

Carbide Precipitation

When unstabilized stainless steels are heated to 800°–1500°F during welding, the chromium in the steel combines with the carbon to form chrome carbides which tend to form along the grain boundaries of the metal (carbide precipitation). This lowers the dissolved chromium content in these areas and thus lowers their corrosion resistance, making them vulnerable to intergranular corrosion. Carbide precipitation is reduced by holding the carbon content of the material to a very low value. This limits the amount of carbon available to combine

with the chromium. The “L” series (extra low carbon) stainless steels are often used for this purpose, but their use reduces system design stress by approximately 15%. Parker Weld-lok® fittings are made from a select 316 series with carbon content in the low range of 0.04 to 0.07 percent. This results in a welded fitting with good corrosion resistance and a high strength factor.

All Parker Weld-lok® fittings in stainless steel are supplied in the solution-treated condition, capable of passing ASTM-A-262 Tests for Detecting Susceptibility to Intergranular Corrosion.

How To Order

Parker Weld-lok® components are ordered by part number easily derived from the following example and ordering chart. The five product characteristics required are coded as shown in the chart.

The example below describes a 90° elbow fitting going from 1/4" tubing to 1/4" tubing.

Example: 4-4 EW-SS

4	-	4	E	W	-	SS
Fitting Size		Fitting Size ¹	Fitting Type	Machining Type		Material
Fitting Size		Fitting Size	Welded Fitting Type	Machining Type		Material
The first two numbers denote the fitting size which matches the tubing O.D.			H Straight J Union Tee E Union Elbow	W Weld-lok®		SS Stainless Steel 316 304 ² Stainless Steel 304 316L ² Stainless Steel 316L 316H ² Stainless Steel 316H
4	1/4" tube	6	3/8" tube	8	1/2" tube	

¹ When both ends of the fittings are the same size and configuration, the size is only called out once.

² Can be supplied upon request.

Special fittings: If a special fitting configuration is required, it is suggested that a sketch or drawing be submitted for review.

Availability: Only items listed in current price list (4280) are carried in stock. Customer Specials may be quoted through Parker IPD Customer Service.

Typical Raw Material Specifications

Fitting Material	Bar Stock	Forgings	Recommended Tubing Specifications	
Stainless Steel 316	ASTM A-276 TYPE 316 ASME SA-479 TYPE 316	ASME SA-182 GRADE 316	ASME SA-213	ASTM A-269
			ASTM A-213	MIL T-8504
			ASTM A-249	MIL T-8506

Where To Order

Parker Weld-lok® components are ordered from:
Instrumentation Products Division,
1005 A Cleaner Way
Huntsville, AL 35805
Phone: 256-881-2040

Design Specifications

The Weld-lok® fitting has been designed and tested in accordance with ANSI B16.11, which covers “Forged Steel Fittings Socket Welded and Threaded.” Our design parallels the Schedule 80, 3000-pound fitting pressure class, and is compatible with O.D. tube wall

thickness meeting the related (3000-psi pipe class) pressure requirements. Strong, full section forgings are used for all “shape” fittings.

User Specification Requirements

The 316 stainless steel Weld-lok® fittings fully conforms to the applicable specifications covered in:

- ANSI B31.1 “Power Piping”
- ANSI B31.7 “Nuclear Power Piping”
- Section III, “Nuclear Power Plant Component,” ASME Boiler and Pressure Vessel Code

Customer Specials may be quoted through the Parker Quick Response Department.