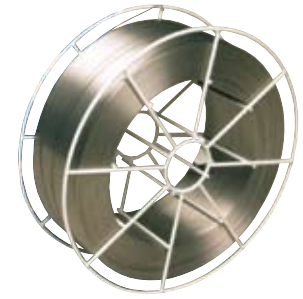


## Alloys

Avesta Welding LLC offers you the broadest range of stainless steel welding consumables in the industry. They are the ideal choice for products used in extremely corrosive, high stress, and high temperature environments. The following is a list of available alloys.

### Stainless Steel Alloys

- ER 308L Si
- ER 307 Si
- ER 316
- ER 308
- ER 308H
- ER 309L Mo
- 310L
- ER 309
- ER 308L
- ER 309L
- ER 309L Si
- ER317L
- ER 318
- ER 312
- ER 316
- ER 316H
- ER 316L Si
- ER 409
- ER 409 Cb
- ER 310
- ER 347
- ER 347 Si
- ER 385 (904L)
- ER 410
- ER 410 Ni Mo
- ER 420
- ER 318 Si



### High Alloys - Corrosion Resistant

- ER NiCrMo-3
- ER NiCu-7
- ER Ni-1
- P 16
- P 100
- 253 MA
- 353 MA

## Covered Electrodes

Avesta Welding manufactures a wide range of specialized alloys to meet stringent operating conditions. Avesta Welding LLC supplies covered electrodes for welding all of the more common ferritic, martensitic, duplex and austenitic stainless steels as well as nickel-based alloys. The product range also encompasses electrodes for dissimilar welds between, for example, stainless steel and mild steel, or stainless steel and nickel-based alloys. All electrodes are available manufactured to the requirements set forth by the nuclear power industry in ASME code section III and KTA 1408.

| Alloy  | Size  |       |       |       | Applications   |
|--------|-------|-------|-------|-------|--|
|        | 3/32" | 1/8"  | 5/32" | 3/16" |  |
| P 100* | 59735 | 59736 | 59738 |       | For welding SAF 2507® and similar type alloys.   |
| P 16   | 59776 | 59777 | 59778 |       | A nickel base electrode for welding Avesta Sheffield 654 SMO® also suitable for nickel-based C-type alloys.            |
| 253 MA | 59664 | 59666 | 59667 | 59668 | For welding Avesta Sheffield 253 MA, a high temperature alloy typically used for furnaces, combustion chambers, etc.   |
| 353 MA | 60410 | 59669 | 59670 |       | For welding Avesta Sheffield 353 MA, a high temperature alloy typically used in carburizing and nitriding atmospheres. |

\*Call or request special ordered items.

## Covered Electrodes

### Stainless Steel, Duplex & Nickel Alloys

Avesta covered electrodes are manufactured in strict accordance to the relevant specification and in full compliance with ISO 9001:2000 Quality System requirements. On-going research and development insures that the product line evolves to meet the needs of today's changing technical requirements, while continuing to provide to the welder uncompromising ease of use.

#### Special Purpose

Special purpose electrodes allow you to choose the easy to use, versatile electrode best suited to your application, resulting in improvements in productivity, weld appearance, and overall costs.

#### VDX-AC/DC

Developed for vertical-down applications, these electrodes are well suited for welding thin gauge material and duct work, plus offer substantial cost savings over TIG welding. The high speed of welding they provide gives time and cost savings when welding root beads in vertical positions. They also allow carefully controlled penetration, thereby minimizing root grinding costs.

#### HX-AC/DC

A high recovery - high deposition rate electrode that reduces the risk of heat distortion, reduces changeover time and the number of passes required. Fewer starts and stops means fewer defects, lower re-work costs and greater production output.

#### 3D

Avesta 3D electrodes have been specially developed for flexible welding in all common welding positions. 3D electrodes have extremely good weldability and give a stable arc. The slag and weld pool are both easy to control.



| Alloy              | Diameter (in.) |       |       |       |       |       |
|--------------------|----------------|-------|-------|-------|-------|-------|
|                    | 1/16           | 5/64  | 3/32  | 1/8   | 5/32  | 3/16  |
| E 308H-17          | 59639          | 59640 | 59642 | 59644 | 59646 | 59648 |
| E 308L-15 Basic    |                |       | 59603 | 59604 | 59605 |       |
| E 308L-16          |                |       | 60745 | 60746 | 60747 | 64001 |
| E 308L-17          | 60211          | 64007 | 64008 | 64009 | 64010 | 64011 |
| E 309-17           |                |       | 59635 | 59637 | 60245 | 59638 |
| E 309L-15 Basic    |                |       | 59631 | 59632 | 59633 |       |
| E 316L-16          |                |       | 60751 | 60752 | 60753 | 64002 |
| E 309L-17          | 60218          | 64019 | 61909 | 61910 | 64017 | 64018 |
| E 309MoL-17        |                | 64028 | 64027 | 64029 | 64030 | 64031 |
| E 310-17           |                |       | 59657 | 59658 | 59661 | 59663 |
| E 312-17           |                |       | 59764 | 59766 | 59767 | 59768 |
| E 316H-17          |                |       | 59678 | 59680 | 59681 | 59682 |
| E 316L-15 Basic    |                |       | 60449 | 59671 | 59672 | 66786 |
| E 316L-16          |                |       | 60748 | 60749 | 60750 | 64003 |
| E 316L-17          | 60264          | 64012 | 64013 | 64014 | 64015 | 64016 |
| E 317L-17          |                | 59721 | 59722 | 59724 | 59726 | 59728 |
| E 347-17           |                | 64964 | 64965 | 64966 | 64967 | 64968 |
| E 385-17 (904L)    |                |       | 59730 | 59732 | 59733 | 59734 |
| E 2209-15 Basic    |                |       | 59758 | 59760 | 59762 |       |
| E 2209-17          |                |       | 64032 | 64033 | 64034 | 64035 |
| E NiCrMo-12 (P12R) |                |       | 59773 | 59774 | 59775 |       |
| E NiCrFe-3         |                |       | 59779 | 59780 | 59781 | 59782 |
| E 308L-17 VDX      |                |       | 59606 | 59607 |       |       |
| E 308L-17 (HX)     |                |       |       |       | 59609 | 59610 |
| E 309MoL-17 VDX    |                |       | 59684 | 59718 |       |       |
| E 316L-17 VDX      |                | 59676 | 59694 | 59696 |       |       |
| E 316L-17 (HX)     |                |       | 59687 | 59689 | 59609 | 59691 |

Note: Custom weights of reel & drum products are also available.

## Flux Cored Wire

Avesta flux cored wire is available in a wide selection of alloys. For use in flat and horizontal as well as all-position applications. Designed for use with 100% CO<sub>2</sub> or a 75% Argon 25% CO<sub>2</sub> shielding gas, they offer excellent economy in all applications. All alloys and sizes are formulated for flat and vertical up use with some out-of-position capability. Some alloys and sizes are also available in all position and high deposition (HD) formats which provide for even greater economies of use.



| Part No.     | Alloy        | Description (Welding Position) | Diameter (in.) | Spool Weight (lbs.) | Applications   |
|--------------|--------------|--------------------------------|----------------|---------------------|--|
| <b>E308</b>  |              |                                |                |                     |  |
| 59526        | E308TO-1     | Flat & horizontal              | .045           | 25                  | For welding austenitic stainless steel type 19 Cr10Ni and titanium and niobium stabilized steels like ASTM 321 and ASTM 347                        |
| 59501        | E308LTO-1    | Flat & horizontal              | .035           | 25                  |  |
| 59527        | E308LTO-1    | Flat & horizontal              | .045           | 25                  |  |
| 59486        | E308LTO-1    | Flat & horizontal              | .063           | 25                  |  |
| 59528        | E308LT1-1    | All position                   | .045           | 25                  |  |
| <b>E309</b>  |              |                                |                |                     |  |
| 59502        | E309LTO-1    | Flat & horizontal              | .035           | 25                  | High alloyed 23 Cr13Ni wire primarily intended for surfacing low alloyed steels and for dissimilar welding between mild steel and stainless steels |
| 59542        | E309LTO-1    | Flat & horizontal              | .045           | 25                  |  |
| 59487        | E309LTO-1    | Flat & horizontal              | .063           | 25                  |  |
| 59530        | E309LT1-1    | All position                   | .045           | 25                  | Molybdenum-alloyed wire for dissimilar joints between stainless steels and low-alloyed steels  |
| 59537        | E309LMoTO-1  | Flat & horizontal              | .045           | 25                  |  |
| 59491        | E309LMoTO-1  | Flat & horizontal              | .063           | 25                  |  |
| <b>E316</b>  |              |                                |                |                     |  |
| 59532        | E316TO-1     | Flat & horizontal              | .045           | 25                  | For welding austenitic stainless steel type 17 Cr12Ni 2.5 Mo and welding titanium and niobium stabilized steels such as ASTM 316Ti                 |
| 59503        | E316LTO-1    | Flat & horizontal              | .035           | 25                  |  |
| 59533        | E316LTO-1    | Flat & horizontal              | .045           | 25                  |  |
| 59488        | E316LTO-1    | Flat & horizontal              | .063           | 25                  |  |
| 59534        | E316LT1-1    | All position                   | .045           | 25                  |  |
| <b>E317</b>  |              |                                |                |                     |  |
| 59504        | E317LTO-1    | Flat & horizontal              | .035           | 25                  | For welding austenitic stainless steel type 18 Cr14Ni3Mo and similar.  |
| 59535        | E317LTO-1    | Flat & horizontal              | .045           | 25                  |  |
| 59489        | E317LTO-1    | Flat & horizontal              | .063           | 25                  |  |
| <b>E347</b>  |              |                                |                |                     |  |
| 59505        | E347TO-4     | Flat & horizontal              | .035           | 25                  | Columbium stabilized alloy is generally used to weld AISI 321 and 347 materials.   |
| 59536        | E347TO-4     | Flat & horizontal              | .045           | 25                  |  |
| 59490        | E347TO-4     | Flat & horizontal              | .063           | 25                  |  |
| <b>E2209</b> |              |                                |                |                     |  |
| 59524        | E2209TO-1    | Flat & horizontal              | .045           | 25                  | For welding of ferritic-austenitic (duplex) stainless steels such as Outokumpu 2205 (ASTM S32205/S31803) and similar                               |
| 59525        | E2209TO-1 PW | All position                   | .045           | 25                  |  |