



## LINK-SEAL® BS 316

Flexible link chain for the sealing of wall penetrations for gas, water, sewage pipes and cables



### AREA OF APPLICATION

Particularly soft rubber, especially suitable for plastic pipes. Use in normal atmosphere, water or humidity. Suitable for electrical isolation and cathodic corrosion protection. S 316: Resistant to water and against most inorganic (acids and alkalis) and organic substances.

### MATERIAL

**Material type:** EPDM Rubber

**Shore hardness:** Shore A 40° ±5

**Pressure plates:** glass fibre reinforced polyamide

**Bolts:** A 4-70 Stainless Steel



### PROPERTIES

**Temperature range:** -40 °C bis + 80 °C

**UV-resistant:** Yes

**Pressure-tight:** 3 bar

**Color:** blue

**Electrical isolation:** with a dielectric strength of 500 V/mm



### SIZE

LS 200 bis LS 700



Building construction



Civil engineering



Water



HVAC



Energy



Oil



Gas



Industry



## PRODUCT INFORMATION

### FEATURES

- Easy and quick installation due to pre-assembled modules
- High quality rubber parts ensure long lifetime
- Protected position in the masonry
- Suitable for retrofitting
- Choice of galvanized 8.8 or stainless steel bolts A4-70
- Electrically isolating
- Hydrostatic sealing against pressing water

### AREAS OF APPLICATION

- For sealing wall penetrations of gas, Water, sewage pipes and cables (considering the calculation basis and the suitability of the product on site)
- Tank embeddings
- Casing pipe seals

### PRODUCT DESCRIPTION

The radial expansion of the rubber parts ensures a permanent, pressure-tight and secure sealing of the annular space. For particularly thin-walled plastic pipes such as pre-insulated, flexible casing and corrugated pipe systems, a Kompakt Temp or Kompakt Super Soft is recommended.



### NOTE

- The surface of the core drilled holes should be coated to protect the reinforcement from corrosion. Therefore we recommend ProteX epoxy resin or ProteX sealant. The specified values for the pressure tightness are valid at 23 °C. For different, higher permanent operating temperatures, changing temperatures and permanent pressure, it might be necessary to fit an ejection safety device.
- Please be sure to ask us in advance about the technical feasibility of planned applications for which there is no description (e.g. applications in the biogas or food sector).

### RECOMMENDATIONS

- PipeX FZH
- ProteX Epoxy Resin



## CERTIFICATES

### TEXT

Lloyds Register: "Pressure Test for Wall Penetration Seal, Type LINK-SEAL® Modular Seal";

Certificate No: APE 0409369/1

Product certificate: - TUV SUD: Production facilities audit (annual) - TUV SUD: Technical report DDA4/118/94 Component testing of a modular seal

Production facility audit (annual):

FHRK quality seal FHRK test specifications GE 101 kompakt seals: (Test report no. G 30 322-6-1), closed version Kompakt Solo / Kompakt Temp / Kompakt Super Soft / Kompakt with oversized flange / Kompakt Multicable / Kompakt Varia / Kompakt Blind / Kompakt SpeX / Kompakt Combi

Drinking water applications: ACS: Certificate of sanitary conformity

Drinking water applications: Pressure plate testing Materials testing DVGW W270 KTW

Drinking water applications: Sealing elements material testing DVGW W270 UBA ELL

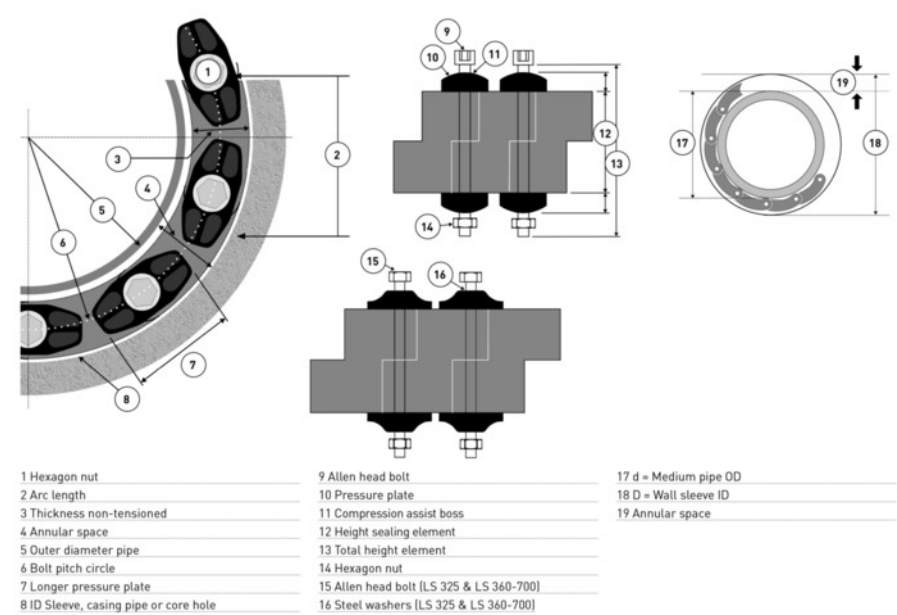
Drinking water applications: Radon seal test report Dr Joachim Kemske Radon seal LINK SEAL® W sealing material





TECHNICAL INFORMATION

The suitable LINK-SEAL® for the application results from the thickness of the annular space between the casing pipe (wall sleeve) and carrier pipe. The perfect LINK-SEAL® is smaller than the annular space in a non-tensioned condition and larger in tensioned- condition. To calculate the appropriate LINK-SEAL® annular space seal, use our online calculation program or the type selection as a basis for calculation. This is available for you to download online as a PDF





## TYPE SELECTION

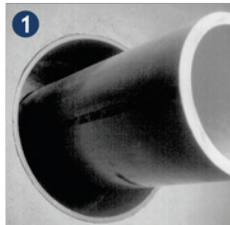
| Article No. | Size   | Suitable for core drilling | Suitable for carrier pipe OD from - to | Number of segments for core drilled hole | GTIN          |
|-------------|--------|----------------------------|----------------------------------------|------------------------------------------|---------------|
| 2-025-00340 | LS 200 | 80 mm                      | 48 - 53 mm                             | 7                                        | 4062987010010 |
|             |        | 100 mm                     | 68 - 75 mm                             | 9                                        |               |
|             |        | 125 mm                     | 95 - 100 mm                            | 12                                       |               |
|             |        | 150 mm                     | 118 - 125 mm                           | 14                                       |               |
| 2-025-00349 | LS 265 | 100 mm                     | 62 - 68 mm                             | 6                                        | 4062987010102 |
|             |        | 125 mm                     | 87 - 93 mm                             | 8                                        |               |
|             |        | 150 mm                     | 112 - 118 mm                           | 10                                       |               |
| 2-025-00341 | LS 275 | 50 mm                      | 10 - 18 mm                             | 4                                        | 4062987010027 |
|             |        | 80 mm                      | 40 - 48 mm                             | 8                                        |               |
| 2-025-00342 | LS 300 | 100 mm                     | 55 - 64 mm                             | 6                                        | 4062987010034 |
|             |        | 125 mm                     | 80 - 89 mm                             | 8                                        |               |
| 2-025-00359 | LS 310 | 150 mm                     | 105 - 114 mm                           | 7                                        | 4062987010119 |
|             |        | 200 mm                     | 155 - 164 mm                           | 10                                       |               |
|             |        | 300 mm                     | 255 - 264 mm                           | 15                                       |               |
|             |        | 350 mm                     | 307 - 314 mm                           | 18                                       |               |
| 2-025-00343 | LS 315 | 100 mm                     | 48 - 57 mm                             | 6                                        | 4062987010041 |
|             |        | 125 mm                     | 73 - 82 mm                             | 8                                        |               |
| 2-025-00344 | LS 325 | 250 mm                     | 190 - 203 mm                           | 9                                        | 4062987010058 |
|             |        | 300 mm                     | 240 - 253 mm                           | 11                                       |               |
|             |        | 350 mm                     | 294 - 303 mm                           | 13                                       |               |
|             |        | 400 mm                     | 340 - 353 mm                           | 15                                       |               |
|             |        | 450 mm                     | 390 - 403 mm                           | 17                                       |               |
|             |        | 500 mm                     | 440 - 453 mm                           | 19                                       |               |
|             |        | 600 mm                     | 540 - 553 mm                           | 23                                       |               |
| 2-025-00064 | LS 340 | 100 mm                     | 32 - 45 mm                             | 5                                        | 4062987009281 |
|             |        | 125 mm                     | 58 - 74 mm                             | 7                                        |               |
|             |        | 150 mm                     | 82 - 99 mm                             | 9                                        |               |
|             |        | 200 mm                     | 132 - 149 mm                           | 13                                       |               |
|             |        | 300 mm                     | 234 - 244 mm                           | 24                                       |               |
|             |        | 350 mm                     | 286 - 296 mm                           | 20                                       |               |
| 2-025-00065 | LS 360 | 125 mm                     | 42 - 61 mm                             | 5                                        | 4062987009298 |
|             |        | 150 mm                     | 66 - 82 mm                             | 6                                        |               |
|             |        | 200 mm                     | 116 - 133 mm                           | 9                                        |               |
|             |        | 250 mm                     | 166 - 186 mm                           | 12                                       |               |
|             |        | 300 mm                     | 216 - 236 mm                           | 15                                       |               |
|             |        | 350 mm                     | 266 - 286 mm                           | 18                                       |               |
|             |        | 450 mm                     | 375 - 386 mm                           | 24                                       |               |
| 2-025-00345 | LS 400 | 250 mm                     | 158 - 177 mm                           | 7                                        | 4062987010065 |
|             |        | 400 mm                     | 308 - 327 mm                           | 12                                       |               |
|             |        | 450 mm                     | 358 - 377 mm                           | 14                                       |               |
|             |        | 500 mm                     | 408 - 427 mm                           | 15                                       |               |
|             |        | 600 mm                     | 508 - 527 mm                           | 19                                       |               |
| 2-025-00066 | LS 410 | 150 mm                     | 58 - 76 mm                             | 5                                        | 4062987009304 |
|             |        | 200 mm                     | 103 - 124 mm                           | 7                                        |               |
|             |        | 300 mm                     | 208 - 226 mm                           | 12                                       |               |
|             |        | 350 mm                     | 253 - 274 mm                           | 14                                       |               |
| 2-025-00346 | LS 425 | 250 mm                     | 178 - 192 mm                           | 7                                        | 4062987010072 |
|             |        | 350 mm                     | 276 - 293 mm                           | 11                                       |               |
|             |        | 400 mm                     | 326 - 341 mm                           | 12                                       |               |
|             |        | 450 mm                     | 376 - 393 mm                           | 14                                       |               |
|             |        | 500 mm                     | 426 - 443 mm                           | 16                                       |               |
|             |        | 600 mm                     | 526 - 543 mm                           | 19                                       |               |
| 2-025-00276 | LS 440 | 300 mm                     | 190 - 210 mm                           | 8                                        | 4062987009878 |
|             |        | 400 mm                     | 292 - 310 mm                           | 11                                       |               |
|             |        | 450 mm                     | 345 - 356 mm                           | 13                                       |               |
|             |        | 500 mm                     | 390 - 410 mm                           | 14                                       |               |
|             |        | 600 mm                     | 408 - 427 mm                           | 17                                       |               |
|             |        | 600 mm                     | 490 - 503 mm                           | 17                                       |               |



| Article No. | Size   | Suitable for core drilling | Suitable for carrier pipe OD from - to | Number of segments for core drilled hole | GTIN          |
|-------------|--------|----------------------------|----------------------------------------|------------------------------------------|---------------|
| 2-025-00347 | LS 475 | 150 mm                     | 53 - 67 mm                             | 5                                        | 4062987010089 |
|             |        | 200 mm                     | 103 - 117 mm                           | 7                                        |               |
|             |        | 250 mm                     | 153 - 163 mm                           | 9                                        |               |
|             |        | 350 mm                     | 253 - 267 mm                           | 14                                       |               |
|             |        | 400 mm                     | 303 - 317 mm                           | 16                                       |               |
|             |        | 450 mm                     | 355 - 367 mm                           | 19                                       |               |
|             |        | 600 mm                     | 503 - 509 mm                           | 25                                       |               |
| 2-025-00348 | LS 500 | 300 mm                     | 157 - 173 mm                           | 7                                        | 4062987010096 |
|             |        | 350 mm                     | 207 - 229 mm                           | 9                                        |               |
|             |        | 400 mm                     | 264 - 279 mm                           | 10                                       |               |
|             |        | 450 mm                     | 307 - 329 mm                           | 12                                       |               |
|             |        | 500 mm                     | 357 - 379 mm                           | 14                                       |               |
|             |        | 600 mm                     | 457 - 479 mm                           | 17                                       |               |
| 2-025-00067 | LS 525 | 350 mm                     | 223 - 239 mm                           | 9                                        | 4062987009311 |
|             |        | 400 mm                     | 273 - 289 mm                           | 11                                       |               |
|             |        | 450 mm                     | 327 - 339 mm                           | 12                                       |               |
|             |        | 500 mm                     | 373 - 389 mm                           | 14                                       |               |
|             |        | 600 mm                     | 473 - 489 mm                           | 17                                       |               |
| 2-025-00068 | LS 575 | 250 mm                     | 134 - 154 mm                           | 8                                        | 4062987009328 |
|             |        | 300 mm                     | 184 - 204 mm                           | 10                                       |               |
|             |        | 350 mm                     | 234 - 254 mm                           | 12                                       |               |
|             |        | 400 mm                     | 284 - 304 mm                           | 14                                       |               |
|             |        | 450 mm                     | 335 - 354 mm                           | 16                                       |               |
|             |        | 500 mm                     | 385 - 400 mm                           | 18                                       |               |
| 2-025-00261 | LS 625 | 400 mm                     | 204 - 234 mm                           | 9                                        | 4062987009854 |
|             |        | 450 mm                     | 254 - 265 mm                           | 10                                       |               |
|             |        | 500 mm                     | 304 - 334 mm                           | 12                                       |               |
|             |        | 600 mm                     | 404 - 434 mm                           | 15                                       |               |
| 2-025-00278 | LS 650 | 350 mm                     | 182 - 210 mm                           | 8                                        | 4062987009892 |
|             |        | 400 mm                     | 234 - 255 mm                           | 9                                        |               |
|             |        | 450 mm                     | 285 - 311 mm                           | 11                                       |               |
|             |        | 500 mm                     | 335 - 359 mm                           | 12                                       |               |
|             |        | 600 mm                     | 436 - 457 mm                           | 15                                       |               |
| 2-025-00471 | LS 700 | 450 mm                     | 235 - 256 mm                           | 7                                        | 4062987010133 |
|             |        | 500 mm                     | 285 - 306 mm                           | 8                                        |               |
|             |        | 600 mm                     | 385 - 406 mm                           | 10                                       |               |



## INSTALLATION



**1**

Center the pipe, cable or conduit in wall opening or casing. Carrier pipes must be suitable, dimensionally stable and without damage in the sealing area. Make sure the pipe is adequately supported on both ends. The LINK-SEAL® can only perform a sealing function and does not serve as a pipe support or fixed point. All building and pipeline guidelines are to be observed



**2**

Use only in suitable wall sleeves, installation tolerances according to dimensions in the calculation program. The specified clamping ranges must be observed here. This also applies to the dimensions of the carrier pipes. With suitable sealing surface in the inner wall and suitable rigidity (dimensional stability after installation) of the wall sleeve. Loosen rear pressure plate with nut just enough so links move freely towards and away from each other connect both ends of belt.



**3**

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.



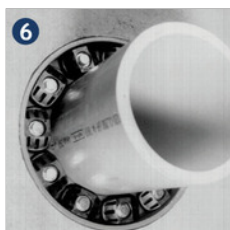
**4**

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.



**5**

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. 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**

Repeat tightening after approx. 2 hours. Especially for LINK-SEAL® Type LS 500 up to LS 700 it might be necessary (depending on the installation conditions such as annular space, temperature, etc.) to tighten again for several times.

### WHAT MUST BE OBSERVED

The PSI warranty is limited to the replacement of defective material.

The suitability of the product for the specific use must be checked by the user on his own responsibility. use.

### WHAT NEEDS TO BE DONE

- Check that the sealing elements, the pipe surface and the inner wall of the core drill or wall sleeve are free of dirt and other contaminants.
- Make sure that the pipe is centered.
- Install the chain and ensure that the pressure plates are evenly aligned.
- install the exact number of segments specified.
- make sure the pipe is properly supported when backfilling.

### WHAT THEY MUST NOT DO

- Do not install the chain until the pressure plates are aligned.
- Do not install LINK-SEAL® annular space seals on spiral pipes.
- Do not tighten one bolt before moving on to the next.
- do not use a cordless, impact or drill screwdriver.
- note that the LINK-SEAL® is not a fixed point.



### **INSTALLATION NOTE**

We expressly draw your attention to the fact that the installation must be carried out by an authorized specialist company in accordance with the installation instructions.

### **RECOMMENDATION**

To create a suitable sealing surface, we recommend coating the core holes with PSI KB epoxy resin. This serves to protect the concrete and to smooth out any shrinkage holes/scoring.

### **TOOLS**

Cleaning material/preparation, measuring tool, torque wrench, aids for markings