# SEALING TECHNOLOGY

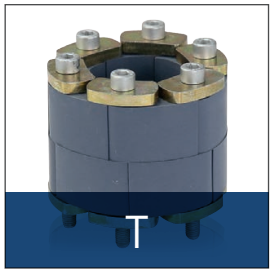
www.psi-products.com

# CONTENT


# **ORIGINAL LINK-SEAL®** MODULAR SEAL









Building construction


Civil engineering


Water


HVAC


Energy


Oil


Gas


Industry

# TYPE SELECTION

## LINK-SEAL® **C** - galvanized
## LINK-SEAL® **S 316** - stainless steel

**Fields of application**
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**
EPDM-Rubber; bolts: C galvanized / S 316 A 4-70 stainless steel; Shore A 50° ±5; pressure plates glass fiber reinforced polyamide

**Properties**
Temperature range -40 °C to 80 °C; Pressure tight up to 5 bar; Electrical isolation with a dielectric strength of 500 V/mm

**Sizes**
LS 200 to LS 650

## LINK-SEAL® **BC** - galvanized
## LINK-SEAL® **BS 316** - stainless steel

**Fields 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**
EPDM-Rubber; bolts: BC galvanized / BS 316 A 4-70 stainless steel; Shore A 40° ±5; pressure plates glass fiber reinforced polyamide

**Properties**
Temperature range -40 °C to 80 °C; pressure tight up to 3 bar; electrical isolation with a dielectric strength of 500 V/mm

**Sizes**
LS 200 to LS 700

## LINK-SEAL® **OC** - galvanized
## LINK-SEAL® **OS 316** - stainless steel

**Fields of application**
Good resistance against oils; aromatic fuels; solvents; mineral oil-based products

**Material**
NITRIL-Rubber; bolts: OC galvanized / OS 316 A 4-70 stainless steel; Shore A 50° ±5; pressure plates glass fiber reinforced polyamide

**Properties**
Temperature range -40 °C to 70 °C; pressure-tight up to 5 bar; not UV resistant; electrical isolation with a dielectric strength of 500 V/mm

**Sizes**
LS 200 to LS 650

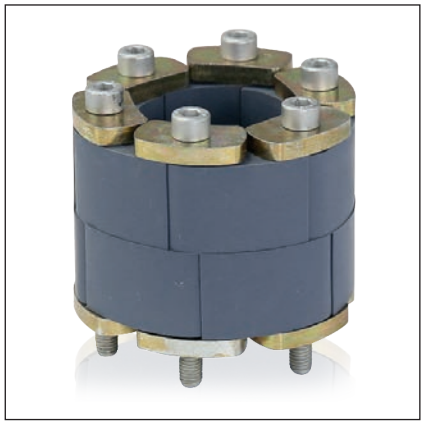
## LINK-SEAL® **W** - stainless steel

**Fields of application**
Suitable for applications in the drinking water sector

**Material**
EPDM-Rubber; bolts: A 4-70 stainless steel; Shore A 50° ±5; pressure plates glass fiber reinforced polyamide

**Properties**
Temperature range -40 °C to 80 °C; UV-resistant; pressure-tight up to 5 bar; Electrical isolation with a dielectric strength of 500 V/mm

**Sizes**
LS 200 to LS 650



## LINK-SEAL® **T** - galvanized

**Fields of application**
Especially suitable for extreme temperatures.

**Material**
Silicone-Rubber; Shore A 50° ±5; bolts galvanized; pressure plates St 37 galvanized

**Properties**
Temperature range -55 °C to 163 °C (temporary up to 204 °C)
Pressure-tight up to 5 bar; no isolating properties

**Sizes**
LS 200-T to LS 575-T


## LINK-SEAL® **KIT**

Pre-assembled LINK-SEAL® rings for the most common pipe combinations as a craftsman's set.

## LINK-SEAL® **BC** - galvanized
## LINK-SEAL® **BS 316** - stainless steel

**Fields 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**
EPDM-Rubber; bolts: BC galvanized / BS 316 A 4-70 stainless steel; Shore A 40° ±5; pressure plates glass fiber reinforced polyamide

**Properties**
Temperature range -40 °C to 80 °C; Pressure tight up to 3 bar; electrical isolation with a dielectric strength of 500 V/mm

**Sizes**
Core drillings from 50 mm to 350 mm

## AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

- Calculation tool
- Product data sheet
- Installation
- Installation video
- Accessories
- Certificates
- Tender text
- Type selection

## PRODUCT INFORMATION

### Properties

- Easy and quick installation due to pre-assembled modules
- Different versions available for potable water, oil, fuel, solvents and high temperature resistance
- 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
- Color differentiation of the various rubber qualities
- Electrically isolating
- Hydrostatic sealing against pressing water

### Fields 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

### 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 Compakt Temp or Compakt Super Soft is recommended.

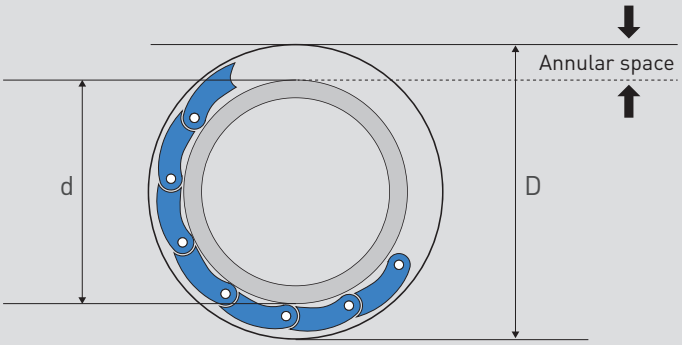
### Hinweise

- 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).

# TECHNICAL INFORMATION

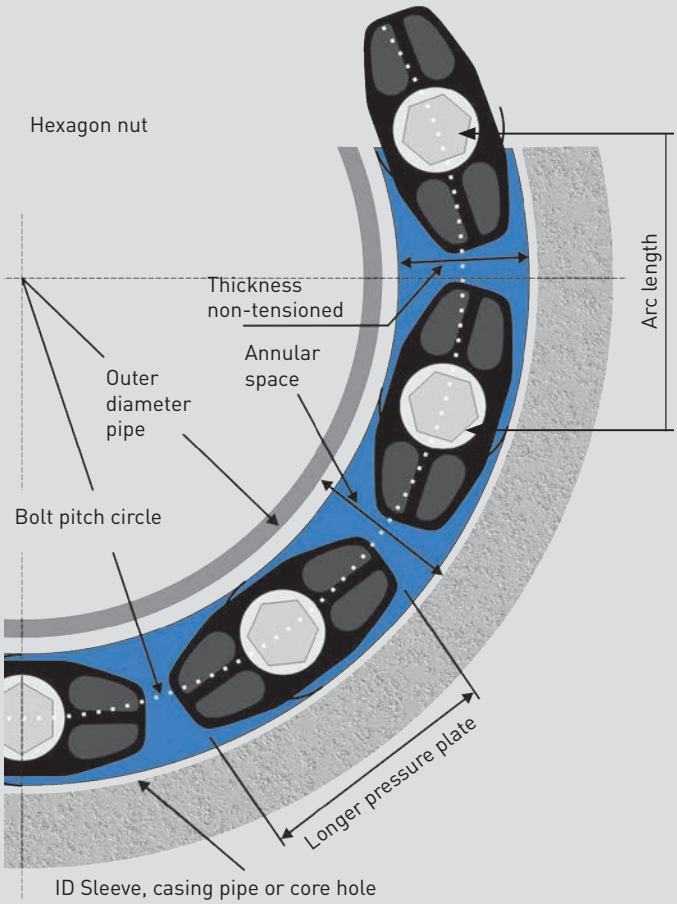
## Type selection

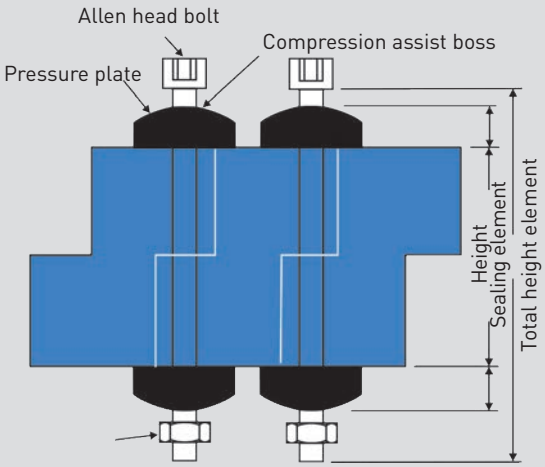
The suitable LINK-SEAL® for the application results from the thickness of the annular space between the casing pipe (wall sleeve) and carrier pipe.
The perfect LINK-SEAL® is smaller than the annular space in a non-tensioned condition and larger in tensioned- condition.

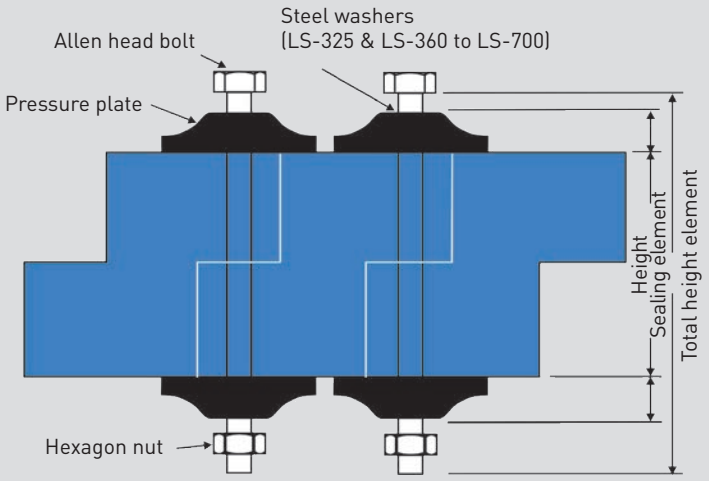



To calculate the appropriate LINK-SEAL® annular space seal, use our online calculation program or the type selection as a basis for calculation. This is available for you to download online as a PDF.

## Original LINK-SEAL® Modular Seal



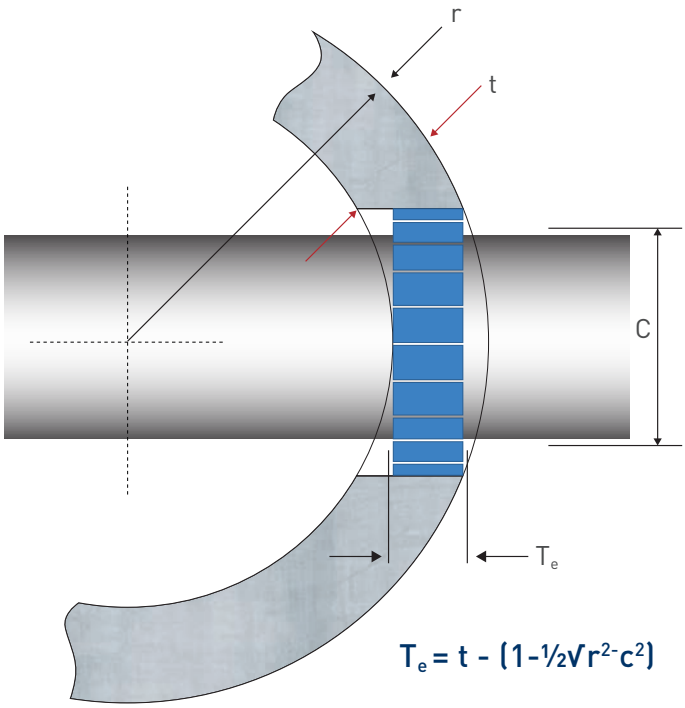



## Manhole sealing

If LINK-SEAL® modular seals are used for a penetration in a curved wall (e.g. manhole sealing), it must first be checked beforehand whether a sufficiently large effective sealing surface (Te) is available.

The effective wall thickness can be determined by scale drawings or by using the following formula. It must be greater than or equal to the required minimum effective wall thickness of the selected LINK-SEAL® type.




$$T_e = t - (1-½\sqrt{r^2-c^2})$$

| LINK-SEAL® | Type required Minimum wall thickness |
|---|---|
| LS 200 - LS 275 | 75 mm |
| LS 300 - LS 315 | 100 mm |
| LS 325 - LS 360 | 120 mm |
| LS 400 - LS 475 | 140 mm |
| LS 500 - LS 650 | 150 mm |
| LS 700 | 200 mm |

The determined effective sealing surface (Te) must be at least as large as the required minimum wall thickness for the selected LINK-SEAL® type. If the effective sealing surface (Te) is at least 40 mm (for core holes from Di 800 mm at least 80 mm), alternatively a Compakt seal can be selected.

### Legend:

Te = Effective sealing surface available
t = Wall thickness
r = Outer diameter
c = Inner diameter core hole / opening

## SUITABLE ACCESSORIES

### ProteX Core Hole Sealing

### PipeX Wall Sleeves

### Torque Wrench

# CERTIFICATES

To offer our customers the best possible quality and service, we are organized according to DIN EN ISO 9001:2015 and have this continuously checked and certified.

**CERTIFICATE ISO 9001:2015**
This certification documents our conformity of the quality management system

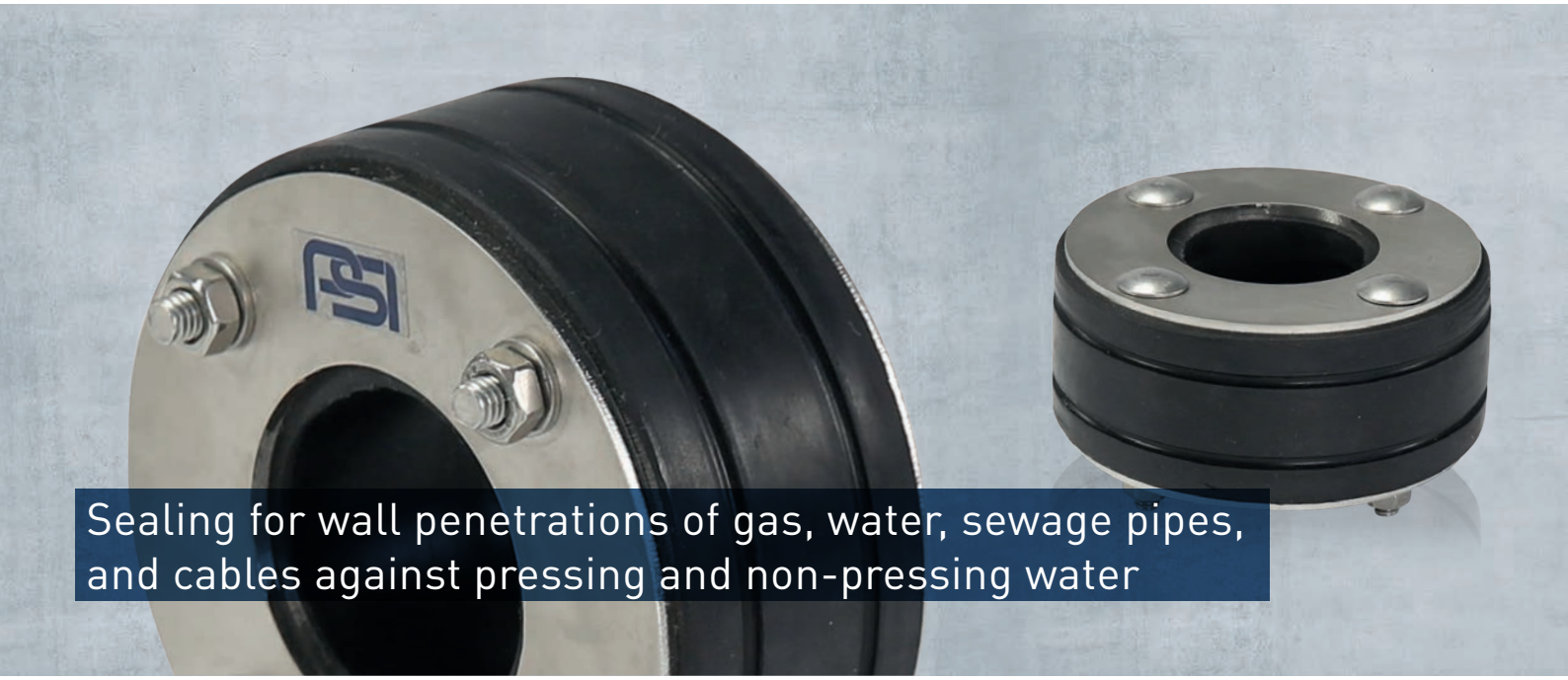
**AEO-CERTIFICATE**
Authorized Economic Operator "AEOC (customs simplification)"

## LINK-SEAL® MODULAR SEAL

- Lloyd's Register: "Pressure Test for Wall Penetration Seal, Type LINK-SEAL® Modular Seal"; Certificate No: APE 0409369/1
- TÜV certificate and reports:
  - TÜV SÜD: Production facilities audit (annual)
  - TÜV SÜD: Technical report DDA4/118/94 Component testing of a modular seal
- FHRK quality seal: FHRK test specification GE 101 seals (test report no. G 30 322-6-2) Original LINK-SEAL® Annular space seal type C / type S316

Drinking water applications

- WRAS: Material approval
- ACS: Certificate of sanitary conformity
- Pressure plate testing: Material testing DVGW W270; KTW
- Sealing element: Material testing DVGW W270; UBA ELL
- Radon tight: Test report Dr. Joachim Kemski, Radon tight LINK-SEAL® W Sealing material




## **Compakt** SEAL












Building construction


Civil engineering


Water


HVAC


Energy


Oil


Gas


District Heating


Industry

# TYPE SELECTION

## Compakt **Solo** - closed
## Compakt **Solo** - split

**Fields of application**
Ideal sealing of wall penetrations for gas, water, sewage pipes, and cables.

**Material**
EPDM-Rubber; Shore A 43° ±5; Pressure plates V2A; Rubber thickness 40 mm;
NBR-Rubber; Shore A 40° ±5

**Properties**
Temperature range EPDM -30 °C to 120 °C; UV-resistant; pressure-tight up to 3.0 bar, with an ejection safety device up to 5.0 bar; temperature range NBR -30 °C to 70 °C; not UV-resistant

**Sizes**
Core drillings 50 to 400 mm

## Compakt **Super Soft** - closed

**Fields of application**
Reliable sealing of wall penetrations for flexible, corrugated pipes, and cables

**Material**
EPDM-Rubber; Shore A 35° ±5; pressure plates V2A;
rubber thickness 2 x 40 mm

**Propertie**
Temperature range -30 °C to 120 °C; UV-resistant; pressure-tight up to 1 bar; highly flexible rubber

**Sizes**
Core drillings 100 to 250 mm

## Compakt **Temp** - closed

**Fields of application**
Suitable sealing of wall penetrations for pre-insulated pipes, especially applicable for district heating / district cooling.

**Material**
EPDM-Rubber; Shore A 43° ±5; pressure plates V2A; rubber thickness 2 x 40 mm

**Properties**
Temperature range -30 °C to 120 °C; UV-resistant; pressure-tight up to 3.0 bar, with an ejection safety device up to 5.0 bar

**Sizes**
Core drillings 70 to 400 mm

## Compakt **Blind** - closed

**Fields of application**
Using as a blind plug.

**Material**
EPDM-Rubber; Shore A 43° ±5; pressure plates V2A; rubber thickness 40 mm

**Properties**
Temperature range -30 °C to 120 °C; UV-resistant; pressure-tight up to 1.5 bar

**Sizes**
Core drillings 50 to 300 mm

## Compakt **Varia** - closed
## Compakt **Varia** - split

**Fields of application**
Sealing of wall penetrations for gas, water, sewage pipes and cables against pressing and non-pressing water. Various diameters can be sealed using the onion ring technique.

**Material**
EPDM-Rubber; Shore A 43° ±5; thread Sizes M6 (for Varia 200 M8); pressure plates V2A; rubber thickness 40 mm

**Properties**
Temperature range -30 °C to 120 °C; UV-resistant;
Closed version: Tightness as temporary blind plug or as single lead-through up to 1,5 bar;
Split version: ND 100 up to 1.0 bar

**Sizes**
Core drillings 80 to 200 mm

## Compakt **Varia LWL** - closed

**Fields of application**
Sealing of wall penetrations for gas, water, sewage pipes. Designed with additional holes (10/14 mm) in the pressure plate for e.g. fiber optic cables (7-14 mm). Various diameters can be sealed using the onion ring technique.

**Material**
EPDM-Rubber; Shore A 43° ±5; pressure plates V2A; rubber thickness 40 mm

**Properties**
Temperature range -30 °C to 120 °C; UV-resistant; tightness- as blind plug or as single lead through up to 1.0 bar

**Sizes**
Core drillings 100 mm

## Compakt **Multicable** - flex/fix

**Fields of application**
Multiple lead-through for small pipe diameters, hoses and cables.
Split version is suitable for retrofitting.

**Material**
EPDM or NBR-Rubber; Shore A 43° ±5; pressure plates split V2A/V4A; rubber thickness 40 mm

**Properties**
Temperature range: EPDM -30 °C to 120 °C; NBR -30 °C to 70 °C; pressure-tight up to 1.0 bar; EPDM UV-resistant; NBR not UV-resistant

**Sizes**
Core drillings 50 to 150 mm

## Compakt **Duo** - closed

**Fields of application**
Double sealing of wall penetrations with gas, water, sewage pipes and cables against pressing and non-pressing water; The advantage here is sealing of the building inside and outside as a single sealing system

**Material**
EPDM-Rubber; NBR-Rubber (on request);
Shore EPDM Standard A 50° ±5; pressure plates V2A (V4A on request); rubber thickness 40 mm each

**Properties**
Temperature range: EPDM -30 °C to 120 °C; NBR -30 °C to 70 °C; EPDM UV-resistant; NBR not UV-resistant; pressure-tight up to 5 bar

**Sizes**
Core drillings 80 to 100 mm

## Compakt **SpeX** - closed
## Compakt **SpeX** - split

### Fields of application
Made upon customer request/ specification. Here, almost all versions are possible: Oval pipes, square recesses, eccentric positioning, lead-throughs of several pipes or cables either as split or closed version.

### Material
Rubber: EPDM standard; EPDM drinking water, Viton and NBR on request; rubber thickness: up to DN 800 = 40 mm; from DN 800 = 2x40 mm
Shore A: EPDM 50° ±5; NBR 50° ±5; EPDM drinking water 67° ±5; Viton 55° ±5; pressure plates V2A / V4A

### Properties
Temperature range: EPDM -30 °C to 120 °C; NBR -30 °C to 70 °C; Viton -20 °C to 200 °C; pressure-tight up to 1.5 bar; EPDM and Viton UV-resistant;

### Sizes
On request

## Compakt **Solution** - Standard
## Compakt **Solution** - Water chamber

### Fields of application
Medium-carrying, pressure-tight wall penetration especially for drinking water tanks at building entry with integrated ejection safety device.

### Material
EPDM-Rubber; pressure plates V4A; rubber thickness 3x40mm

### Properties
Pressure ratings from PN 6/10 to 10/16; UV-resistant; flange connection of the sleeve as required pressure-tight up to 5 bar; ISO pipe series 1

### Sizes
Nominal diameter from ND 65 to ND 500

## Compakt **Combi** – galvanized Compakt
## Compakt **Combi** - stainless steel

### Fields of application
For pipe and cable penetration in accordance with DIN 18533, for constructions with sealing sheets (black tank). Seal with fixed loose flange for dowelling on concrete walls or masonry walls.

### Material
EPDM-Rubber; galvanized steel;
stainless steel (1.4301 or 1.4571 / 1.4404

### Properties
Seal: Temperature range -30 °C to 120 °C; UV-resistant; annular space seal pressure-tight up to 5.0 bar steel parts galvanized, alternatively also in stainless steel

### Sizes
Core drillings 80 to 1000 mm

AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

**Product data sheet** | **Installation** | **Installation video**

**Accessories** | **Certificates** | **Tender text**

# PRODUCT INFORMATION

## Properties General

- Special applications for different pipe systems
- Consist of stainless steel pressure plate
- All Compakt Solo split versions are foldable

## Properties Compakt Super Soft

- Double rubber sealing rings made of extra soft EPDM
- Reliable sealing even for thin-walled pipe types
- Specially developed for wall penetrations of flexible, corrugated pipes, and cables

## Fields of application

- Sealing for wall penetrations of gas, water, sewage pipes and cables
- Against pressing and non-pressing water

## Description

The 40 mm wide rubber element is compressed by means of two metal discs. The Compakt seals the annular space between carrier pipe and casing pipe/core hole against water and gas.

## Notes

- Compakt seals are not an anchoring point.
- The carrier pipes must be centered and supported.
- A coating system should be used for the core drilling to create a smooth surface and to seal the concrete.
- For long clamping distances, additional hexagonal socket wrenches in a longer design are required.
- The specified values for pressure tightness are valid at 23 °C. For other, especially higher continuous operating temperatures, changing temperatures and permanent pressures, an ejection safety device must be fitted; this also applies to annular spaces larger than 100 mm.
- 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 industry).

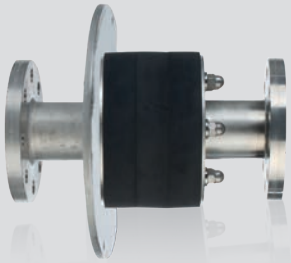
# TECHNICAL INFORMATION

## Compakt Multicable

The configuration of the lead-throughs of pipes/cables with an outer diameter from 4 to 32; 40 or 50 mm can be chosen freely. The sealing is pressure-tight up to1 bar. Split version is suitable for retrofitting. For each opening we deliver blind plugs which can be taken out when inserting the pipe/ cable, so that unused openings remain sealed pressure-tight with a blind plug. Therefore, it is also possible to install other pipes and cables later.
For the installation no special tools beside a torque wrench are required.

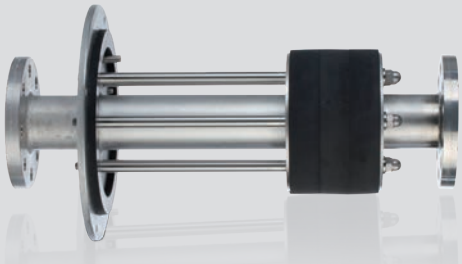
## Compakt Solution[u]

- By means of the fixture plate the forces are transmitted to the masonry. The seal is thus decoupled and a movement of it, is therefore impossible.
- This prevents the seal from shifting. At the same time, this also covers the core hole.
- Tensile strength connection (respectively integrated shear protection of the wall duct)!
- Adjustable sealing element. Re-tightening from outside the water chamber is possible at any time



## Additional at WC:

- Flush finish inside the water chamber. No creation of dead space, thus microbacterially uncritical. Subsequent tightening of the seal from outside the water chamber is possible at any time.
- Concentric installation is ensured by integrated centering bolts.
- A complex core hole coating can be omitted.

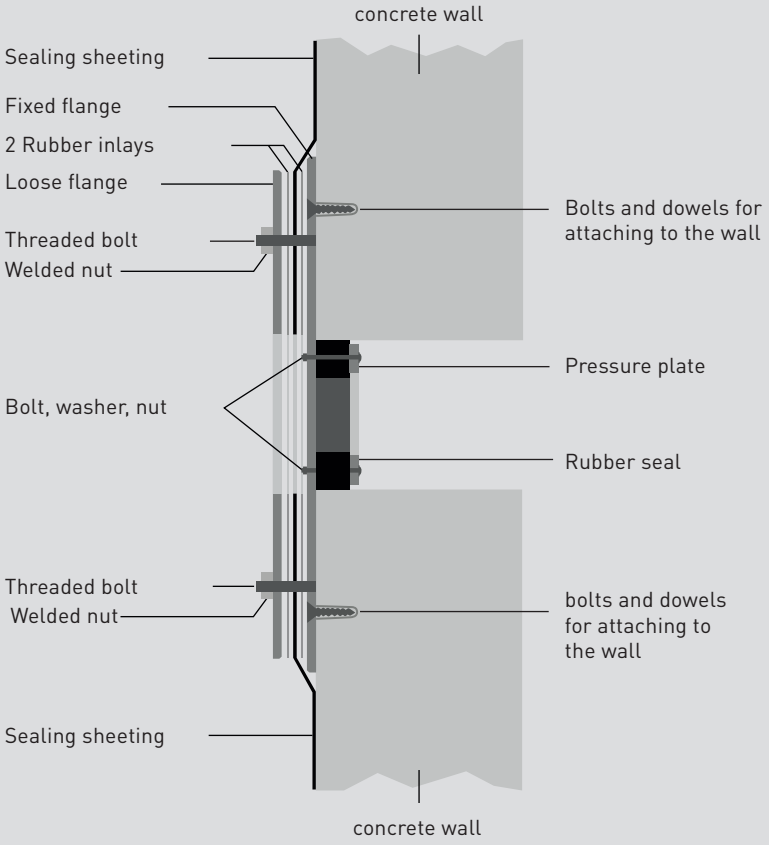


## Compakt Combi

For constructions with sealing sheets or wall sleeves with fixed loose flanges are required to be in accordance with DIN 18533. A distinction is made here between non-pressing and pressing water.

## Sectional view

A seal with fixed loose flange according to DIN 18533, steel parts galvanized, alternatively* stainless steel




# SUITABLE ACCESSORIES

### ProteX Core Hole Sealing

### PipeX Wall Sleeves

### CentriX Rubber Ring

# CERTIFICATES

To offer our customers the best possible quality and service, we are organized according to DIN EN ISO 9001:2015 and have this continuously checked and certified.

**CERTIFICATE ISO 9001:2015**
This certification documents our conformity of the quality management system

**AEO-CERTIFICATE**
Authorized Economic Operator "AEOC (customs simplification)"

## COMPAKT SEAL

- MFPA pressure test: Solo; Combi
- SKZ pressure test: Varia
- Radon tight: Audit report Dr. Joachim Kemski
- FHRK quality seal: FHRK test specification GE 101 Compakt seals

(Test report no. G 30 322-6-1), closed version Compakt Solo / Compakt Temp / Compakt Super Soft / Compakt with oversized flange / Compakt Multicable / Compakt Varia / Compakt Blind / Compakt SpeX / Compakt Combi

Drinking water applications:

- Material EPDM: Material testing DVGW W270; UBA ELL


Especially for sealing concrete in a core hole

# **ProteX** CORE HOLE SEALING

Epoxy resin

Sealing

**Building construction** | **Civil engineering** | **Water** | **HVAC** | **Energy** | **Oil** | **Gas** | **District Heating** | **Industry**

# TYPE SELECTION


## ProteX **Epoxy resin** - Set with brush & latex gloves

**Fields of application**
For coating and preservation of core drilled holes

**Material**
Two-component epoxy resin

**Properties**
Pot life at 20 °C : approx. 90 min., higher temperatures shorten the pot life
Drying at 20 °C ambient temperature: min. 12 hours continuous operating temperature: max. 70 °C
Color: white

**Sizes**
Content: 1,1 kg, sufficient for approx. 3,5 sqm

## ProteX **Core Hole Sealing**

**Fields of application**
Priming of core-drillings and sealing with special paint

**Material**
Container of primer and container of special paint

**Properties**
Primer color: colorless
Drying at 20 °C: overcoatable after approx. 1 hour

Special paint color: pebble grey
Drying at 20 °C: Seal can be installed after approx. 12 hours continuous operating temperature: max. -10 °C to max. 50 °C

**Sizes**
Content: 0,33 liter, sufficient for approx. 1,5 sqm

## AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

Product data sheet | Installation | Installation video

Accessories | Certificates | Tender text

## PRODUCT INFORMATION

### ProteX Epoxy Resin

### Properties

- Short drying time
- Two-component epoxy resin
- Fully-hardened, white protective coating has a smooth, viscoelastic surface and is insensitive to shocks and impacts
- The treated surface has a very good resistance to alkalis and acids and is seawater proof

### Fields of application

- Especially for sealing the concrete of a core hole
- The coating is suitable for indoor and outdoor use as a non-porous protective coating for concrete, fiber cement, masonry, steel, wood and other materials

### Description

The ProteX epoxy resin is supplied as a set with a brush (length approx. 40 cm) and a pair of latex gloves. The resin can be used at ambient temperature of 5 °C upwards. The surface to be coated must be cleaned and carefully dried by preheating the surface, smooth surfaces need to be roughened beforehand with emery cloth grain size 60 or coarser, the abrasive dust is to be removed afterwards. The hardener is added to the can with the liquid plastic and stirred well. The application is done with the brush included in the delivery. The layer thickness is approx. 0.25 mm per coat, up to three coats can be applied if required.

### Notes

Please consider also the publications of the german institution "Berufsgenossenschaft der Bauwirtschaft (BG Bau)" regarding the handling of epoxy resins.

# ProteX Core Hole Sealing

## Properties

- The base coat of a colorless primer provides a good adhesive base and closes small pores and capillaries in the concrete.
- The special paint used is a chlorinated rubber paint in pebble grey. In combination, this provides an optimal sealing of core drillings and additionally protects any exposed reinforcements from corrosion.
- The coating is suitable for indoor and outdoor use as a pore-free protective coating for the use of annular space. The hardened, gray protective coating has a smooth surface and is insensitive to shocks and impacts.

## Fields of application

- Especially for sealing concrete in a core hole
- The coating is suitable for indoor and outdoor use as a pore-free protective coating for concrete, fiber cement, masonry, steel, wood, and other materials.

## Description

The system can be used from an ambient temperature of 5 °C to 30 °C. The surface to be coated must be cleaned and thoroughly dried by preheating the surface. Smooth surfaces must first be roughened with emery cloth, grain size 60 or coarser.
The abrasive dust must then be removed. Stir the contents of the containers well before use, then use a brush to cover the surface evenly. After application of the primer and a flash-off time at room temperature of approx. 1 hour, the coating can be applied.

## Notes

The layer thickness of the special paint is approx. 0.1 mm per layer, up to three coats can be applied if required. After application, carefully close the can. When properly stored, the paint is reusable.

# SUITABLE ACCESSORIES

### Latex gloves, blue

### brush


Non-hardening sealing compound for complicated sealing applications

# **STOPAQ®** SEALING SYSTEM


**Building construction** | **Civil engineering** | **Water** | **HVAC** | **Energy** | **Oil** | **Gas** | **Industry**

# TYPE SELECTION


## STOPAQ® **FN 2100** - Cartridges

**Fields of application**
STOPAQ® is particularly suitable for highly complicated sealing situations, such as multiple penetrations, eccentrically positioned pipes or irregularly shaped core drillings

**Material**
STOPAQ® is a soft, pasty, permanently elastic compound that does not harden

**Properties**
In contact with water, STOPAQ® expands, thus able to seal the wall penetration permanently after movement or settlement has occurred, or after retrospective cable installation.

**Sizes**
Content: 0,33 kg or 0,53 kg cartridges

# AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

**Product data sheet** | **Installation** | **Installation video**

**Accessories** | **Certificates** | **Tender text**

# PRODUCT INFORMATION

## Properties

- Retrospective insertion of cables and pipes is possible after the sealing process
- Environmentally neutral and not-toxic (test reports on request)
- Water- and gas-tight according to NEN 2768
- Does not damage plastic pipes
- Adhesion on humid surfaces
- Self-healing through expansion effect

## Fields of application

- Sealing of gaps and underground cable or pipe penetrations

## Description

STOPAQ® can also be applied on humid surfaces. Simply remove basic dirt. The manual pistol and nozzle, included in the delivery, make processing very easy. STOPAQ® can be used without any further measures up to a depth of 1.0 m and an annular space of min. 10 mm and max. 50 mm. For deeper installations the use of mortar is necessary. STOPAQ® should be injected at least 100 mm deep into the wall opening.
It is recommend to preheat the cartridge, when processing in temperatures below 15 °C. Since STOPAQ® does not harden, the cartridge and spray nozzle can be used several times.

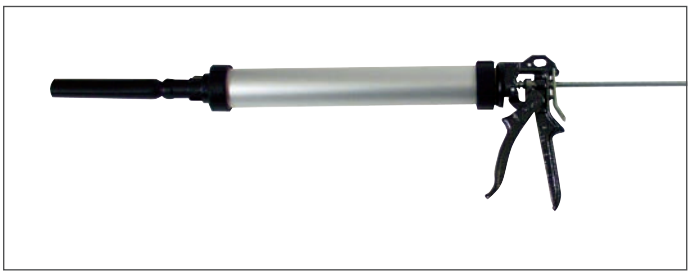
## Notes

To facilitate installation, preheat cartridges in warm water (approx. 30 °C).

# SUITABLE ACCESSORIES

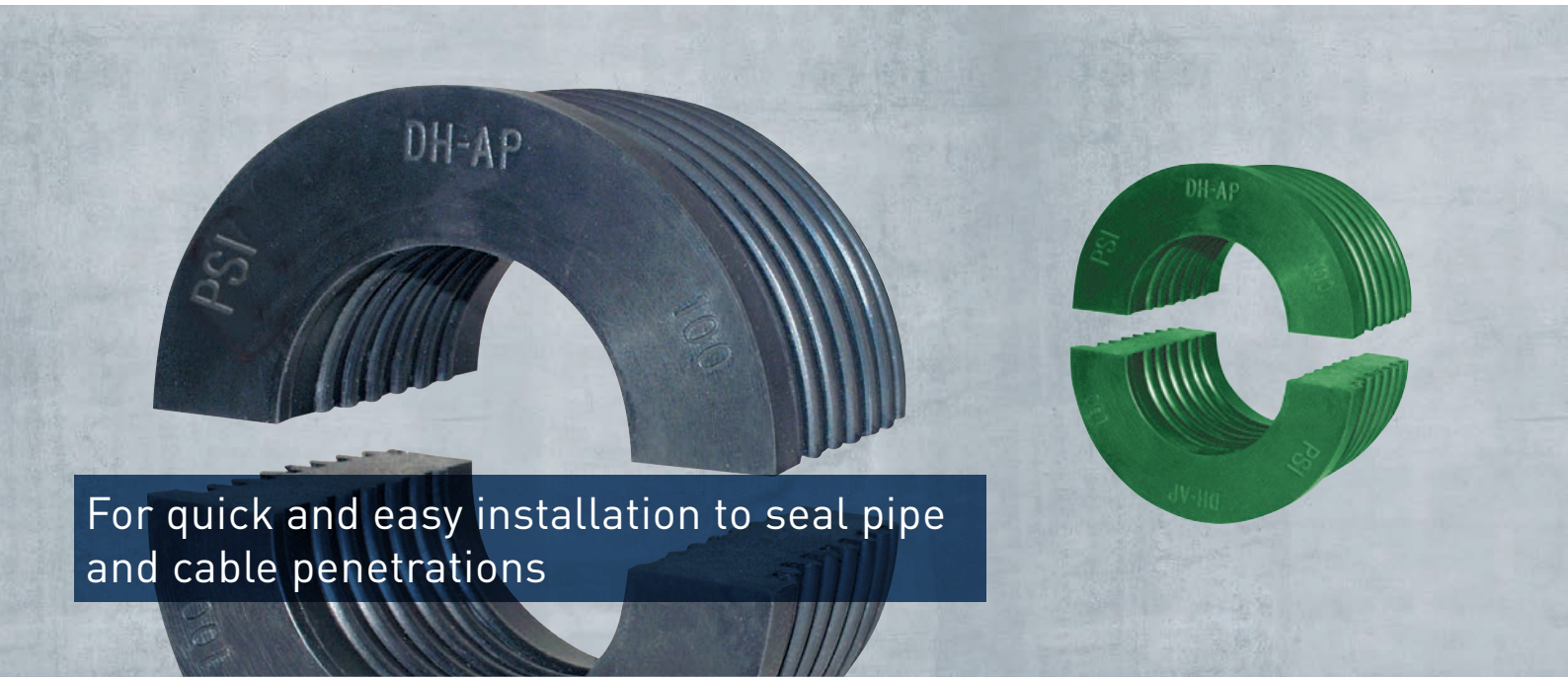
## Cartridge gun for 0.33 kg


## Cartridge gun for 0.53 kg

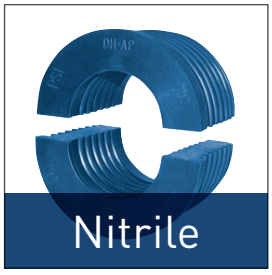


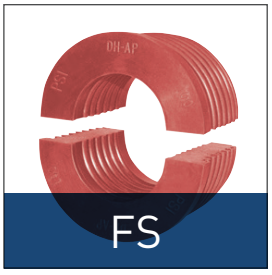
## Foam tape, roll á 5 m

## STOPAQ® Mortar, 0.5 kg bag




## **PlugiT** SEALING PLUG




# TYPE SELECTION

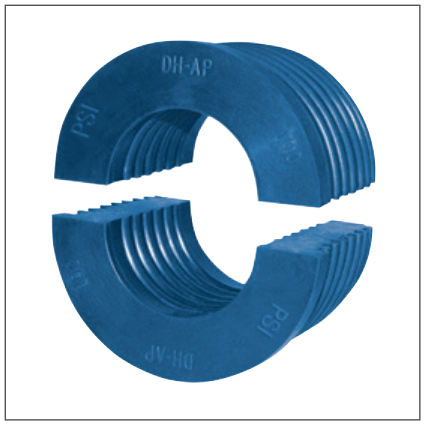

## PlugiT **EPDM** - black

**Fields of application**
Standard rubber for gas- and water-tight sealing
(e.g. heating pipes and water pipes)

**Material**
EPDM-Rubber

**Properties**
Temperature range -25 °C/ 110 °C;
pressure-tight up to 3 bar

**Sizes**
Core drillings 40 to 200 mm



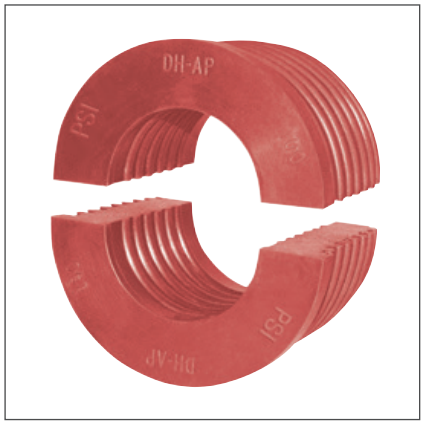

## PlugiT **Nitrile** - blue

**Fields of application**
Good resistance to oils and greases
(e.g. hydraulic systems)

**Material**
Nitrile

**Properties**
Temperature range -25 °C/ 110 °C;
pressure-tight up to 3 bar

**Sizes**
On request



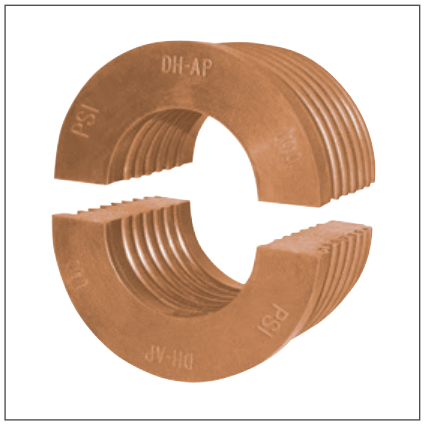

## PlugiT **FS**

**Fields of application**
Highly fire retardant rubber
(e.g. fire retardant, gas- and waterproof sealing of pipes)

**Material**
FS

**Properties**
Temperature range -30 °C/ +120 °C;
pressure-tight up to 3 bar

**Sizes**
On request



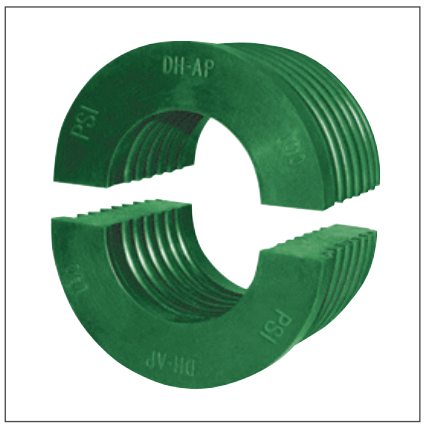

## PlugiT **Silicone** - brown

**Fields of application**
Resistant to high temperature differences
(e.g. in cooling and steam pipes)

**Material**
Silicone

**Properties**
Temperature range -60 °C/ +200 °C;
pressure-tight up to 3 bar

**Sizes**
On request




## PlugiT **Viton** - green

**Fields of application**
Resistant to chemicals
(e.g. in laboratories)

**Material**
Viton

**Properties**
Temperature range -25 °C/ 200 °C;
pressure-tight up to 3 bar

**Sizes**
On request

AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

**Product data sheet** **Installation** **Certificates**

**Tender text**

# PRODUCT INFORMATION

## Properties

- Horizontal and vertical installation
- Easy installation
- Wide range of applications
- Noise-absorbing
- Vibration-absorbing
- Electrically non-conductive
- High abrasion resistance

## Fields of application

- Sealing of pipe and cable penetrations which are led through walls and ceilings.

## Description

No special tools are required for quick and easy installation; the sealing plug is simply hammered into the annular space.
The profiled design of the plug ensures a pressure tightness against gas and water up to 3 bar. Relevant test certificates are available.
The sealing plugs are made of high-quality rubber and are extremely abrasion-resistant. Various rubber qualities are available for the different fields of application in industry and construction.

## Notes

- The plug can only be removed by hammering it out from the backside
- Core drillings or casing pipe dimensions must be checked for a tolerance of <1mm before installation
- Plug cannot be adjusted, a pipe support is mandatory

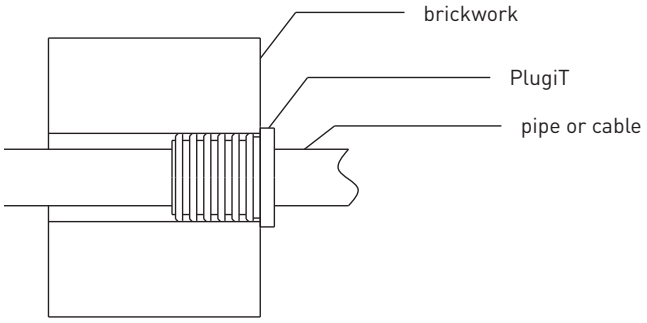
# TECHNICAL INFORMATION

### Use in a wall penetration

When using the seal in a core drilled hole which was made by means of a diamond drill bit, make sure that the surface is good and the concrete is of good quality.

The PlugiT sealing plug is driven from the outside of the wall into the annular space between the core hole and the carrier pipe respectively cable.

The pressure load of 3 bar against gas and water is safely achieved. The use in a wall sleeve is also possible.



# SUITABLE ACCESSORIES

## Lubricant for plug and seal installation, can 150 ml

# CERTIFICATES

To offer our customers the best possible quality and service, we are organized according to DIN EN ISO 9001:2015 and have this continuously checked and certified.

**CERTIFICATE ISO 9001:2015**
This certification documents our conformity of the quality management system

**AEO-CERTIFICATE**
Authorized Economic Operator "AEOC (customs simplification)

## PlugiT SEALING PLUG

- Lloyd's Register: Pressure test (3 bar)


# **WalloX** WALL COLLAR / WALL SEALING RING


Wall Collar


Wall Sealing


Civil engineering


Water


Energy


Oil


Gas


District Heating

# TYPE SELECTION

## WalloX **Wall Collar round** - Pipe/Cable
## WalloX **Wall Collar flat** - Flat conductor

**Fields of application**
Wherever pipes are worked directly into concrete, the wall collar is used as a safe hydrostatic seal

**Material**
High quality rubber; stainless steel straps

**Properties**
Tensile strength 9.5 N/mm2; elongation at break 500%; Shore hardness A 45° ±5; service temperature max. 80 °C; minimum temperature -40 °C; Pressure-tight for pipe AD 32 to OD 315 tested up to 5 bar; Pressure-tight from pipe OD 355 tested up to 4 bar

**Sizes**
Pipe outside diameter ND 10 to 1400

## WalloX **Wall Sealing Ring Temp** - Pre-Insulated Pipes

**Fields of application**
For pre-insulated pipes, particularly PE-jacket and flexible pipes for district heating systems

**Material**
High quality rubber

**Properties**
Against non-pressing water up to 0.5 bar water pressure

**Sizes**
Pipe outer diameter ND 65 - 1000 mm

## AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

**Product data sheet** **Installation** **Certificates**

**Tender text**

# PRODUCT INFORMATION

### Properties

- Ground water and pressing water tight
- High quality coutchouc
- Fast and easy installation

### Fields of application

- Pipe penetration e.g. of pipes made of steel, cast iron, copper, plastic, fiber cement, concrete, and vitrified clay
- Pressing through walls, ceilings, floors, manholes, swimming pools and groundwater tanks
- Design for flat conductors, wires and cables for lightning protection

### Description WalloX Wall Collar

Cleaning the pipe surface. Slide on the wall collar and place it in the designated position. For wall collars up to pipe OD 315 mm. Two fastening straps, placement on both sides of the flange. For wall collars from pipe OD 355 mm. Three fastening straps, placement on both sides of the flanges, as well as between the flanges.

### Description WalloX Wall Sealing Ring Temp

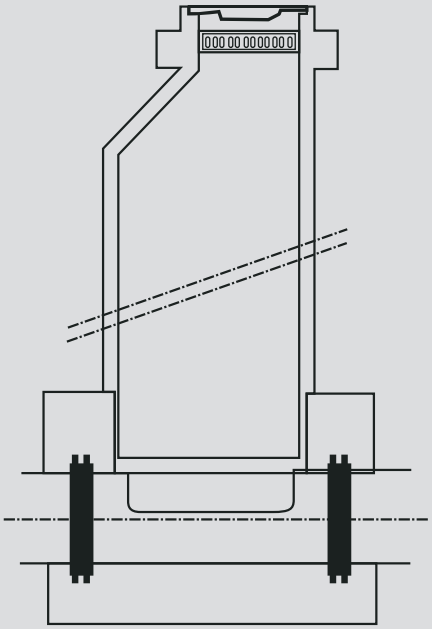
Manufactured and produced in one piece up to Sizes D 200. Due to their conical shape, the rings fit tightly on to the pipe, eliminating any need for additional fastening straps. Wall sealing rings Temp are pushed on to the pipe and cast in the center of the wall.

### Notes

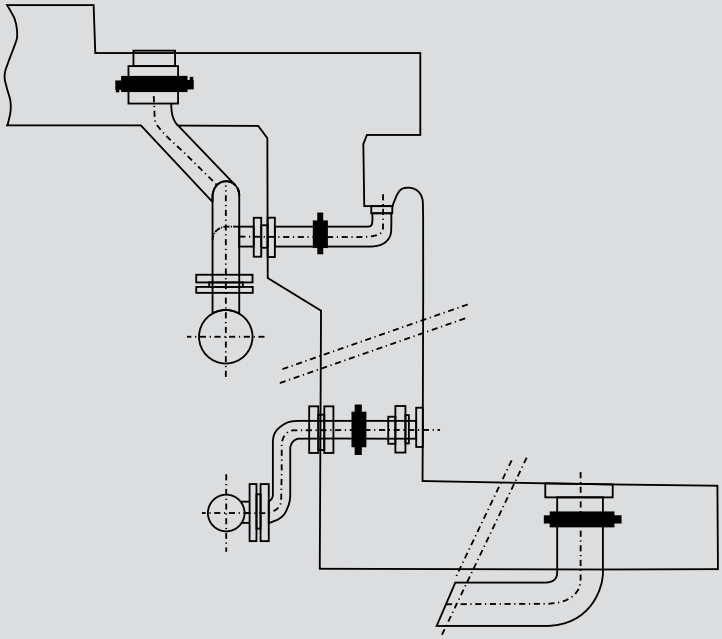
- The wall collar is not a fixing point or bearing and therefore cannot absorb any mechanical forces
- The minimum cover of concrete should not be less than 3 cm
- WalloX Sealing Ring Temp are tested and certified by MFPA Leipzig up to 0.5 bar water pressure. If water pressure of more than 0.1 bar is expected, we recommend using Compakt Temp sealing ring against pressing water for wall penetrations designed for district heating pipes.

# TECHNICAL INFORMATION

## Application examples WalloX Wall Collar



**Swimming pool**



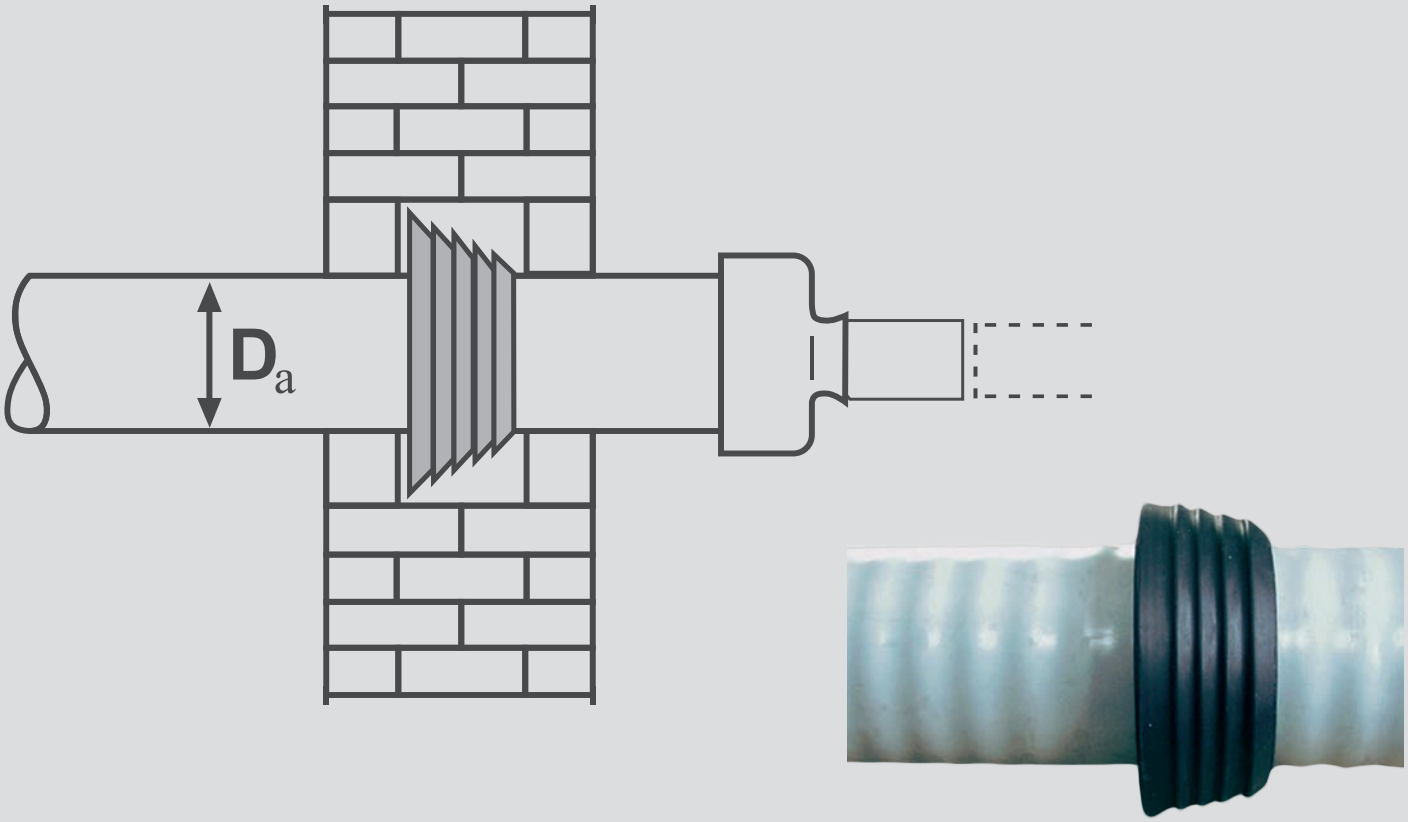
**Manhole opening**

## Lightning rod

### Flat conductor 30 x 3.5 or 3 mm

### Round conductor; 8 - 10 mm

### Application example WalloX Wall Sealing Ring




## CERTIFICATES

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**AEO-CERTIFICATE**
Authorized Economic Operator "AEOC (customs simplification)

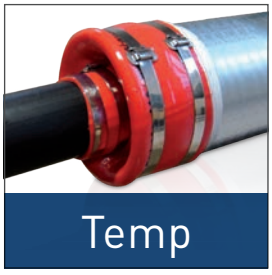
### WalloX Wall Collar / Wall Sealing Ring

- MFPA Leipzig; pressure-tight when installed: WalloX Wall Collar
- MFPA Leipzig; pressure tightness in the installed condition against non-pressing water: WalloX Wall Sealing Ring
- WalloX Wall Collar radon tight: Audit report Dr. Joachim Kemski


# **RottoX** DYNAMIC SEAL

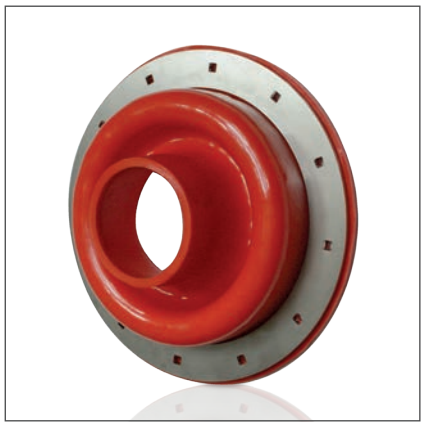

VDW®


VDW® OD


Temp

Civil engineering | Water | Energy | Oil | Gas | District Heating

# TYPE SELECTION



## RottoX **VDW®** - radial/axial movement

**Fields of application**
The flexible sleeve is the ideal compensator for radial and axial movements. Particularly suitable for pre-insulated pipe wall penetrations and for constructions without sealing sheeting.

**Material**
High-quality Rottolin; seamlessly manufactured; permanently elastic sealing compound; anchor dowels; pressure plate V2A

**Properties**
Material thickness approx. 6-8 mm; Color red; Shore A 50° ±5; tensile strength 11 N/mm²; elongation at break 400%; tear strength; 27 N/mm²; max. continuous operating temperature 55 °C; weldable (only split version); tight against pressing water up to 1.0 bar

**Sizes**
Core drillings from 150 to 1000 mm

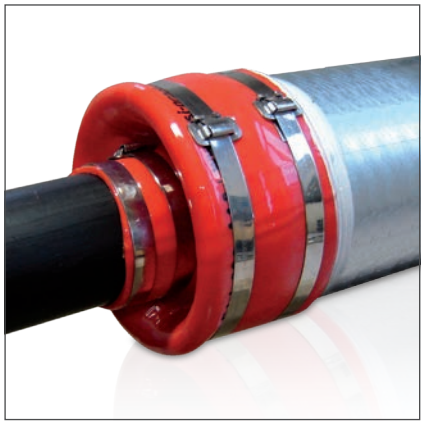
## RottoX **VDW® OD** - flexible

**Fields of application**
The flexible sleeve made of high quality Rottolin can compensate pipe bendings, and is suitable for non-moving pipes penetrating buildings without sealing sheet

**Material**
High-quality Rottolin; seamlessly manufactured; permanently elastic sealing compound; anchor dowel; pressure plate V2A

**Properties**
Material thickness approx. 6-8 mm; color red; Shore A 50° ±5; tensile strength 11/N mm²; elongation at break 400%; tear strength; 27 N/mm²; max. continuous operating temperature 55 °C; pipe bending up to 20 °C; tight against pressing water up to 1.0 bar; weldable (only split version)

**Sizes**
Core drillings from 150 to 900 mm



## RottoX **Temp** - radial/axial movement

### Fields of application
The RottoX Temp end seals for pre-insulated pipes are specially developed to provide a pressure-tight seal between carrier and casing pipes.

### Material
High-quality Rottolin; seamlessly manufactured; stainless steel fastening straps

### Properties
Material thickness approx. 9-11 mm; color red; Shore A 50° ±5; tensile strength 11 N/mm²; elongation at break 400%; tear strength; 27 N/mm²; max. continuous operating temperature 55 °C; weldable (only split version)

### Sizes
Dimensions 50 x 125 mm up to 1100 x 1200 mm

AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

**Product data sheet** **Installation** **Certificates**

**Tender text**

# PRODUCT INFORMATION

## Properties RottoX VDW®

- Supports axial and radial load changes up to +/-25 mm
- Compensates pipe settlements, depending on pipe OD and core hole size up to 40 mm

## Properties RottoX VDW® OD

- Pipe bending up to 20°

## Properties RottoX Temp

- Due to their high flexibility, the casing end seal allows axial and radial movements between casing and carrier pipe.

## Fields of application

- Sleeve for sealing pre-insulated pipes or other moving pipes for wall penetrations.

## Description

Due to the unique manufacturing process, the seamless production is possible for nearly all pipe combinations and sizes. Installation is very easy due to the pre-formed sleeves. As a result of seamless production, without punched openings, subsequent tensions will not cause cracks.

Even the weld seam of the split version has the same properties in the base material, it is hot-plate-welded without any additional materials. This could be carried out on site by our partner.

The material Rottolin is also characterized by high durability and flexibility. This is particularly important, for example, when used in acidic soils.
Of course, this also applies to the standard STM sleeve for installation on a carrier pipe / casing pipe combination.

## Notes

- For installation in the ground, the sleeve must be covered with an expansion pad, to reduce the pressure of the soil on the sleeve, so that a moving during the backfilling process is still possible.
- To ensure tightness of RottoX Temp, the annular space should not be larger than 70 mm

# TECHNICAL INFORMATION

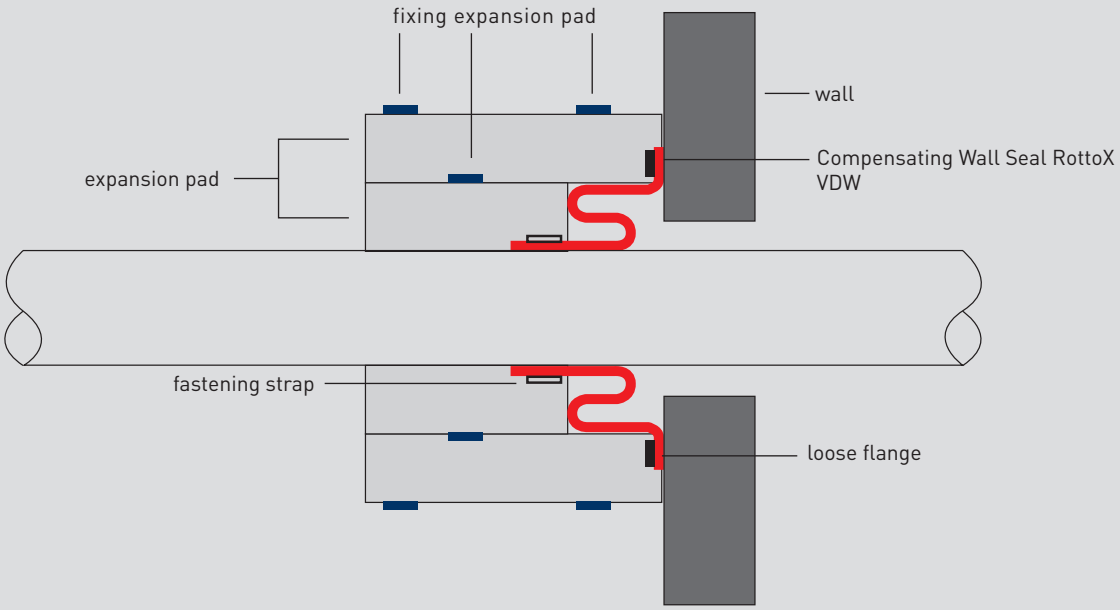
## RottoX VDW®

### Penetration through the wall "Compensating Wall Seal"

1. With a flush connection to the dynamic end seal one layer of expansion pads is wrapped around the carrier pipe. (Width of the expansion pad min. 50 cm). By means of adhesive tape, fastening straps, cable ties etc. it must be fixed proper to the pipe, so that a moving or opening of the expansion pad layer is not possible during the backfilling process.

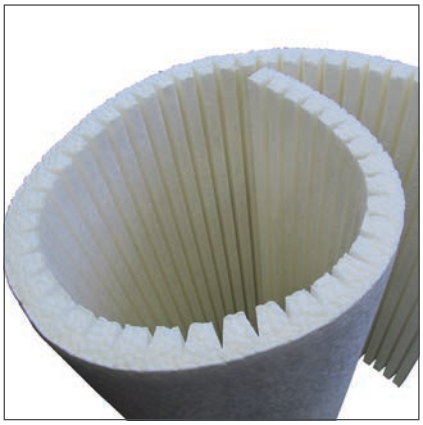
2. Another layer is applied to the expansion pad after step 1. The width is chosen so that the expansion pad butts against the casing end seal and is flush with the previous layer.

3. Step 2 needs to be repeated (layer by layer) until the top layer of the expansion pad is flush with the wall -covering the dynamic end seal. Finally, one more layer of expansion pads is wrapped and fixed over the entire installation



# SUITABLE ACCESSORIES

## Expansion pad



# CERTIFICATES

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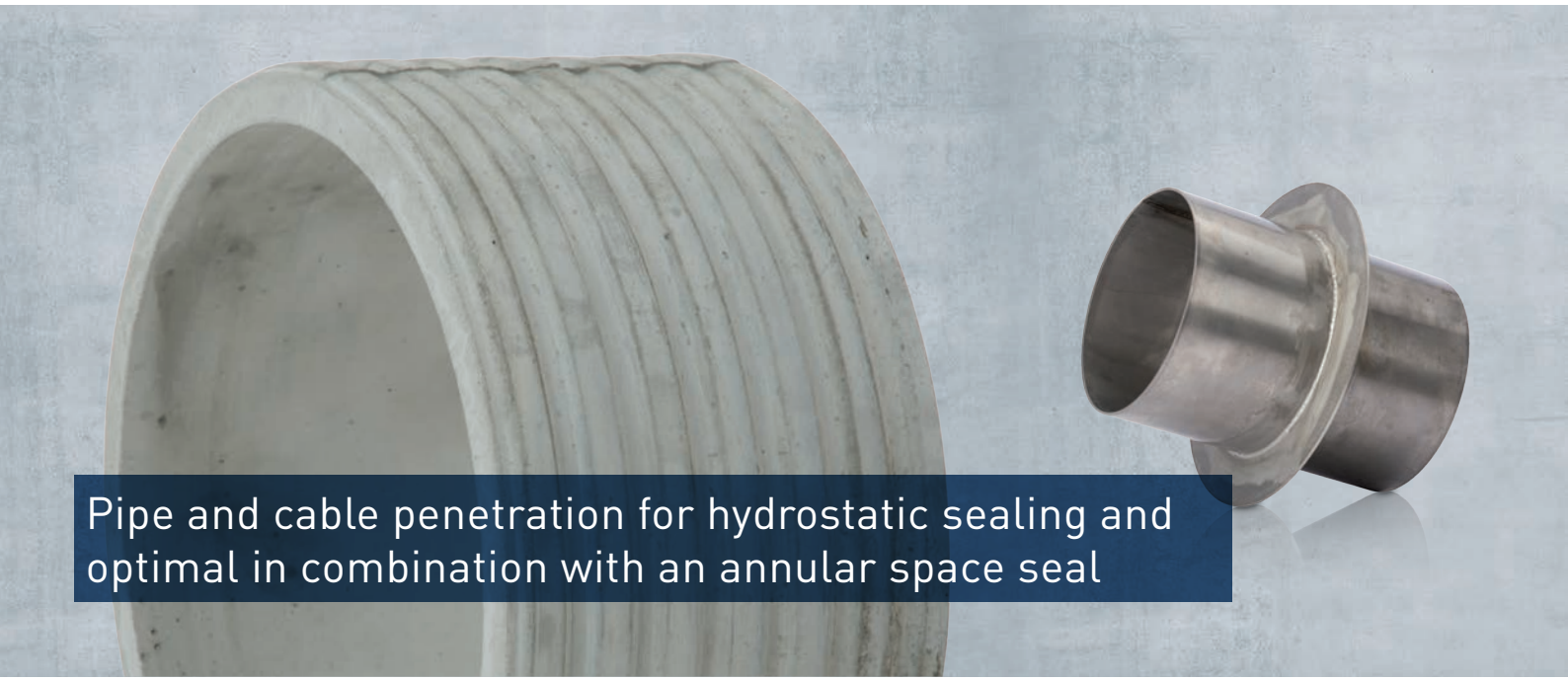
**AEO-CERTIFICATE**
Authorized Economic Operator "AEOC (customs simplification)

### RottoX Dynamic Wall Seal

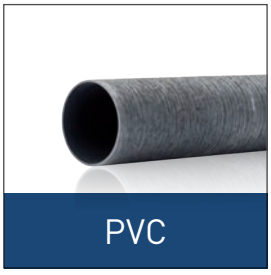
- VDW® - MFPA Leipzig: Pressure-tight when installed
- RottoX Temp - MFPA Leipzig: Pressure-tight when installed



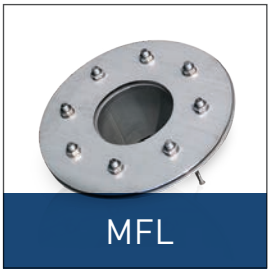
Pipe and cable penetration for hydrostatic sealing and optimal in combination with an annular space seal

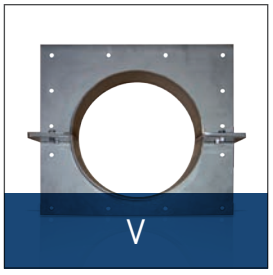
## **PipeX** WALL SLEEVE

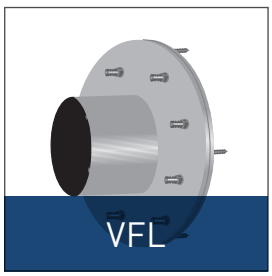

FZH

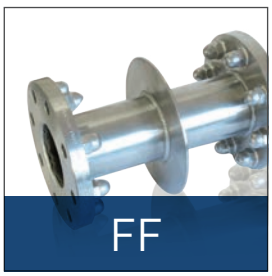

PVC


Steel


MFL


V


VFL


FF

**Building construction** | **Civil engineering** | **Water** | **Energy** | **Oil** | **Gas** | **Industry**

# TYPE SELECTION

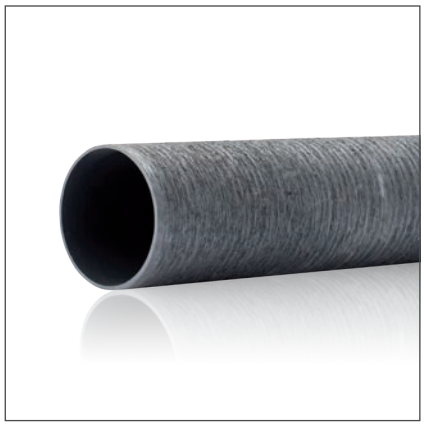
## PipeX **FZH** - closed
## PipeX **FZH** - split

**Fields of application**
This wall sleeve can either be set in concrete, bricked in or installed watertight in a wall opening with mortar. The circumferential grooves lead to a watertight bond with the building. For use in concrete basins or tanks, wall sleeve can be backed with a coating of the concrete construction.

**Material**
Asbestos-free fiber cement; consisting of cement and glass fibers;
color light gray

**Properties**
External groove circumferential not spiral; coatable

**Sizes**
ND 80 to 800; lengths: 200 to 1200 mm



## PipeX **PVC**

**Fields of application**
PVC wall sleeves suitable for concreting or bricking in

**Material**
PVC; roughened outside

**Properties**
Standard length 400 mm; can be cut to fit the wall thickness

**Sizes**
Inner diameter from 50 to 200 mm; reinforced walls: 82, 100 and 250 mm

## PipeX **Steel** - galvanized
## PipeX **Stainless Steel** - V2A

**Fields of application**
For pipe and cable penetration for embedding in concrete or insertion in the concrete formwork

**Material**
Galvanized steel; stainless steel V2A (1.4301) V4A (1.4571);
coating and sanding according to the length of the wall thickness

**Properties**
Standard sleeve supplied with a welded-on anchor flange acting as an annular water-stop plate.

**Sizes**
On request

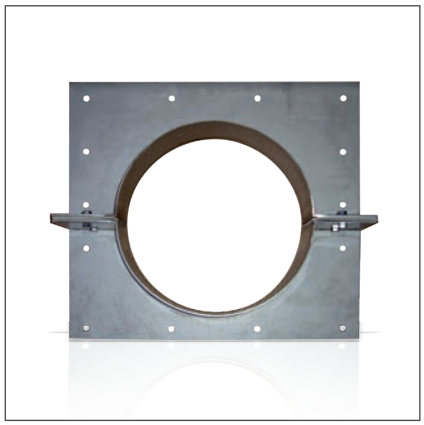
## PipeX **MFL** - galvanized
## PipeX **MFL** - stainless steel

**Fields of application**
For pipe and cable penetration in accordance with DIN 18533; for buildings with sealing sheets (black tube); wall sleeve with fixed / loose flange for installation in the concrete formwork

**Material**
galvanized steel; stainless steel V2A (1.4301) V4A (1.4571)

**Properties**
Anchoring via concrete anchors or cap nuts; version available for retrofitting installation by means of dowels; against pressing and non-pressing water

**Sizes**
From ND 80 to ND 1000 (sleeve diameter)



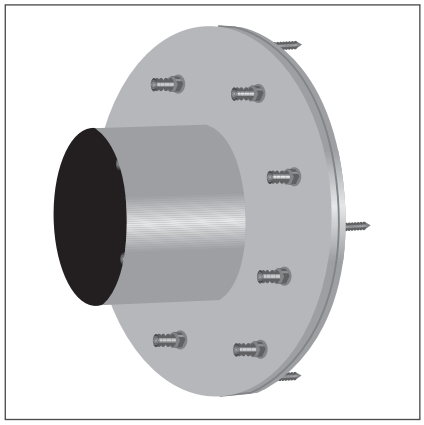
## PipeX **V** - closed
## PipeX **V** - split

**Fields of application**
For pipe and cable penetration for buildings without sealing sheets (white tub); prefabricated wall sleeve for installation in front of the wall

**Material**
galvanized steel; stainless steel V2A (1.4301) V4A (1.4571)

**Properties**
Easy installation with sealing adhesive and dowels

**Sizes**
From ND 80 to ND 1000 (sleeve diameter);
other sizes on request



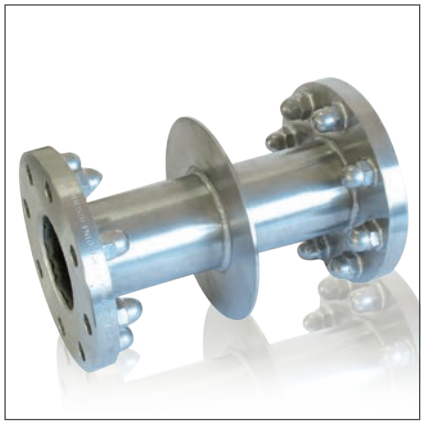
## PipeX **VFL** - galvanized
## PipeX **VFL** - stainless steel

**Fields of application**
For pipe and cable penetration in accordance with DIN 18533; for buildings with waterproofing sheets (black tub); prefabricated wall sleeve for installation in front of the wall

**Material**
Galvanized steel; stainless steel V2A (1.4301) V4A (1.4571)

**Properties**
Against pressing and non-pressing water

**Sizes**
From ND 80 to ND 1000 (sleeve diameter);
other sizes on request



## PipeX **FF**

**Fields of application**
Stainless steel wall penetration in the field of waterworks, sewage treatment plants and industrial sector

**Material**
Stainless steel V2A (1.4301) or V4A (1.4571)

**Properties**
Connecting flanges with tightly back-welded cap nuts;
welded-on wall collar

**Sizes**
ND 50 to 500

AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

**Product data sheet** **Installation** **Certificates**

**Tender text**

# PRODUCT INFORMATION

## PipeX FZH

### Properties

- water pressure-tight
- high dimensional accuracy
- smooth inner wall
- good bonding to concrete
- high stability
- non-flammable

### Fields of application

For wall, ceiling and floor penetrations, fiber cement wall sleeves are used for hydrostatic sealing of pipes

### Description

In combination with a seal that covers the annular space, a suitable pressure-tight sealing is guaranteed between the wall sleeve and the carrier pipe.

### Notes

For split version of PipeX FZH additional putty is necessary.
Available as a set with bar spacers in 1 kg/container.
The consumption is approx. 125 g per 100 mm sleeve length.

## PipeX On Wall-Face Sleeve

### Properties

- black/white tub
- split/closed
- galvanized/stainless steel

### Fields of application

- clean surface for for sealing of pipe and wall penetrations, going through walls and ceilings

### Description

For constructions with sealing sheets, wall sleeves or pre-fabricated wall sleeves with fixed/ loose flanges are required to be in accordance with DIN 18533. Differentiation based on pressing and non-pressing water. Long lasting solution for all wall penetrations.

The PipeX Steel Wall Sleeves are made of welded or seamless steel pipes and are protected against corrosion by galvanizing. Also available further corrosion protection measures on request.

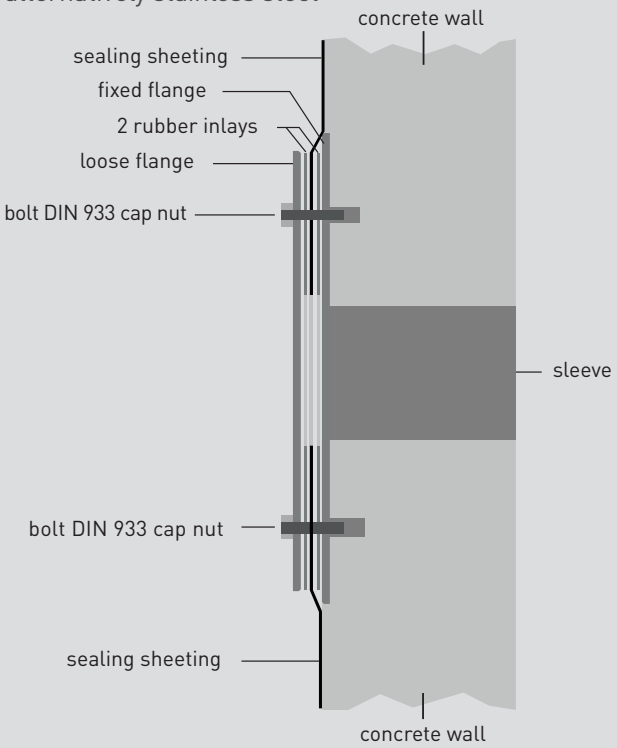
### Notes

- for white tubs we recommend on wall-face sleeves
- bolt connection for fixed/loose flanges are part of the delivery.
- suitable inlays (2 rubber sheets)

# TECHNICAL INFORMATION

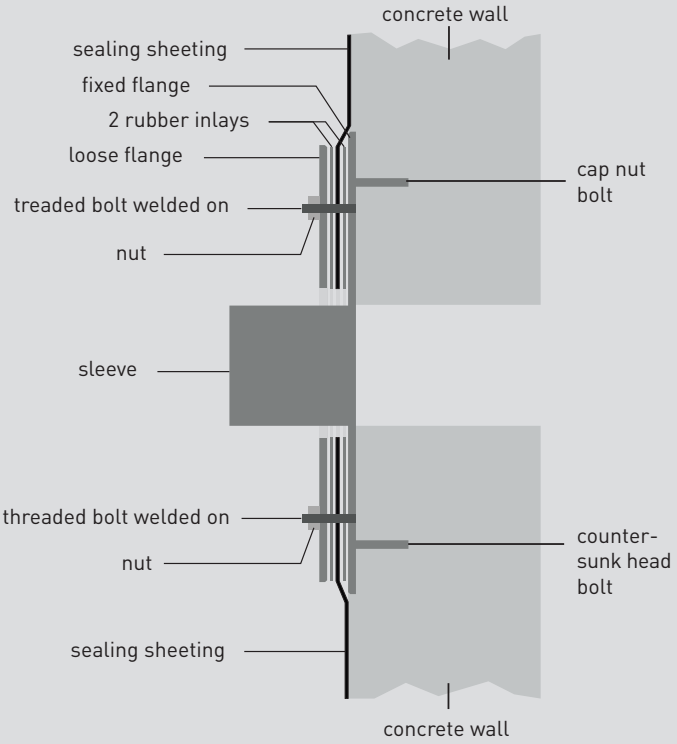
## PipeX MFL: Wall Sleeve with fixed and loose flange

according to DIN 18533, steel parts galvanized, alternatively stainless steel



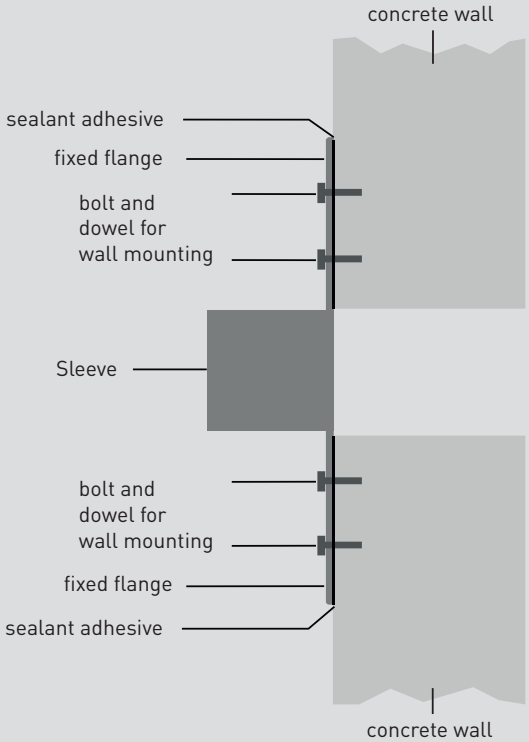

## PipeX VFL: On Wall-Face Sleeve with fixed and loose flange

according to DIN 18533, galvanized, alternatively stainless steel




## PipeX V: On Wall-Face Sleeve closed and split version

galvanized, alternatively stainless steel



## PipeX FZH

### Important notes on installation

- only cut wet fiber cement.
- use only hand-operated or slow-moving equipment with a dust collector.
- impact of the concrete from a great height or with high pressure directly on the component is to be avoided during concreting.
- when placing the sleeves in the formwork, ensure enough concrete cover (min. 100 mm circumferential around OD sleeve depending on static specifications, concrete quality and compaction).
- for the formwork, the minimum distances according to the structural analysis must be observed.
- carry out a visual inspection for damage before installation.
- please observe the valid Federal Ordinance on Hazardous Substances.
- process only outdoors or in well-ventilated areas.
- the fine dust endangers health when inhaled, wear a dust mask.

## PipeX FF

The stainless steel wall penetration is cast in the concrete wall. It provides a seal against a range of media. The carrier pipes are flanged directly to the cast-in penetration.

The PipeX FF installation is carried out flush with the casing for a variety of applications such as sedimentation tanks, high-level tanks, shaft constructions etc.
The flanges can be manufactured as welding neck flanges according to DIN 2632 (PN10) or smooth flanges (turned on all sides with reduced sheet thickness) similar to DIN 2576 (PN10).

The stainless steel pipes used correspond to the ISO pipe range. 1. The PipeX FF is supplied with wall flange welded on the middle,
an annular water stop plate that guarantees safe sealing of the sleeve outer diameter and also serves as a wall anchor. The PipeX FF is manufactured in S304 (V2A) (1.4301 or1.4541) or S316 (V4A) (1.4571), other materials upon request. It is welded in inert gas and stained and passivated afterwards. On request PipeX FF can be supplied sanded, without wallflange or with only one flange sheet (F-piece).

Other pressure stages available upon request. All connecting flanges have capnuts welded tightly on the back.

## SUITABLE ACCESSORIES

### PipeX Casing aids made of PE-LD

### PipeX PVC with shaped socket and lip seal

## CERTIFICATES

To offer our customers the best possible quality and service, we are organized according to DIN EN ISO 9001:2015 and have this continuously checked and certified.

**CERTIFICATE ISO 9001:2015**
This certification documents our conformity of the quality management system

**AEO-CERTIFICATE**
Authorized Economic Operator "AEOC (customs simplification)

### Wall Sleeves

- PipeX FZH - MFPA Leipzig: Pressure-tight when installed
- PipeX FZH - MFPA Leipzig: Classification report fire behavior A1 - DIN EN 13501-1
- PipeX PVC - MFPA Leipzig: Pressure-tight when installed
- FHRK quality seal for PipeX FZH: FHRK test specification GE-102

# OTHER PRODUCTS FROM PSI

Product overview **Sealing Technology**


Product overview **Pipe Insertion**


Product overview **Corrosion Protection**


Product overview **Flange Gasket**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Product overview **Marking**

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Art.-No. 3-050-00534