5
00.002.403	4 × 350	120–160	1.6

Technical datasheet

FICAST NiFe ENiFe-CI

ISO 1071 E C Ni Fe-CI3 · AWS A5.15 E NiFe-CI

Nickel-iron grade for grey, nodular and malleable cast iron repairs.

AC / DC− / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.003.250	2.5 × 300	80–110	1.3
00.003.323	3.25 × 350	100–140	1.5
00.003.403	4 × 350	130–170	1.5

Technical datasheet

FICAST NiFe B ENiFe-CI

ISO 1071 E C Ni Fe-CI3 · AWS A5.15 E NiFe-CI

Alternative NiFe grade for cold repair of grey, nodular and malleable iron.

AC / DC− / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.004.250	2.5 × 300	70–100	1.3
00.004.323	3.25 × 350	100–130	1.5
00.004.403	4 × 350	120–160	1.5

Technical datasheet

FICAST NiFe BAL ENiFe-CI-A

ISO 1071 E C Ni Fe-CI A1 · AWS A5.15 E NiFe-CI-A

NiFe-A grade for cold repair of grey, nodular and malleable cast iron.

AC / DC− / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.007.323	3.25 × 350	90–110	1.5
00.007.403	4 × 350	110–150	1.5

Technical datasheet

FICAST Fe ≈ ESt

ISO 1071 E C Fe-1 · AWS A5.15 ≈ E St

Iron-based grade for buffer layers and specified single-layer surfacing.

AC / DC− / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.006.323	3.25 × 350	90–120	5.0
00.006.403	4 × 350	110–150	5.0

Technical datasheet

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HARDFACING & SURFACING

Tool Rebuild & General Wear

Choose the deposit by wear mechanism, base metal and finishing method. Check the linked datasheet for buffer-layer or heat-treatment requirements.

FIDUR 350 E Fe1 · Hardfacing

EN 14700 E Fe1

Build-up on steel machine parts subject to abrasion. As welded 280–340 HB.

AC / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.649.323	3.25 × 350	110–140	5.0
00.649.404	4 × 450	140–180	6.0
00.649.504	5 × 450	180–240	6.0

Technical datasheet

FIDUR 2/55 E Z Fe2 · Hardfacing

EN 14700 E Z Fe2

Tough overlays where edge retention matters. As welded 52–57 HRC.

DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.641.324	3.25 × 450	120–160	6.0
00.641.404	4 × 450	150–190	6.0
00.641.504	5 × 450	180–240	6.0

Technical datasheet

FIDUR 3/50 E Fe3 · Hardfacing

EN 14700 E Fe3

Rebuild hot and cold working tools. As welded approximately 47 HRC.

AC / DC+ · PA PB PC

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.611.323	3.25 × 350	110–140	5.0
00.611.403	4 × 350	140–180	5.0

Technical datasheet

FIDUR 4/60 E Fe4 · Hardfacing

EN 14700 E Fe4

Rebuild high-speed tooling. As welded 59–62 HRC.

AC / DC+ · PA PB PC

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.612.253	2.5 × 350	80–110	5.0
00.612.323	3.25 × 350	110–140	5.0
00.612.403	4 × 350	130–170	5.0

Technical datasheet

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HARDFACING & SURFACING

Tough Overlays for Abrasion

Choose between basic and rutile-coated options for tough, abrasion-resistant overlays on steel.

FIDUR 6/55 E Fe6 · Hardfacing

EN 14700 E Fe6

Tough abrasion-resistant steel overlays. As welded 52–55 HRC.

DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.651.324	3.25 × 450	110–140	6.0
00.651.404	4 × 450	140–180	6.0
00.651.504	5 × 450	170–220	6.0

Technical datasheet

FIDUR 6/60 E Z Fe6 · Hardfacing

EN 14700 E Z Fe6

Hard steel overlays for abrasive wear. As welded 58–62 HRC.

DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.613.253	2.5 × 350	80–110	5.0
00.613.324	3.25 × 450	110–140	6.0
00.613.404	4 × 450	140–180	6.0
00.613.504	5 × 450	170–220	6.0

Technical datasheet

FIDUR 6/60 R E Z Fe6 · Hardfacing

EN 14700 E Z Fe6

Rutile hardfacing variant for abrasion where AC operation is required.

AC / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.623.253*	2.5 × 350	80–110	5.0
00.623.324	3.25 × 450	110–140	6.0
00.623.404	4 × 450	130–170	6.0

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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HARDFACING & SURFACING

Impact & Rail Surfacing

Use the work-hardening grades for the specified impact or rail duty. Compare hardness figures in their stated condition.

FIDUR 7/200 E Fe9 · Hardfacing

EN 14700 E Fe9

Work-hardening surfacing for manganese steel exposed to impact.

AC / DC+ · PA PB PC PF

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.626.323	3.25 × 350	110–150	5.0
00.626.404	4 × 450	140–180	6.0
00.626.504	5 × 450	180–220	6.0

Technical datasheet

FIDUR 7200 Mn E Z Fe9 · Hardfacing

EN 14700 E Z Fe9

Manganese overlay for heavy impact and sliding wear. As welded 200–250 HB.

AC / DC− · PA PB

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.647.323	3.25 × 350	110–150	5.0
00.647.404	4 × 450	140–180	6.0
00.647.504	5 × 450	180–220	6.0

Technical datasheet

FIDUR 8/200 E Fe10 · Hardfacing

EN 14700 E Fe10

Work-hardening overlay for rails and manganese steel applications.

AC / DC+ · PA PB

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.614.253*	2.5 × 350	90–110	5.0
00.614.324*	3.25 × 450	110–150	6.0
00.614.404*	4 × 450	140–180	6.0
00.614.504*	5 × 450	180–220	6.0

Technical datasheet



* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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HARDFACING & SURFACING

Severe Abrasion & Grinding Wear

Compare the hard deposits for sustained abrasion. Check the linked datasheet for impact duty and layer restrictions.

FIDUR 10/60 E Fe14 · Hardfacing

EN 14700 E Fe14

High-recovery abrasion-resistant overlay. As welded 57–60 HRC.

AC / DC+ · PA

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.615.253	2.5 × 350	90–120	5.0
00.615.323	3.25 × 350	120–160	5.0
00.615.404	4 × 450	150–190	6.0
00.615.504	5 × 450	180–240	6.0

Technical datasheet

FIDUR 10/65 E Fe15 · Hardfacing

EN 14700 E Fe15

High-chromium overlay for severe grinding wear. As welded 62–64 HRC.

AC / DC− / DC+ · PA

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.618.253	2.5 × 350	90–120	5.0
00.618.323	3.25 × 350	120–160	5.0
00.618.404	4 × 450	150–190	6.0
00.618.504	5 × 450	180–240	6.0

Technical datasheet

FIDUR 10/65 W E Fe16 · Hardfacing

EN 14700 E Fe16

Specialist overlay for tools and machine parts under severe grinding and impact wear.

AC / DC+ · PA

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.635.323*	3.25 × 350	130–170	5.0
00.635.404*	4 × 450	160–200	6.0
00.635.504*	5 × 450	200–250	6.0

Technical datasheet

FIDUR 10/70 E Fe16 · Hardfacing

EN 14700 E Fe16

Hardfacing for severe abrasive duty. As welded 68–70 HRC.

AC / DC− / DC+ · PA

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.627.323	3.25 × 350	120–160	5.0
00.627.404	4 × 450	150–190	6.0
00.627.504	5 × 450	200–250	6.0

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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HARDFACING & SURFACING

Nickel & Cobalt Surfacing

Select the overlay for the service environment, particularly corrosion, cavitation, erosion and thermal cycling.

FIDUR 23/250 ENiCrMo-5

EN 14700 E Z Ni 2 · ISO 14172 NI 6275 (Ni Cr 15 Mo 16 Fe 5 W 3) · AWS A5.11 E Ni Cr Mo-5

Nickel-base overlay for thermal shock and corrosion exposure.

AC / DC+ · PA

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.617.253*	2.5 × 350	70–100	5.0
00.617.323*	3.25 × 350	120–140	5.0
00.617.403*	4 × 350	160–190	5.0

Technical datasheet

FILIT 21 E Co1 · Cobalt surfacing

EN 14700 E Co1

Cobalt-base overlay for hot-service corrosion, cavitation and erosion.

AC / DC− · PA

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.619.323	3.25 × 350	110–140	5.0
00.619.403	4 × 350	130–170	5.0

Technical datasheet

FILIT 6 ECoCr-A

EN 14700 E Co2 · AWS A5.13 E Co Cr-A

Cobalt-base overlay for cavitation, erosion and corrosion duty.

AC / DC− · PA

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.616.323	3.25 × 350	110–140	5.0
00.616.403	4 × 350	130–170	5.0

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

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CUTTING & GOUGING

Arc Cutting & Gouging

Choose a cutting electrode for separation or a gouging electrode for weld removal and joint preparation. For underwater work, see page 5.

MET-OX · Arc cutting

Special-purpose electrode

Coated electrode for manual arc cutting of metallic workpieces.

DC−

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.990.404*	4 × 450	160–210	6.0
00.990.504*	5 × 450	200–250	6.0

Technical datasheet

KJELCUT · Arc cutting

Special-purpose electrode

Arc cutting of steel, cast iron and suitable non-ferrous metals.

DC−

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.991.324	3.25 × 450	110–150	6.0
00.991.404	4 × 450	140–190	6.0
00.991.504*	5 × 450	180–230	6.0

Technical datasheet

KJELGOUGE · Arc gouging

Special-purpose electrode

Arc gouging for weld removal and joint preparation.

AC / DC−

ORDER CODE	Ø × L mm	CURRENT A	KG/PACK
00.992.323	3.25 × 350	100–140	4.0
00.992.403	4 × 350	130–170	3.3

Technical datasheet

* Made to customer order by Kjellberg. Confirm availability and pack format when ordering.

UNDERWATER ELECTRODES

AQUAWELD and KJELCUT AQUA are on page 5, with separate application and ordering information for wet welding and cutting.

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SUPPLY & TECHNICAL REFERENCES

Specify the Electrode

Use the manufacturer's item number to order the exact grade, diameter and length. Include the quantity, preferred pack format and any required approval.

WHAT TO SPECIFY	DETAILS TO CHECK
Parent material	Give the steel or alloy designation. For repairs, identify the casting, base material or existing overlay.
Classification and procedure	Quote the AWS or ISO classification required. Check the coating, polarity, permitted welding positions and any storage or re-drying conditions.
Size and pack	Use Ø × L in millimetres and quote the complete Kjellberg item number. Ask for a lead time where the item is marked with an asterisk.
Service conditions	Specify low-temperature impact, high-temperature duty, corrosion or wear requirements where relevant.
Approval and certificates	Give the authority, classification and certification requirements when enquiring. Verify the exact grade, size and approval scope before use.

READ THE TABLES

AC = alternating current. DC+ and DC− refer to electrode polarity. PA–PG are welding-position codes. The ≈ symbol identifies an approximate classification. A dagger (†) flags a code to confirm when ordering.

Made to order. Rows marked * are produced to order by Kjellberg. Confirm UK pack formats and availability for the size and grade required.

Kjellberg electrode catalogue

Enquire with R H Davey

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