

## Frequently Asked Questions

**Why do customers refer to the Selco Seal as the "Ultimate Gasket"?**

The gasket has provided permanent sealing in severe conditions of temperature and pressure that could not be sealed any other way, except by welding the flanges together.

**Why do gaskets leak?**

The primary reasons are:

1. Gasket Selection
2. Assembly conditions
3. Improper Installation

**What is the pH range of the standard Selco Seal Gasket with flexible graphite?**

pH 0 to 14 (except strong oxidizers)

**What is the temperature range in steam?**

Steam to 1200° Fahrenheit

**What is the temperature range in air?**

Cryogenic to 932° Fahrenheit

**What is the PxT value for the Selco Seal?**

Pressure x Temperature = 25,000,000. This parameter is not meaningful for a Selco Seal

**What are the "m" and "Y" values?**

"m" = 2.5 ; "Y" = < 2850 psi

**Where do the "m" and "Y" values come from?**

The "m" and "Y" values are empirically derived numbers used by gasket designers that have proven satisfactory under general operating conditions and are a figure of merit relating to the sealing area width and the clamping pressure required for a gasket to seal. The gasket factor "m" is the ratio of contact pressure to contained pressure. The "Y" factor is the minimum gasket seating stress.

**What are my sealing material options?**

The sealing material options are:

1. Flexible Graphite ("B", GTB, GTH Commercial Grade, "N", Nuclear Grade or "NI", GTK Nuclear Grade with passive inhibitor)
2. PTFE (Virgin, Gore-Tex GR or Gylon, Chesterton 456)
3. Ceramic (Fiberfrax)

**What seating pressure is recommended to seal the Selco Seal Gasket?**

Seating Pressure = 5000 psi

**What is the reason for torquing the flange bolts to 50% - 65% of bolt yield?**

To allow for additional elongation of the bolts due to temperature changes - the bolts can accept the additional stress and not exceed the elastic limit of their material - the result is that the seal does not require re-torquing nor will a leak develop under temperature or pressure changes

**What pressure is required to seal spiral wound, double jacketed, or soft steel gaskets?**

A seating pressure of 10,000 psi to 12,000 psi is required. A pressure that can damage flanges and/or stretch the bolts beyond the elastic limit

**What is the pressure capability of the Selco Seal Gasket?**

Tested to 5,000 psi internal pressure on 6" - 2500# flanges with no measurable leakage. Gaskets have been used in service at 10,300 psi

**What is the interpretation of the Selco Seal Helium Leak Rate Test?**

A leak rate of  $1.0 \times 10^{-7}$  standard cubic centimeters per second of helium was obtained; this is around a 5 to 10 parts per million leak rate or about equal to the "natural" background concentration of helium that exists in the atmosphere

**What does FXT stand for?**

For extra thickness - usually 1/8" thick gaskets. We supply a composite unit that consists of two Selco Seals tack welded to a metal ring spacer.

**When is an FXT used?**

When other than our standard thickness Selco Seal is required by installation. Sometimes necessary in tongue and groove flanges.

**What are the installation instructions?**

The installation procedure depends on the application, but in general the Selco Seal is to be inserted or aligned to the bottom flange bolt, then aligned to the ID and cross torque in a star pattern.

**How many pressure ranges will the Standard Self Locator accommodate?**

The complete ANSI pressure range from 150# to 2500#.

150# - 300# - 400# - 600# - 900# - 1500# - 2500#.

**What is the standard thickness of the gasket?**

Nominally 1/32 inch in self-locators thru 12". Standard gaskets 14" and above are 1/16" and 304 SS unless specified otherwise.

**What is the thickness of a flexible graphite seal?**

Nominally 0.015 inches

**What is the range of sizes in which the Selco Seal is manufactured?**

The *Self Locator* style comes in all ANSI, DIN, BS, AUS and JIS Standard sizes from ½" to 24 " or equivalent metric sizes. *Ring* gaskets and *Custom* shape gaskets available from ½" to over 16 feet in diameter. Fabricated to customer's requirements of size and shape.

**What is the standard Selco Seal sealing element width?**

Standard nominal width of sealing element is 0.125" each side.

**What is the smallest cross-section needed for a sealing element to fit?**

Minimum web width is 0.200 inches cross sectional dimension to accommodate both the top and bottom sealing elements.

**What is the difference between a Full Face Flange Gasket and a standard Selco Seal Ring Gasket?**

A full-face flange gasket will be made with the bolt-hole pattern cut into the gasket.

**May a customer specify where he would like the position of the Sealing Element on the gasket to be?****What is the optimum position for the location of the Sealing Element?**

Engineering studies have indicated that optimum sealing is achieved with the sealing element near the ID. Additional sealing elements can be added to enhance sealing of particularly bad flanges or added near the OD to minimize flange rotation.

**What is a Full Face Gasket and can the Selco Seal be made as one?**

A Full Face Gasket is fabricated with bolt-holes.

**What is the most important feature of the Selco Seal Gasket?**

The high unit load generated by the narrow sealing area provides a considerably higher flange clamping pressure and a better seal at a lower clamping force.

**Can we manufacture the Selco Seal for use in "Tongue and Groove" flanges?**

Yes - Specify either the size of the tongue and groove or specify the dimensions of the groove into which the gasket is to be retained. Check the depth of the groove and the length of the tongue to make certain that the thickness of the gasket will provide sealing.

**What metal should be recommended for an application?**

If the customer doesn't specify a specific metal, recommend using the same or similar metal as the flange.

**What are the advantages of the Selco Seal over sheet products?**

Selco Seals are easy to install. The sealing element is contained in a metal groove that protects the sealing material. Unlimited shelf life. No special handling required for either storage or installation.

**What is the tested leak rate for a Selco Seal?**

The published leak rate is 0.000,000,1 standard cubic centimeters per second of helium. This is equivalent to about the background concentration of helium occurring naturally in the atmosphere and rated better than a "T3" in test at Ecole Polytechnique and MPA.

**How do I know what pressure range to specify?**

The pressure range is related to the pipe size or operating pressure of the vessel pipe wall thickness is based on the pressure class gasket dimensions are set by the ANSI specification to guarantee a proper fit regardless of shape or size. The Selco Seal has been tested and performs equally well from vacuum to 5000 psi.

**How rough or smooth can the flange surface finish be for a Selco Seal to achieve its seal?**

Selco Seal Gaskets can seal all existing flanges with finishes from 10 to 400 micro inches RMS.

**What keeps the Selco Seal from being over compressed?**

The Selco Seal design is such that it can't be over compressed. Compression recovery test have shown a 96% or greater recovery. Unless the hydrostatic end force exceeds the clamping force, the gasket will not leak.

**Literature states that the Selco Seal is "as permanent as a weld", what about fugitive emissions?**

A properly installed Selco Seal gasket is as leak proof as a permanent weld. This is claimed on the basis of the helium leak test data.

**Can I use the ½", ¾", 1" and 1¼" Self Locator Gaskets on slip-on flanges?**

Yes. Both the *Self Locator* and *Ring Style* gasket have a sealing area positioned to seal on a slip-on flange.

**How do I specify a gasket for "Raised Face Flanges"?**

The standard *Self Locator* and *Ring* gaskets are manufactured for a "proper fit" on raised face flanges and all flange styles.

**Does Sealing Corporation have API (American Petroleum Institute) approval?**

The designation "API APPROVED" has not been in use for over 15 years and was used only for wellhead equipment. API now has a quality and safety monitor program called "*medallion*" which is only for wellhead equipment.

**Do I use API specification?**

Most users have developed their own specification for gaskets. API has delegated to ASME and PVRC the responsibility for development of gasket constants, specifications and testing.

**If the Selco Seal is as good as a weld, can I treat the joint like a weld and not have to perform the periodic leak tests?**

EPA is developing a revised standard that provides for extending the elapsed time between leak monitoring and testing, based on acceptable leak rate data.

**Why is the Selco Seal called the "Ultimate Gasket" or refereed to as the "Install It and Forget It" gasket by specification engineers?**

This unique gasket exceeds the new EPA amendments to the *Federal Clean Air Act Title III*. The Selco Seal is a permanently sealing gasket with a *Flexible Graphite* sealing element. The gasket is unaffected by temperature, corrosive mediums, or thermal cycling operating conditions. The design eliminates cold flow of the flexible graphite and does not require any post installation re-torquing. The gasket is routinely supplied in any commercially available exotic or standard metal to match flange material or service conditions of temperature, steam, and acidic or caustic materials.

**What are the primary features and benefits of the Selco Seal Gasket?**

Temperature Range:	-328° F to +932° F in atmosphere
	+1200° F in steam
	+5432° F continuous in reducing or inert media
Pressure Range:	Full Vacuum to 5000 psi
pH Range:	0 to 14 (except strong oxidizers)
Fire Safe:	Passed the equivalent of the Exxon Fire Test
Blowout Safe:	Pressure tested to 5000 psi
No Re-torquing Required	
Seals over a large flange surface finish range (10 to 400 µin RMS)	
Virtually Leak Free	
Unlimited Shelf Life	
Utilizes flexible graphite as sealing element while controlling the cold flow	
High unit load transferred to the sealing element demanding less stress on the flanges bolts	