# PIPE INSERTION

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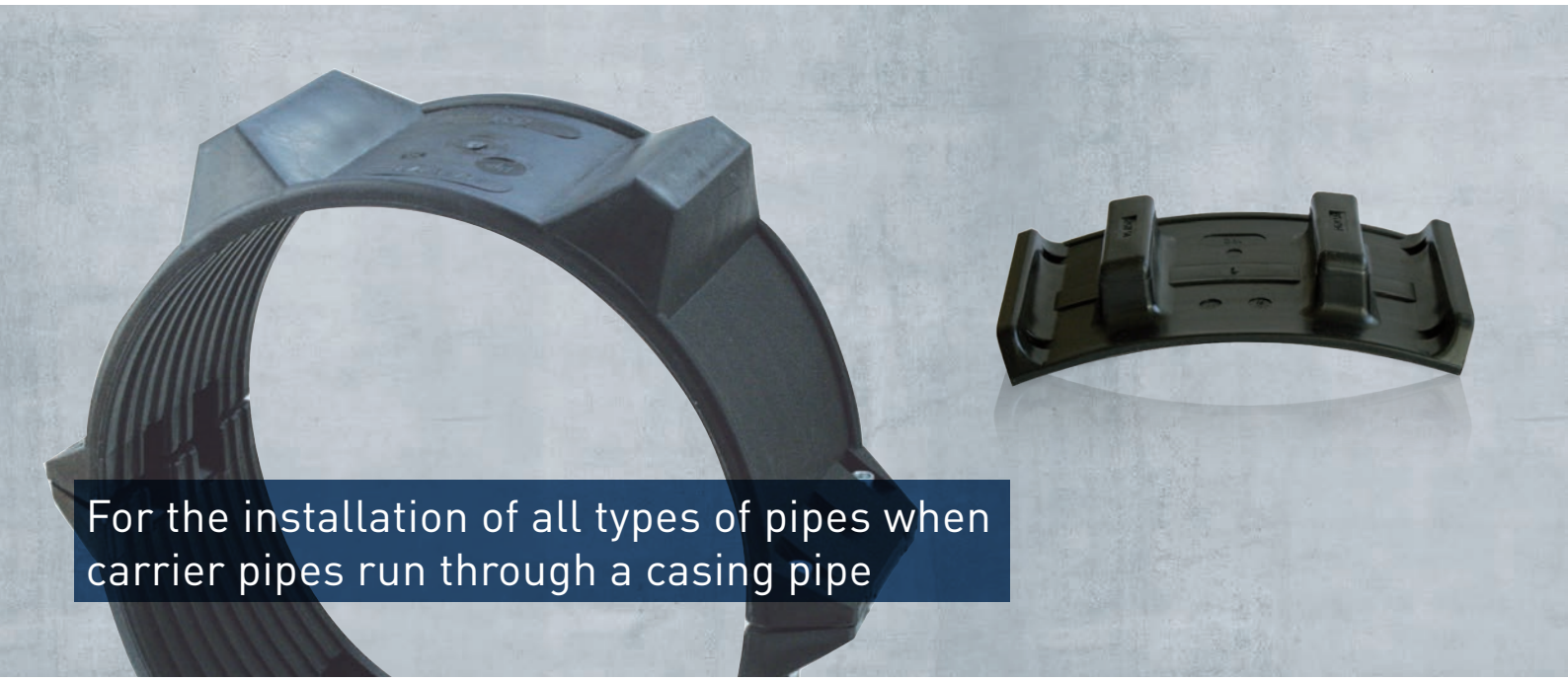
# CONTENT




# **CaseX DSI®** CASING SPACER


PA/PE


AZ/AC


MA


RGV


GKO-mk


GKO-gl/gs


Ranger® II

Water Energy Civil Engineering

# TYPE SELECTION

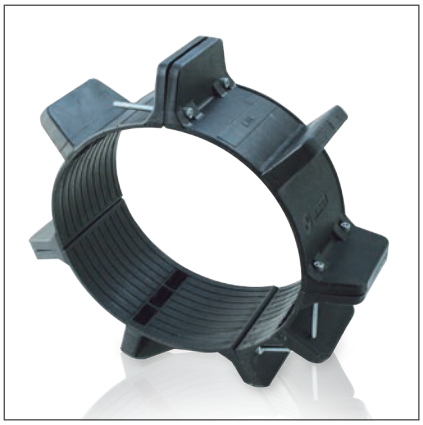
## CaseX **DSI® PA/PE**

**Fields of application**
For pipe pull-in and pipe storage; also suitable for particularly small carrier pipes

**Material**
Polypropylene; bolts/nuts galvanized, stainless steel on request

**Properties**
Easy installation by means of two half-shells and 4 bolts; max. static load per ring up to 250 kg; skid heights 11 to 110 mm; cathodic pipe protection; material temperature range -20 °C to 100 °C; coefficient of sliding friction of polypropylene on steel approx. 0.2

**Sizes**
Outside pipe diameter from 25 mm to 336 mm



## CaseX **DSI® AZ/AC**

**Fields of application**
For pipe pull-in and pipe storage

**Material**
Polypropylene; bolts/nuts galvanized, stainless steel on request

**Properties**
The variable number of segments ensures that the spacer can be adapted to the different carrier pipe diameters: max. static load per ring up to 200 kg; skid heights 16 - 110 mm; cathodic pipe protection; material temperature range -20 °C to 100 °C; coefficient of sliding friction of polypropylene on steel approx. 0.2

**Sizes**
Outside pipe diameter from 98 mm to 385 mm

## CaseX **DSI® MA**

**Fields of application**
For pipe pull-in and pipe storage; suitable for larger medium pipes and higher static loads

**Material**
Polypropylene; bolts/nuts galvanized, stainless steel on request

**Properties**
The variable number of segments ensures that the spacer can be adapted to the different carrier pipe diameters: max. static load per ring up to 650 kg; skid heights 25 to 75 mm; cathodic pipe protection; material temperature range -20 °C to 100 °C; coefficient of sliding friction of polypropylene on steel approx. 0.2

**Sizes**
Outside pipe diameter from 402 mm to 1249 mm

## CaseX **DSI® RGV**

**Fields of application**
For pipe pull-in and pipe storage; suitable for larger medium pipes and higher static loads

**Material**
Polypropylene; bolts/nuts galvanized, stainless steel on request

**Properties**
The variable number of segments ensures that the spacer can be adapted to the different carrier pipe diameters: max. static load per ring 1,000 kg; skid heights 50 to 125 mm; cathodic pipe protection; material temperature range -20 °C to 100 °C; coefficient of sliding friction of polypropylene on steel approx. 0.2

**Sizes**
Outside pipe diameter from 500 mm to 2100 mm

## CaseX **DSI® GKO-mk**

### Fields of application
For pipe pull-in and pipe storage; metal-free solution for small medium pipes and low static load; suitable for cathodic protected pipes

### Material
Polypropylene

### Properties
Easy installation and adaption to different media pipe diameters by means of clamping connection technology: max. static load per ring up to 250 kg; skid heights 25 to 125 mm; cathodic pipe protection; material temperature range -20 °C to 100 °C; coefficient of sliding friction of polypropylene on steel approx. 0.2; metal-free

### Sizes
Outside pipe diameter from 160 mm to 430 mm

## CaseX **DSI® GKO-gl/gs**

### Fields of application
For pipe pull-in and pipe storage; metal-free solution for large medium pipes and extreme static loads; suitable for cathodic protected pipes

### Material
Polypropylene

### Properties
Easy installation and adaptation to different carrier pipe diameters by means of clamping connection technology: max. static load per ring GKO-gl up to 4.000 kg; GKO-gs up to 14,200 kg; Skid heights 36 to 125 mm; Cathodic pipe protection; Material temperature range -20 °C to 100 °C; Sliding friction coefficient of polypropylene on steel approx. 0.2; Metal-free

### Sizes
Outside pipe diameter from 400 mm to 2500 mm

## CaseX **Ranger® II** - Pipe bundling

### Fields of application
For pipe pull-in and pipe storage; metal-free solution, mainly used for multiple pipe pull-in such as bundling. Suitable for cathodic protected pipes

### Material
Polypropylene block polymer PP

### Properties
Easy installation and adaption to different carrier pipe diameters by means of clamping connection technology: max. static load per ring up to 3,000 kg; skid heights 8 mm to 175 mm; cathodic pipe protection; material temperature range -20 °C to 100 °C; coefficient of sliding friction of polypropylene on steel approx. 0.2; metal-free

### Sizes
Outside pipe diameter from 21 mm to 2867 mm

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

**Tender text** | **Type selection**

# PRODUCT INFORMATION

## Properties

- Easy pull-in of the carrier pipe
- The spacer's friction coefficient is reduced to a minimum because they are made of plastic
- The minimized friction prevents damage to the protective coating and wrapping of the pipes
- A wide range of skid heights facilitates the centering/storage of carrier pipe in casing pipe
- Excellent insulating properties of the materials used. All requirements of cathodic pipe protection are fulfilled

## Fields of application

Casing spacers made of high-quality polypropylene material are universally applicable in the installation of all kinds of pipelines when the carrier pipe runs through a casing pipe.

## Description

Polypropylene has a waxy and therefore a good sliding surface. The coefficient of sliding friction of PP on steel is approx. 0.2. In comparison, steel on steel is about 0.5. Due to the optimum friction conditions, abrasion is reduced to a minimum. Good stress cracking resistance, flexibility of the body, low weight, bending stiffness and stability of the skids form as well as excellent dielectric isolation characteristics are further benefiting properties. Polypropylene has a higher temperature resistance than polyethylene. The base material is resistant up to 100 °C. The specification of the load capacity applies for a skid height up to 75 mm. For skid heights above 75 mm, these values shall be multiplied by a factor of 0,75.
These specifications apply to standard pipelines. To determine the correct distances for an individual application, other factors have to be taken into consideration, such as pipe diameter, wall thickness of pipe and type of media (gas or liquid). We will be glad to assist you in determining the exact dimensions.

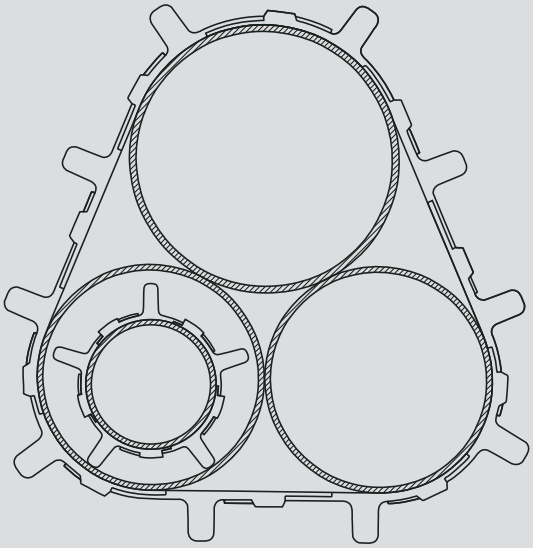
## Notes

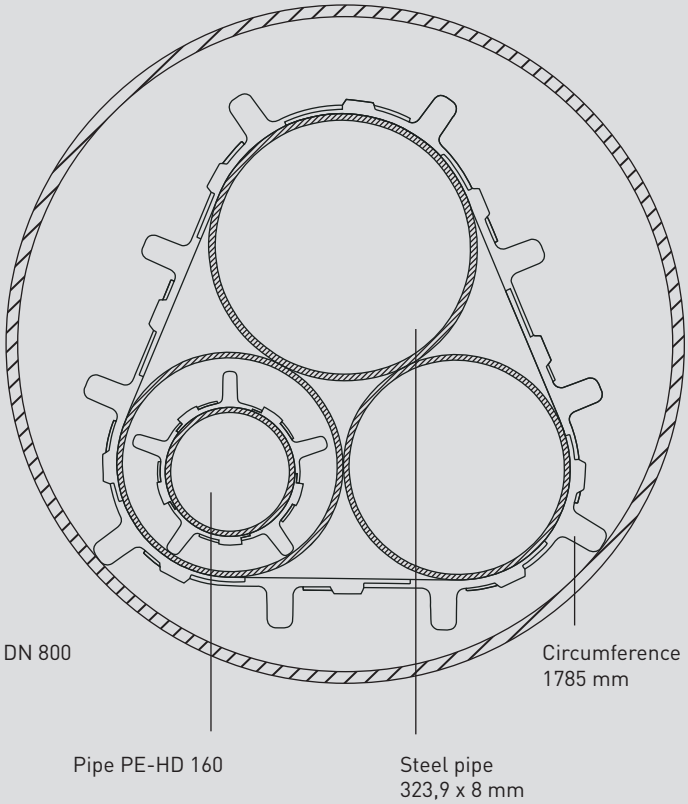
Plastic spacers are usually installed with the following distances:

- Pipe diameter up to 300 mm at 2.5 m distance
- Pipe diameter 301 - 600 mm at 2.0 m distance
- Pipe diameter larger than 600 mm at 1.5 m distance
- The spans also depend on the specifications of the respective pipe manufacturers. In particular cases, the ring distance can be modified after checking the installation situation.

# TECHNICAL INFORMATION

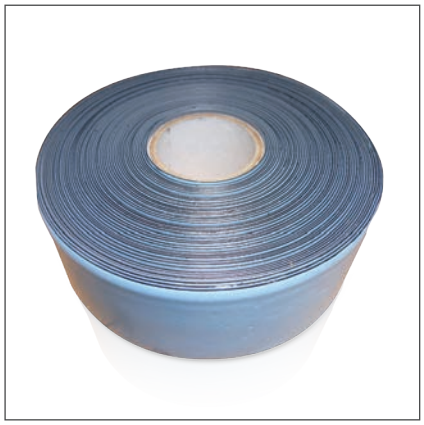
### Application example of pipe bundling






# SUITABLE ACCESSORIES

### Anti sliding tape



### SuppiT Pipe Support

# 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)"

## CASING SPACERS

Ruhrgas material testing

- DSI® Plastic Spacers GKO 125 gs, 125 gl, 36 gs, 36 gl; TALW component testing


# **CaseX** STEEL SPACER/ROLLER RING




**Water** **Energy** **Civil Engineering**

# TYPE SELECTION

## **CaseX** Steel Spacer

### Fields of application
For pipe pull-in and pipe positioning where the requirements exceed the possibilities of a DSI® casing spacer

### Material
Half shells and skids are made of steel; surfaces are optionally raw (black) without corrosion protection or bitumen-coated, plastic-coated, galvanized or in stainless steel (V2A/V4A); sliding bodies made of PP, steel, brass, PTFE etc.; screws made of galvanized, high-strength steel or stainless steel

### Properties
Individual solution according to customer requirements; high temperature resistance and load capacity, as well as adjustment to large annular spaces

### Sizes
According to customer requirements

## **CaseX** Steel roller ring

### Fields of application
For pipe pull-in and pipe positioning where the requirements exceed the possibilities of a DSI® casing spacer.

### Material
Half shells and skids are made of steel; surfaces are optionally raw (black) without corrosion protection or bitumen-coated, plastic-coated, galvanized or in stainless steel (V2A/V4A); wheels made of polyamide, steel or stainless steel; screws made of galvanized, high-strength steel or stainless steel

### Properties
Individual solution according to customer requirements; high temperature resistance and load capacity, as well as adjustment to large annular spaces; reduced pull-in friction resistance

### Sizes
According to customer requirements

## **KuRRi®** Polymer Roller Ring

### Fields of application
Pipe pull-in and pipe positioning; pull-in of multiple pipes such as pipe bundling; individual solution according to customer requirements, where the requirements exceed the possibilities of a Ranger® II casing spacer

### Material
Polyamide wheels with bolted steel axle (stainless steel on request); polyethylene plate with appropriate holes for the carrier pipes;

### Properties
Pull-in with low tensile forces by means wheels arranged in star-shape; weight approx. 5-7 kg/ring; individual solution according to customer requirements

### Sizes
Suitable for casing pipes from 600 to 1200 mm

AVAILABLE ONLINE | WWW.PSI-PRODUCTS.COM

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

**Tender text** **Type selection**

# PRODUCT INFORMATION

## Properties

- Easy pipe installation by reducing friction between the carrier pipe and the casing pipe
- Provide support for the carrier pipe
- Act as spacers between carrier pipe and casing pipe. The carrier pipe can be placed in concetric or eccentric positions in casing pipe
- Ensure electrical isolation between carrier pipe(s) and casing pipe

## Description

Each ring consists of two half-shells, which are clamped together by hexagonal bolts and nuts.
The CaseX steel spacers/roller rings are manufactured individually

## Notes

- Different skid heights for the upper and lower half shells allow any position of the carrier pipe in the outer casing. For longer distances, if necessary with guide rail (anti-twist device).

## Fields of application

Often it is not possible to lay pipes in open ditches. For example, for rail or raod crossings it is first necessary to drive casings underground.
By using steel spacers or roller rings the carrier pipe can be inserted into the casing pipe.

# KuRRi® Polymer Roller Ring

## Properties

- The basic disc is made of polyethylene with corresponding drill holes and gaps for carrier pipes. The drill holes are slightly bigger than the outside diameter of the respective carrier pipes
- Possible additional openings (as required), which facilitate a better flow of filling material
- Wheels made of Polyamide with bolted steel axle (stainless steel on request)
- Connection of various polymer roller rings to each other with pull rods
- Guide rail to prevent twisting (if necessary) which will be fixed in casing pipe by customer. The working space in the tunnels, galleries or pipe penetrations must be sufficient according to german standard DGUV

## Description

In case of socket connections of the carrier pipes (e.g. electrofusion sockets), the sockets can be placed so they are in contact with the polymer roller ring (depending on available space). This prevents axial displacements of the carrier pipes in the feedthrough direction.

## Notes

- If a steel winch is required for longer lengths, it can be easily fixed on the pull rods without the use of special tools

## Fields of application

The polymer roller rings are suitable for the insertion of several cable pipes in relation to plastic pipelines in the field of electricity, gas and water supply.

# TECHNICAL INFORMATION

### Steel roller ring with holding clamp for socket joints

This steel roller ring also has two (or more) clamps. The additional clamps are located on the main holding clamp.

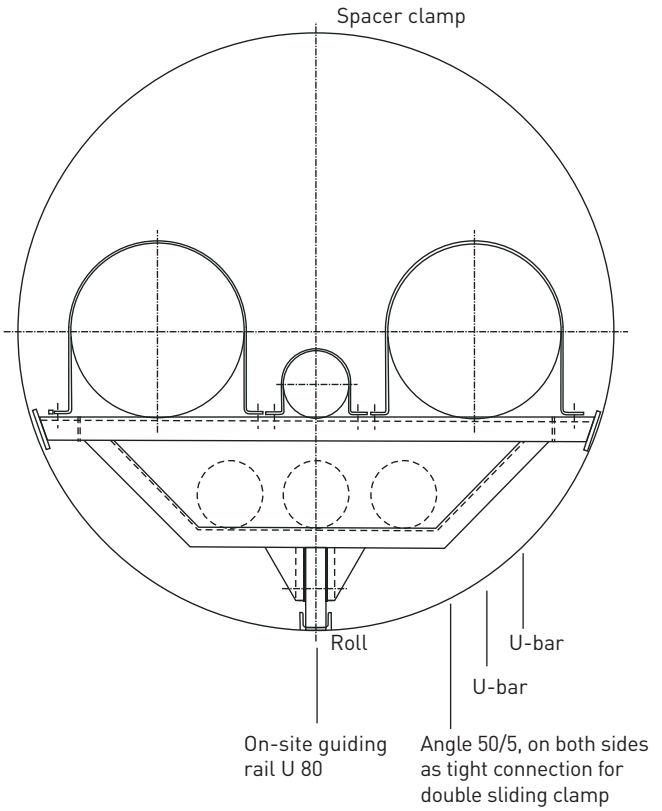
### Individual steel solutions

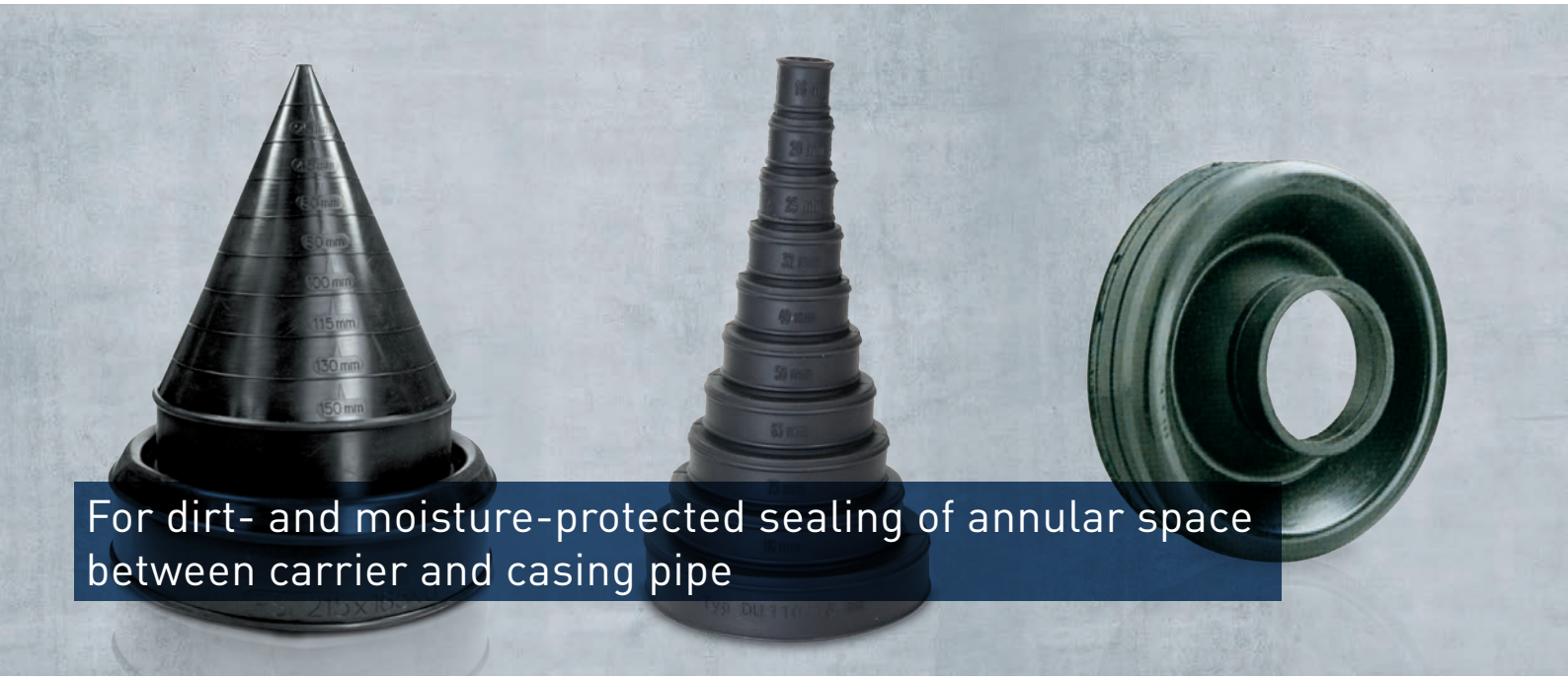
In the wide field of protective pipe laying, there are applications where plastic spacers and KuRRi can no longer meet the requirements

**Examples:**

- Multiple pipes in exact defined position
- Support for long distances
- Permanent pipe movement
- High temperature
- Heavy weight
- Integrated tensile protection
- Hanging constructions

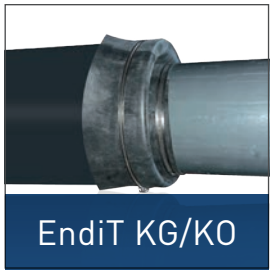
### Application example






# **EndiT** CASING/STEP END SEAL


EndiT DU


EndiT KG/KO


RottoX STM


EndiT KT


EndiT HA


EndiT DU

Water Energy Civil Engineering

# TYPE SELECTION

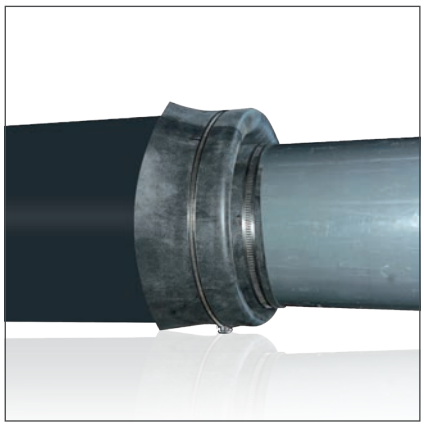
## EndiT Casing End Seal **DU**

**Fields of application**
Ending of pipe-in-pipe systems for new installations; suitable also for larger dimensions; requirement for a dirt- and moisture-protected sealing solution

**Material**
EPDM rubber; Shore A 50° ±5; rubber thickness 5-6 mm; fastening straps stainless steel

**Properties**
Solution for fixed standard combinations of carrier and casing pipes; ability to compensate eccentric installed carrier pipes; easy installation due to pre-molded end seal

**Sizes**
Carrier pipe sizes 20-762 mm
Casing pipe sizes 90-965 mm



## EndiT Casing End Seal **KG/KO**

**Fields of application**
Ending of pipe-in-pipe systems for new installations or retrofitting; requirement for a dirt- and moisture-protected sealing solution; suitable for almost all combinations of carrier and casing pipes. Available in oil and gas resistant material, as well as for high temperatures

**Material**
Neoprene rubber (silicone and NBR on request); Shore A 65° ±5; rubber thickness 2-3 mm; fastening straps stainless steel

**Properties**
Individual production according to customer requirements; suitable for eccentric positioned carrier pipes; flexible adjustment of end seal on site; no additional tools necessary; KG for new installations; KO for retrofitting; closing by means of applied adhesive stripe; high resistances depending on material quality

**Sizes**
Carrier pipe sizes 32-1320 mm
Casing pipe sizes 48,3-2000 mm

## Casing End Seal RottoX **STM**

### Fields of application
Ending of pipe-in-pipe systems for new installations or retrofitting; requirement for a dirt- and moisture-protected sealing solution; in case of extreme eccentricity for carrier pipe as well as for several openings; available for almost all combinations of carrier and casing pipes

### Material
Thermoplastic elastomer Rottolin; shore A 50° ±5; material thickness approx. 6-8 mm, reinforced 9-11 mm available; color red; fastening straps stainless steel

### Properties
Highly resistant material, easy installation due to pre-formed seal; additional openings possible; standard thickness is weldable; tensile strength 11 N/mm2; elongation at break 400%;
tear strength: 27 N/mm; max. continuous operating temperature +55 °C

### Sizes
Carrier pipe sizes 50-1200 mm
Casing pipe sizes 200-1600 mm: Special sizes on request

## Step End Seal EndiT **KT**

### Fields of application
Sealing of annular spaces of pipe-in-pipe systems for new installations, compensation of eccentric pipe positions. Requirement for a dirt- and moisture-protected sealing solution

### Material
EPDM rubber; Shore A 60° ±5; rubber thickness 3-4 mm; fastening straps stainless steel

### Properties
Flexible and variable solution for various carrier and casing pipe sizes; easy installation due to pre-molded seal and scaling on the outside

### Sizes
Carrier pipe sizes 10-508 mm
Casing pipe sizes 110-610 mm

## Step End Seal EndiT **HA**

**Fields of application**
Ending of pipe-in-pipe systems for new installations of house connections; requirement for a dirt- and moisture-protected sealing solution

**Material**
EPDM rubber; shore A 50° ±5; rubber thickness 2-3 mm; fastening straps stainless steel

**Properties**
Solution for fixed dimensions of carrier and casing pipes when centered: Easy installation due to pre-molded end seal.

**Sizes**
Carrier pipe sizes 25-50 mm
Casing pipe sizes 50-90 mm

## Step End Seal EndiT **DU**

**Fields of application**
Ending of pipe-in-pipe systems for new installations of house connections; requirement for a dirt- and moisture-protected sealing solution

**Material**
EPDM rubber; shore A 50° ±5; rubber thickness 2 mm; fastening straps stainless steel

**Properties**
Flexible and variable solution for various carrier and casing pipe sizes; easy installation due to pre-molded seal and scaling on the outside

**Size**
Carrier pipe sizes 16; 20; 25; 32; 40; 50; 63; 75 and 90 mm;
Casing pipe size 110 mm

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

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

**Tender text** | **Type selection**

## PRODUCT INFORMATION

### Properties

- Protection against moisture and dirt
- Also suitable for retrofitting
- Individual or special solutions possible

### Fields of application

Pipes carrying media (e.g. gas pipeline, water pipeline, sewage pipeline, etc.) below motorways, main roads, railway tracks, etc. are often laid in casing pipes, here they are used as protective pipe closures.

### Description

The end seals are used to seal the annular space between the carrier pipe and the casing pipe against dirt and moisture.

### Notes

Casing end seals are available for new installations, and for retrofitting.

# OTHER PRODUCTS FROM PSI

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Product overview **Marking**

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