

# PSI CASING END SEALS FOR CASING PIPE CLOSURE

FOR PROTECTION  
AGAINST MOISTURE  
AND DIRT

ALSO FOR  
RETROFITTING

INDIVIDUAL  
CUSTOMIZED  
SOLUTIONS



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## GENERAL INFORMATION

Pipes carrying media (e.g. gas pipes, water pipes, sewage pipes, etc.) below motorways, main roads, rail tracks, etc. are often laid in casing pipes. Casing end seals serve to protect the annular space between carrier pipe and casing pipe from moisture, dirt and animals. PSI casing end seals are available for new installations and pipes already installed.

### Description / Technical Data

#### Type KT casing end seal (only for new installation)

Advantages of the PSI type KT casing end seals are, in particular, low storage costs, because of only five different KT sizes suitable for casing pipe sizes from ND 100 to ND 600. Two casing pipe sizes per type are already pre-molded for installation convenience as a collar. The stainless steel straps included in the delivery can be used for all diameters.

Material:	EPDM
Thickness:	approx. 3-4 mm
Shore hardness A:	60 ± 5
Carrier pipe sizes:	10-508 mm (see current price list for precise dimensions)
Casing pipe sizes:	110-610 mm (see current price list for precise dimensions)
Compensation for eccentric Pipe position:	yes
Fastening strap material:	stainless steel

#### Type DU casing end seal (only for new installation)

Casing end seals type DU are always supplied in a suitable size for the carrier pipe / casing pipe combination. Further adaptation on the construction site is no longer necessary.

Material:	EPDM
Thickness:	approx. 5-6 mm
Shore hardness A:	50 ± 5
Carrier pipe sizes:	20-762 mm (see current price list for precise dimensions)
Casing pipe sizes:	90-965 mm (see current price list for precise dimensions)
Fastening strap material:	stainless steel

#### Type KG/KO casing end seal (KG for for new installation, KO for retrofitting)

The type KG/KO casing end seals are manufactured in a conical shape. Due to individual production of the casing seals, they are available for nearly all pipe sizes and carrier pipe/casing pipe combinations. If the opening is a bit too small for the carrier pipe, it can be adjusted on site (see installation instructions).

Standard material:	Neoprene rubber
Material on request:	Silicone (only as KG type) and NBR
Thickness:	approx. 2-3 mm
Shore hardness A:	65 ± 5
Carrier pipe sizes:	32-1320 mm (see current price list for precise dimensions)
Casing pipe sizes:	48.3-2000 mm (see current price list for precise dimensions)
Special sizes:	upon request
Fastening strap material:	stainless steel



## GENERAL INFORMATION

### Type HA casing end seal (only for new installation)

HA - casing end seals are used when installing new house service lines.

Material:	EPDM
Thickness:	approx. 2-3 mm
Shore hardness A:	50 ± 5
Carrier pipe sizes:	25-50 mm (see current price list for precise dimensions)
Casing pipe sizes:	50-90 mm (see current price list for precise dimensions)
Fastening strap material:	stainless steel



### Type STM casing end seal

(only for new installation, split version upon request, installation service available)

Seamless STM casing seals are manufactured according to special requirements. They are available for nearly all pipe sizes. This sealing sleeve is the appropriate type especially for extreme eccentricities or if several openings are required, e.g. for additional cable ducts. This sealing sleeve is also available in a reinforced version (type STMV) for higher mechanical loads.

Material:	Rottolin
Thickness:	STM approx. 6-8 mm, STMV approx. 9-11 mm
Shore hardness A:	approx. 50 ± 5
Carrier pipe sizes:	50-1200 mm (see current price list for precise dimensions)
Casing pipe sizes:	200-1600 mm (see current price list for precise dimensions)
Compensation for eccentric pipe positioning:	yes
Special sizes:	upon request
Fastening strap material:	stainless steel



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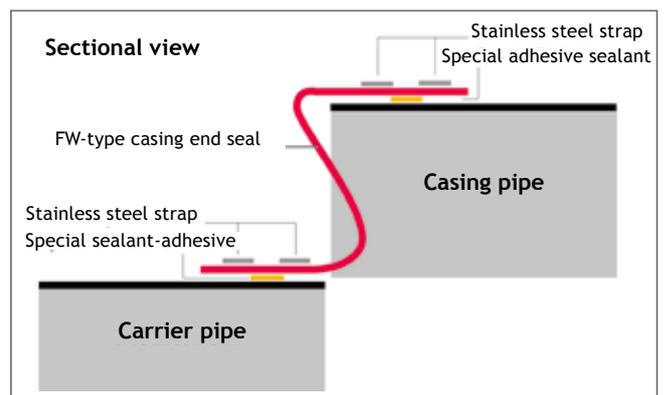
## GENERAL INFORMATION

PSI casing end seals type FW are specially developed to provide a pressure-tight seal between carrier and casing pipes. The casing end seal is made of high-quality Rottolin and, thanks to its 9-11 mm thickness, it is particularly dimensionally stable and pressure-tight up to 0.5 bar. As a result of its exceptional flexibility, the casing end seal allows axial and radial movement between casing and carrier pipe. To ensure tightness, the annular space should be no larger than 70 mm. A special, permanently elastic adhesive sealant is sprayed from a cartridge on to the underside of the collar of the sealing sleeve, which is then secured over the casing and carrier pipe with two stainless steel fastening straps. Before backfilling, the casing end seal needs to be covered with foam pads.

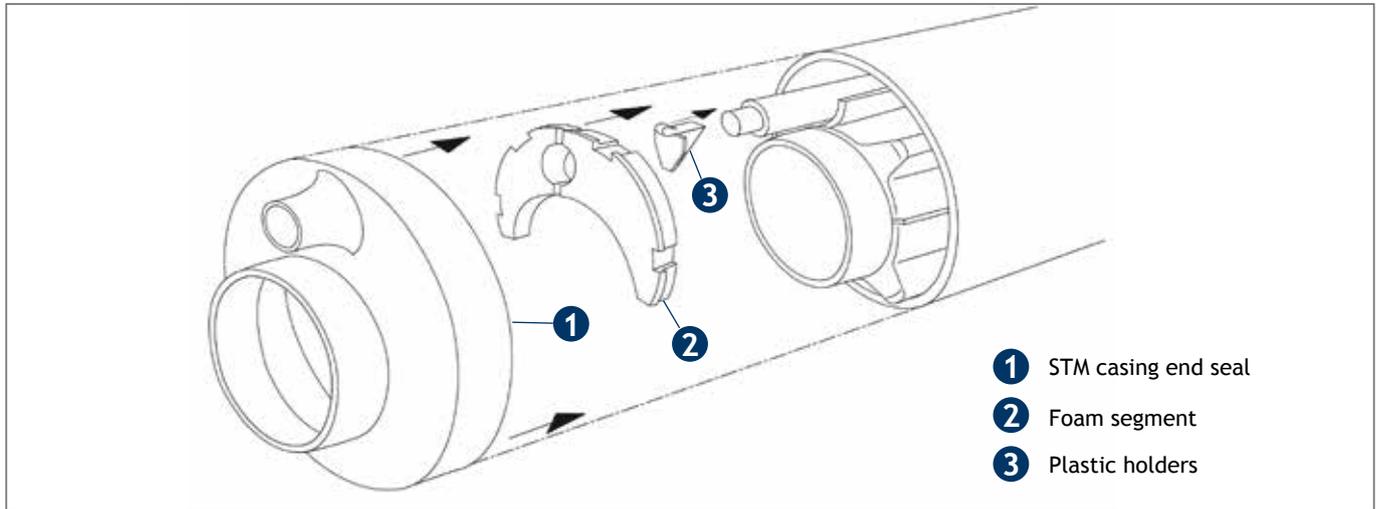


### Technical Data:

Material:	Rottolin
Material thickness:	9-11 mm
Color:	red
Shore hardness:	approx. 50°
Tensile strength:	11 N/mm <sup>2</sup>
Elongation at breaking point:	400%
Tear strength:	27 N/mm
Max. continuous operating temp.	55 °C



## GENERAL INFORMATION



Fix plastic holders with clip on the inner wall of the casing pipe. Cut to suitable length if necessary. The distance must be chosen according to the recesses of the support segments.



Place foam segments on the carrier pipe and insert into casing pipe. Hereby the raised flange rests on the outer front of the casing pipe. This means that secure support is guaranteed.



The cable duct has to be pulled through between the semi-circular recesses. If the recesses are too small, they can be slightly enlarged by cutting them out further with a knife.



Pull casing end seal over the pipe and fit fastening straps (included).

### APPLICATION RECOMMENDATION

#### Penetration through casing pipes

##### “Casing pipe - Carrier pipe”

1. With a flush connection to the casing 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 has to 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. Step 1 needs to be repeated (layer by layer) until the the top layer of the expansion pad is at the same level as the casing pipe circumference.
3. Finally one layer needs to be wrapped and fixed covering the the entire installation. (Overlapping the casing end seal on the casing pipe at least 20 cm).

#### Penetration through the wall

##### “PSI Compensating Wall Seal Type VDW”

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 has to 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. Step 1 needs to be repeated (layer by layer) until the the top layer of the expansion pad is flush with the wall -covering the dynamic end seal.
3. Finally one more layer of expansion pads is wrapped and fixed over the entire installation

## GENERAL INFORMATION

Expansion pads are state-of-the-art in the field of district heating. They are used to reduce the pressure of the soil on the pipe surface of buried pre-insulated pipes in case of thermal expansion. Around elbows the expansion pads are applied to the inner-side (protection for longitudinal reduction and to the outer-side (protection for longitudinal increase) of the elbow.

Depending on the manufacturer and type they are usually made of cross-linked or non-cross-linked PE or PUR foams.

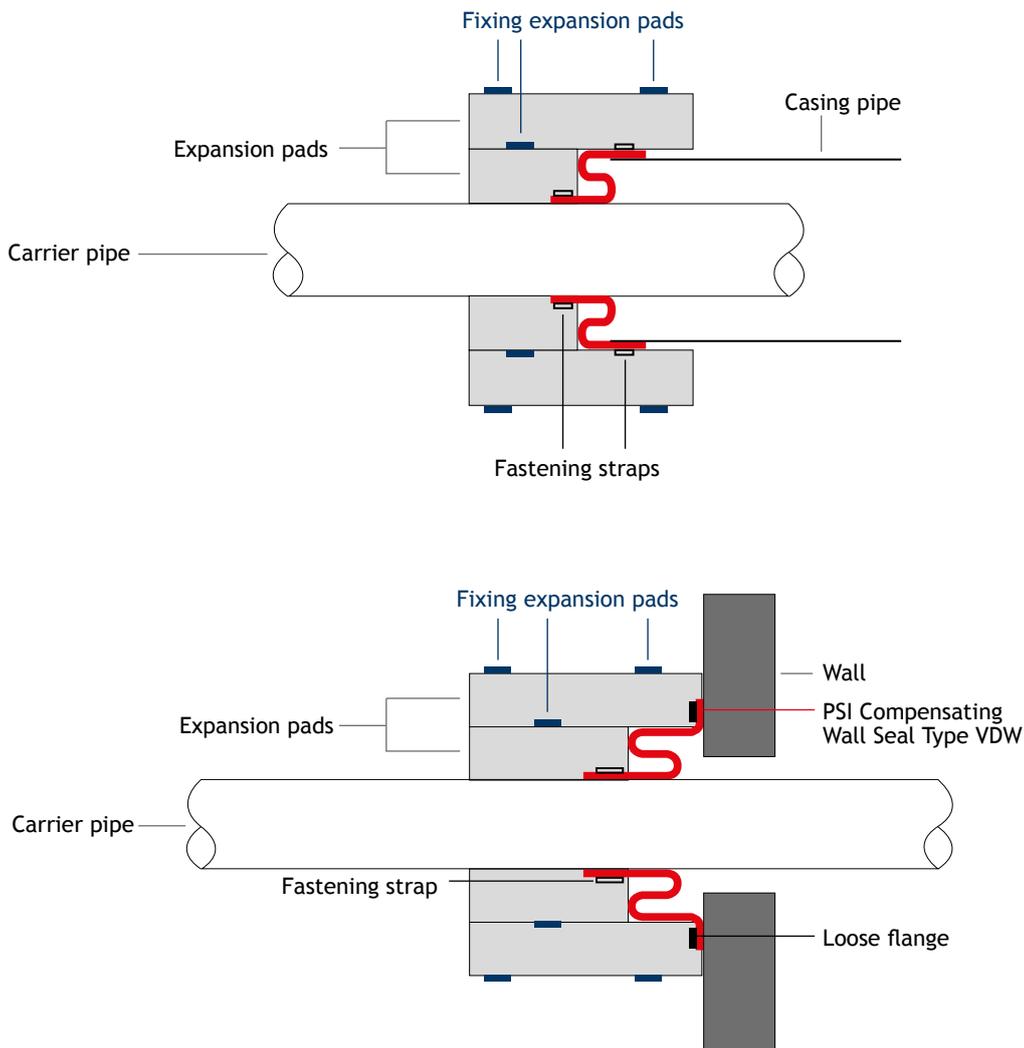
This means that important material properties such as being rot-proof, low water absorption, excellent mechanical, chemical and physical resistance and contour stability are given. This ensures a long service life and great functionality.

As casing end seals for district heating pipes have to deal with pipe movement, space for movement needs to be available around the casing end seal.

Expansion pads therefore offer two advantages at the same time:

1. First they provide protection for the casing end seals when backfilling the trench and hold back the pressure while the material compresses
2. They ensure room for movement of up to 25 mm

Using expansion pads is generally recommended.





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