

# Уплотнения для прохода труб

## Технические характеристики

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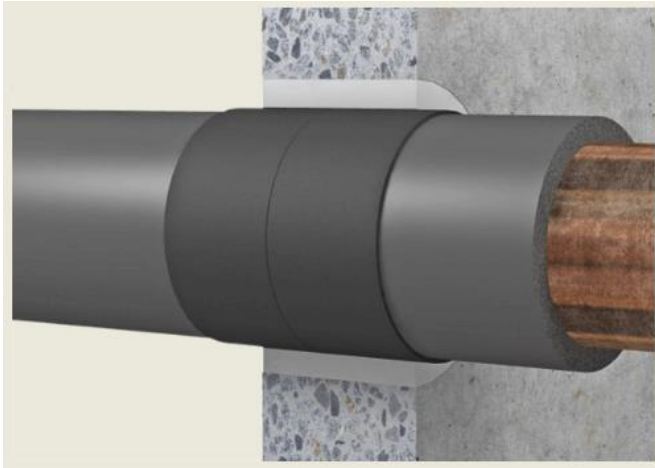
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## Pipe penetration seals prevent fire and smoke from spreading to other areas



**Pipe penetration seals** must be designed to prevent fire and smoke from spreading through ceilings or walls through which pipes pass for a certain period of time. The penetration seal principle prevents the fire from spreading from the exposed side to the non-exposed side. It also prevents the passage of fire and smoke from pipe linings and the pipes themselves.

Pipe penetration seals are divided into seals for combustible pipes and pipe casings for non-combustible pipes. They are available in various fire resistance classes (R 30 to R 120), allowing them to be adapted to the fire resistance of the surrounding components.

### Pipe sealings...

- ... **prevent the spread** of fire and smoke through openings.
- ... are available in various designs and **fire resistance classes** .
- ... must **comply with DIN 4102-11** and have DIBt approval.

### Overview Products

- Fire protection sleeves
- mortar
- Combined bulkhead

### Overview of services

- Consulting and planning
- Installation or assembly
- distribution
- Repairs, improvements to the existing stock
- Development of fire protection concepts

Pipe sealing is required for plastic pipes because these pipes can transmit fire and smoke to the non-fire side in the event of a fire. Pipes can be sealed or encased, but both options must comply with building regulations.

Table 1 of DIN 4102-11 shows the classification of pipe penetration seals into fire resistance classes.

Fire resistance classes of measures against fire spread in pipelines	Fire resistance duration in minutes
R30	≥ 30
R60	≥ 60
R90	≥ 90
R120	≥ 120

## Options for pipe sealing for combustible pipes

### Pipe sleeves

This pipe penetration seal consists of two sleeves for walls, or one sleeve for installation below ceilings, which are installed in the area of the pipe penetrations. The remaining opening must be completely filled with dimensionally stable and non-combustible building materials.

There are also sleeves lined with an intumescent material. These expand by more than 18 times when exposed to heat of approximately 180°C. This compresses the softening pipe and keeps it stable.

### Options for pipe sealing for non-combustible pipes

For non-combustible pipes, there are silicate fiber mats that are used to cover the pipes. These mats are made of inorganic mineral fibers with a melting point of over 1,000°C and ensure that non-combustible pipes do not expand or contract.

Furthermore, there is also the possibility of using so-called “intumescent mats”, which foam up in the event of a fire and protect the pipes from expansion.

pipe penetration seals must comply with DIN 4102-11 and must have the same fire resistance duration as the surrounding components or the fire resistance duration must not be undercut.

The aim is to prevent the spread of fire and smoke during pipe penetration. Therefore, the individual systems must have their own approval from the German Institute for Building Technology (DIBt) as well as other proof of use. Accordingly, it must be demonstrated that work with pipe penetration seal systems was carried out in accordance with these regulations.

With regard to the building regulations of the respective federal states, fire protection structures must be designed taking into account

- the flammability of the building materials
- the fire resistance period
- the tightness
- and the arrangement of escape routes

be designed to prevent the spread of fire and smoke in order to fulfil the general objectives of fire protection: rescue of people and animals and effective fire-fighting operations.

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