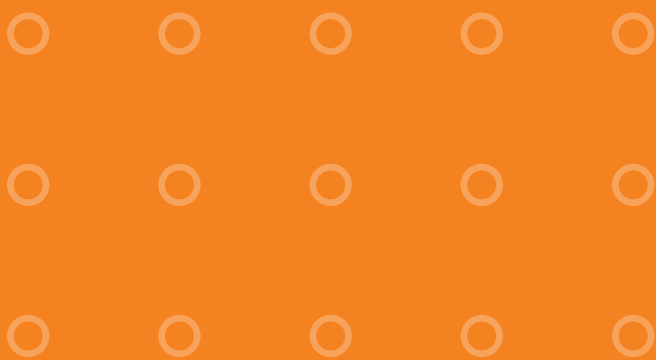


Perfect insulation

Cable insulation systems from OBO

The comprehensive product range
featuring all-new system innovations
for perfect cable insulation

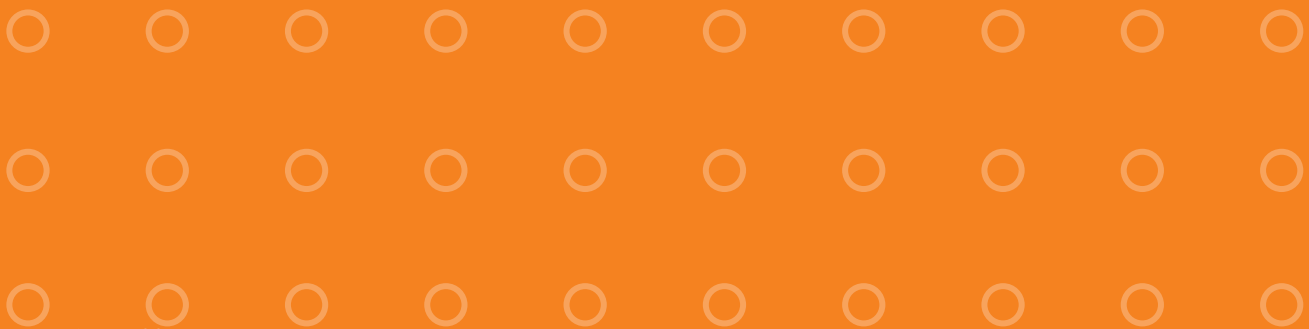
BSS Fire protection systems



OBO
BETTERMANN

Safety assured

A true fire protection system



Maximum safety right down to the very last detail

Any chain is only as strong as its weakest link. Even the most advanced fire protection concept can fail in the event of an emergency if it has just one minor weakness in its electrical installation components, for example. OBO BSS fire protection systems can protect any electrical installation which has to meet specific requirements in terms of fire protection. This is often the case in buildings in which large numbers of people congregate. Our fire protection systems ensure that in the event of a fire, smoke and flames will not reach other fire areas. This safeguards the function of major building services in respect of fire protection as well as that of equipment required for the purposes of evacuation and fire-fighting. In this way, both human life and property can be protected.



Safety you can rely on

Cable insulations are divided into the following fire-resistance classes:

Fire-resistance class:	S 30	S 90	S 120
Fire-resistance period:	Min. 30 minutes	Min. 90 minutes	Min. 120 minutes

Appropriate building supervisory authority licences have been issued or are pending for all cable insulations, thereby providing a guarantee that the requirements of the relevant fire-resistance classes can be met. You will always be on the safe side with OBO.

New from OBO

We have extended our range of cable insulation products in order to be able to provide the ideal solution for any building.

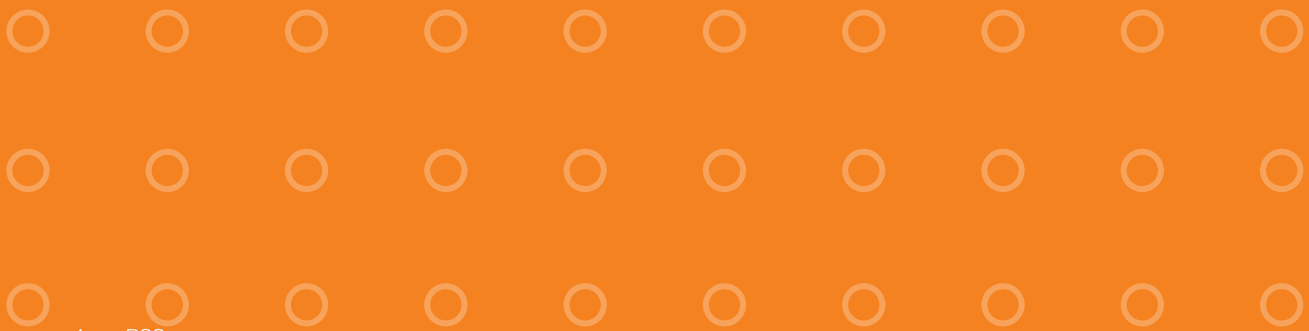
The insulation systems you may already be familiar with are now complemented by a wide variety of solutions which you can use to create the ideal cable insulation for almost any installation situation.

New features in the range include:

- **OBO FBA-B**
Flexible foam blocks
- **OBO FBA-S**
Flexible foam plugs
- **OBO FBA-D**
Core drill insulators
- **OBO FBA-SR**
Circular assembly insulators
- **OBO FBA-F**
Square assembly insulators
- **OBO FPS**
Ready-assembled panel insulators

On the safe side

OBO FBA cable insulations



OBO FBA cable insulations

OBO's new FBA cable insulations are a development of the proven OBO FBA insulations. Enhanced materials have been used to significantly optimise the possible applications of the individual systems. Custom solutions have been developed in particular for use in thin partitions, to enable installation in almost all types of wall and ceiling.



Solid walls made from brick, concrete/reinforced concrete and aerated concrete building slabs



Thin partitions designed as uprights with steel substructure and clad on both sides with non-combustible structural panels



Solid ceilings made from concrete/reinforced concrete and aerated concrete

Product description

OBO's FBA components are made from closed porous foam. In the event of a fire, FBA products expand at very low pressure to create an insulating carbon foam, thereby providing a reliable barrier to prevent flames and smoke passing through the cable insulation.

The use of prefabricated components means that the various FBA cable insulations can be assembled very quickly and easily with no dust or fibres. This is also true, of course, in the event of retrofitting, something that is of particular importance for installation in data processing and laboratory environments, for example. No special tools are required for processing.

Depending on the fire-resistance class of the cable insulation and the installation location, the following minimum component thicknesses must be observed in accordance with the specifications of building supervisory authority licences:

	Fire-resistance class	
	S 30 	S 90 
Solid wall	Min. 5 cm	Min. 10 cm
Thin partition	Min. 7.5 cm	Min. 10 cm
Solid ceiling	Min. 15 cm	Min. 15 cm

Applications

In accordance with licences issued by the DIBt in Germany, FBA components may be used to create cable insulations meeting the requirements of fire - resistance classes S 30 and S 90 in solid walls, thin partitions and solid ceilings.

Approved routing option

Electric cables and lines of any type (including optical fibres) may be routed through the insulation (up to 60% of the opening in the brickwork may be taken up by cables). The overall cross-section of the individual cable is unlimited. Cables up to 21 mm in diameter may be combined in cable bundles (the diameter of the bundle must not exceed 10 cm). Spaces either side of the bottom half of the pipe do not have to be filled with FBA fire protection compound. However, this method of cable bundling is not permitted for OBO's FBA-D cable insulation.

Cable support concepts (cable trays and ladders) made from sectional steel, aluminium or plastic may be routed through the insulation. It is also permissible to route individual cables from steel or plastic pipes for control purposes through the insulations, as long as their external diameter does not exceed 15 mm.

Confirmation of conformance and marking

As stipulated in relevant building supervisory authority licences, once FBA cable insulations have been assembled, the OBO FBA-WS wall plate supplied in the FBA-BS completion kit should be completed and mounted next to the insulations.

Furthermore, to confirm that the system has been assembled correctly, the confirmation of conformance should be completed and handed over to the owner of the building.

Note

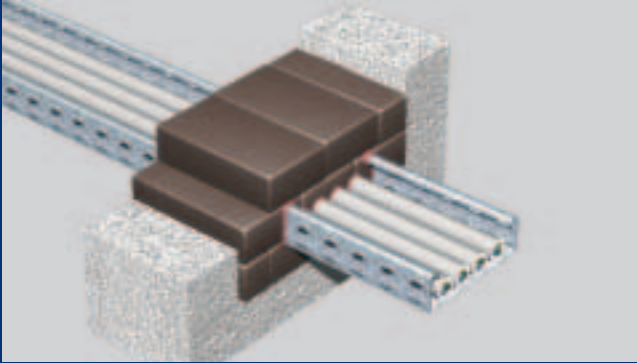
All provisions in the relevant building supervisory authority licence must always be observed.



OBO FBA-B flexible foam blocks

DIBt licence Z-19.15-1556

FBA-B flexible foam blocks provide a quick, easy and clean means of square cable insulation.



FBA-B insulation dimensions

Cable insulations with OBO FBA blocks must not exceed the following dimensions:

Component	Insulation dimensions
Solid wall F 30	Max. width 84 cm, max. height 54 cm
Solid wall F 90	Max. width 100 cm, max. height 60 cm or max. width 60 cm, max. height 100 cm
Thin partition	Max. width 84 cm, max. height 54 cm
Solid ceiling	Max. width 40 cm, unlimited length

System description

OBO FBA-B are square foam blocks which provide a very simple means of building medium-scale cable insulations. When the blocks are installed in a longitudinal direction, they meet the requirements of fire-resistance class S 90, and class S 30 when installed in a transverse direction.

Assembly instructions

FBA blocks should be packed tightly into the opening. A knife should be used to cut the blocks precisely to size. To make the assembly process easier, vacuum block FBA-BV can be used as a finishing block. Following assembly, a simple slit is made in the plastic bush on these blocks so that the blocks can then swell back to their original size. All joints and gaps between cables, cable support systems and blocks must be filled with FBA-M fire protection compound to a depth of at least 2 cm.

Special assembly instructions

If the thickness of the wall or ceiling is less than the minimum insulation thickness, additional packing must be used. This must take the form of non-combustible structural panels at least 100 mm wide and must be mounted on the surface of the wall or ceiling as a frame in order to reach the minimum component thickness required by the fire-resistance class.

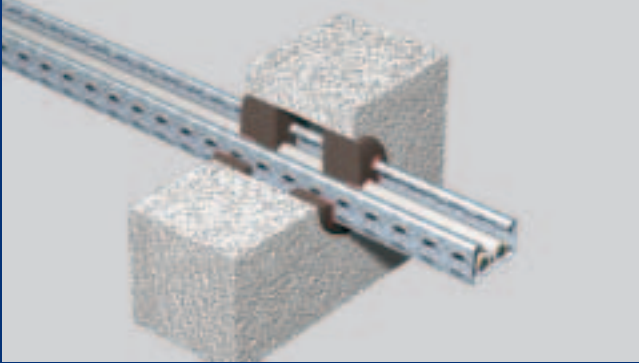
Retrofitting

In the event of retrofitting, the blocks must be removed from the insulation and the reassembled exactly once then cable installation is complete.

OBO FBA-S flexible foam plugs

DIBt licence Z-19.15-1558

FBA-S circular foam plugs provide a quick and easy means of cable insulation in tapping holes.



FBA-S insulation dimensions

The following dimensions must be observed for cable insulations with OBO FBA plugs:

Fire-resistance class	Insulation thickness	Insulation size
S 30	Min. 12 cm	Max. 25 cm
S 90	Min. 15 cm	Max. 25 cm

System description

OBO FBA-S are round foam plugs in various sizes. They are the ideal solution for cable insulation in tapping holes in solid walls and ceilings. The plugs may also be used to seal unused holes.

Assembly instructions

In order to seal tapped holes, one FBA plug must be inserted from each side and sit flush with the surface of the hole. In accordance with cable occupation, a knife should be used to cut exact-fit openings in the plugs. All joints between cables, cable supports and plugs must be filled with FBA-M fire protection compound to a depth of at least 2 cm. Any resulting free space between the two plugs does not have to be filled.

Special assembly instructions

If the thickness of the wall or ceiling is less than the required minimum insulation thickness, additional packing in the form of non-combustible structural panels must be used around the tapped hole. The thickness of the packing must be selected so that the resulting component thickness is at least equal to the required insulation thickness for the relevant fire-resistance class.

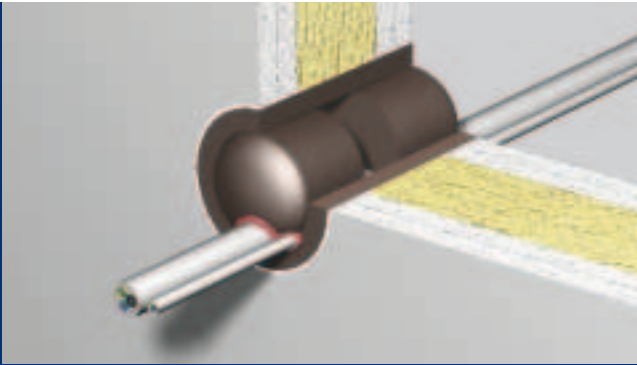
Retrofitting

For the retrofitting of cables, additional openings may be cut into the plugs. Following cable installation, residual joints must be refilled with FBA-M fire protection compound to a depth of 2 cm.

OBO FBA-D core drill insulators

DIBt licence Z-19.15-1559

FBA-D core drill insulators were developed to enable the creation of small circular cable insulations even in thin partitions: a truly simple solution.



FBA-D insulation dimensions

For cable insulation with OBO FBA core drill insulators, the pipe shell must be at least 10 cm in length. The pipe shell is available in two stock lengths to suit various wall thicknesses: 10 cm and 15 cm.

Fire-resistance class	Insulation thickness
S 30	Min. 10 cm
S 90	Min. 10 cm

System description

OBO FBA-D is a special solution for small circular cable insulations which can be installed quickly and easily in thin partitions, solid walls and solid ceilings.

OBO FBA-D core drill insulators comprise a rigid pipe shell with an external diameter of 78 mm and two matching FBA-DS plugs. The pipe shell is made from the same material as the plugs, but is rigid.

Assembly instructions

Once the pipe shell has been inserted into the opening, FBA-M fire protection compound, filler or mineral mortar must be used to fill the remaining gap around the shell to a depth of 2 cm (on both sides in walls but only on the underside in ceilings). The entire pipe shell may be filled with cables. The free space in the pipe shell is equal to the maximum permissible cable occupation of 60%.

Once the cables have been installed, if the two plugs are required, they are cut to size and inserted into the pipe shell (flush with the surface). The remaining joints inside the pipe shell are then filled with FBA-M fire protection compound to a depth of 2 cm.

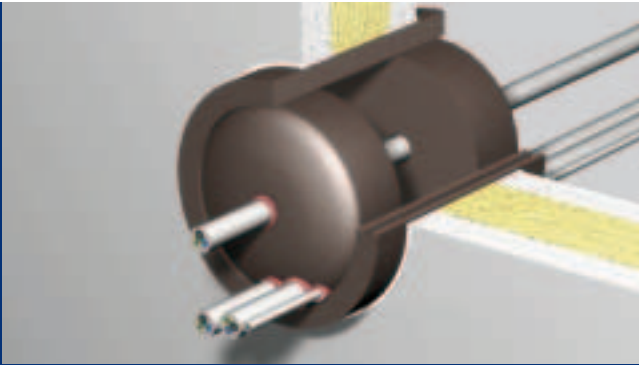
Retrofitting

If additional cables are installed subsequently, the plugs must be removed or cut open. Following cable installation, the modified plugs are re-inserted and all joints filled with FBA-M fire protection compound to a depth of 2 cm.

OBO FBA-SR circular assembly insulators

DIBt licence Z-19.15-1558

The FBA-SR circular assembly insulator is the ideal complement to other FBA systems for insulating larger circular openings in thin partitions.



FBA-SR insulation dimensions

The following insulation thicknesses must be observed for cable insulation with OBO FBA-SR:

Fire-resistance class	Insulation thickness
S 30	Min. 12 cm
S 90	Min. 15 cm

System description

OBO FBA-SR is the ideal solution for circular cable insulations in thin partitions. It is also suitable for use in solid walls and ceilings.

OBO's FBA-SR circular assembly insulator comprises a split, rigid pipe shell (external diameter 140 mm) and two FBA-S107 plugs. The material used for the pipe shells is a rigid version of the same material used for the plugs.

Assembly instructions

The two pipe shells are inserted into the opening together. FBA-M fire protection compound, filler or mineral mortar is used to fill the remaining gap around the shells to a depth of 2 cm (on both sides in walls but only on the underside in ceilings). If only fire-resistance class S 30 is required, the length of the pipe shell may be reduced to 12 cm. The free space in the shell may be filled entirely with cables. As the pipe shell is part of the insulation, the internal free space is exactly equal to the maximum permissible cable occupation of 60%.

Once the cables have been installed, if the two plugs are required, they are cut to size and inserted into the pipe shell flush with the surface. All residual joints inside the pipe shell are then filled with FBA-M fire protection compound to a depth of 2 cm.

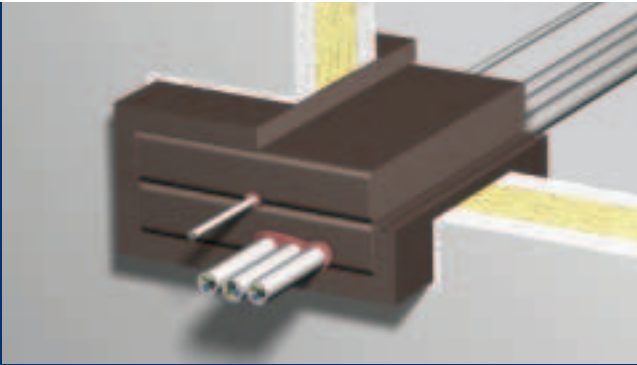
Retrofitting

Should cables need to be retrofitted, openings may be cut into the plugs. Following installation, the plugs should be sealed as they were when the cable insulation was originally installed.

OBO FBA-F square assembly insulators

DIBt licence Z-19.15.1557

A prefabricated square insulation system, the FBA-F square assembly insulator is a custom solution for installation in thin partitions that is very easy to install.



FBA-F insulation dimensions

The following insulation thicknesses must be observed for cable insulation with OBO FBA-F:

Fire-resistance class	Insulation thickness
S 30	Min. 12 cm
S 90	Min. 20 cm

System description

OBO's FBA-F is a special system which makes light work of cable insulations, specifically in thin partitions. It is also suitable for use in solid walls and ceilings. The square assembly insulator comprises a split, solid frame measuring 20 x 10 x 20 cm and two matching FBA-FI inside pieces. The frame components are made from the same material as the inside pieces, although the former are much more rigid.

Assembly instructions

The two frame components are inserted into the opening and FBA-M fire protection compound, filler or mineral mortar is used to fill the joints around the frame to a depth of 2 cm (on both sides in walls but only on the underside in ceilings). The length of the frame components may be reduced to 12 cm if only fire-resistance class S 30 is required. The interior of the frame may be filled entirely with cables, as this free space is exactly equal to the maximum permissible 60% cable occupation.

The remaining free space inside the frame is filled with the cut-to-size inside pieces. All residual joints between the cables, frame and inside pieces must be filled with FBA-M fire protection compound to a depth of 2 cm.

Retrofitting

The inside pieces are removed if cables need to be retrofitted. Following cable installation, these pieces should be modified, re-inserted and all joints filled with FBA-M fire protection compound to a depth of 2 cm.

Ordering data

OBO FBA



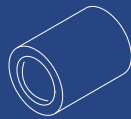
Cable insulation OBO FBA-B

Type	Dimensions mm	Packed in units of	Weight kg/item	Art. no.
FBA-B	200 x 125 x 60	20	0.400	7202 50 4
FBA-BV	200 x 125 x 25	1	0.400	7202 51 2



Cable insulation OBO FBA-S

Type	Diameter mm	Packed in units of	Weight kg/item	Art. no.
FBA-S65	65	20	0.080	7202 55 1
FBA-S78	78	20	0.110	7202 55 5
FBA-S107	107	20	0.190	7202 55 9
FBA-S122	122	20	0.231	7202 56 3
FBA-S134	134	20	0.286	7202 56 7
FBA-S165	165	20	0.432	7202 57 1
FBA-S200	200	20	0.670	7202 57 5
FBA-S250	250	20	0.865	7202 57 9



Cable insulation OBO FBA-D

Type	Length mm	Packed in units of	Weight kg/item	Art. no.
FBA-D100	100	1	0.155	7202 62 4
FBA-D150	150	1	0.194	7202 62 8
FBA-DS		1	0.045	7202 63 6

FBA-D scope of supply: 1x pipe shell D = 78 mm, 2x FBA-DS plugs



Cable insulation OBO FBA-SR

Type	Diameter mm	Packed in units of	Weight kg/item	Art. no.
FBA-SR	140	1	0.730	7202 58 6

FBA-SR scope of supply: 1x split pipe shell, 2x FBA-S107 plugs



Cable insulation OBO FBA-F

Type	Dimensions mm	Packed in units of	Weight kg/item	Art. no.
FBA-F	200 x 200 x 100	1	1.220	7202 66 0
FBA-FI	200 x 175 x 35	1	0.360	7202 66 4

FBA-F scope of supply: 1x split frame, 2x FBA-FI inside pieces



Completion kits

Type	Packed in units of	Weight kg/item	Art. no.
FBA-B-BS	1	0.045	7202 53 0
FBA-S-BS	1	0.045	7202 59 2
FBA-D-BS	1	0.045	7202 64 4
FBA-F-BS	1	0.045	7202 67 2

Contents: 1x licence certificate, 1x assembly instructions, 1x wall plate with 2x push-fit plugs



Wall plate

Type	Packed in units of	Weight kg/item	Art. no.
FBA-WS	1	0.016	720234 2

Contents: 1x wall plate with 2x push-fit plugs



FBA fire protection compound

Type	Contents ml	Packed in units of	Weight kg/item	Art. no.
FBA-M	310	1	0.460	7202 31 8

Get insulated!

OBO FPS ready-assembled panel insulators



OBO FPS ready-assembled panel insulators
Fire-resistance class S90. DIBt licence pending

The FPS ready-assembled panel insulator is the next logical step in OBO's range of cable insulation solutions. At the heart of the insulation system is a ready-coated mineral fibre panel. Once the panel has been installed, an additional final coating does not have to be applied. In addition to the insulation of cables and lines, all manner of pipelines made from combustible and non-combustible materials may be routed through the insulation.



Solid walls made from brick, concrete/reinforced concrete and aerated concrete building slabs



Thin partitions designed as uprights with steel substructure and cladded on both sides with non-combustible structural panels



Solid ceilings made from concrete/reinforced concrete and aerated concrete

OBO FPS ready-assembled panel insulators

OBO FPS comprises coated mineral panels and a layer of fire protection compound on the cables routed through it. In the event of a fire, the coating will foam up, creating an insulating carbon foam. Together with the mineral fibre panels, this foam will provide effective protection against the propagation of flames and smoke. In accordance with the building supervisory authority licence, in addition to electrical cables and lines pipelines made from metal and plastic may also be routed through the insulation at the same time. These types of insulation are known as "combined insulation".

Applications

In accordance with the specifications of the building authority supervisory licence, OBO's FPS ready-assembled panel insulators may be installed in solid walls, thin partitions and solid ceilings.

Approved routing options

As OBO FPS is a combined system, a wide variety of different installation products may be routed through the insulation:

- Electrical cables and lines of all types (including optical fibres). The cables (up to 21 mm in diameter) may be combined in cable bundles (the diameter of the bundle must not exceed 10 cm).
- Cable supports made from sectional steel, aluminium and plastic.
- Individual pipelines made from steel or plastic for control purposes up to a diameter of 15 mm.
- Pipelines for non-combustible liquids and non-combustible gases (with the exception of ventilation lines), for pneumatic tube conveyor systems and for vacuum lines. The pipelines may be made from various plastics, e.g. PVC or PP, from steel or from copper. The maximum diameter and the wall thickness of the individual pipes are each subject to restrictions. The building supervisory authority licence contains detailed information for the various pipes. In general, no more than 60% of the opening in the brickwork may be taken up by cables and pipes.

General assembly instructions

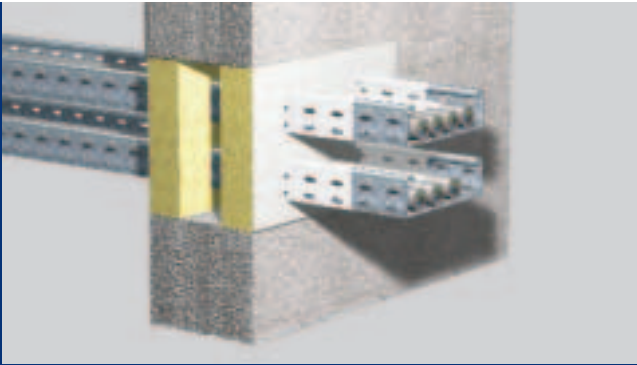
The opening in the brickwork must be sealed on both sides with two exact-fit cut-to-size OBO FPS mineral fibre panels, flush with the surface. Before use, all panel edges must be coated with OBO FPS-A, in order to ensure adhesion between panels and with the component intrados. Any residual joints should be packed with loose mineral wool to the same thickness as the panel. If the thickness of the wall, in which the insulation is to be installed, is less than 15 cm, a circumferential frame made from the OBO FPS-K calcium silicate panel must be installed into the intrados. Once special work on the cables, cable support systems and pipes has been completed, no additional coatings have to be applied to the mineral fibre panels.



OBO FPS ready-assembled panel insulators

DIBt licence pending

The ready-assembled panel insulator comprises ready-coated mineral fibre panels for cable insulation in solid walls and ceilings as well as in thin partitions.



FPS insulation dimensions

The following insulation dimensions must be observed when assembling OBO's FPS combined insulators:

	Wall	Ceiling
Wall/ ceiling thickness	Min. 10 cm	Min. 15 cm
Insulation thickness	Min. 15 cm	Min. 15 cm
Insulation size	Max. width 150 cm Max. height 120 cm	Max. width 100 cm Unlimited length

Assembly instructions for cable bushings

Before the mineral fibre panels are assembled, the area inside the insulation between the cables and the cable support systems must be filled with OBO FPS-S filler. The cables and also the cable support systems may be located next to and underneath the opening intrados. All joints where the cables and cable support systems exit the insulation must be filled with FPS-S filler. A layer of FPS-A must then be applied to the cables and cable support systems along a minimum length of 15 cm on both sides of the insulation. The dry layer must be at least 1 mm thick.

Assembly instructions for routing metal pipes

All metal pipes routed must feature what is known as "sectional insulation" in the vicinity of the insulation. The length and thickness are determined by the diameter of the line and the wall thickness of the pipe. The building supervisory authority licence contains information about the material to be used as well as the length and thickness of the insulation. Contact between sectional insulation in adjacent pipes is permitted, and insulation may be installed to the side and underneath in the opening. Once the panel has been assembled, FPS-S filler should be used to fill the points at which the pipe insulation exits the mineral fibre panels. Finally, the sectional isolation must be coated with a layer

of FPS-A on both sides of the insulation along the length specified in the licence (dry layer thickness at least 1 mm).

Assembly instructions for routing plastic pipes

The points at which plastic pipes exit the insulation must be filled with FPS-S filler on both sides. A suitable pipe collar should then be fitted to the pipe. A pipe collar is required on both sides in wall bushings but only on the underside of ceilings. M6 or M8 threaded rods are inserted through the insulation for fixing purposes. The fixing flange on the pipe collars must not jut out beyond the insulation. However, contact between adjacent pipe collars is permitted.

Retrofitting

Cables and pipes may be retrofitted. To do this, use a knife to cut a suitable opening into the mineral fibre panels before sealing the opening back up as in the original installation. As long as the diameter of the retrofitted opening does not exceed 80 mm and no more than three cables are routed, it is sufficient to use loose mineral wool to the same thickness as the panel on both sides and a layer of FPS-S filler at least 15 mm deep for sealing purposes.

Ordering data

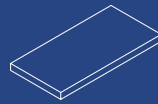
OBO FPS

Confirmation of conformance and marking

As required in the licence, following assembly, the insulation must be permanently identified using a wall plate. Complete the FPS-WS wall plate included in the FPS-BS completion kit accordingly and mount it next to the insulation. The confirmation of conformance included in the completion kit should also be completed to confirm correct assembly and handed over to the owner of the building.

Processor training

In accordance with the building supervisory authority licence, OBO FPS ready-assembled panel insulators may only be installed by trained and qualified personnel. OBO Bettermann can provide appropriate training. Please contact an OBO Bettermann subsidiary for information about training options.



Panel insulator

Type FPS-P	Dimensions mm 1000 x 600 x 60	Packed in units of 2	Weight kg/item 6.840	Art. no. 7202 27 0
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Paint

Type FPS-A	Contents kg 2	Packed in units of 1	Weight kg/item 2.200	Art. no. 7202 27 4
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Filler compound

Type FPS-S	Contents ml 310	Packed in units of 1	Weight kg/item 0.410	Art. no. 7202 27 8
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Calcium silicate panels

Type FPS-K	Dimensions mm 500 x 150 x 20	Packed in units of 1	Weight kg/item 0.420	Art. no. 7202 28 2
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Completion kits

Type FPS-BS		Packed in units of 1	Weight kg/item 0.080	Art.-Nr. 7202 28 6
Contents: 1x licence certificate, 1x assembly instructions, 1x wall plate with 2x push-fit plugs				



Wall plate

Type FPS-WS		Packed in units of 1	Weight kg/item 0.011	Art.-Nr. 7202 29 0
Contents: 1x wall plate with 2x push-fit plugs				

Other OBO cable insulations

1 OBO HSM hard insulation compound. Fire-resistance class S 120

Dry premixed special mortar for the simple and cost-effective manufacture of cable insulations in walls and ceilings.

2 OBO KBK cable fire protection pads, KBK system. Fire-resistance class S 90

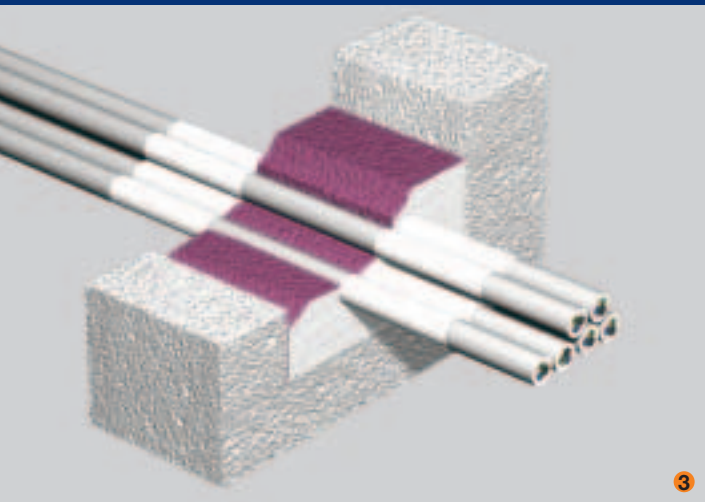
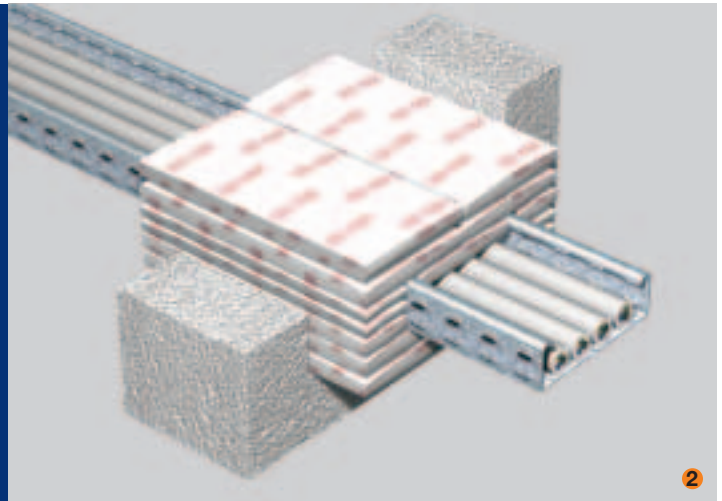
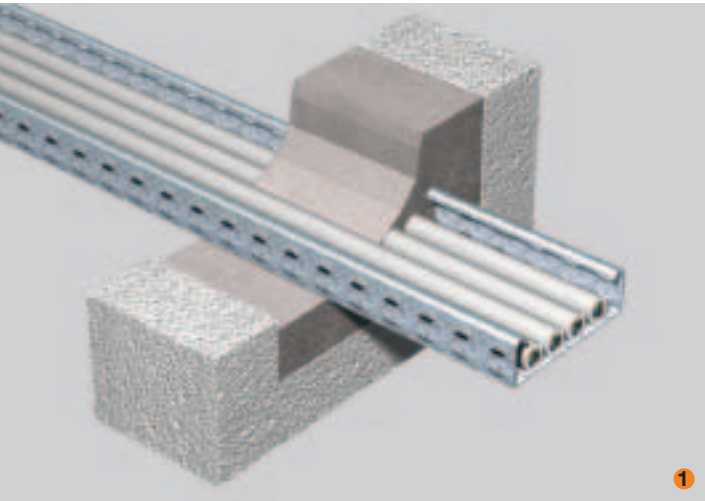
Fire protection pads which can be shaped as required for the quick, easy and absolutely clean, dust-free manufacture of cable insulations.

3 Henkel Tangit FP 500 fire protection foam. Fire-resistance class S 90

High-viscosity dual-component PU foam with good adhesion and very high foaming performance (almost 14 times).

4 OBO KBK cable fire protection pads, KBK-K system. Fire-resistance class S 90

The ideal solution for the quick, easy and clean creation of cable insulations in cable routing ducts made from PVC.



OBO. Used by professionals.



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