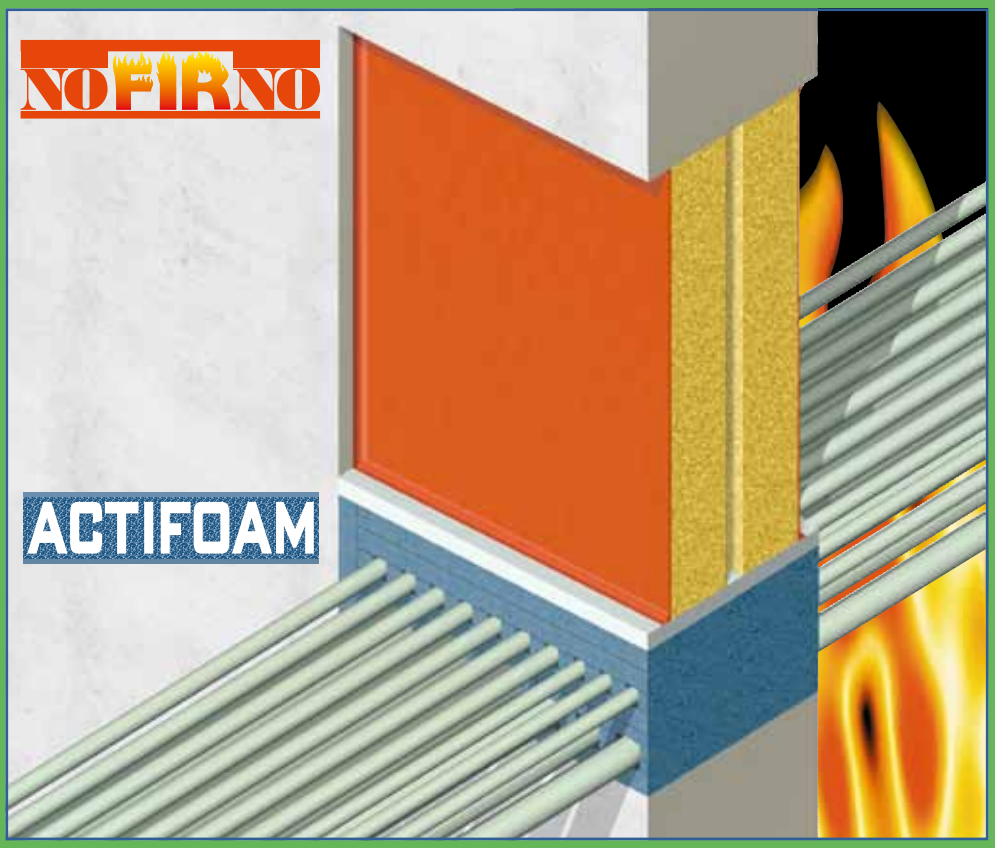
INSTALLATION INSTRUCTIONS NOFIRNO®-BOARD FIRESTOP SYSTEM FOR CABLE WAYS



TESTED ACCORDING TO EN 1366-3:2004; FIRE RESISTANCE EI-90/E-120 ACCORDING TO EN 13501-2:2003 CERTIFICATE 2006-EFECTIS-R0834

WE CARE

BEELE ENGINEERING

Edition : September 2010

Research & Development : BEELE Engineering BV, Aalten, the Netherlands.

Note : The manufacturer reserves the right to make dimensional and design modifications without prior notification.

brochure code : nofirnoboard/installation/en/con

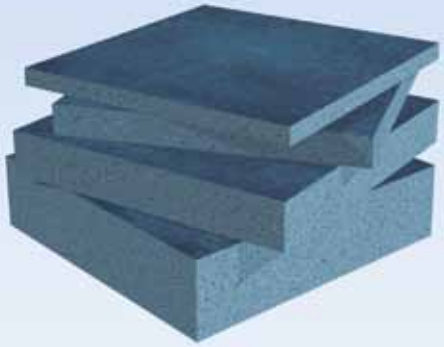
ACTIFOAM NOFIRNO

WE CARE

ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

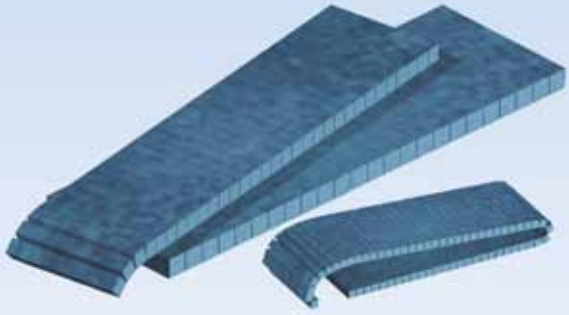
ACTIFOAM® filler sheets

Note: maximum continuous service temperature of the ACTIFOAM® sheets not to exceed 70 °C.
Consult our technical support department in case of higher operating temperatures.



ACTIFOAM® slit filler sheets

Note: maximum continuous service temperature of the ACTIFOAM® sheets not to exceed 70 °C.
Consult our technical support department in case of higher operating temperatures.



ACTIFOAM® is used to fill any cavities or gaps in constructions. In case of fire, the cavity will be totally filled with the expanding rubber, offering a perfect fire seal for a very long duration.
Oxygen index 40% (>30% is flame retardant).
ACTIFOAM® can also be used for other sealing purposes. An advantage is that ACTIFOAM® does not absorb water. Tested at 2.5 bar water pressure during 24 hours.
Due to the closed cell structure, the rubber has good thermal insulation properties. The K value at 10 °C according to NEN-EN 12667 is 12.3 mk/W. The density of the foam rubber at 23 °C is between 0.35 and 0.4 g/cm^3, in accordance with ISO 2781. Compression set of the foam rubber is 14% which stands for a good “memory”.
Good weathering, UV and ozone resistance. Temperature range from -15 °C to +70 °C.
The 10 mm thick sheets have 30 (60) pre-cut profiles 10x10 mm, the 15 mm thick sheets 20 (40) profiles 15x15 mm, the 20 mm thick sheets 15 (30) profiles 20x20 mm and the 25 mm thick sheets 12 (24) profiles 25x25 mm. The profiles can easily be torn off.

ACTIFOAM® filler sheets		sheet width	article number
300x150x10		150	83.0110
300x150x15		150	83.0111
300x150x20		150	83.0112
300x150x25		150	83.0113
300x200x10		200	83.0120
300x200x15		200	83.0121
300x200x20		200	83.0122
300x200x25		200	83.0123
300x250x10		250	83.0130
300x250x15		250	83.0131
300x250x20		250	83.0132
300x250x25		250	83.0133
600x150x10		150	83.0210
600x150x15		150	83.0211
600x150x20		150	83.0212
600x150x25		150	83.0213
600x200x10		200	83.0220
600x200x15		200	83.0221
600x200x20		200	83.0222
600x200x25		200	83.0223
600x250x10		250	83.0230
600x250x15		250	83.0231
600x250x20		250	83.0232
600x250x25		250	83.0233
500x500x10		-	83.0005
1000x500x15		-	83.0011
1000x500x20		-	83.0012
1000x500x25		-	83.0013

all dimensions in mm

ACTIFOAM® slit separation sheets		sheet width	article number
300x150x10		150	83.1110
300x150x15		150	83.1111
300x150x20		150	83.1112
300x150x25		150	83.1113
300x200x10		200	83.1120
300x200x15		200	83.1121
300x200x20		200	83.1122
300x200x25		200	83.1123
300x250x10		250	83.1130
300x250x15		250	83.1131
300x250x20		250	83.1132
300x250x25		250	83.1133
600x150x10		150	83.1210
600x150x15		150	83.1211
600x150x20		150	83.1212
600x150x25		150	83.1213
600x200x10		200	83.1220
600x200x15		200	83.1221
600x200x20		200	83.1222
600x200x25		200	83.1223
600x250x10		250	83.1230
600x250x15		250	83.1231
600x250x20		250	83.1232
600x250x25		250	83.1233

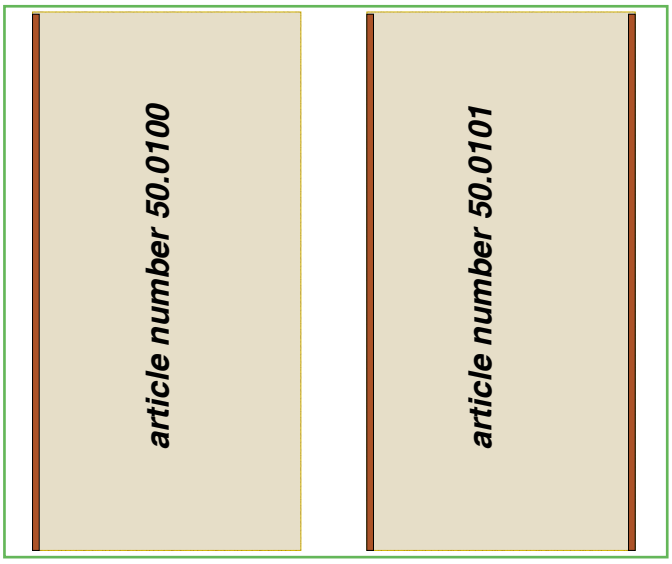
all dimensions in mm

WE CARE

NOFIRNO ACTIFOAM

ACTIFOAM®/NOFIRNO®-BRD MULTI-CABLE TRANSIT SEALING SYSTEM

NOFIRNO® mineral wool boards are supplied measuring 1000 x 600 mm with a 1.2 - 1.5 mm thick layer of NOFIRNO® coating on *one* or *both* sides.
The NOFIRNO® mineral wool boards are 60 mm thick (without coating) and have a density of 152 kg/m^3.
The boards can easily cut to size at site.
In case of fire the NOFIRNO® coating will form a ceramic protective shield at the exposed side. This shield is also a thermal barrier. Furthermore it prevents moisture from escaping from the inside of the mineral wool board so that no shrinkage will occur during fire exposure.
The NOFIRNO® coating is water resistant. To avoid water absorption of the mineral wool, NOFIRNO® sealant has to be applied all around for outdoor applications. For mechanical stability, it is of the utmost importance that the boards fit snugly in the conduit opening and that the boards are sealed all around with NOFIRNO® sealant.



For oversized penetrations, the NOFIRNO® mineral wool boards are used to fill the remaining open space in the most economic way. For the fire rated filling around the cables, preferably ACTIFOAM® sheets are used.
To obtain a fair degree of tightness, the foam filling should be compressed. To achieve sufficient compression, a NOFIRNO® fire proof plate is placed between the ACTIFOAM® filing and the NOFIRNO® mineral wool board(s). In this way also the mechanical stability of the fire safe penetration is improved.

In cases of limited wall thickness, NOFIRNO® rubber insert sleeves are applied around each of the cables to obtain the required thermal insulation.

article number 50.0104

Fire resistant board 12 mm thick.
Cut to size of the conduit opening.
Supplied in sizes 1000x1000 mm.

PRODUCT INFORMATION SEALANT

01)	colour	red brown
02)	specific gravity	1.40 ± 0.03 g/cm^3
03)	curing of top layer	0.5 - 1 hour depending on temperature and air humidity
04)	service temperature	-50 °C up to +180 °C
05)	tensile strength	1.5 MPa
06)	elongation at break	200%
07)	hardness	45 Shore A
08)	elastic deformation	approx. 50%
09)	resistance	UV, Ozone, arctic conditions
10)	ageing	more than 20 years
11)	supplied in	310 ml cartridges
12)	storage	to be stored cool and dry min/max temperature = +5/+30° C
13)	storage life	guaranteed 6 months; when applied later than 6 months after date of manufacturing, curing and adhesive properties have to be checked before application

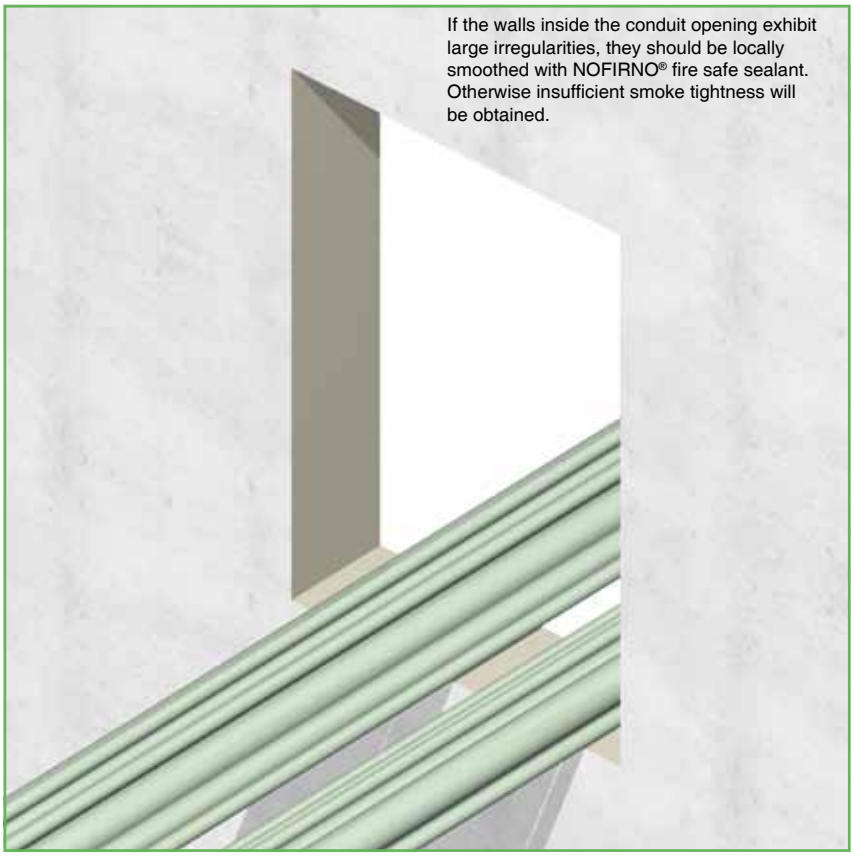
article number 50.0102

NOFIRNO® is a paste-like compound which is simple to use. NOFIRNO® has a balanced viscosity and can be applied overhead.
After applying the sealant, it can be smoothed by means of a wet cloth or by hand. Because the sealant adheres very tightly, the cloth and hands should be wetted with water before use to prevent sealant from sticking to them.

Shelf life is 12 months when stored properly. Since we have no control on storage, we can only guarantee for 6 months.

ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

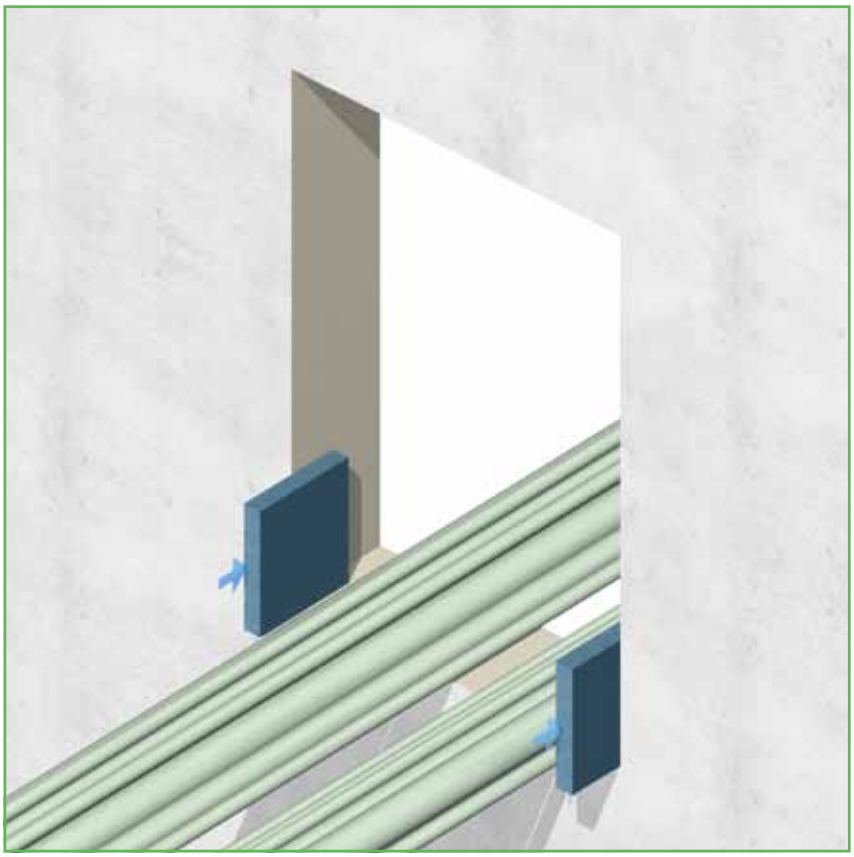
1) The cables can be ducted through the conduit opening in random order.
It is most important that they are not pulled too tight in order not to hamper their separation at a later stage.



If the walls inside the conduit opening exhibit large irregularities, they should be locally smoothed with NOFIRNO® fire safe sealant. Otherwise insufficient smoke tightness will be obtained.

ACTIFOAM

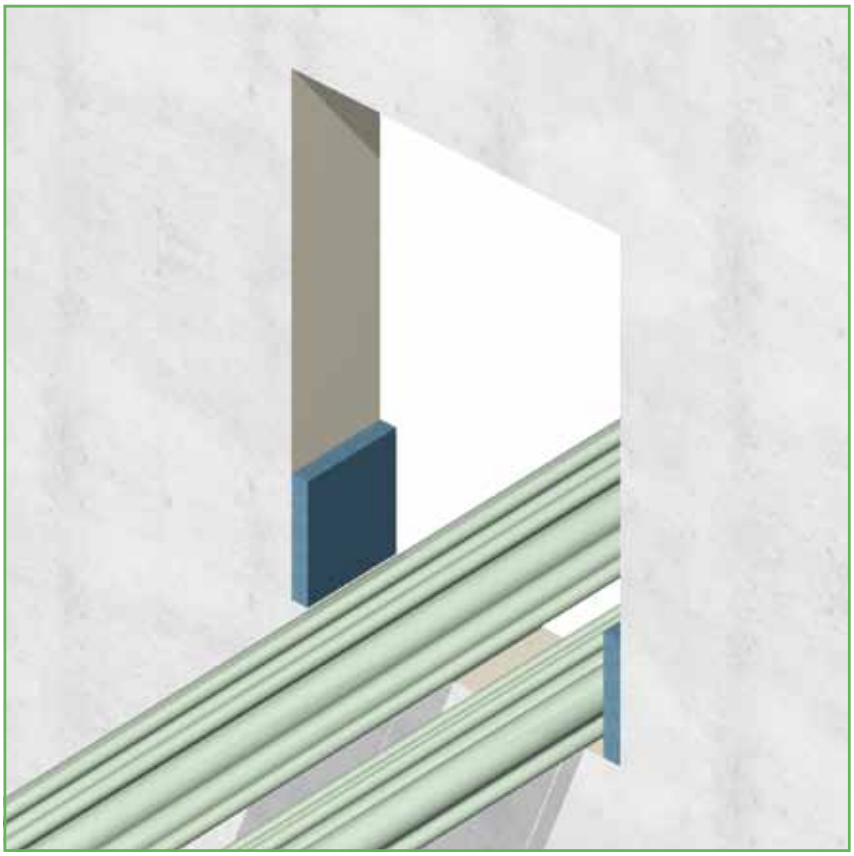
2) ACTIFOAM® rubber sheets are cut into strips fitting to the size of the walls inside the conduit opening. For this purpose, ACTIFOAM® sheets with a thickness of 25 mm are used.



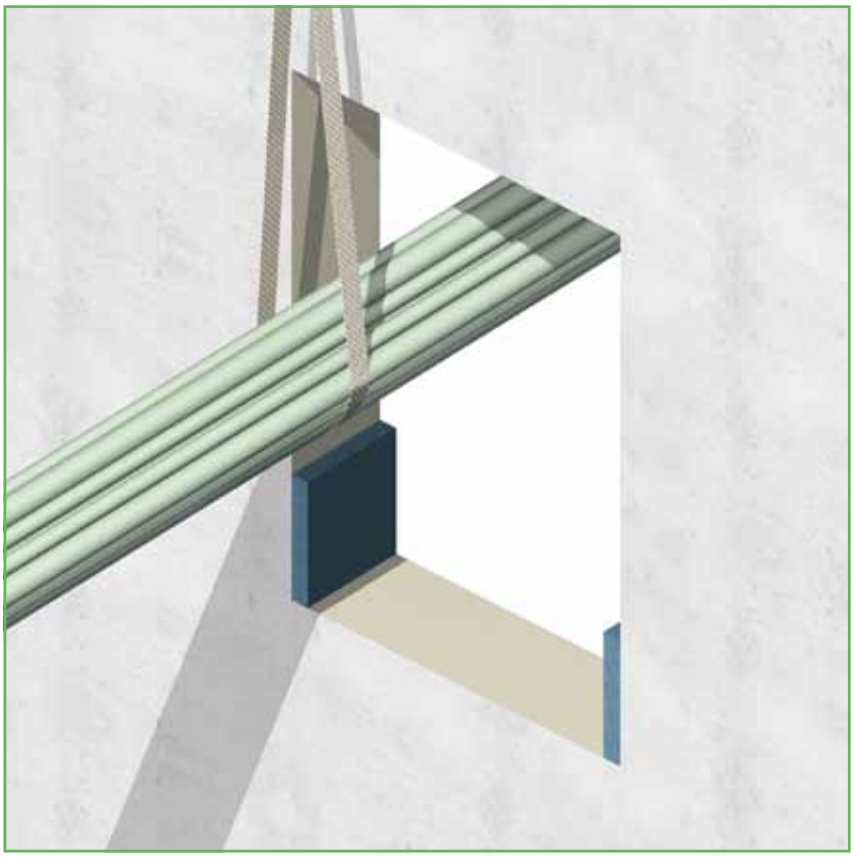
ACTIFOAM

ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

3) The ACTIFOAM® rubber sheets should fit snugly in the conduit opening to ensure a tight fit against the walls. This is important to avoid smoke penetrating between the sheets and the wall.

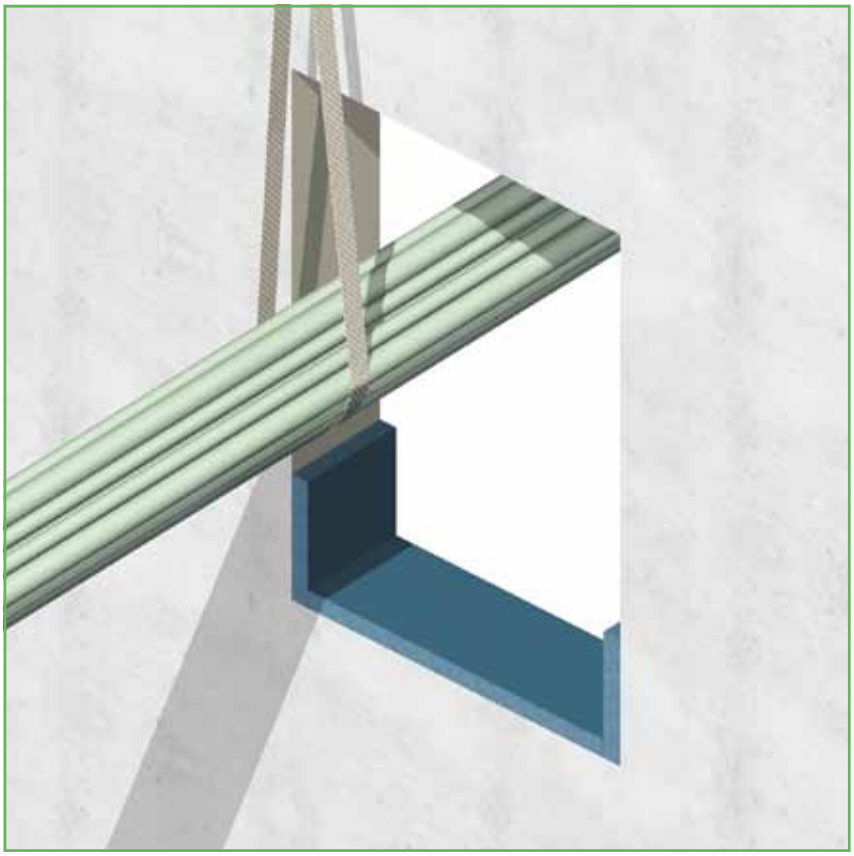


4) A slightly oversized sheet of ACTIFOAM® rubber with a thickness of 25 mm is placed inside the conduit opening underneath the cables. The sheet should fit snugly between the sheets against the side walls.



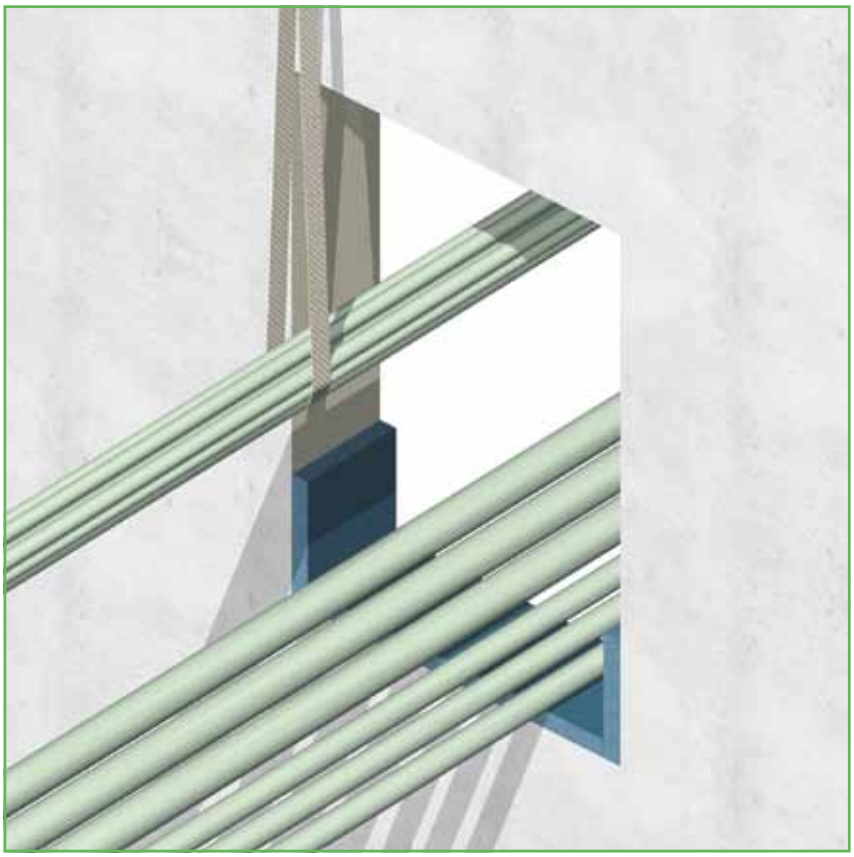
ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

5) A slightly oversized strip of ACTIFOAM® rubber with a thickness of 25 mm is placed inside the conduit opening underneath the cables. The sheet will be compressed by the weight of the cables.



ACTIFOAM

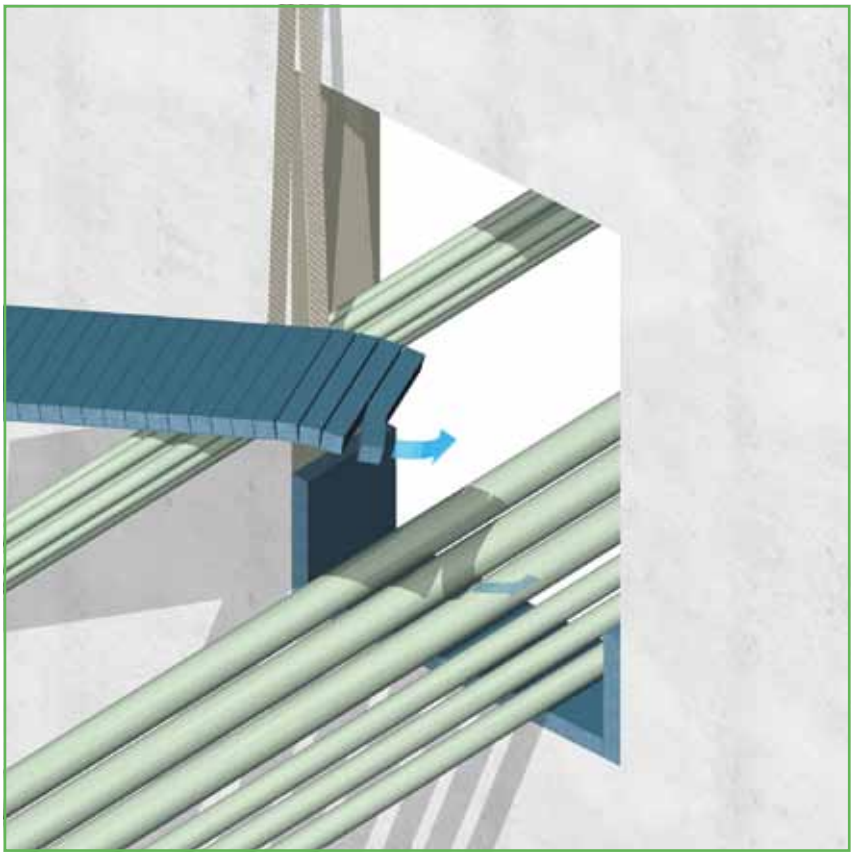
6) One layer of cables is spread out on the ACTIFOAM® rubber sheet at the bottom of the conduit opening.
The other cables are lifted to make room for further finishing the first layer.



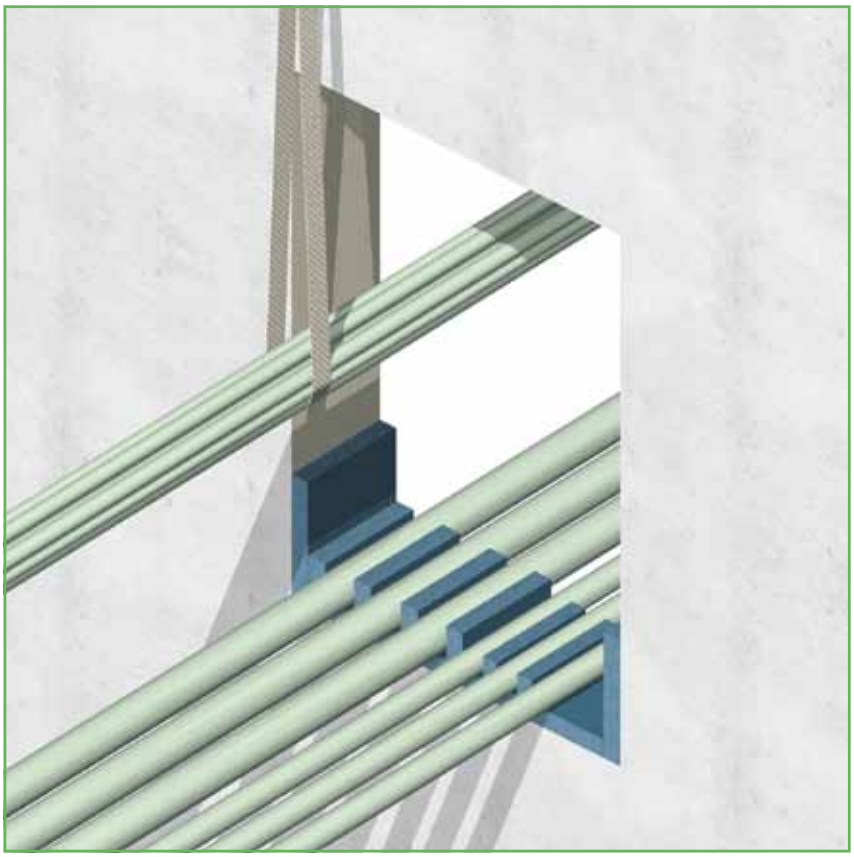
ACTIFOAM

ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

7) For proper cable separation, square profiles are torn off the pre-slit ACTIFOAM® rubber sheets.
The sizes of the profiles should be equivalent to the cable diameters.

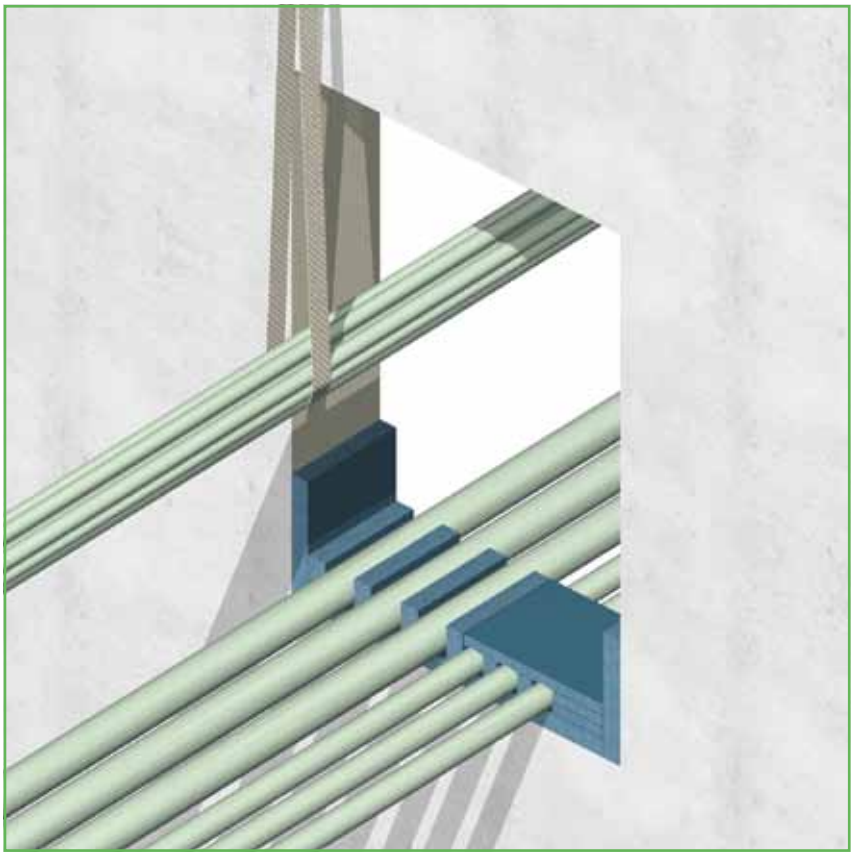


8) Profiles are slit in sizes of 10x10, 15x15, 20x20 and 25x25 mm. This enables an easy fit for corresponding cable sizes.
Cables larger than 25 mm should be separated by a minimum of 25 mm.



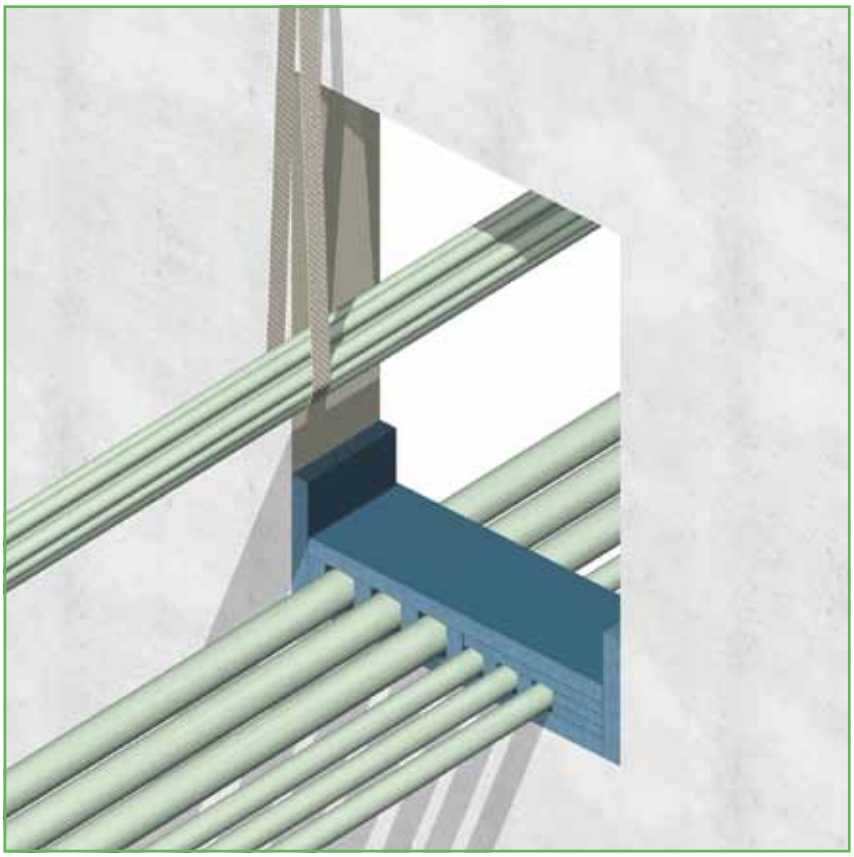
ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

9) Adjacent to the first layer of cables and profiles, one or more extra sheets of ACTIFOAM® rubber is fitted to create a level layer for further filling the conduit opening.



ACTIFOAM

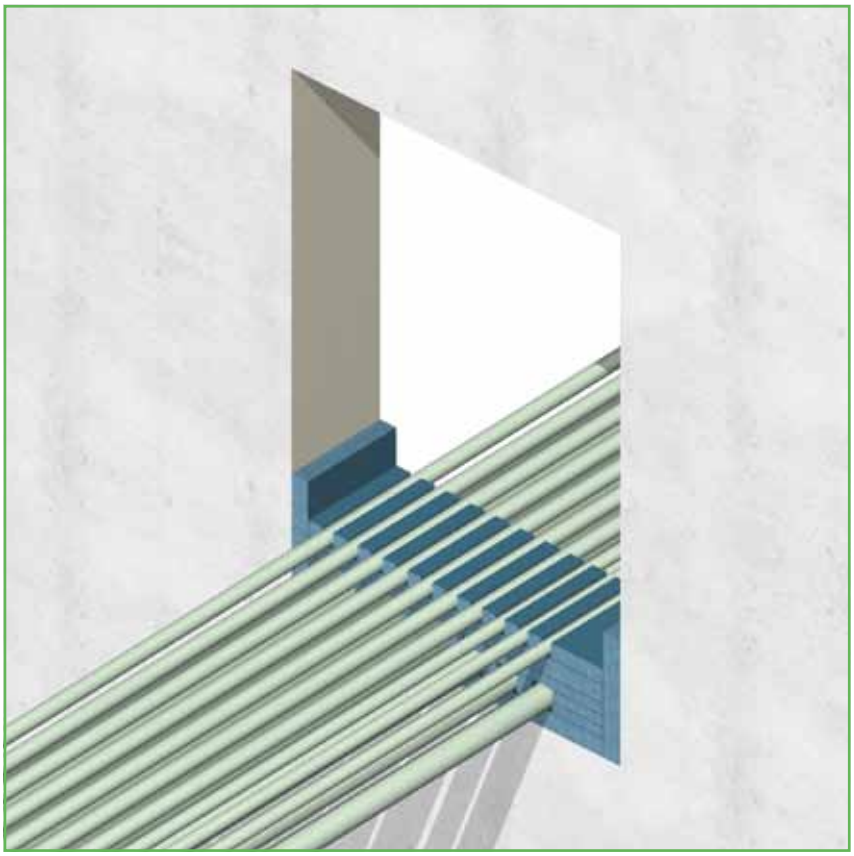
10) An intermediate ACTIFOAM® rubber sheet is inserted in the conduit opening on top of the levelled first layer.
The thickness of the intermediate layer is dependent on the maximum cable diameter.



ACTIFOAM

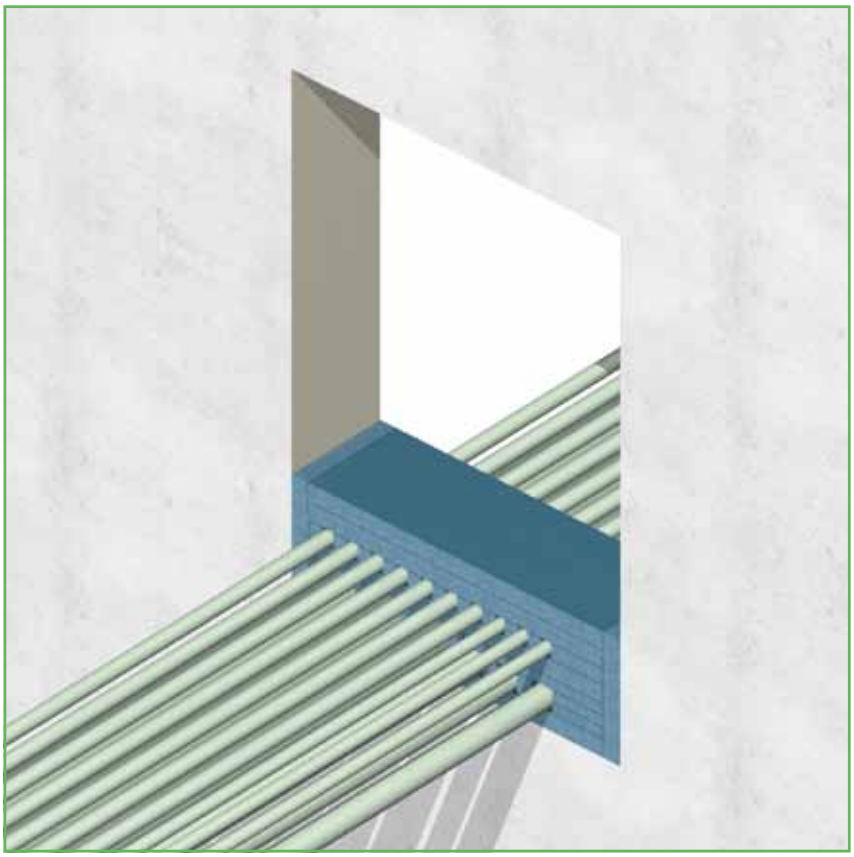
ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

11) The next layer of cables is spread out and in the same way as with the first layer of cables, the cables are separated with the ACTIFOAM® pre-slit profiles and levelled with one or more ACTIFOAM® sheets.



ACTIFOAM

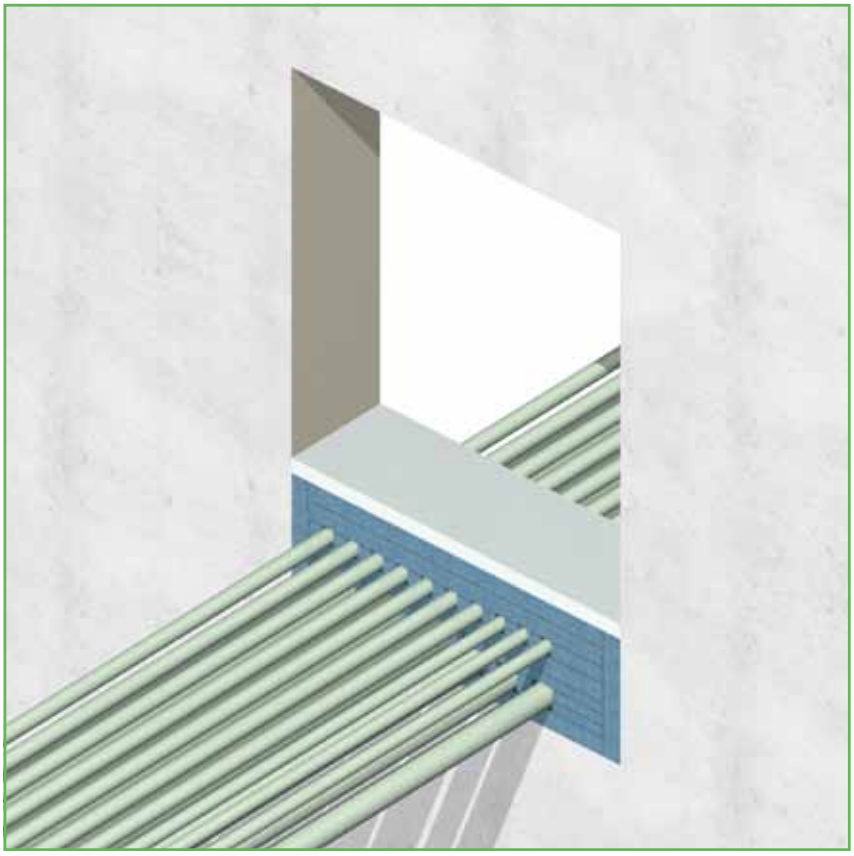
11) The remaining space between the sheets, placed against the walls, is filled with one or more ACTIFOAM® sheets.
All sheets should fit tightly in the conduit opening to obtain a fair degree of smoke tightness.



ACTIFOAM

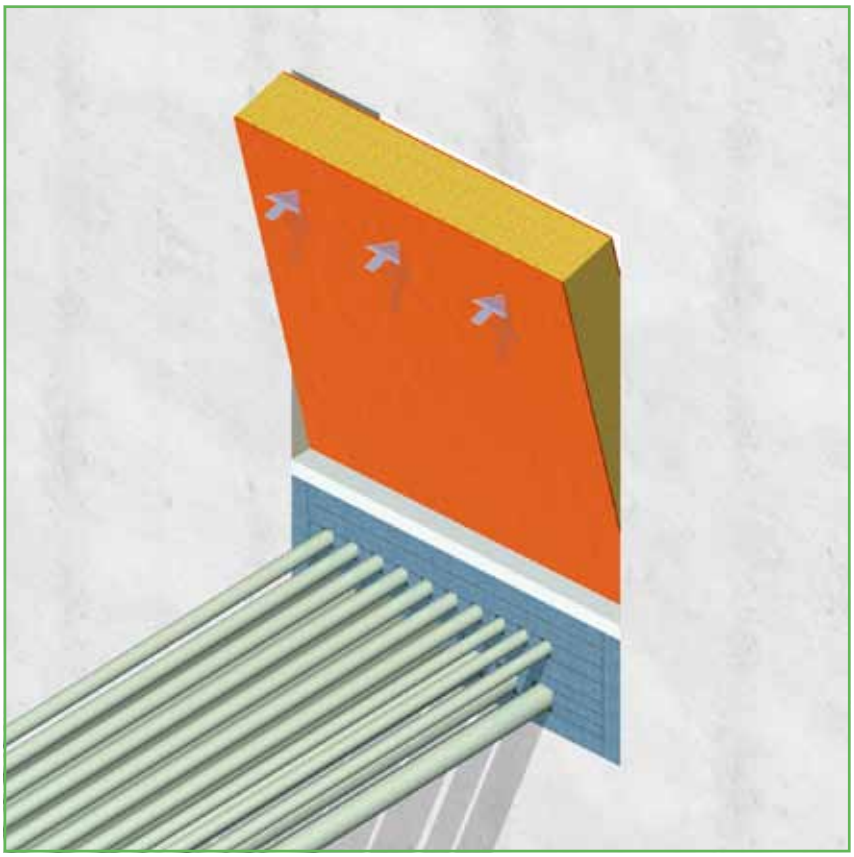
ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

13) A fire safe compression plate is placed on top of the ACTIFOAM® filling to obtain controlled expansion during fire exposure.
The plate is also needed to compress the ACTIFOAM® filling in order to improve tightness.



ACTIFOAM

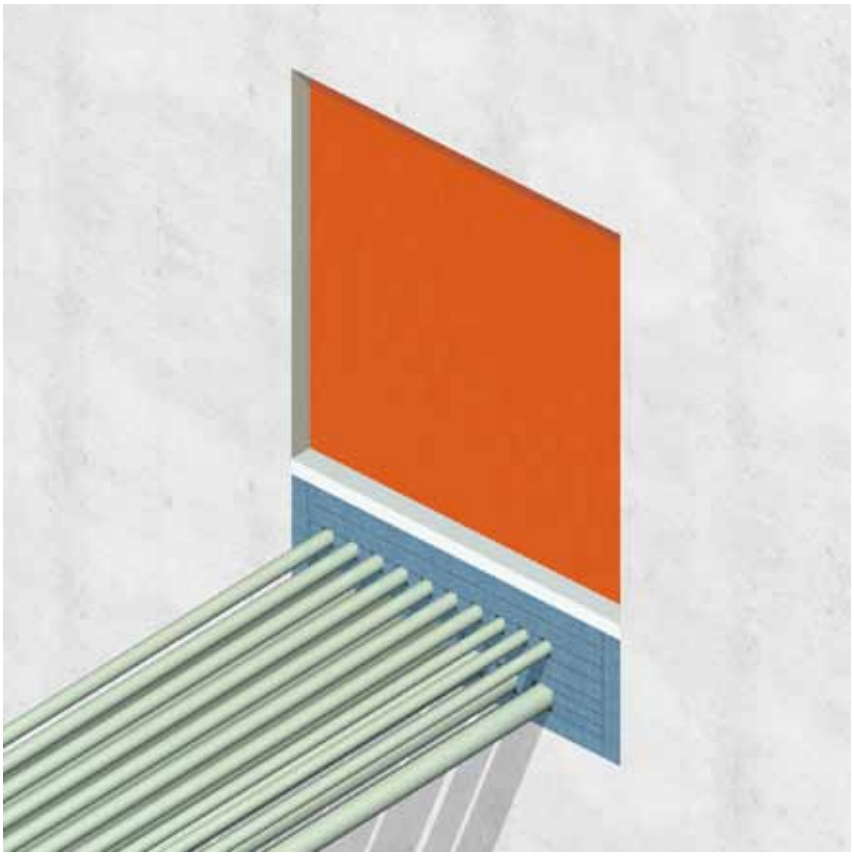
14) A NOFIRNO® coated board is cut to size and tightly fitting inserted into the open space of the conduit opening.
The NOFIRNO® board should be a bit oversized in height with a view to compress the ACTIFOAM® filling.



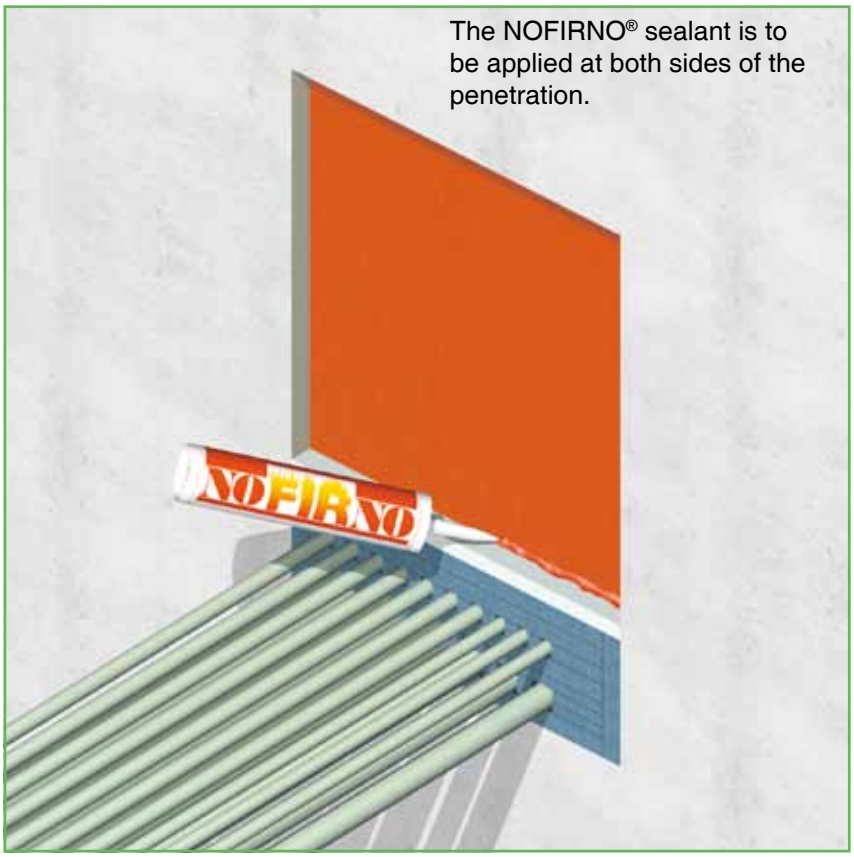
ACTIFOAM

ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

15) Depending on the required fire rating, a single NOFIRNO® board coated on both sides can be inserted in the conduit opening.
For higher fire ratings two boards coated on one side only can be placed on top of the compression plate.



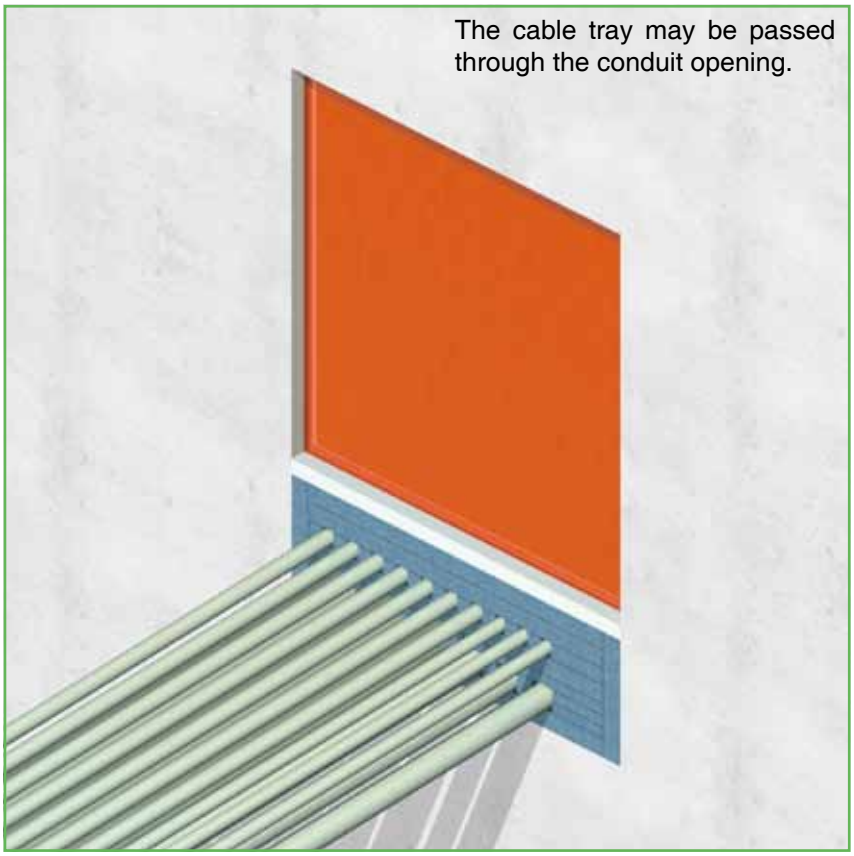
16) The NOFIRNO® board is sealed all around with NOFIRNO® sealant to obtain optimum tightness and to avoid dehydration of the mineral wool. This will also improve mechanical stability. The sealant can be smoothed by hand.



The NOFIRNO® sealant is to be applied at both sides of the penetration.

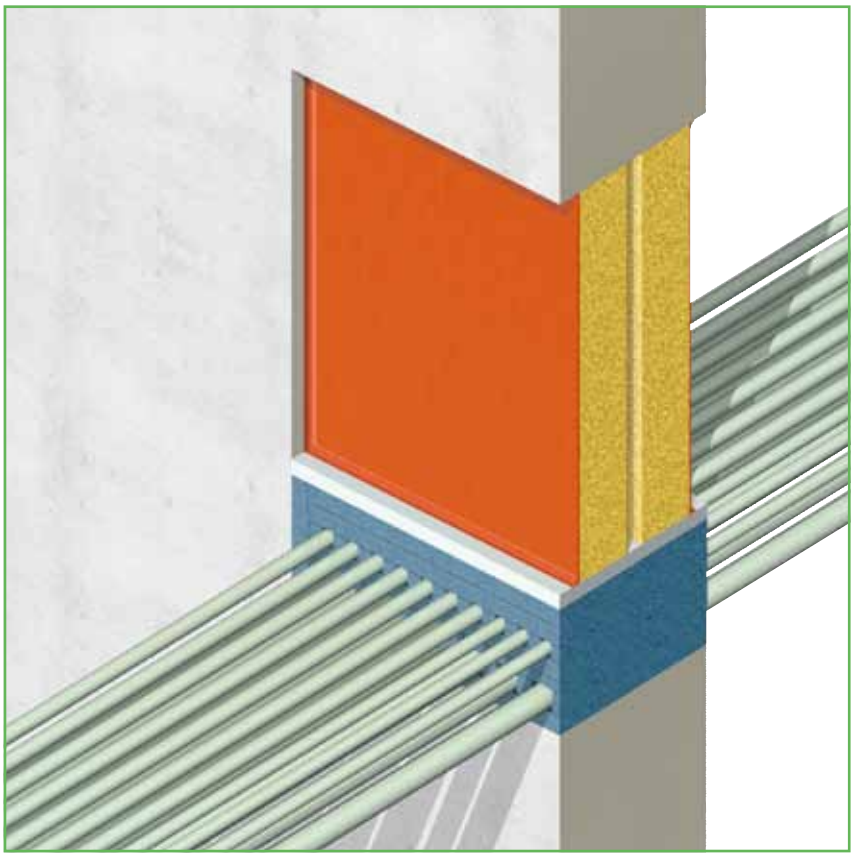
ACTIFOAM®/NOFIRNO®-BRD
MULTI-CABLE TRANSIT SEALING SYSTEM

17) The finished NOFIRNO® - ACTIFOAM® multi-cable penetration. For adding extra cables the NOFIRNO® board can be removed and the fire safe compression plate lifted.
The ACTIFOAM® filling allows easy access for ducting more cables.



ACTIFOAM

18) It is advisable to install two NOFIRNO® boards coated on one side only. For installations where a lower fire rating is applicable a single NOFIRNO® board, coated at both sides, can be applied



ACTIFOAM