



Austenitic (300 Series) Stainless Steel Filler Metals

**Stainless Steel Stick Electrodes,
Tubular Wires and Solid Wires**



Tough Enough for the Most Extreme Applications

The use of stainless steel is growing in the welding industry. It's the top choice among welders for critical applications where other materials won't work, such as issues with corrosion, safety, weakness of the metal or appearance.

Stainless components are often fabricated from flat plate or sheet, which requires welding and cutting. Because of its unique properties, however, welding stainless steel requires careful attention to filler metal and weld process selection.

With its 10–30 percent chromium makeup, stainless steel filler metal has a relatively impervious refractory oxide film that is self-healing and provides good corrosion resistance, strength at higher temperatures and toughness at cryogenic temperatures. Stainless steel filler metal is also an excellent choice for certain applications with specialty metals where welders are unsure which filler metal is appropriate.

AWS Class Applications

Because it comes in a number of AWS classes for a variety of applications, it's important to match the appropriate class to the types of base metals being joined (refer to product list for more information).

Class	Description
E308	Used for stainless steel types 301, 302, 304L, 321, CF-3 and CF-8
E309	Used for stainless steel types 304, 304L, 309, 309L; often used in welding stainless steel to carbon, low-alloy, heat-resistant and clad steels
E316	Used for joining 316, 316L, CF-3 and CF-8 stainless steels; molybdenum added to help prevent pitting and increase creep resistance

Stainless Steel Filler Metal Benefits and Considerations

Stainless steel filler metal has a number of advantages over other metals because of its unique chemical composition, but it also comes with some considerations that are important for welders to be aware of.

Benefits

- Good corrosion resistance due to the 10–30 percent chromium
- Strength at high temperatures
- Toughness at cryogenic temperatures
- Ability to join difficult to weld steels and dissimilar metals (carbon to stainless)
- Available in a variety of electrode types for flux-cored, shielded-metal, gas-tungsten and gas-metal arc welding

Considerations

- Requires pre-weld cleaning to ensure corrosion resistance
- Generally has a higher coefficient of thermal expansion than carbon steel; holding dimensional tolerances can be challenging
- Root openings or gaps need to be, at a minimum, equal to the diameter of the electrode
- Post-weld cleaning is essential to ensure properly formed chromium oxide film on surface
- Stainless steel filler metal is 3–5 times more expensive than carbon steel — even small mistakes are expensive



Consistent Results Across a Broad Range of Class Options

With the expansion of our stainless steel stick electrodes, flux-cored, solid and metal-cored wire product lines, we now offer a comprehensive portfolio of stainless Hobart filler metals. Just like our other filler metals, our stainless steel offerings are superior products that provide consistent results.

When welders are looking for a trusted brand of high-quality filler metals that perform consistently, they choose Hobart. We're not just a wholesaler; we're the manufacturer — which is why we stand behind the reliability of our product. This quality guarantee extends to our stainless steel line, which also ships from the same location as our other products, on the same reliable timeline.

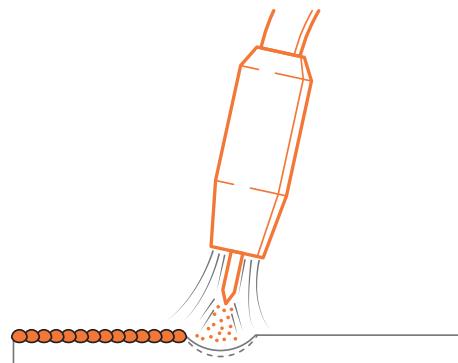
We welcome the opportunity to demonstrate the superior weld quality of our stainless steel filler metal products. Contact our Applications Engineering Hotline at 800.532.2618 to learn more.

Best arc stability, spatter level and bead appearance on the market.



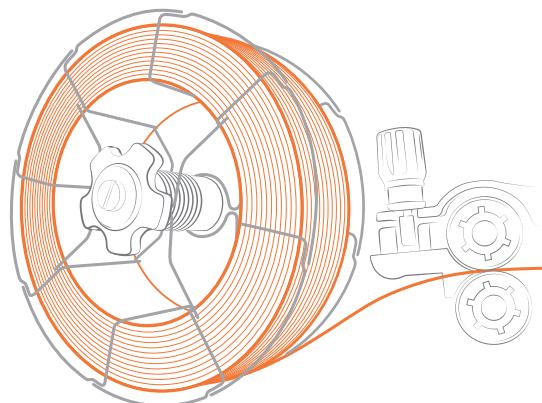
Stocked product with reliable shipping timelines

Reduces downtime and ensures project timelines are met



Controlled spatter level

Reduces post-weld cleanup and increases productivity



Precision-layer wound (solid and flux-cored wire)

Provides worry-free feedability from left to right with no tangles



Vacuum-sealed packaging (flux-cored wire)

Ensures product integrity and eliminates exposure to moisture

Stick Electrodes

Our Sterling AP lines provide smooth, uniform and finely rippled weld beads that require minimal finishing, possess outstanding out-of-position capabilities, and good strike and restrike characteristics.

Our Sterling (-17) line produces attractive, finely rippled concave weld beads, possesses self-peeling slag and excellent restrike characteristics, is extremely stable, and exhibits higher deposition rates with little spatter.

Sterling and Sterling AP E308/E308H	For applications where service conditions are not severe; can be used as an intermediate layer prior to deposition of hard-facing material. Use on types 301, 302, 304, 305 and 308 base metals.
Sterling, Sterling AP and Smootharc Plus E308/E308L	Properties similar to type 308, with low carbon to avert carbide precipitation and inhibit subsequent carbide precipitation. For welding type 304/304L.
Sterling AP E309 (H)	Moisture-resistant, all-position solution primarily designed for welding type 309 metal, but can also be used for 18-8 clad steels or dissimilar metals if alloy content is sufficiently high for a sound, ductile deposit.
Sterling, Sterling AP and Smootharc Plus E309/E309L	Low carbon modification of standard type 309 analysis used for weld overlay or welding stainless to mild or low-alloy steels.
Sterling AP E309Mo/E309MoL	Addition of molybdenum improves tensile strength and resistance; use for 316 clad steels and joining molybdenum-containing steels to carbon steels.
Sterling and Sterling AP E316/E316H	For welding type 316 steel; use where increased high-temperature corrosion resistance of molybdenum-bearing steels is necessary.
Sterling, Sterling AP and Smootharc Plus E316/E316L	For welding type 316L material; properties similar to type 316; suited for urea environments.

Flux-Cored Wire

We offer gas-shielded stainless steel flux-cored wires through our FabCO product line, which produces a bright, flat bead profile; clean and easy slag release; minimal spatter; higher moisture resistance; and excellent overall weld bead appearance. Each of our FabCO stainless steel flux-cored wires is formulated to operate with either 100% CO_x or a 75%/25% argon/CO₂ mixture. The wires are packaged in vacuum-sealed bags, precision layer wound, and classified for all-position use. These features allow us to provide consistent, repeatable results for the widest variety of applications.

FabCO 308LT1	Use on types 301, 302, 304, 304L, 321, CF-3 and CF-8.
FabCO 309LT1	Use on types 304, 304L, 309, 309L and for welding stainless steel to carbon, low-alloy, heat-resistant and clad steel.
FabCO 316LT1	Use on types 316, 316L, CF-3M and CF-8M.

Metal-Cored Wire

We offer metal-cored wire options for 308, 309 and 316 Series metals designed to meet the needs of chemical, foodservice and exhaust fabricators who have poor to fair fit-up. Metal-cored stainless steel wires are manufactured to the same chemistries as solid wires and provide increased deposition rates, faster travel speeds, decreased heat input and minimal spatter. Stainless steel metal-cored wires are an excellent choice for flat and horizontal welding of long continuous seams where productivity can be maximized.

FabCOR ER308LSi	Austenitic wire used to join 301, 302, 304, 304L and 308 stainless steels.
FabCOR ER309LSi	Austenitic wire used to join similar 309L alloys or 300 Series to carbon or low-alloy steels.
FabCOR ER316LSi	Austenitic wire used to join 316 and 316L.

Solid Wire

We offer a wide variety of solid wires perfect for welding clean material in indoor shop environments and automated, high-volume production. Our spools are available with precision layer, rather than random winding, and provide unparalleled performance at market-competitive prices. We also offer drum packaging for automation and high-volume production for select wires.

Hobart also offers solid wire alloys in cut-to-length TIG rods, with stamped alloy identification. Available TIG alloys are 308 and 308/L, 309/309L and 316/316L.

ER308/ER308L	Lower-range carbon 308 to help prevent intergranular corrosion; used to weld types 301, 302, 304 and 308 as well as some dissimilar 300 Series stainless steels.
ER308/ER308H	Use on types 301, 302, 305 and 308 base metals; increased strength for applications where high mechanical properties are required.
ER308L HiSiL	308L modified to increase weld puddle fluidity to ensure better tie-ins and potentially higher welding speeds.
ER309 (H)	Produced in upper range of carbon content to give increased high-temperature strength; for welding type 309 stainless steels, 18-8 clad steel or dissimilar metals.
ER309/ER309L	Used to join similar 309L alloys or 300 Series stainless steels to carbon or low-alloy steels.
ER309L HiSiL	309L modified to help overcome the typical sluggish nature of 300 Series stainless steel welding puddles.
ER316/ER316L	Molybdenum-bearing alloy for increased pitting resistance; carbon in lower range for better intergranular corrosion resistance.
ER316L HiSiL	316L modified for better wetting action when using a GMAW process.

This full line of stainless steel filler metals is available today to add to your product offerings, giving you the opportunity to further extend the quality and reliability of the Hobart brand to your customers.

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FILLER METALS