WELD STAR TIG FILLER WIRES

TIG FILLER WIRES. RANGE & ORDERING GUIDE.

135 ordering codes. 41 grades.
Nine material and application categories.



SELECT BY MATERIAL & APPLICATION

Category	Application	Codes	Pages
Mild steel	General fabrication and C-Mn steelwork	10	2
Heat resisting	Boilers, pressure pipework and Cr-Mo steels	19	2-3
Low temperature	Fine-grained steels and sub-zero service	6	3-4
High strength	High-strength and ultra-high-strength steels	9	4
Weather resistant	Corten and exposed weathering-steel structures	3	5
Stainless steel	Matching stainless, dissimilar steels and duplex	44	5-8
Nickel alloy	Corrosion, high-temperature and cast-iron work	27	8-10
Aluminium	Pure aluminium, Al-Si and Al-Mg alloys	15	10-11
Hardfacing	Wear-resistant overlays and component repair	2	12

ORDER THE GRADE. SPECIFY THE SIZE.

Use the tables to select the part number, diameter and pack weight. All rods are 1000mm long. Part numbers link to the matching R H Davey product page.

NEED HELP WITH FILLER SELECTION?

Tell us the parent material, service conditions and welding procedure. Contact our Southampton team for technical advice, pricing and availability.

View & order online

MILD STEEL / HEAT RESISTING

MILD STEEL

A15

AWS: ER70S-2

Triple-deoxidised with titanium, aluminium and zirconium. Suitable for C-Mn and low-alloy steels where additional deoxidising capacity is required.

Use for: C-Mn and low-alloy steel; tanks, pipework and structural fabrication.

Part number	Dia. mm	Pack kg
3010300219	1.0	5
3010300221	1.2	5
3010300222	1.6	5
3010300224	2.4	5
3010300225	3.2	5



Technical datasheet

MILD STEEL

A18

AWS: ER70S-6

Copper-coated wire with high manganese and silicon content for deoxidising power. A fluid weld pool gives a smooth bead and reduces post-weld dressing.

Use for: General fabrication, machinery, structural steel and automotive work.

Part number	Dia. mm	Pack kg
3010300154	1.0	5
3010300155	1.2	5
3010300156	1.6	5
3010300158	2.4	5
3010300159	3.2	5



Technical datasheet

HEAT RESISTING

A30

AWS: ER70S-A1

A 0.5% molybdenum copper-coated filler for low-alloy creep-resistant steels. Recommended working temperatures up to 500°C, subject to the welding procedure and service specification.

Use for: Creep-resistant steels; boilers, pressure vessels and heat exchangers.

Part number	Dia. mm	Pack kg
3010300421	1.6	5
3010300423	2.4	5
3010300424	3.2	5



Technical datasheet

HEAT RESISTING

A31

AWS: ER80S-D2

A 0.5% molybdenum copper-coated filler producing a smooth weld deposit on carbon and low-alloy steels. Recommended working temperatures up to 500°C.

Use for: Carbon and low-alloy steels; pressure pipework and boiler fabrication.

Part number	Dia. mm	Pack kg
3010300279	1.0	5
3010300280	1.2	5
3010300281	1.6	5
3010300283	2.4	5
3010300284	3.2	5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

HEAT RESISTING / LOW TEMPERATURE

HEAT RESISTING

A32

AWS: ER80S-B2

A chromium-molybdenum filler for heat-resistant steels, including 0.9% Cr / 0.5% Mo steels. Recommended working temperatures up to 550°C.

Use for: Cr-Mo heat-resistant steels; power generation, boilers and process equipment.

Part number	Dia. mm	Pack kg
3010300324	1.0	5
3010300325	1.2	5
3010300326	1.6	5
3010300328	2.4	5
3010300329	3.2	5



Technical datasheet

HEAT RESISTING

A33

AWS: ER90S-B3

A 2.25% chromium / 1% molybdenum filler for heat-resistant steels. Designed for elevated-temperature service, with recommended working temperatures up to 600°C.

Use for: Pressure piping, boiler tubes and chemical or petrochemical equipment.

Part number	Dia. mm	Pack kg
3010300367	1.6	5
3010300369	2.4	5
3010300370	3.2	5



Technical datasheet

HEAT RESISTING

CrMo5

AWS: ER80S-B6

A 5% chromium / 0.5% molybdenum filler for heat-resistant steels. Offers strength and resistance in hot-hydrogen environments; recommended working temperatures up to 650°C.

Use for: Refinery pipework, heat exchangers and high-temperature process equipment.

Part number	Dia. mm	Pack kg
3010300404	1.6	5
3010300406	2.4	5
3010300407	3.2	5



Technical datasheet

LOW TEMPERATURE

ER80S-Ni1

AWS: ER80S-Ni1

Copper-coated wire containing approximately 1% nickel for fine-grained and low-temperature steels. Nickel improves impact toughness, with impact performance down to -50°C.

Use for: Offshore structures, tanks, pipelines and low-temperature steel fabrication.

Part number	Dia. mm	Pack kg
6011100522	1.6	5
6011100380	2.4	5
6011100521	3.2	5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

LOW TEMPERATURE / HIGH STRENGTH

LOW TEMPERATURE

ER80S-Ni2

AWS: ER80S-Ni2

Copper-coated wire containing approximately 2.5% nickel for low-temperature and fine-grained steels. Offers impact toughness at sub-zero temperatures down to -60°C.

Use for: Offshore equipment, transport, shipbuilding and low-temperature pipework.

Part number	Dia. mm	Pack kg
6011100552	1.6	5
6011100553	2.4	5
6011100554	3.2	5



Technical datasheet

HIGH STRENGTH

ER100S-G

AWS: ER100S-G

Nickel-chromium-molybdenum filler for high-strength, low-temperature applications. Combines crack resistance with impact toughness at temperatures down to -50°C.

Use for: High-strength fine-grained steels; bridges, transport and mining equipment.

Part number	Dia. mm	Pack kg
3010300450	1.6	5
3010300452	2.4	5
3010300453	3.2	5



Technical datasheet

HIGH STRENGTH

ER110S-G

AWS: ER110S-G

Copper-coated NiCrMo filler for single-pass and multipass welding of low-alloy steels. Produces tough weld metal with low-temperature impact performance down to -40°C.

Use for: High-strength steel fabrication, offshore structures and process equipment.

Part number	Dia. mm	Pack kg
3010300470	1.6	5
3010300472	2.4	5
3010300473	3.2	5



Technical datasheet

HIGH STRENGTH

ER120S-G

AWS: ER120S-G

NiCrMo filler for ultra-high-tensile-strength and fine-grained steels. Select against the required joint strength, impact properties and approved welding procedure.

Use for: Ultra-high-strength steels; cranes, lifting equipment, frames and transport.

Part number	Dia. mm	Pack kg
6031100490	1.6	5
6031100491	2.4	5
6031100492	3.2	5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

WEATHER RESISTANT / STAINLESS STEEL

WEATHER RESISTANT

Corten

AWS: ER80S-G

Copper- and nickel-alloyed filler for Corten and other weather-resistant structural steels. Designed to provide atmospheric corrosion resistance in exposed steelwork.

Use for: Weathering-steel structures, bridges, containers and architectural fabrication.

Part number	Dia. mm	Pack kg
6011100578	1.6	5
6011100579	2.4	5
6011100580	3.2	5



Technical datasheet

STAINLESS STEEL

ER307Si

AWS: ER307Si

Manganese-alloyed austenitic stainless filler with crack resistance. Added silicon improves weld-pool fluidity and deposit appearance; suitable for stress-relieving buffer layers.

Use for: Dissimilar steels, armour plate, exhausts and buffer layers before hardfacing.

Part number	Dia. mm	Pack kg
6011100113	1.6	5
6011100316	2.4	5
6011100317	3.2	5



Technical datasheet

STAINLESS STEEL

ER308L

AWS: ER308L

Low-carbon austenitic stainless filler. Reduced carbon limits carbide precipitation and intergranular corrosion, with good atmospheric and nitric-acid corrosion resistance.

Use for: Matching stainless fabrication, pipework, food-processing and chemical equipment.

Part number	Dia. mm	Pack kg
6011100424	1.0	5
6011100321	1.2	5
6011100326	1.6	5
6011100328	2.4	5
6011100329	3.2	5



Technical datasheet

STAINLESS STEEL

ER309L

AWS: ER309L

Low-carbon austenitic stainless filler for dissimilar steels and overlays. Offers high-temperature oxidation resistance and performance in carburising atmospheres.

Use for: Dissimilar-steel joints, stainless overlays, buffer layers and furnace components.

Part number	Dia. mm	Pack kg
6011100548	1.0	5
6011100549	1.2	5
6011100333	1.6	5
6011100335	2.4	5
6011100396	3.2	5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

STAINLESS STEEL

STAINLESS STEEL

ER310

AWS: ER310

High-chromium austenitic filler with oxidation resistance at elevated temperatures below 1000°C. Fully austenitic weld metal requires control of hot-cracking risk.

Use for: Matching heat-resistant stainless steels, furnaces and heat exchangers.

Part number	Dia. mm	Pack kg
6011100339	1.6	5
6011100341	2.4	5
6011100342	3.2	5



Technical datasheet

STAINLESS STEEL

ER312

AWS: ER312

High-ferrite stainless filler producing a two-phase weld deposit for dissimilar-metal joints. Service temperatures should remain below 420°C to avoid brittle secondary phases.

Use for: Dissimilar-steel joints and mixed-metal fabrication or repair.

Part number	Dia. mm	Pack kg
6011100157	1.6	5
6011100345	2.4	5
6011100346	3.2	5



Technical datasheet

STAINLESS STEEL

ER317L

AWS: ER317/317L

Low-carbon stainless filler with more molybdenum than 316L for increased corrosion resistance. Not for structural service above 400°C or cryogenic applications.

Use for: Matching Cr-Ni-Mo steels in chemical, marine and food-processing equipment.

Part number	Dia. mm	Pack kg
6011100590	1.6	5
6011100591	2.4	5
6011100592	3.2	5



Technical datasheet

STAINLESS STEEL

ER316L

AWS: ER316L

Low-carbon molybdenum-bearing austenitic stainless filler for joining and surfacing steels of similar composition. Low carbon reduces intergranular carbide precipitation.

Use for: Matching molybdenum-bearing stainless; food, dairy and chemical equipment.

Part number	Dia. mm	Pack kg
6011100164	0.8	5
6011100169	1.0	5
6011100399	1.2	5
6011100351	1.6	5
6011100170	2.0	5
6011100352	2.4	5
6011100353	3.2	5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

STAINLESS STEEL

STAINLESS STEEL

ER347Si

AWS: ER347Si

Niobium-stabilised stainless filler resisting intergranular corrosion. Increased silicon improves fluidity and bead appearance for matching or titanium-stabilised parent materials.

Use for: Stabilised stainless steels such as 321 and 347; process and pressure equipment.

Part number	Dia. mm	Pack kg
6011100360	1.6	5
6011100362	2.4	5
6011100363	3.2	5



Technical datasheet

STAINLESS STEEL

ER385 / 904L

AWS: ER385

Super-austenitic stainless filler with high nickel and added copper. Resists stress-corrosion cracking, pitting and crevice corrosion, including sulphuric environments.

Use for: Aggressive chemical service, fertiliser equipment, paper processing and seawater exposure.

Part number	Dia. mm	Pack kg
6011100593	1.6	5
6011100594	2.4	5
6011100595	3.2	5



Technical datasheet

STAINLESS STEEL

ER410

AWS: ER410

Martensitic stainless filler for similar-composition steels and protective overlays. Preheat and post-weld heat treatment are required for adequate ductility in many engineering applications.

Use for: Matching 12% chromium steels; furnace parts, turbine components and repairs.

Part number	Dia. mm	Pack kg
6011100546	1.6	5
6011100196	2.4	5
6011100547	3.2	5



Technical datasheet

STAINLESS STEEL

ER2209 Duplex

AWS: ER2209

Austenitic-ferritic duplex filler combining high strength with resistance to stress-corrosion cracking and pitting. Recommended service range is cryogenic to 300°C.

Use for: 22% chromium duplex stainless steels, commonly 2205; offshore and process equipment.

Part number	Dia. mm	Pack kg
6011100309	1.6	5
6011100310	2.4	5
6011100311	3.2	5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

STAINLESS STEEL / NICKEL ALLOY

STAINLESS STEEL

ER2594 Super Duplex

AWS: ER2594

Super-duplex filler with a PREN of at least 40. Nickel overalloying supports weld-metal balance and resistance to pitting and chloride stress-corrosion cracking.

Use for: Super-duplex fabrication; offshore, petrochemical, pulp and pollution-control equipment.

Part number	Dia. mm	Pack kg
6011100225	1.6	5
6011100227	2.4	5
6011100486	3.2	5



Technical datasheet

NICKEL ALLOY

Alloy 625

AWS: ERNiCrMo-3

Nickel-alloy filler for welding and cladding with resistance to pitting and stress corrosion. Recommended service range is cryogenic to 540°C.

Use for: Alloy 625 and similar nickel alloys; chemical, marine and aerospace equipment.

Part number	Dia. mm	Pack kg
6031100101	1.6	5
6031100300	2.4	5
6031100310	3.2	5



Technical datasheet

NICKEL ALLOY

Alloy 82

AWS: ERNiCr-3

Nickel-chromium filler providing strength and corrosion resistance from cryogenic to high temperatures. Used between nickel alloys, stainless steels and carbon steels.

Use for: Alloys 600, 601, 690, 800 and 800HT; dissimilar joints and overlays.

Part number	Dia. mm	Pack kg
6031100106	1.6	5
6031100303	2.4	5



Technical datasheet

NICKEL ALLOY

Alloy C276

AWS: ERNiCrMo-4

High-molybdenum nickel-alloy filler for matching and dissimilar joints. Offers resistance to stress-corrosion cracking, pitting and crevice corrosion.

Use for: Chemical plant, pressure vessels, pipelines and severe marine or offshore service.

Part number	Dia. mm	Pack kg
6011100596	1.6	5
6011100597	2.4	5
6011100598	3.2	5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

NICKEL ALLOY

NICKEL ALLOY

Alloy C22

AWS: ERNiCrMo-10

Nickel-chromium-molybdenum filler for matching and dissimilar alloys. Niobium-free weld metal suits selected super-austenitic and super-duplex joints and corrosion-resistant overlays.

Use for: C22, 625 and 825 joints; corrosive process plant and cladding.

Part number	Dia. mm	Pack kg
6011100599	1.6	5
6011100600	2.4	5
6011100601	3.2	5



Technical datasheet

NICKEL ALLOY

Alloy 59

AWS: ERNiCrMo-13

Nickel-chromium-molybdenum filler with very low carbon and silicon. Designed for demanding wet-corrosion service across a wide range of oxidising environments.

Use for: Flue-gas scrubbers, digesters, chemical process plant and corrosion-resistant overlays.

Part number	Dia. mm	Pack kg
6011100602	1.6	5
6011100603	2.4	5
6011100604	3.2	5



Technical datasheet

NICKEL ALLOY

Monel 400

AWS: ERNiCu-7

Nickel-copper filler designed for Monel, with good bead appearance and resistance to saline solutions and a broad range of corrosive media.

Use for: Monel joints and overlays; marine construction, desalination and heat exchangers.

Part number	Dia. mm	Pack kg
6011100605	1.6	5
6011100606	2.4	5
6011100607	3.2	5



Technical datasheet

NICKEL ALLOY

Alloy 825

AWS: ERNiFeCr-1

Nickel-iron-chromium filler for moderately oxidising and reducing environments. Produces fully austenitic weld metal with resistance to chloride stress-corrosion cracking.

Use for: Matching overlays; chemical, petrochemical, paper and power-generation equipment.

Part number	Dia. mm	Pack kg
6011100608	1.6	5
6011100609	2.4	5
6011100610	3.2	5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

NICKEL ALLOY / ALUMINIUM

NICKEL ALLOY

Alloy 617

AWS: ERNiCrCoMo-1

Nickel-chromium-cobalt-molybdenum filler for high-temperature strength and oxidation resistance. Suitable for selected joining applications up to approximately 1150°C.

Use for: Matching high-temperature alloys; gas turbines, ethylene plant and dissimilar joints.

Part number	Dia. mm	Pack kg
6011100611	1.6	5
6011100612	2.4	5
6011100613	3.2	5



Technical datasheet

NICKEL ALLOY

Alloy 200

AWS: ERNi-1

Nickel filler containing titanium to control weld-metal porosity. Used in chemical processing, synthetic-fibre production and food-processing equipment.

Use for: Nickel 200 and 201 welding or cladding; selected dissimilar-metal joints.

Part number	Dia. mm	Pack kg
6031100304	1.6	5
6031100110	2.4	5



Technical datasheet

NICKEL ALLOY

FN55

AWS: ERNiFe-CI

Ferro-nickel filler for cast iron and ductile iron, including dissimilar joints to mild, low-alloy and stainless steels. Used for rebuilding shafts, wheels and casting repairs.

Use for: Cast iron and ductile iron repairs; cast iron-to-steel joints.

Part number	Dia. mm	Pack kg
6011100614	1.6	5
6011100615	2.4	5



Technical datasheet

ALUMINIUM

ER1070 / Al99.7

AWS: ER1070

High-purity aluminium filler for pure aluminium. Offers atmospheric and chemical resistance; clean the parent material and filler thoroughly before welding.

Use for: Pure-aluminium fabrication; chemical, electrical, construction and food equipment.

Part number	Dia. mm	Pack kg
6011100390	1.6	2.5
6011100392	2.4	2.5
6011100394	3.2	2.5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

ALUMINIUM

ALUMINIUM

ER4043 / AlSi5

AWS: ER4043

Silicon-alloyed filler with good wetting and weld-pool fluidity, low cracking sensitivity and bright welds. Not recommended where the welded component will be anodised.

Use for: Suitable aluminium alloys, including alloys containing up to 7% silicon.

Part number	Dia. mm	Pack kg
6011100470	1.6	2.5
6011100471	2.4	2.5
6011100472	3.2	2.5



Technical datasheet

ALUMINIUM

ER5183 / AlMg4.5Mn

AWS: ER5183

Designed for tensile strength, fracture toughness and impact performance, with seawater corrosion resistance. Not recommended for elevated-temperature applications.

Use for: High-magnesium aluminium alloys; shipbuilding, rail, tanks and marine components.

Part number	Dia. mm	Pack kg
6011100476	1.6	2.5
6011100477	2.4	2.5
6011100478	3.2	2.5



Technical datasheet

ALUMINIUM

ER5356 / AlMg5

AWS: ER5356

General-purpose Al-Mg filler with good strength, weldability and seawater corrosion resistance. Suitable for components that require anodising after welding.

Use for: Aluminium alloys with up to 5% magnesium; boats, bicycles, vehicles and tanks.

Part number	Dia. mm	Pack kg
6011100473	1.6	2.5
6011100474	2.4	2.5
6011100475	3.2	2.5



Technical datasheet

ALUMINIUM

ER5556 / AlMg5Mn

AWS: ER5556/ER5556A

High-strength Al-Mg-Mn filler for strong as-welded fillet joints, with toughness and corrosion resistance. Not recommended for elevated-temperature applications.

Use for: Al-Mg base materials up to 5.3% magnesium; construction, vessels and tanks.

Part number	Dia. mm	Pack kg
6011100479	1.6	2.5
6011100480	2.4	2.5
6011100481	3.2	2.5



Technical datasheet

1000mm rods throughout. Pack weights are per part number. Select the filler to suit the parent material, service conditions and welding procedure.

HARDFACING

HARDFACING

HF600

CLASSIFICATION: EN ISO 14700: S Fe 8

Hardfacing filler depositing approximately 54-60 HRC martensitic weld metal. Resists abrasion with moderate impact; use a buffer layer on hard-to-weld steels.

Use for: Wear-resistant overlays on C-Mn steel tools, rollers, crushers and earthmoving parts.

Part number	Dia. mm	Pack kg
6031100487	1.6	1
6031100320	2.4	1



BEFORE YOU ORDER

Parent material

Identify the alloy or steel grade, including both materials for a dissimilar joint.

Service conditions

Check temperature, corrosion, strength and impact requirements.

Welding procedure

Confirm the specified filler classification, shielding gas and any heat treatment.

Size and quantity

Quote the part number, rod diameter, pack weight and number of packs.

Technical datasheet

REPAIR OR WEAR PROTECTION?

FN55: cast-iron joining and repair

Choose FN55 for cast iron or ductile iron and selected cast iron-to-steel joints. Match preparation and heat control to the casting and repair procedure.

HF600: a wear-resistant surface

Choose HF600 to deposit a hard, abrasion-resistant overlay on a suitable steel component. It is a surfacing consumable, not a general-purpose joining filler.

TECHNICAL ADVICE & ORDERING

Contact R H Davey with the material, application and part number. We can help with filler selection, pack quantities, pricing and availability.

02380 339443

sales@rhdaveywelding.co.uk

View & order online

Selection guidance does not replace the requirements of a qualified welding procedure. Consult the linked grade datasheet for detailed technical information.