



General Information

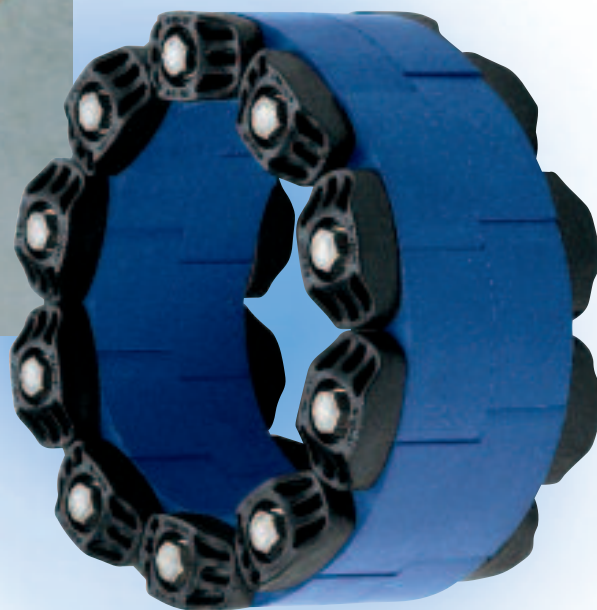
Technical Data

Selection Guide

Order Submittal Sheet

Installation Instruction

# PSI Link-Seal<sup>®</sup> Modular Seals



## Pipeline Accessories

# Link-Seal® Modular Seals

## General Information



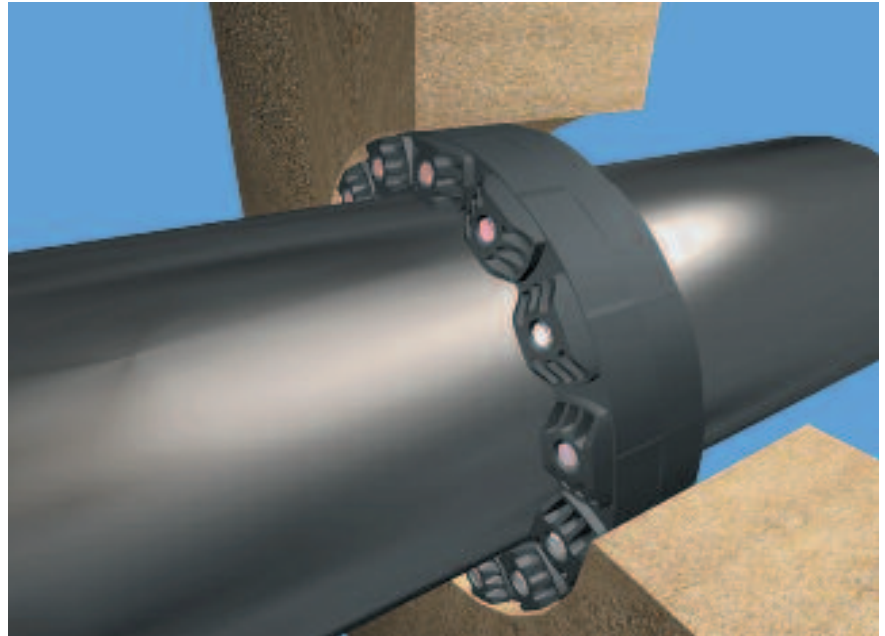
### Application range

Link-Seal® Modular Seals are considered to be the premier method for permanently sealing pipes of any size passing through walls, floors and ceilings. In fact, any cylindric object may be quickly, easily and permanently sealed, as they pass through barriers.

### Features

- Saves money and time
- Positive hydrostatic seal
- Long seal life
- Maximum protection against corrosion
- Oil, jet fuel and temperature resistant material available
- Configure a Link-Seal® modular seal to match your application
- ISO quality assurance

### The principle



**The radial expansion of the rubber ensures the hydrostatic pressure tightness**

# Link-Seal® Modular Seals

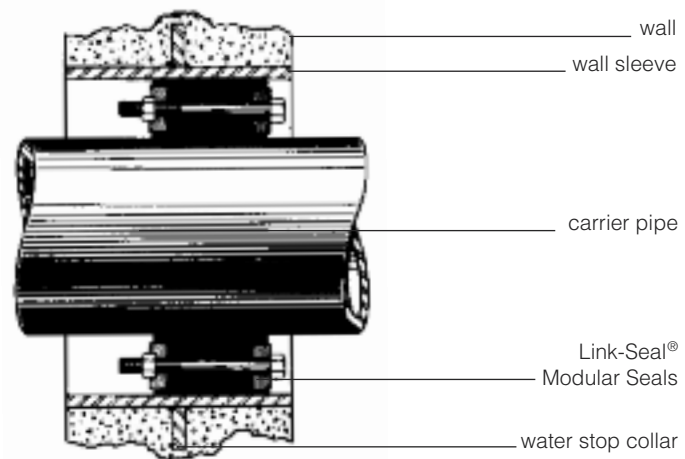
## Technical Data



### Material Properties

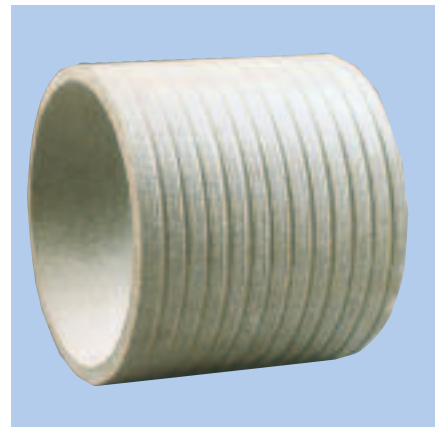
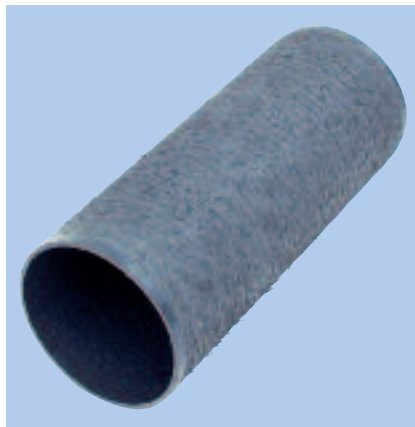
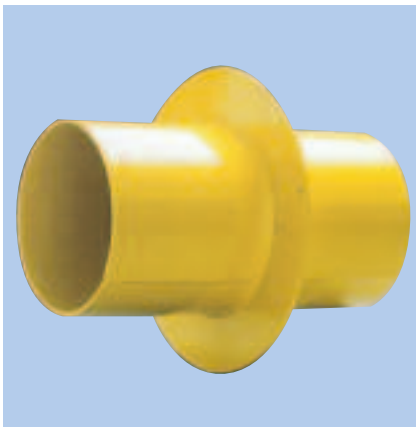
|                                   |   |  |
|-----------------------------------|---|--|
| Temperature resistance            | Standard version black<br>Type T, grey<br>Type O, green   | -40° C up to +80° C<br>-55° C up to +230° C<br>-40° C up to +70° C |
| Oil, jet fuel resistance          | Type O  |  |
| Special version for plastic pipes | blue EPDM   | Shore 40 ± 5   |
| Pressure tightness                | up to 5 bar (TÜV and Lloyd's registered) Original Link-Seal®<br>up to 3 bar (Lloyd's registered) Original Link-Seal® Typ BC and BS316<br>up to 2 bar (Lloyd's registered) Type S-LS |  |
| Cathodic protection               | Dielectrical strength 500 V/mm  |  |

### Sectional drawing of a Link-Seal® Modular Seals



### Wall sleeve

PSI offers wall sleeves in PVC, carbon steel galvanised, stainless steel or asbestos free fibre cement.



# Link-Seal® Modular Seals

## Technical Data



| Type          | Version                  | Sealing Element                    | Pressure Plates               | Bolts and Nuts                | Temperature Range      | Application   |
|---------------|--------------------------|------------------------------------|-------------------------------|-------------------------------|------------------------|---|
| <b>C</b>      | Standard                 | EPDM-rubber black                  | Reinforced Nylon Polymer      | Carbon steel zinc dichromated | -40° C up to + 80° C   | General application at normal atmosphere, in water or a humid environment. Suitable for electrical insulation and cathodic protection.              |
| <b>B</b>      | Shore 40±5               | EPDM-rubber blue                   | Reinforced Nylon Polymer      | Carbon steel zinc dichromated | -40° C up to + 80° C   | See under type „C“, especially for plastic pipes  |
| <b>S 316</b>  | Standard stainless steel | EPDM-rubber black                  | Reinforced Nylon Polymer      | stainless steel               | -40° C up to + 80° C   | High resistance against water, most other inorganic substances (acids and alkalis) and against most organic substances (e.g. acetic acid, acetone). |
| <b>O</b>      | Oil resistant            | NITRILE-rubber green               | Reinforced Nylon Polymer      | Carbon steel zinc dichromated | -40° C up to + 70° C   | Good resistance against oil, aromatic fuels, solvents and other mineral oil base products.  |
| <b>BS 316</b> | Shore 40±5               | EPDM-rubber blue                   | Reinforced Nylon Polymer      | stainless steel               | -40° C up to + 80° C   | See type „S 316“, especially for plastic pipes  |
| <b>OS 316</b> | Oil resistant            | NITRILE-rubber green               | Reinforced Nylon Polymer      | stainless steel               | -40° C up to + 70° C   | Good resistance against oil, aromatic fuels, solvents and other mineral oil base products.  |
| <b>KTW</b>    | Shore 45±5               | EPDM-rubber black incl. KTW-Stamp* | Reinforced Nylon Polymer blue | stainless steel               | - 40° C up to + 80° C  | Appropriate for drinking water applications   |
| <b>T**</b>    | High and low temperature | SILICONE-rubber grey               | St 37 zinc dichromated        | Carbon steel zinc dichromated | - 55° C up to + 230° C | No insulating properties, especially suitable for extreme temperatures.   |

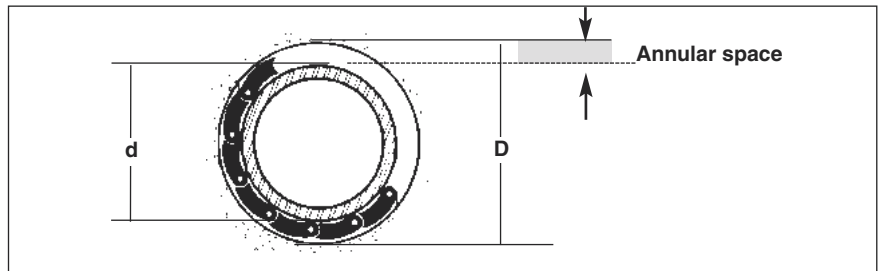
# Link-Seal® Modular Seals 3 Bar/Blue, 5 Bar/Black, Green & Grey

## Selection/Order Submittal Sheet



### 1. Which type is suitable?

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



Wall opening I.D. (D) -  Actual Pipe O.D. (d) =  Annular space  
 \_\_\_\_\_  
 2

From the adjacent chart, select the size closest to the annular space calculated in step 1. 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.

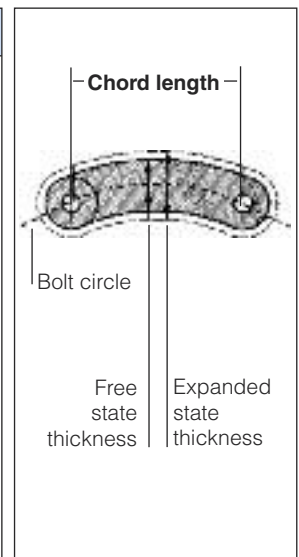
| Type                | Free state thickness | Annular space | Expanded state thickness | Necessary wall thickness |
|---------------------|----------------------|---------------|--------------------------|--------------------------|
| LS 200              | 12,7 mm              |               | 15,7 mm                  | 75 mm                    |
| LS 265              | 16,0 mm              |               | 20,0 mm                  | 75 mm                    |
| LS 275              | 16,0 mm              |               | 20,0 mm                  | 75 mm                    |
| LS 300              | 18,0 mm              |               | 22,5 mm                  | 100 mm                   |
| LS 310              | 18,0 mm              |               | 22,5 mm                  | 100 mm                   |
| LS 315              | 21,1 mm              |               | 26,0 mm                  | 100 mm                   |
| LS 325              | 23,2 mm              |               | 30,0 mm                  | 120 mm                   |
| LS 340              | 25,5 mm              |               | 34,0 mm                  | 120 mm                   |
| LS 360              | 32,0 mm              |               | 42,0 mm                  | 120 mm                   |
| LS 400              | 36,3 mm              |               | 46,0 mm                  | 140 mm                   |
| LS 410              | 37,0 mm              |               | 48,5 mm                  | 140 mm                   |
| LS 425              | 28,4 mm              |               | 37,0 mm                  | 140 mm                   |
| LS 440              | 44,0 mm              |               | 55,0 mm                  | 140 mm                   |
| LS 475              | 41,3 mm              |               | 48,5 mm                  | 140 mm                   |
| LS 500              | 60,3 mm              |               | 71,5 mm                  | 150 mm                   |
| LS 525              | 55,4 mm              |               | 63,5 mm                  | 150 mm                   |
| LS 575              | 48,0 mm              |               | 58,0 mm                  | 150 mm                   |
| LS 615 <sup>a</sup> | 81,6 mm              |               | 102,0 mm                 | 150 mm                   |
| LS 625              | 83,0 mm              |               | 102,0 mm                 | 150 mm                   |
| LS 650              | 69,0 mm              |               | 84,0 mm                  | 150 mm                   |
| LS 700              | 95,0 mm              |               | 110,0 mm                 | 150 mm                   |

**Type:**

### 2. How many links do you need?

Calculate the number of links required to fit around the pipe and seal the annular space. Determine the bolt circle for Link-Seal® modular seal assembly by using the formular below.

| Type                | Chord length | Carrier Pipe O.D. min. | Carrier Pipe O.D. max.      | min. No. of Segm. |
|---------------------|--------------|------------------------|-----------------------------|-------------------|
| LS 200              | 30,0 mm      | from 21,3 mm           | up to 323,9 mm <sup>1</sup> | 4                 |
| LS 265              | 41,0 mm      | from 50,0 mm           | up to 406,4 mm <sup>1</sup> | 5                 |
| LS 275              | 25,6 mm      | from 0,0 mm            | up to 90,0 mm               | 4                 |
| LS 300              | 41,0 mm      | from 44,5 mm           | up to 250,0 mm <sup>1</sup> | 5                 |
| LS 310              | 57,5 mm      | from 60,3 mm           | up to 406,4 mm <sup>2</sup> | 5                 |
| LS 315              | 38,4 mm      | from 37,0 mm           | up to 315,0 mm              | 5                 |
| LS 325              | 79,8 mm      | from 133,0 mm          | up to 711,0 mm              | 6                 |
| LS 340              | 41,4 mm      | from 14,0 mm           | up to 323,9 mm              | 4                 |
| LS 360              | 55,1 mm      | from 40,0 mm           | up to 406,4 mm              | 5                 |
| LS 400              | 93,1 mm      | from 139,7 mm          | up to 1220,0 mm             | 6                 |
| LS 410              | 67,6 mm      | from 60,3 mm           | up to 323,9 mm              | 5                 |
| LS 425              | 93,1 mm      | from 144,0 mm          | up to 1220,0 mm             | 6                 |
| LS 440              | 99,0 mm      | from 100,0 mm          | up to 1220,0 mm             | 5                 |
| LS 475              | 68,6 mm      | from 60,3 mm           | up to 1220,0 mm             | 5                 |
| LS 500              | 99,8 mm      | from 100,0 mm          | up to 1220,0 mm             | 5                 |
| LS 525              | 99,8 mm      | from 133,0 mm          | up to 1220,0 mm             | 6                 |
| LS 575              | 79,5 mm      | from 130,0 mm          | up to 1220,0 mm             | 5                 |
| LS 615 <sup>a</sup> | 155,5 mm     | from 219,0 mm          | up to 3000,0 mm             | 6                 |
| LS 625              | 106,7 mm     | from 133,0 mm          | up to 2000,0 mm             | 5                 |
| LS 650              | 106,7 mm     | from 133,0 mm          | up to 2000,0 mm             | 5                 |
| LS 700              | 155,5 mm     | from 219,0 mm          | up to 3000,0 mm             | 6                 |



<sup>1</sup> As from O.D. of 150 mm we recommend to enlarge your coredrill to install Link-Seal Type 310.  
<sup>2</sup> As from O.D. of 300 mm we recommend to enlarge your coredrill to install Link-Seal Type 325.  
<sup>3</sup> LS 615 NOT suitable for plastic pipes.

Wall Opening I.D. (D) +  Pipe Diameter O.D. (d) =  Bolt Circle :  Chord length :  Number  
 \_\_\_\_\_  
 2

x 3,14 =  :  =

**Number:**



Selection CD/  
Guide on request

# Link-Seal® Modular Seals Selection/Order Submittal Sheet



### 3. Which version is suitable?

Please determine the rubber and bolt quality suitable for your application. The relevant abbreviations are shown in the following chart.

**Version:**

| Rubber  | Bolts/nuts |                 |
|---|------------|-----------------|
|   | galvanised | stainless steel |
| <b>Standard EPDM-rubber (black)</b>                 | C          | S 316           |
| <b>Oil resistant Nitrile-rubber (green)</b>         | O          | OS 316          |
| <b>Temperature resistant Silicone-rubber (grey)</b> | T          | TS 316*         |
| <b>EPDM-rubber (blue, Shore 40 ± 5)</b>             | B          | BS 316          |

\* Special type

### 4. Correct product code?

Please select the correct product code corresponding to your choice.



**Product-Code:**

| Type   | C           | B           | S 316       | O           | BS 316      | OS 316      |
|--------|-------------|-------------|-------------|-------------|-------------|-------------|
| LS 200 | 2-025-00001 | 2-025-00300 | 2-025-00139 | 2-025-00040 | 2-025-00340 | 2-025-00156 |
| LS 265 | 2-025-00017 | 2-025-00309 | 2-025-00186 | -           | 2-025-00349 | -           |
| LS 275 | 2-025-00010 | 2-025-00301 | 2-025-00140 | 2-025-00039 | 2-025-00341 | 2-025-00150 |
| LS 300 | 2-025-00002 | 2-025-00302 | 2-025-00141 | 2-025-00041 | 2-025-00342 | 2-025-00151 |
| LS 310 | 2-025-00018 | 2-025-00310 | 2-025-00187 | -           | 2-025-00359 | -           |
| LS 315 | 2-025-00012 | 2-025-00303 | 2-025-00146 | 2-025-00049 | 2-025-00343 | 2-025-00157 |
| LS 325 | 2-025-00003 | 2-025-00304 | 2-025-00142 | 2-025-00042 | 2-025-00344 | 2-025-00152 |
| LS 340 | 2-025-00004 | 2-025-00058 | 2-025-00143 | 2-025-00050 | 2-025-00064 | 2-025-00055 |
| LS 360 | 2-025-00008 | 2-025-00059 | 2-025-00144 | 2-025-00051 | 2-025-00065 | 2-025-00056 |
| LS 400 | 2-025-00009 | 2-025-00305 | 2-025-00172 | 2-025-00043 | 2-025-00345 | 2-025-00153 |
| LS 410 | 2-025-00011 | 2-025-00060 | 2-025-00173 | 2-025-00052 | 2-025-00066 | 2-025-00161 |
| LS 425 | 2-025-00005 | 2-025-00306 | 2-025-00174 | 2-025-00044 | 2-025-00346 | 2-025-00154 |
| LS 440 | 2-025-00015 | -           | 2-025-00176 | 2-025-00257 | -           | 2-025-00258 |
| LS 475 | 2-025-00006 | 2-025-00307 | 2-025-00145 | 2-025-00045 | 2-025-00347 | 2-025-00155 |
| LS 500 | 2-025-00007 | 2-025-00308 | 2-025-00147 | 2-025-00046 | 2-025-00348 | 2-025-00158 |
| LS 525 | 2-025-00013 | 2-025-00061 | 2-025-00148 | 2-025-00047 | 2-025-00067 | 2-025-00159 |
| LS 575 | 2-025-00014 | 2-025-00062 | 2-025-00149 | 2-025-00053 | 2-025-00068 | 2-025-00160 |
| LS 615 | 2-025-00215 | -           | 2-025-00185 | 2-025-00220 | -           | 2-025-00265 |
| LS 625 | -           | 2-025-00260 | -           | -           | 2-025-00261 | -           |
| LS 650 | 2-025-00016 | -           | 2-025-00177 | 2-025-00255 | -           | 2-025-00259 |
| LS 700 | -           | 2-025-00470 | -           | -           | 2-025-00471 | -           |

### 5. Order submittal sheet

Please copy the order sheet and fax to PSI Ltd  
Fax +44(0) 1480 404662



Selection CD/  
Guide on request

| Quantity | Type | Version | Product-Code | Total |
|----------|------|---------|--------------|-------|
|          |      |         |              |       |
|          |      |         |              |       |
|          |      |         |              |       |

For further information please contact PSI Ltd. We apply our General conditions for sales on all orders. Subject to technical changes. The user must ensure that the chosen product is suitable for his application. Our warranty is limited to the replacement of defective found material. For prices please see our actual price list.

despatched by:

date/signature



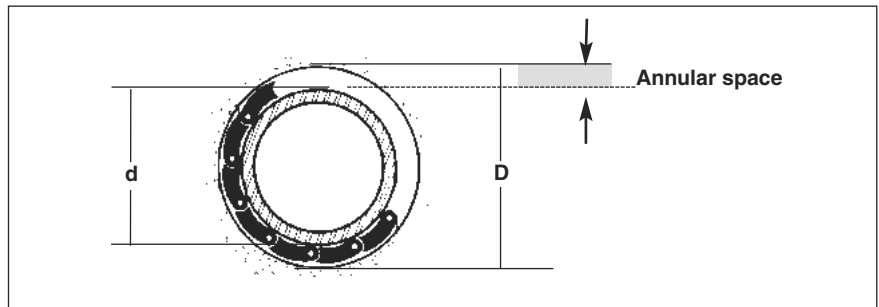
# Link-Seal Type S-LS (small Version) 2 bar

## Selection/Order Submittal Sheet



### 1. Which type is suitable?

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



|  |   |  |   |  |
|--|---|--|---|--|
| Wall opening I.D. (D)                                    | - | Actual Pipe O.D. (d)                                     | = | Annular space  |
| <input style="width: 100px; height: 20px;" type="text"/> | - | <input style="width: 100px; height: 20px;" type="text"/> | = | <input style="width: 100px; height: 20px;" type="text"/> |
| 2  |   |  |   |  |

From the adjacent chart, select the size closest to the annular space calculated in step 1. 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.

| Type     | Free state thickness | Annular space | Expanded state thickness | Necessary wall thickness |
|----------|----------------------|---------------|--------------------------|--------------------------|
| LS 200   | 17,7 mm              |               | 15,7 mm                  | 70 mm                    |
| LS 275   | 16,0 mm              |               | 20,0 mm                  | 70 mm                    |
| S-LS 300 | 17,5 mm              |               | 21,0 mm                  | 70 mm                    |
| S-LS 315 | 20,1 mm              |               | 24,0 mm                  | 70 mm                    |
| S-LS 325 | 24,0 mm              |               | 29,0 mm                  | 90 mm                    |
| S-LS 340 | 24,5 mm              |               | 30,0 mm                  | 70 mm                    |
| S-LS 360 | 31,5 mm              |               | 37,0 mm                  | 90 mm                    |
| S-LS 400 | 35,5 mm              |               | 42,0 mm                  | 90 mm                    |
| S-LS 410 | 36,5 mm              |               | 42,5 mm                  | 90 mm                    |
| S-LS 425 | 28,6 mm              |               | 34,1 mm                  | 90 mm                    |
| S-LS 440 | 44,0 mm              |               | 50,5 mm                  | 90 mm                    |
| S-LS 475 | 41,3 mm              |               | 45,5 mm                  | 90 mm                    |
| S-LS 500 | 61,0 mm              |               | 67,0 mm                  | 110 mm                   |
| S-LS 525 | 53,0 mm              |               | 58,0 mm                  | 110 mm                   |
| S-LS 575 | 48,0 mm              |               | 54,0 mm                  | 100 mm                   |
| S-LS 625 | 83,0 mm              |               | 95,0 mm                  | 100 mm                   |
| S-LS 650 | 69,0 mm              |               | 77,0 mm                  | 100 mm                   |

### Type:

Note: Type S-LS reduced pressure and sealing range

### 2. How many links do you need?

Calculate the number of links required to fit around the pipe and seal the annular space. Determine the bolt circle for Link-Seal® modular seal assembly by using the formula below.

| Type     | Chord length | Carrier Pipe O.D. min. | Carrier Pipe O.D. max.      | min. No. of Segm. |
|----------|--------------|------------------------|-----------------------------|-------------------|
| LS 200   | 30,5 mm      | from 21,3 mm           | up to 323,9 mm <sup>1</sup> | 4                 |
| LS 275   | 25,0 mm      | from 0,0 mm            | up to 30,0 mm               | 4                 |
| S-LS 300 | 40,5 mm      | from 44,5 mm           | up to 406,4 mm <sup>2</sup> | 5                 |
| S-LS 315 | 37,0 mm      | from 37,0 mm           | up to 315,0 mm              | 5                 |
| S-LS 325 | 79,0 mm      | from 88,9 mm           | up to 711,0 mm              | 6                 |
| S-LS 340 | 42,0 mm      | from 14,0 mm           | up to 323,9 mm              | 4                 |
| S-LS 360 | 55,5 mm      | from 16,0 mm           | up to 406,4 mm              | 4                 |
| S-LS 400 | 93,0 mm      | from 139,7 mm          | up to 1220,0 mm             | 6                 |
| S-LS 410 | 68,0 mm      | from 44,5 mm           | up to 323,9 mm              | 4                 |
| S-LS 425 | 93,0 mm      | from 134,0 mm          | up to 1220,0 mm             | 6                 |
| S-LS 440 | 99,0 mm      | from 100,0 mm          | up to 1220,0 mm             | 5                 |
| S-LS 475 | 68,0 mm      | from 60,3 mm           | up to 1220,0 mm             | 5                 |
| S-LS 500 | 99,0 mm      | from 100,0 mm          | up to 1220,0 mm             | 5                 |
| S-LS 525 | 99,0 mm      | from 133,0 mm          | up to 1220,0 mm             | 6                 |
| S-LS 575 | 79,0 mm      | from 130,0 mm          | up to 1220,0 mm             | 5                 |
| S-LS 625 | 106,7 mm     | from 133,0 mm          | up to 2000,0 mm             | 5                 |
| S-LS 650 | 106,7 mm     | from 133,0 mm          | up to 2000,0 mm             | 5                 |

<sup>1</sup> As from an O.D. of 150 mm we recommend to enlarge your coredrill to install Link-Seal Type S-LS 300.

<sup>2</sup> As from an O.D. of 250 mm we recommend to enlarge your coredrill to install Link-Seal Type S-LS 325.

|  |   |  |          |  |   |  |   |  |
|--|---|--|----------|--|---|--|---|--|
| Wall Opening I.D. (D)                                    | + | Pipe Diameter O.D. (d)                                   | x 3,14 = | Bolt Circle  | : | Chord length   | = | Number   |
| <input style="width: 100px; height: 20px;" type="text"/> | + | <input style="width: 100px; height: 20px;" type="text"/> | =        | <input style="width: 100px; height: 20px;" type="text"/> | : | <input style="width: 100px; height: 20px;" type="text"/> | = | <input style="width: 100px; height: 20px;" type="text"/> |
| 2  |   |  |          |  |   |  |   |  |

### Number:



Selection CD/  
Guide on request

## Link-Seal Type S-LS (small Version)

# Selection/Order Submittal Sheet



### 3. Which version is suitable?

Please determine the rubber and bolt quality suitable for your application. The relevant abbreviations are shown in the following chart

**Version:**

| rubber  | bolts/nuts |                 |
|---|------------|-----------------|
|   | galvanised | stainless steel |
| <b>Standard EPDM-rubber black</b>                                   | C          | S 316           |
| <b>KTW EPDM-rubber black acc. to German drinking recommendation</b> | –          | KTW             |

### 4. Correct product code?

Please select the correct product code corresponding to your choice.



**Product-Code:**

| Type     | C           | S 316       | KTW         |
|----------|-------------|-------------|-------------|
| LS 200   | –           | –           | 2-025-00400 |
| LS 275   | –           | –           | 2-025-00404 |
| S-LS 300 | 2-024-00002 | 2-024-00141 | 2-024-00200 |
| S-LS 315 | 2-024-00012 | 2-024-00146 | 2-024-00204 |
| S-LS 325 | 2-024-00003 | 2-024-00142 | 2-024-00208 |
| S-LS 340 | 2-024-00004 | 2-024-00143 | 2-024-00212 |
| S-LS 360 | 2-024-00008 | 2-024-00144 | 2-024-00216 |
| S-LS 400 | 2-024-00009 | 2-024-00172 | 2-024-00220 |
| S-LS 410 | 2-024-00011 | 2-024-00173 | 2-024-00224 |
| S-LS 425 | 2-024-00005 | 2-024-00174 | 2-024-00228 |
| S-LS 440 | 2-024-00015 | 2-024-00176 | 2-024-00232 |
| S-LS 475 | 2-024-00006 | 2-024-00145 | 2-024-00236 |
| S-LS 500 | 2-024-00007 | 2-024-00147 | 2-024-00240 |
| S-LS 525 | 2-024-00013 | 2-024-00148 | 2-024-00244 |
| S-LS 575 | 2-024-00014 | 2-024-00149 | 2-024-00248 |
| S-LS 625 | 2-024-00017 | 2-024-00179 | 2-024-00252 |
| S-LS 650 | 2-024-00016 | 2-024-00177 | 2-024-00256 |

Note: Type S-LS reduced pressure and sealing range

### 5. Order submittal sheet

Please copy the order sheet and fax to PSI Ltd  
Fax +44(0) 1480 404662



**Selection CD/  
Guide on request**

| Quantity | Type | Version | Product-Code | Total |
|----------|------|---------|--------------|-------|
|          |      |         |              |       |
|          |      |         |              |       |
|          |      |         |              |       |

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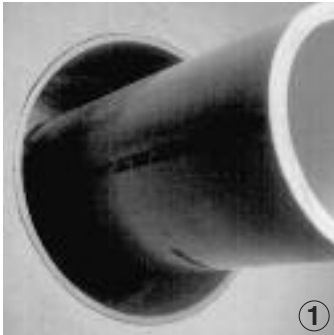
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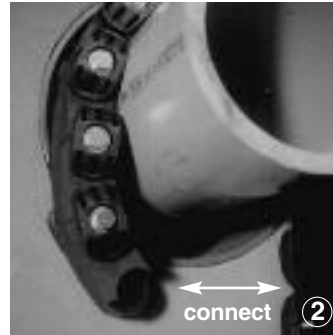
# Link-Seal® Modular Seals

## Installation Instruction



Center the pipe, cable or conduit in wall opening or casing. Make sure the pipe is adequately supported on both ends. Link-Seal® modular seals are not intended to support the weight of the pipe.

①



Loosen rear pressure plate with nut just enough so links move freely towards and away from each other - connect both ends of belt.

②



Check to be sure bolt heads are facing the installer. Extra slack or sag is normal. Do not remove links if extra slack exists. Note: On smaller diameter pipes, links may need to be stretched.

③



Slide belt assembly into annular space. For larger size belts, start inserting Link-Seal® modular seal assembly at the 6 o'clock position and work both sides up toward the 12 o'clock position in the annular space.

④



Start at 12 o'clock. Tighten any bolt in a clockwise manner. Tighten only by hand!

⑤



Do not tighten any bolt more than 4 turns at a time. Continue in a clockwise manner. Make 2 or 3 more passes at 3 turns per bolt until links have been uniformly compressed and the max. torque moment (see table) is reached.

⑥



Completed assembly

⑦

Repeat tightening after approx. 2 hours. Especially the Link-Seal® Type LS 500 up to LS 650 are, depending on the installation conditions (annular space, temperature, etc.) has to be tightened again for several times.

| Max. torque moment  |  |   | Type                |
|---|--|---|---------------------|
| for Type C, S316 rubber black O and OS316 rubber green Type T rubber grey Shore 55°± 5° | for Type BC and BS316 rubber blue, Shore 40°± 5° | for Type S-LS version C, S316 and KTW Shore 45°± 5° |                     |
| 2 Nm  | 2 Nm   | 2 Nm  | LS 200 up to LS 275 |
| 8 Nm  | 6 Nm   | 6 Nm  | LS 300 up to LS 360 |
| 27 Nm   | 20 Nm  | 20 Nm   | LS 400 up to LS 475 |
| 65 Nm   | 50 Nm  | 50 Nm   | LS 500 up to LS 575 |
| 110 Nm  | 65 Nm  | 65 Nm   | LS 615              |
| 65 Nm   | 50 Nm  | 50 Nm   | LS 625 up to LS 700 |

# Link-Seal® Modular Seals

## Installation Instruction



Please consider the right equipment when you install Link-Seal®



### Link-Seal® Modular seals – Do's

1. Make sure pipe is centered.
2. Install the belt with the pressure plates evenly spaced.
3. Install the exact number of links indicated in sizing charts.
4. Check to make sure pipe is supported properly during backfill operations.
5. Make sure seal assembly and pipe surfaces are free from dirt.



### Link-Seal® Modular seals – Don't's

1. Don't install the belt with the pressure plates aimed in irregular directions (Staggered)
2. Don't install Link-Seal® Modular seals with spiral weld pipe.
3. Don't torque each bolt completely before moving on to the next.
4. Do not use high speed power tools.
5. Do not use power tools with Link-Seal® Modular seal S316 (X) bolts.
6. Please note that the Link-Seal® isn't a fixing point.

PSI warranty is limited to the replacement of faulty material. The user is responsible for checking if the products are suitable for application.

# Original Link-Seal® Selection Table

Selection for core drilled holes



| KB  | LS                              |     |     | Select Seal          |             |
|-----|---------------------------------|-----|-----|----------------------|-------------|
|     | Medium pipe Ø <sub>a</sub> [mm] | up  | to  | Quantity of elements | Type LS ... |
| 50  | 10                              | -   | 18  | 4                    | 275         |
| 80  | 40                              | -   | 48  | 8                    | 275         |
|     | 48                              | -   | 53  | 7                    | 200         |
| 100 | 32                              | -   | 45  | 5                    | 340         |
|     | 48                              | -   | 57  | 6                    | 315         |
|     | 55                              | -   | 64  | 6                    | 300         |
|     | 62                              | -   | 68  | 6                    | 265         |
|     | 68                              | -   | 75  | 9                    | 200         |
| 125 | 42                              | -   | 61  | 5                    | 360         |
|     | 58                              | -   | 74  | 7                    | 340         |
|     | 73                              | -   | 82  | 8                    | 315         |
|     | 80                              | -   | 89  | 8                    | 300         |
|     | 87                              | -   | 93  | 8                    | 265         |
|     | 95                              | -   | 100 | 12                   | 200         |
| 150 | 50                              | -   | 67  | 5                    | 475         |
|     | 58                              | -   | 76  | 5                    | 410         |
|     | 66                              | -   | 82  | 6                    | 360         |
|     | 82                              | -   | 99  | 9                    | 340         |
|     | 105                             | -   | 114 | 7                    | 310         |
|     | 112                             | -   | 118 | 10                   | 265         |
|     | 118                             | -   | 125 | 14                   | 200         |
| 200 | 90                              | -   | 104 | 6                    | 575         |
|     | 103                             | -   | 117 | 7                    | 475         |
|     | 103                             | -   | 124 | 7                    | 410         |
|     | 116                             | -   | 133 | 9                    | 360         |
|     | 132                             | -   | 149 | 13                   | 340         |
|     | 155                             | -   | 164 | 10                   | 310         |
| 250 | 134                             | -   | 154 | 8                    | 575         |
|     | 140                             | -   | 160 | 6                    | 440         |
|     | 153                             | -   | 163 | 9                    | 475         |
|     | 158                             | -   | 177 | 7                    | 400         |
|     | 166                             | -   | 186 | 12                   | 360         |
|     | 178                             | -   | 192 | 7                    | 425         |
|     | 190                             | -   | 203 | 9                    | 325         |
|     | 206                             | -   | 212 | 12                   | 310         |
|     | 300                             | 157 | -   | 173                  | 7           |
| 184 |                                 | -   | 204 | 10                   | 575         |
| 190 |                                 | -   | 210 | 8                    | 440         |
| 208 |                                 | -   | 226 | 12                   | 410         |
| 216 |                                 | -   | 236 | 15                   | 360         |
| 234 |                                 | -   | 244 | 20                   | 340         |
| 240 |                                 | -   | 253 | 11                   | 325         |
| 255 |                                 | -   | 264 | 15                   | 310         |
| 350 | 182                             | -   | 210 | 8                    | 650         |
|     | 207                             | -   | 229 | 9                    | 500         |
|     | 223                             | -   | 239 | 9                    | 525         |
|     | 234                             | -   | 254 | 12                   | 575         |
|     | 253                             | -   | 267 | 14                   | 475         |
|     | 253                             | -   | 274 | 14                   | 410         |
|     | 266                             | -   | 286 | 18                   | 360         |
|     | 258                             | -   | 274 | 10                   | 400         |
|     | 276                             | -   | 293 | 11                   | 425         |
|     | 286                             | -   | 296 | 24                   | 340         |
|     | 294                             | -   | 303 | 13                   | 325         |
|     | 307                             | -   | 314 | 18                   | 310         |

# Original Link-Seal® Selection Table

Selection for core drilled holes



| KB  | LS                              |     |      | Select Seal          |             |
|-----|---------------------------------|-----|------|----------------------|-------------|
|     | Medium pipe Ø <sub>a</sub> [mm] | up  | - to | Quantity of elements | Type LS ... |
| 400 | 200                             | -   | 234  | 9                    | 625         |
|     | 234                             | -   | 255  | 9                    | 650         |
|     | 264                             | -   | 279  | 11                   | 500         |
|     | 273                             | -   | 289  | 11                   | 525         |
|     | 284                             | -   | 304  | 14                   | 575         |
|     | 292                             | -   | 310  | 11                   | 440         |
|     | 303                             | -   | 317  | 16                   | 475         |
|     | 308                             | -   | 327  | 12                   | 400         |
|     | 326                             | -   | 341  | 12                   | 425         |
|     | 340                             | -   | 353  | 15                   | 325         |
| 450 | 246                             | -   | 265  | 10                   | 625         |
|     | 266                             | -   | 286  | 7                    | 615         |
|     | 285                             | -   | 311  | 11                   | 650         |
|     | 307                             | -   | 329  | 12                   | 500         |
|     | 327                             | -   | 339  | 12                   | 525         |
|     | 335                             | -   | 354  | 16                   | 575         |
|     | 345                             | -   | 356  | 13                   | 440         |
|     | 355                             | -   | 367  | 19                   | 475         |
|     | 358                             | -   | 377  | 14                   | 400         |
|     | 376                             | -   | 393  | 14                   | 425         |
| 375 | -                               | 386 | 24   | 360                  |             |
| 390 | -                               | 403 | 17   | 325                  |             |
| 500 | 296                             | -   | 334  | 12                   | 625         |
|     | 335                             | -   | 359  | 12                   | 650         |
|     | 357                             | -   | 379  | 14                   | 500         |
|     | 373                             | -   | 389  | 14                   | 525         |
|     | 385                             | -   | 400  | 18                   | 575         |
|     | 390                             | -   | 410  | 14                   | 440         |
|     | 408                             | -   | 427  | 15                   | 400         |
|     | 426                             | -   | 443  | 16                   | 425         |
|     | 440                             | -   | 453  | 19                   | 325         |
| 600 | 396                             | -   | 434  | 15                   | 625         |
|     | 436                             | -   | 457  | 15                   | 650         |
|     | 457                             | -   | 479  | 17                   | 500         |
|     | 473                             | -   | 489  | 17                   | 525         |
|     | 490                             | -   | 503  | 17                   | 440         |
|     | 503                             | -   | 509  | 25                   | 475         |
|     | 508                             | -   | 527  | 19                   | 400         |
|     | 526                             | -   | 543  | 19                   | 425         |
|     | 540                             | -   | 553  | 23                   | 325         |

All other sizes on request!

## Available in these versions:

- Type C: Rubber EPDM (black standard), screws galvanized
- Type BC: Rubber EPDM (blue, extra soft for plastic pipe)
- Type S316: Rubber EPDM (black), screws V4A-stainless steel
- Type BS316: Rubber EPDM (blue, extra soft for plastic pipe), screws V4A-stainless steel
- Type O: Rubber Nitril (green, oil-resistant), screws galvanized. Price on request.
- Type OS316: Rubber Nitril (green, oil-resistant), screws V4A-stainless steel. Price on request.



# Link-Seal Type S-LS Selection Table

(slim version up to 2,0 bar)

Selection for core drilled holes



| KB  | LS                               |    |     | Select Seal          |             |
|-----|----------------------------------|----|-----|----------------------|-------------|
|     | Medium pipe $\varnothing_a$ [mm] | up | to  | Quantity of elements | Type LS ... |
| 50  | 10                               | -  | 18  | 4                    | 275         |
| 80  | 40                               | -  | 48  | 8                    | 275         |
|     | 48                               | -  | 53  | 7                    | 200         |
| 100 | 40                               | -  | 47  | 5                    | 340         |
|     | 52                               | -  | 57  | 6                    | 315         |
|     | 58                               | -  | 64  | 6                    | 300         |
|     | 68                               | -  | 75  | 9                    | 200         |
| 125 | 51                               | -  | 61  | 5                    | 360         |
|     | 65                               | -  | 75  | 7                    | 340         |
|     | 77                               | -  | 83  | 8                    | 315         |
|     | 83                               | -  | 89  | 8                    | 300         |
|     | 95                               | -  | 100 | 12                   | 200         |
| 150 | 59                               | -  | 67  | 5                    | 475         |
|     | 67                               | -  | 76  | 5                    | 410         |
|     | 76                               | -  | 86  | 7                    | 360         |
|     | 90                               | -  | 100 | 9                    | 340         |
|     | 108                              | -  | 115 | 10                   | 300         |
|     | 118                              | -  | 125 | 14                   | 200         |
| 200 | 92                               | -  | 104 | 6                    | 575         |
|     | 109                              | -  | 117 | 7                    | 475         |
|     | 117                              | -  | 126 | 7                    | 410         |
|     | 126                              | -  | 136 | 9                    | 360         |
|     | 140                              | -  | 150 | 13                   | 340         |
|     | 158                              | -  | 164 | 14                   | 300         |
| 250 | 134                              | -  | 144 | 6                    | 525         |
|     | 142                              | -  | 154 | 8                    | 575         |
|     | 150                              | -  | 161 | 6                    | 440         |
|     | 166                              | -  | 177 | 7                    | 400         |
|     | 176                              | -  | 186 | 12                   | 360         |
|     | 185                              | -  | 192 | 7                    | 425         |
|     | 192                              | -  | 202 | 9                    | 325         |
|     | 208                              | -  | 214 | 18                   | 300         |
| 300 | 166                              | -  | 178 | 7                    | 500         |
|     | 192                              | -  | 204 | 10                   | 575         |
|     | 200                              | -  | 211 | 8                    | 440         |
|     | 215                              | -  | 226 | 12                   | 410         |
|     | 226                              | -  | 236 | 15                   | 360         |
|     | 240                              | -  | 250 | 20                   | 340         |
|     | 258                              | -  | 264 | 21                   | 300         |
| 350 | 196                              | -  | 211 | 8                    | 650         |
|     | 216                              | -  | 228 | 9                    | 500         |
|     | 234                              | -  | 241 | 9                    | 525         |
|     | 242                              | -  | 254 | 12                   | 575         |
|     | 259                              | -  | 267 | 14                   | 475         |
|     | 266                              | -  | 276 | 14                   | 410         |
|     | 276                              | -  | 286 | 18                   | 360         |
|     | 290                              | -  | 300 | 24                   | 340         |
|     | 308                              | -  | 314 | 25                   | 300         |

# Link-Seal Type S-LS Selection Table

(slim version up to 2,0 bar)

Selection for core drilled holes



| KB  | LS                |                          |     | Select Seal             |                |
|-----|-------------------|--------------------------|-----|-------------------------|----------------|
|     | Medium pipe<br>up | Ø <sub>a</sub> [mm]<br>- | to  | Quantity of<br>elements | Type<br>LS ... |
| 400 | 210               | -                        | 234 | 9                       | 625            |
|     | 246               | -                        | 255 | 9                       | 650            |
|     | 266               | -                        | 278 | 11                      | 500            |
|     | 284               | -                        | 292 | 11                      | 525            |
|     | 292               | -                        | 304 | 14                      | 575            |
|     | 299               | -                        | 311 | 11                      | 440            |
|     | 309               | -                        | 317 | 16                      | 475            |
|     | 316               | -                        | 328 | 12                      | 400            |
|     | 328               | -                        | 335 | 21                      | 360            |
|     | 332               | -                        | 342 | 12                      | 425            |
|     | 342               | -                        | 352 | 15                      | 325            |
| 450 | 260               | -                        | 280 | 10                      | 625            |
|     | 296               | -                        | 311 | 11                      | 650            |
|     | 316               | -                        | 328 | 12                      | 500            |
|     | 334               | -                        | 342 | 12                      | 525            |
|     | 342               | -                        | 354 | 16                      | 575            |
|     | 349               | -                        | 356 | 13                      | 440            |
|     | 359               | -                        | 367 | 19                      | 475            |
|     | 366               | -                        | 378 | 14                      | 400            |
|     | 382               | -                        | 392 | 14                      | 425            |
|     | 376               | -                        | 386 | 24                      | 360            |
|     | 392               | -                        | 402 | 17                      | 325            |
| 500 | 310               | -                        | 334 | 12                      | 625            |
|     | 346               | -                        | 359 | 12                      | 650            |
|     | 366               | -                        | 378 | 14                      | 500            |
|     | 384               | -                        | 392 | 14                      | 525            |
|     | 392               | -                        | 404 | 18                      | 575            |
|     | 399               | -                        | 411 | 14                      | 440            |
|     | 409               | -                        | 417 | 21                      | 475            |
|     | 416               | -                        | 428 | 15                      | 400            |
|     | 432               | -                        | 442 | 16                      | 425            |
|     | 442               | -                        | 452 | 19                      | 325            |
| 600 | 410               | -                        | 434 | 15                      | 625            |
|     | 446               | -                        | 460 | 15                      | 650            |
|     | 466               | -                        | 478 | 17                      | 500            |
|     | 484               | -                        | 492 | 17                      | 525            |
|     | 492               | -                        | 504 | 22                      | 575            |
|     | 499               | -                        | 510 | 17                      | 440            |
|     | 509               | -                        | 516 | 26                      | 475            |
|     | 516               | -                        | 528 | 19                      | 400            |
|     | 532               | -                        | 542 | 19                      | 425            |
|     | 542               | -                        | 552 | 23                      | 325            |

All other sizes on request!


## Available in these versions:

- Type C: Rubber EPDM (black standard), screws galvanized
  - Type S316: Rubber EPDM (black), screws V4A-stainless steel
  - Type KTW: Rubber EPDM (with blue print „KTW“, pressure plate blue), screws V4A-stainless steel
- KTW = Version for drinking water**



# Original Link-Seal® Modular Seals Certificate





## DET NORSKE VERITAS

### TYPE APPROVAL CERTIFICATE

**CERTIFICATE NO. P-11485**  
 This Certificate consists of 2 pages

This is to certify that the  
**Deck/Bulkhead Penetration**  
 with type designation(s)  
**LINK-SEAL SYSTEM of the types LS 200, LS 275, LS 300, LS 315, LS 325 and LS 500.**


Manufactured by  
**PSI Pipeline Seal & Insulator, Inc**  
 Houston, United States

is found to comply with  
 Det Norske Veritas Rules for Classification of Ships


Application  
 Pipe penetrations of watertightness bulkheads and decks, except fire divisions

|                    |  |
|--------------------|--|
| Temp. range:       | Type D, C, X: -40°C to +120°C          |
| Max. work. press.: | Type D: 7.0 bar, Type C and X: 5.0 bar |
| Size:              | See page 2                             |

Place and date  
Brevik, 2004-05-11  
for Det Norske Veritas AS




John Olav Nævdal  
Head of Section



Local Office  
DNV Houston

This Certificate is valid until  
2008-02-31



Tull Berg-Nelson  
Surveyor

Notes: This Certificate is subject to terms and conditions attached. Any significant change in design or construction may render this Certificate invalid. The validity also relates to the Type Approval Certificate and not to the approval of representative samples.



## BESCHEINIGUNG

|               |  |
|---------------|--|
| Prüfbericht:  | 004011784  |
| Auftraggeber: | PSI Products GmbH<br>Ulrichstraße 25<br>72116 Mühlhausen                                     |
| Hersteller:   | PSI Pipeline Seal and Insulator, Inc.<br>8505 South Street<br>Houston, Texas 77021<br>U.S.A. |
| Gegenstand:   | Ringraum-Dichtung in Modul-Bauseize  |

Der o.g. Gegenstand wurde unter Berücksichtigung technischer Regeln geprüft und die qualitätsrelevanten Maßnahmen für die Fertigung beauftragt.  
 Der Geltungsbereich mit allen Einzelheiten ist in dem Prüfbericht enthalten.  
 Der Hersteller ist berechtigt, an dem o.g. Gegenstand das Deutlichkeitszeichen  
**TÜV - SW 007 - 94**  
 anzubringen.

Mannheim, den 24. September 2004  
 88-024-6474/jp

TÜV RAVENHERRN SACHSEN SÜDWEST E.V.  
 Bau und Betrieb  
 Dampf- und Druckluft  
 Kompetenzzentrum Druckbehälteranlagen  
 Die Sachverständige




Certificate

|  |                            |
|--|----------------------------|
| Client: PSI Products GmbH<br>Ulrichstrasse 25<br>72116 Mühlhausen, Germany | Title: APPROVED            |
| Classifying Office:  | Date: 26 September 2004    |
| Expiry Date:<br>To: 18 August 2004   | Valid From: 18 August 2004 |

This certificate is issued to the client named in the certificate, who hereby certifies that the relevant technical specifications of the certificate have been fully met and that the certificate is valid for the intended application.

**Link-Seal® in Modulbauweise**  
 Modell LS der Materialtypen C, D und BC  
 Modell S-LS des Materialtyps C

Diese Tests wurden durchgeführt bei der Herstellung von PSI Products GmbH "Druckprüfung für die Ringraumdichtung Typ Link-Seal® in Modulbauweise" Anrichte 004. Die Daten der Prüfungsanordnung in der 18. August 2004.

The inspection was carried out in accordance with the following conditions:

**Schweißverfahren**  
 Die Schweißverfahren der Prüfungen ist, dass die oben genannten Dichtungen bei den technischen Druck, so als in der Tabelle angegeben, undurchlässig sind.

| Link-Seal® Typ     | Technischer Druck |
|--------------------|-------------------|
| LS 200-028 Typ E   | 7 bar             |
| LS 200-028 Typ BC  | 7 bar             |
| LS 200-028 Typ D   | 7 bar             |
| S-LS 200-028 Typ C | 7 bar             |



A.H. Zornigman  
Surveyor in Charge Register (MBA)

A member of the Lloyd's Register Group