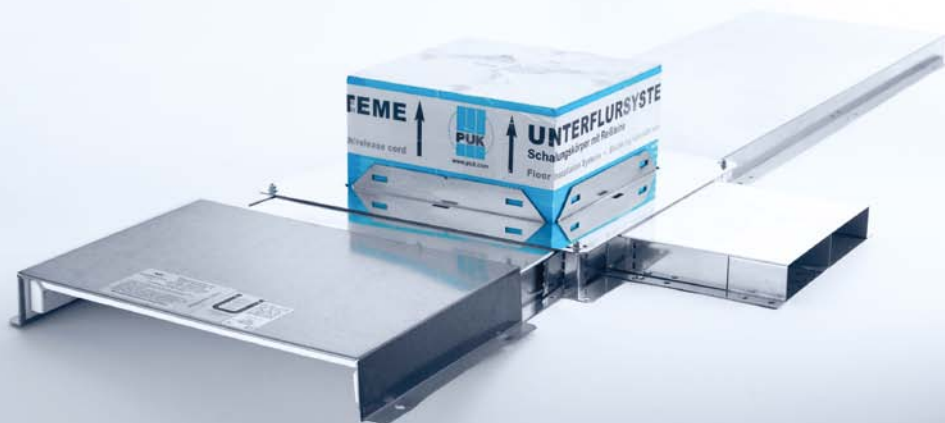




Fire protection for screed-covered underfloor systems

Technical information



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General information

The reaction to fire of construction materials and construction parts is specified in DIN 4102-9. (The fire inspections of cable insulations are specified in section 9.)

If fire resistance for a certain wall is required (DIN 4102 does not regulate fire resistances; they are specified in the state construction regulations as well as in other regulations, such as e.g. in the industrial building guideline), ducts may only be fed through that wall if the spreading of a fire may not be feared for a sufficiently time period of time, or if precautions against it have been taken. For the use of electrical installation duct systems this means that, if fire protection walls are crossed, they must be re-sealed providing fire protection and safety from smoke gas.

Wichmann cable fire insulation

By implementing the approved Systems Wichmann WD 90 cable fire insulation, a fire resistance period of 90 minutes will prevent the fire and smoke from being released through installation openings in fire protection walls. In detail the fire stop consists of a box with fire protection packages that in case of a fire will generate foam from 100°C on and of an independent smoke seal by means of EasyFoam plugs. Hereby a proper assembly and handling in accordance with the general construction approval must be complied to.

As a result, the implementation of the fire stop in duct systems offers the operator the following benefits:

- the use of an open separation in the fire protection wall
- a separate smoke gas insulation in the floor box
- an easy assembly and subsequent installation
- the duct system can be installed within the heat- and impact sound insulation

System requirements

- test standard: DIN 4102-9
- fire rating: S90
- approval specifications: Z-19.15-202
- verification of applicability: approval specifications with manufacturer's certificate

After the completed mounting in accordance with the following assembly instructions, a corresponding manufacturer's certificate must be requested, confirming to the constructor that this specific installation based on the building regulation is an „irrelevant deviation“ from the approval specifications. Provided a proper execution, a compliance with the approval specifications would be handed out.

German model duct systems guideline (MLAR)

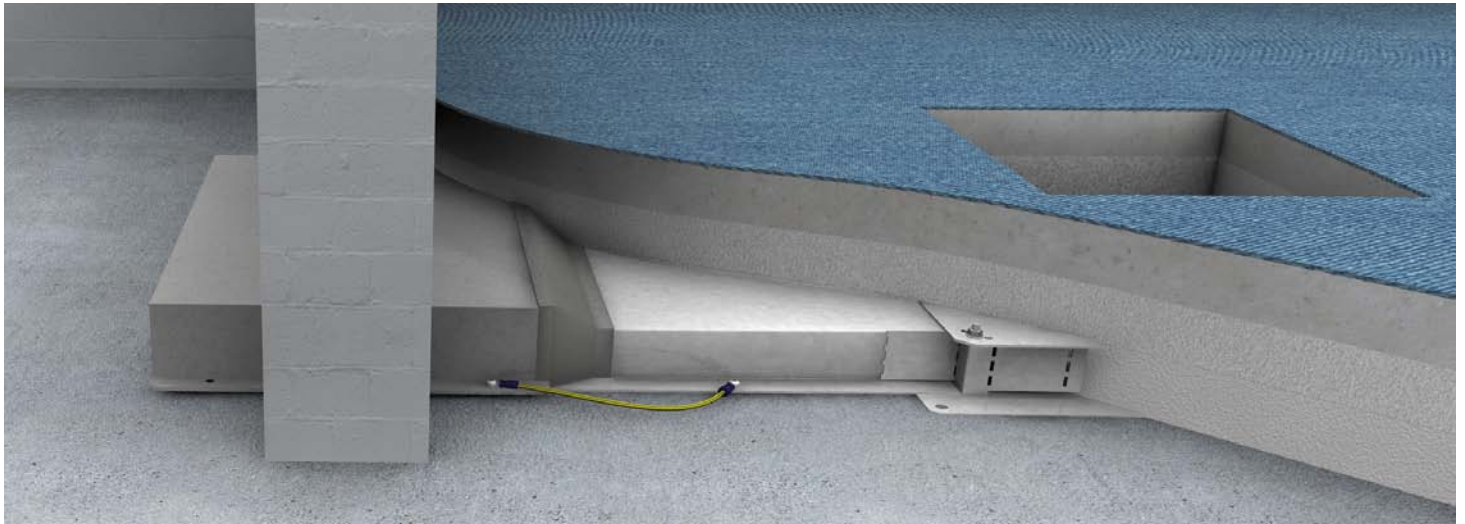
Based on the regulations of MLAR, the following statement is made regarding fire protection behaviour in section 3.5.6:

„Underfloor ducts for cables that are screed-flush or screed covered must have an upper cover made of inflammable construction materials in necessary stairwells, in spaces between necessary stairwells and in outdoor exits as well as in necessary corridors. They must not have an opening except in the necessary corridors: inspection openings or openings for subsequent cable assignment with tightly closing sealings made of fire-proof materials.“

In this context it must be complied to that hollow floors must have a minimum screed thickness of 30 mm over underfloor duct.

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Fire stop (cable seal WD90, Wichmann system) for screed-covered underfloor ducts with a width of 350 mm, available in the heights of 28, 38 and 48mm. Other sizes upon request. For the installation in fire protection walls of fire resistance grading S90.



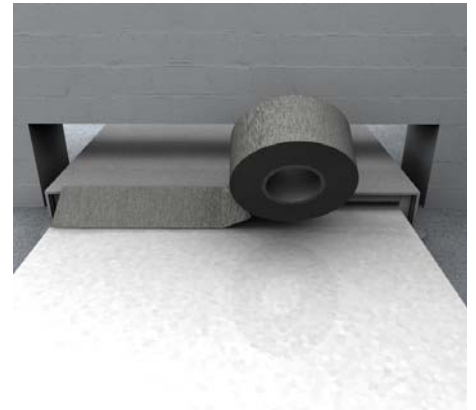
1 | Scope of delivery

The fire stop shipment includes an underfloor cable box and a quality label. Two EasyFoam smoke protection plugs can be ordered in addition to the content of delivery.



2 | Positioning the cable box

Place the cable box into the wall opening. The box must not protrude from the wall by more than 8,5 cm.



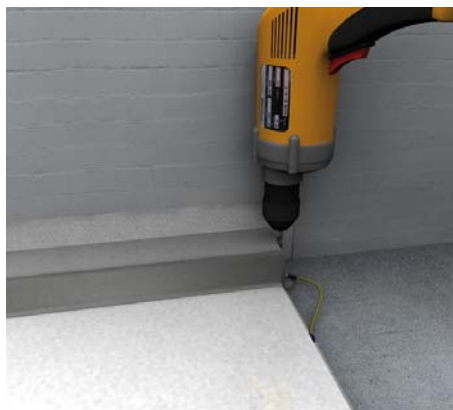
3 | Sealing

Push the screed-covered underfloor ducts flush to the fire stop and seal with rubber band. Ducts must not be led through the fire stop.



4 | Plastering

Thoroughly plaster into wall depth using mineral mortar or joint filling made of hard cement.



5 | Mounting the steel unit

Firmly plug the three-sided steel plate housing to the fire stop on the raw floor, allowing for an earthing connection.



6 | Inspection opening

In order to create an inspection chamber or an installation opening, mount hollow floor box to the underfloor duct and then insert shuttering unit.

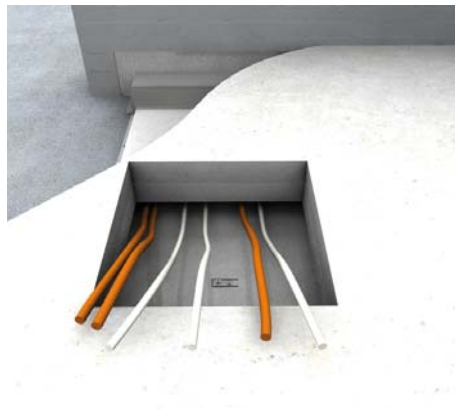
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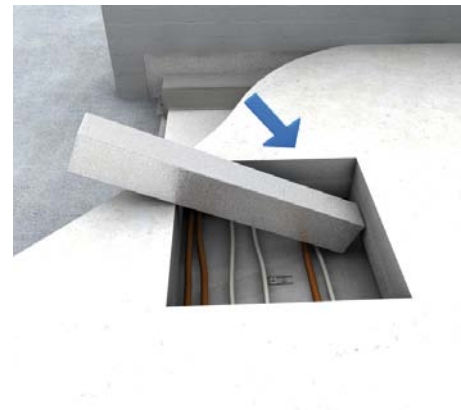
7 | Applying screed

After the completed mounting of the screed-covered duct system, apply sealing, impact noise insulation and screed.



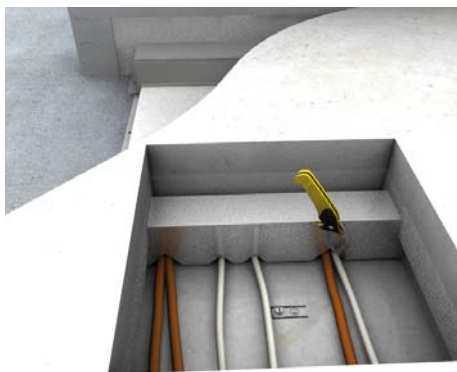
8 | Cable routing

Lay cables in screed-covered underfloor duct and fire stop. The ground below the partition must be even and not flammable.



9 | Smoke control

Place EasyFoam smoke protection plugs over the entire width of hollow floor box.



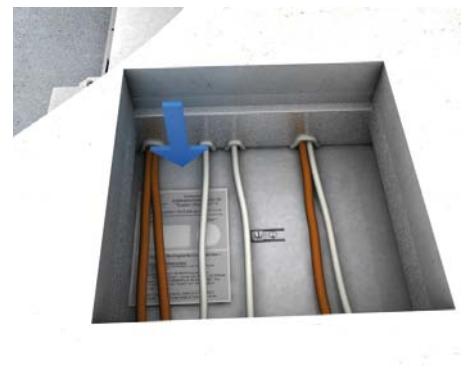
10 | Adjusting the size

Cut Easy-Foam smoke protection plugs according to the cable sizes.



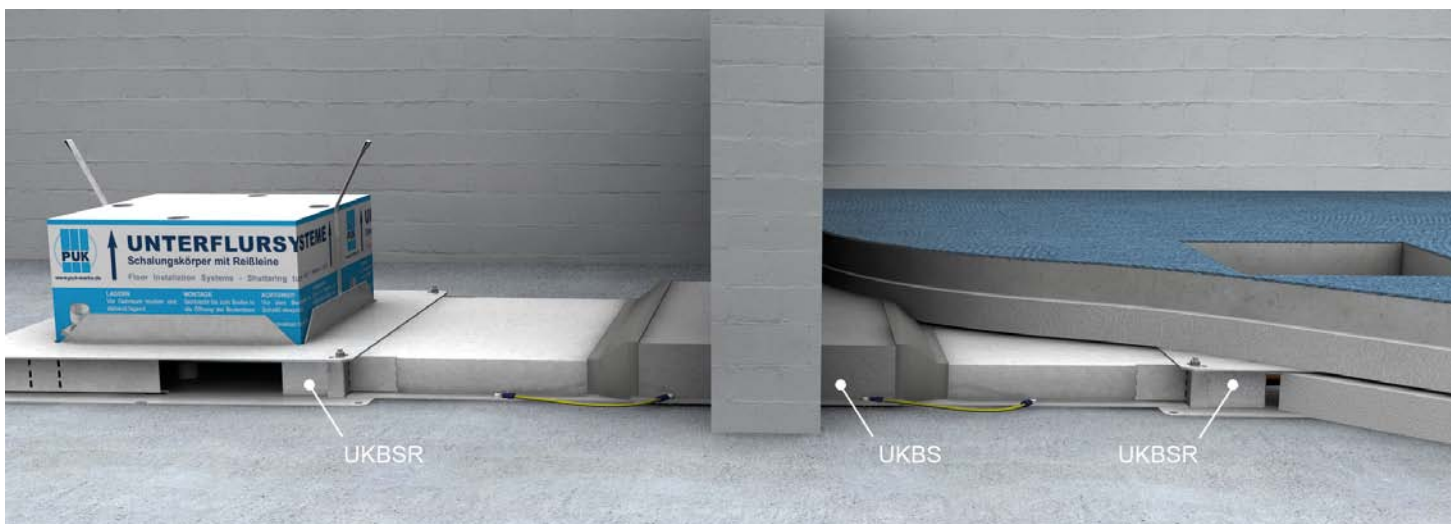
11 | Sealing

All remaining openings must be sealed using silicone or EasyFoam fire protection foam.



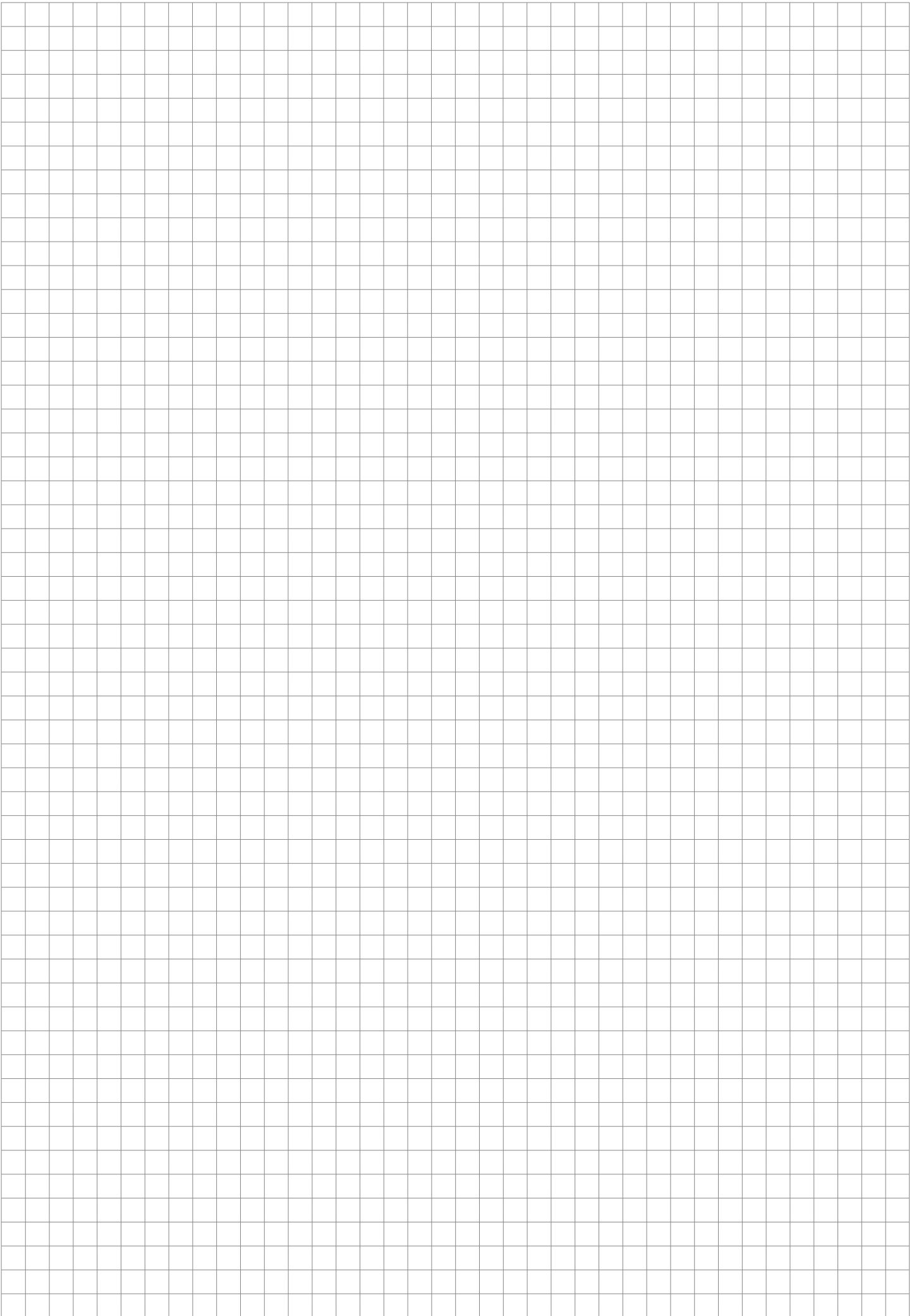
12 | Quality label

Fill in quality label and fix to the hollow floor box. Hand in declaration of compliance together with permit.



13 | Fire protection components

The fire stop must be installed according to DIN 4102-4 in brickwork of up to 10cm thickness and sealed on both sides of the nearest hollow floor box using EasyFoam smoke protection plugs. The underfloor fire stop has a capacity of up to 100% for holding cables. All cables can be led through the fire stop without diameter restrictions, as well as glass fibre cables, hollow plastic pipes (up to a diameter of 50 mm) and single control cables made of steel, copper or plastic (up to 15 mm diameter).





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