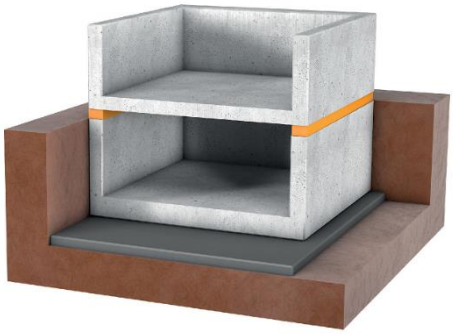
Fire Protection
Decoupling underneath the ceiling

General



Every country has different requirements with regard to the fire protection of components. It is the responsibility of the fire safety engineer to decide which measures have to be taken in order to meet the project- or country-specific requirements.

This document is intended to give assistance in the planning and implementation of fire protection measures in connection with the elastic decoupling of a building with Sylomer® or Sylodyn® underneath the ceiling.

As an example, the following deals briefly with structural fire protection in general and for illustration purposes the fire classification of construction products and building elements according to EN 13501-2. As already mentioned, always it has to be followed the instructions of the responsible fire safety engineer as well as the country- resp. project-specific requirements.

Structural fire protection

There are diverse structural measures which include the used the building materials and components, regulated in Europe and Germany in DIN EN 13501 and DIN EN 1992-1-2 for reinforced concrete construction, DIN EN 1993-1-2 for steel construction and DIN EN 1995-1-2 for timber construction, structural fire protection in industrial buildings in DIN 18230 in addition the planning of escape routes or fire-extinguishing systems in buildings.

Example: EN 13501-2 - Fire classification of construction products and building elements

Distinction of the following criteria for the description of the fire resistance of a building part of product independent of its function in the building:

- Load bearing capacity (R)
- Integrity (E)
- Insulation (I)

For each of above criteria the performance time is given in minutes (10, 15, 20, 30, 45, 60, 90, 120, 180, 240 or 360).

Executions variants for point- and strip bearings

Fire resistant joint filling rope or mineral wool

Especially for thin bearings, which are executed with edge clearance, the execution of fire resistant joint filling rope (see Figure 1) is recommended. The rope is installed in the joint and can be covered with elastic grout. Instead of joint filling rope, mineral wool can also be used to fill the joint; In this case the joint has to be covered with elastic grout.

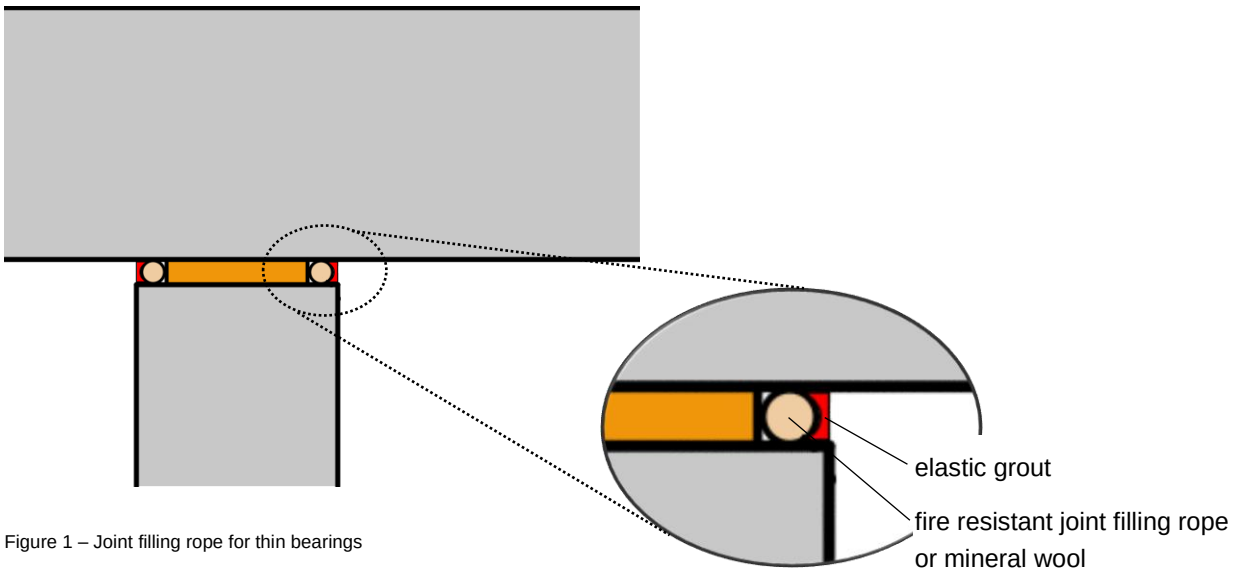


Figure 1 – Joint filling rope for thin bearings

Producers of fire resistant joint filling rope:

- Kuhn / Roku Joint filling Rope
- EK VIBA / SG 300

Producers of elastic grout:

- Sika / Sicasil, Sikacryl, Boom
- Hilti / CFS-S SIL, CFS-S ACR
- Promat / Promaseal-A, -AG, -S

Producers of mineral wool:

- Rockwool
- Compatect
- Röfix / Firestop
- Saint-Gobain / Isover

Covering with fire resistant panels

Fire resistant panels can be used to cover the bearing according to Figure 2 and Figure 3. In this case a housing for the bearing is fixed to the ceiling slab. To prevent noise bridges it is necessary to provide a gap of ~1-2 mm between the fire resistant housing and the column or wall. To further protect the bearing it is necessary to install a sealing strip to the column or wall, which foams up in case of fire. If the bearing is installed with edge clearance, the gap between the bearing and the housing can alternatively be filled with mineral wool.

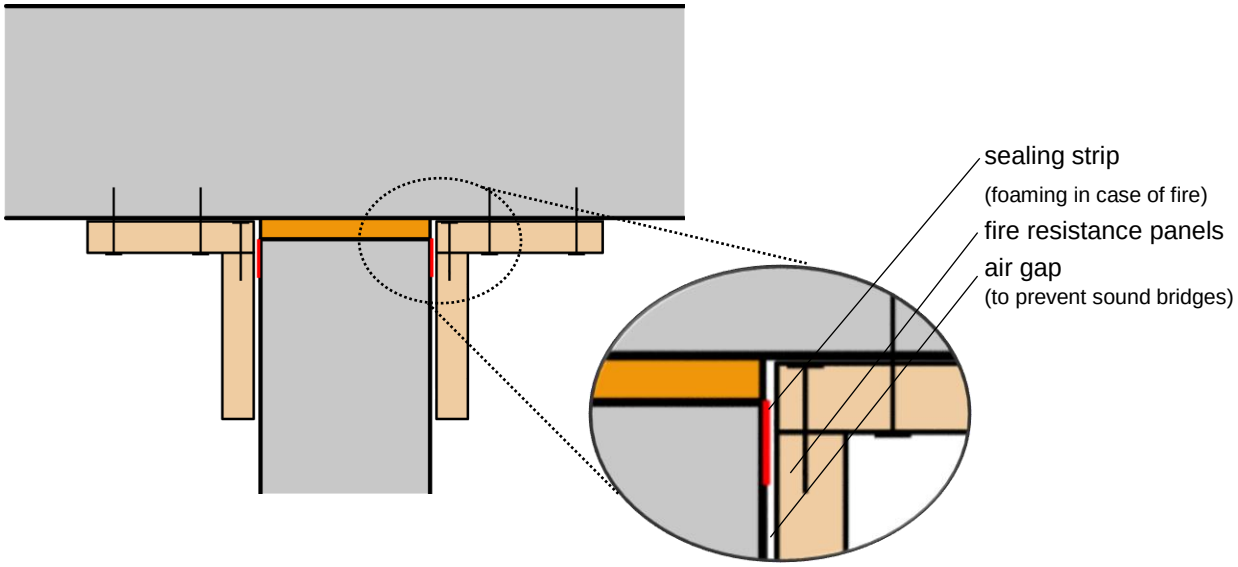


Figure 2 – Covering of a point- or strip bearing with fire resistant panels (connection of column or wall to ceiling)

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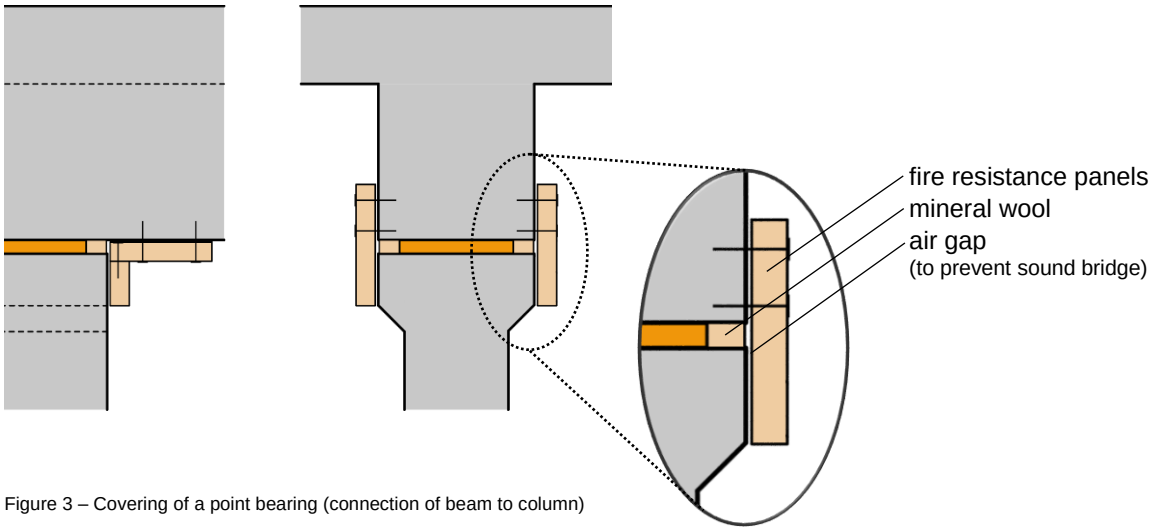

Figure 3 – Covering of a point bearing (connection of beam to column)

Producers of fire resistant panels:

- Promat / Promatect
- Fermacell / Aestuver
- Heraklith / Tektalan

Producers of fire resistant sealing strips:

- Promat / Promaseal-PL
- Intumex / Sealing Strip LXPSK
- Würth / Intumescent Strip