

# LS-650 Material Information and Sizing Procedure - Method 2



## LS-650 Model "C"

Suitable for use in water, direct ground burial and atmospheric conditions. Provides electrical isolation where cathodic protection is required.

**Type:** Standard

**Seal Element:** EPDM (Black)

**Pressure Plates:** Reinforced Nylon Polymer

**Bolts & Nuts:** Steel (Metric)

**Temp. Range:** -40 to +250°F (-40 to +121°C)\*

**Min. Pipe Size:** 4.5"      **Max Pipe Size:** 48"

## LS-650 Model "S-316"

For chemical processing & wastewater treatment. EPDM rubber is resistant to most inorganic acids and alkalis, some organic chemicals (acetone, alcohol, ketones).

**Type:** Stainless

**Seal Element:** EPDM (Black)

**Pressure Plates:** Reinforced Nylon Polymer

**Bolts & Nuts:** 316 Stainless Steel (Metric)

**Temp. Range:** -40 to +250°F (-40 to +121°C)\*

**Min. Pipe Size:** 4.5"      **Max Pipe Size:** 48"

## Method 2 - Link-Seal® Modular Seal Sizing

1. Calculate the annular space. The annular space is half the difference between your pipe size and the wall opening diameter. Use the following formula.

$$\text{Annular Space} = \frac{\text{Wall Opening I.D.} - \text{Actual Pipe O.D.}}{2}$$

2. You have selected the correct size Link-Seal® modular seal if...the free state thickness is less than the annular space...and the expanded state thickness is greater than the annular space.

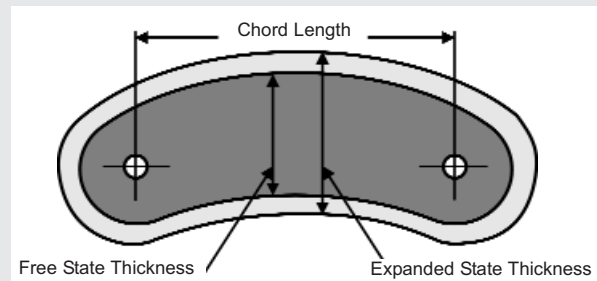
3. Calculate the number of links required to fit around the pipe and seal the annular space.

A. Determine the bolt circle for your Link-Seal® modular seal assembly by using the following formula.

$$\text{Bolt Circle} = \frac{\text{Wall Opening I.D.} + \text{Pipe Diameter O.D.}}{2}$$

B. Use the following formula to determine required number of links per Link-Seal® modular seal assembly.

$$\text{Links Per Seal} = \frac{\text{Bolt Circle} \times 3.14}{\text{Chord Length}}$$



LINK-SEAL SIZE	FREE STATE THICKNESS	EXPANDED STATE THICKNESS	CHORD LENGTH
LS-650	2.76"	3.57"	4.16"

\* = Free state thickness includes an insertion tolerance.

### Example 1.

Wall Opening I.D. = 30"  
Actual Pipe O.D. = 24"

$$\text{Annular Space} = \frac{30 - 24}{2} = 3.00"$$

Calculate the annular space (3.00").

Determine the number of links for a complete assembly:

$$\text{Bolt Circle} = \frac{30 + 24}{2} = 27"$$

Chord Length for LS-650 = 4.16"

Links Per Seal = 20.37,  
rounded down = 20  
With a final calculation of

$$\text{Links Per Seal} = \frac{27 \times 3.14}{4.16} = 20.37$$

20 links (greater than 10 links) the result is accurate.

## Link-Seal® LS-650 Sizing Chart (Verification)

PIPE O.D. RANGE #1	PIPE O.D. RANGE #2	A	B	C	Links/Seal
1.456 - 1.936	1.936 - 2.035	8.606	6.670	6.670	4
2.645 - 3.495	3.495 - 3.673	9.795	6.300	6.670	5
3.882 - 4.968	4.968 - 5.221	11.032	6.064	6.670	6
5.144 - 6.394	6.394 - 6.720	12.294	5.900	6.670	7
6.421 - 7.793	7.793 - 8.190	13.571	5.778	6.670	8
7.708 - 9.173	9.173 - 9.641	14.858	5.685	6.670	9
9.001 - 10.154	10.154 - 11.078	16.151	5.997	6.670	10
10.299 - 11.898	11.898 - 12.505	17.449	5.551	6.670	11
11.600 - 13.250	13.250 - 13.926	18.750	5.500	6.670	12

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