



# INSTALLATION INSTRUCTIONS

## AQUASTOP® - NOFIRNO®

### SEALING SYSTEM FOR LEAKING CONDUITS



# AQUASTOP®

# NO FIRNO



Beele campus 45.000 m<sup>2</sup>  
Ready 2020/2021



- A: Reception, Education Center, Workshops, Video Conferences
- B: Demonstration, Training and Installation
- C: R&D center, Testing Facilities
- D: Pilot plant for new developments
- E: Production Plant phase 1 and 2
- F: Park with amphitheater and Food Forest 15.000 m<sup>2</sup>

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**Edition**

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**Research & Development**

: BEELE Engineering BV, Aalten, the Netherlands.

**Note**

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®

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**brochure code**

: installation AQUASTOP/NOFIRNO cable

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



*It is self-evident that water leakages must be prevented under all circumstances. After all, leaking water means not only a nuisance but in most cases damage as well. Although no exact figures are known, it is safe to say that the corrosion damage caused every year by leaking cable and pipe entries runs into hundreds of millions of dollars. Therefore, a great deal of effort goes into minimizing the effects of water leakage. Preventing leaking conduits is an absolute must.*

*We have the products and systems for it, however .....*

Leaking conduits are a problem in many buildings/installations when ducting pipes underground. Attempts are made to stop the water leakage, but most often without any success. We can see the effects of leaks almost daily around us. However, we generally forget that a corrosion process is slowly but surely affecting the structure and equipment concerned. The corrosion damage caused by such conduits can be substantial. Secondary drawbacks are that moist spaces are generally accompanied by a mouldy atmosphere, fungus growth and a proliferation of vermin.

BEELE Engineering has developed three solutions to stop the water leakage in buildings and installations:

- 1) in case the ground water can be pumped away outside the building, the contents of the existing conduit sealing system can be removed and the regular NOFIRNO® system can be applied in the wall opening.
- 2) in case the existing sealing system cannot be removed and the leakage occurs only during heavy rainfall, for cable and small bore pipe penetrations the NOFIRNO® system can be applied against the wall by making use of the split, modular frames at the time there is no leakage.
- 3) in most cases, however, it is impossible to work outside the building and the repair work has to be carried out under leaking conditions. In this case it is better to leave as much of the existing material in place and make space available for the application of the mouldable AQUASTOP® rubber and the NOFIRNO® sealant.

To obtain mechanical stability and tightness over an extended service life, the AQUASTOP® filling is finished with a layer of NOFIRNO® sealant.



For existing, leaking conduits in buildings and installations as described under 3), the AQUASTOP® mouldable rubber has been developed by the engineers of BEELE Engineering. The AQUASTOP® mouldable rubber is made of a silicone polymer to offer the market an inert material which does not pollute the ground water.

The rubber is very sticky and can be applied on wet surfaces. The rubber can be moulded by hand in the shape required for the repair work.



**article number 80.0940**

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The AQUASTOP® - NOFIRNO® transit sealing system for leaking cable and pipe conduits is composed of NOFIRNO® insert (cable) sleeves in 29 different sizes, NOFIRNO® (multi-) filler sleeves in 5 different sizes, NOFIRNO® sealant and AQUASTOP® mouldable rubber.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The tools needed for the installation are a spatula (or knife) to cut the mouldable rubber, flat nose pliers to adjust the set of fillers, a filler set adjuster, a dryer for the concrete and the possible wet surface of the mouldable rubber, cloths for cleaning and compression of the sealant layer, a cable cleaner, a bucket with water and a professional sealant dispenser.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS

### PRODUCT INFORMATION SEALANT

|                         |                                                                                                                                                               |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01) colour              | red brown                                                                                                                                                     |
| 02) specific gravity    | 1.40 ± 0.03 g/cm³                                                                                                                                             |
| 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<br>min/max temperature = +5/+30° C                                                                                                  |
| 13) storage life        | guaranteed 6 months; when applied later than 6 months<br>after date of manufacturing, curing and adhesive<br>properties have to be checked before application |

*NOFIRNO® is absolutely HALOGEN FREE with zero VOC (volatiles organic compounds) according to TÜV report 89206405-01. Furthermore NOFIRNO® has a low smoke index and a high oxygen index (ISO 4589-2: 1996), and low flame spread characteristics according to IMO Resolution A.653(16).  
NOFIRNO® is a paste-like compound which is simple to use. NOFIRNO® has a balanced viscosity and can be applied overhead.*

article number 50.0107



terracotta

blue



article number 50.0108

black



article number 50.0109

white



article number 50.0110

grey



article number 50.0111

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The AQUASTOP® mouldable rubber is made of a silicone polymer and is delivered in strips 40 mm wide. The rolls of AQUASTOP® mouldable rubber are packed in polyethylene sheets. With a spatula or a knife the strips can be cut very easily to required lengths.

AQUASTOP® rubber is soft and very well kneadable and can be smeared out on wet surfaces.

AQUASTOP® rubber does not age and can be stored for a very long time.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS

### NOFIRNO® CABLE INSERT SLEEVES



cable insert sleeves are split lengthwise

Operating temperatures:  
-50 °C up to +180 °C

NOFIRNO® cable insert sleeves are used to separate cables inside the conduit opening. This allows for ease of application of the NOFIRNO® sealant in between and around the ducted cables. The NOFIRNO® cable sleeves are available in 29 sizes and in lengths of 60, 80, 110, 130, 140, 160 and 210 mm. The NOFIRNO® cable insert sleeves are split lengthwise and can therefore be placed around the cables in front of the conduit opening.

# INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS

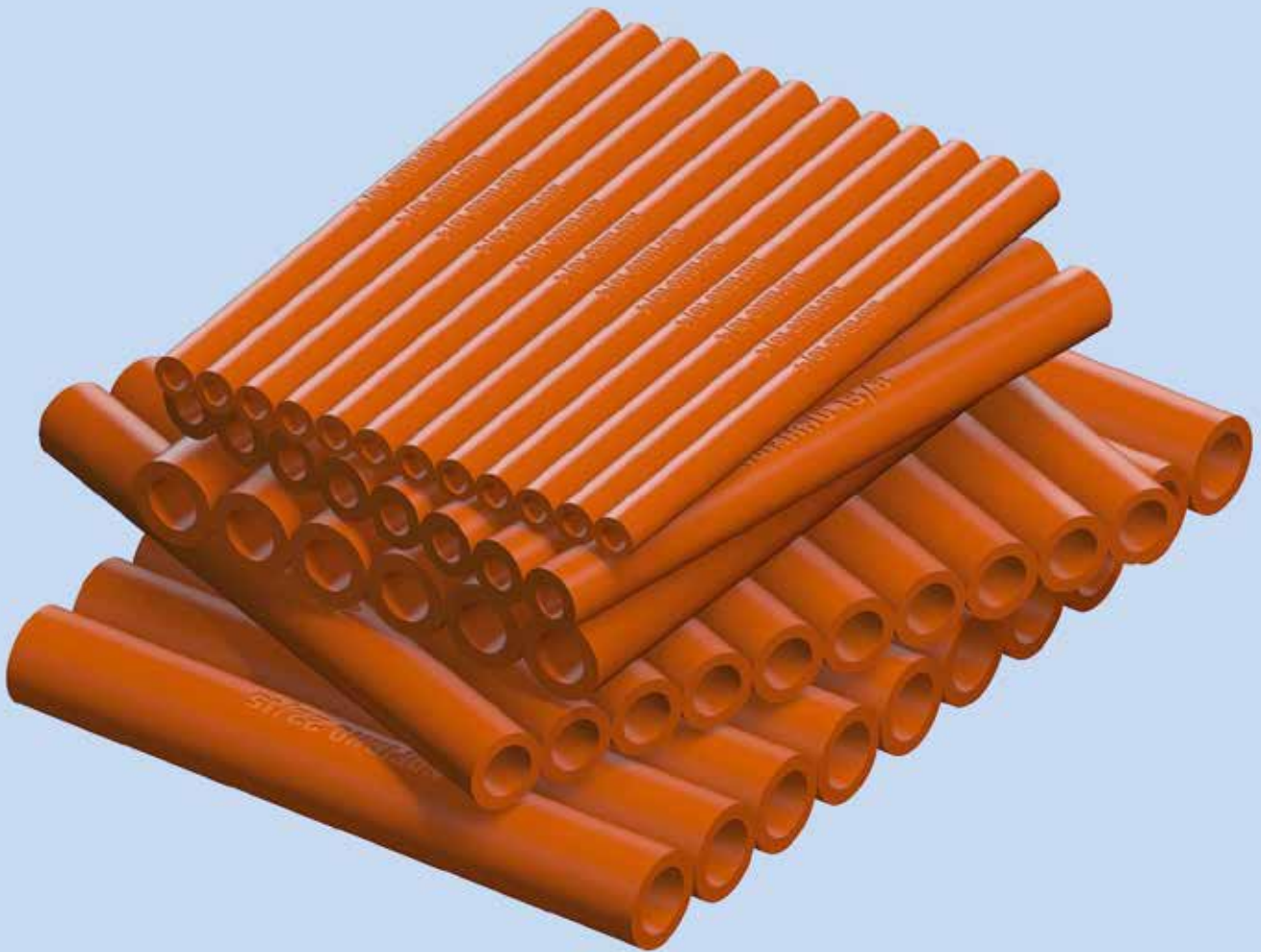
## NOFIRNO® CABLE INSERT SLEEVES

| NOFIRNO® sleeve | cable diameter | sleeve length | article number | sleeve length | article number | sleeve length | article number | sleeve length | article number |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|
| 12/6            | 5 - 7          | 60            | 50.1000        | 80            | 50.1240        | 110           | 50.1040        | 130           | 50.1200        |
| 14/8            | 7 - 9          |               | 50.1001        |               | 50.1241        |               | 50.1041        |               | 50.1201        |
| 16/10           | 9 - 11         |               | 50.1002        |               | 50.1242        |               | 50.1042        |               | 50.1202        |
| 18/12           | 11 - 13        |               | 50.1003        |               | 50.1243        |               | 50.1043        |               | 50.1203        |
| 20/14           | 13 - 15        |               | 50.1004        |               | 50.1244        |               | 50.1044        |               | 50.1204        |
| 22/16           | 15 - 17        |               | 50.1005        |               | 50.1245        |               | 50.1045        |               | 50.1205        |
| 26/18           | 17 - 19        |               | 50.1006        |               | 50.1246        |               | 50.1046        |               | 50.1206        |
| 28/20           | 19 - 21        |               | 50.1007        |               | 50.1247        |               | 50.1047        |               | 50.1207        |
| 30/22           | 21 - 23        |               | 50.1008        |               | 50.1248        |               | 50.1048        |               | 50.1208        |
| 32/24           | 23 - 25        |               | 50.1009        |               | 50.1249        |               | 50.1049        |               | 50.1209        |
| 34/26           | 25 - 27        |               | 50.1010        |               | 50.1250        |               | 50.1050        |               | 50.1210        |
| 36/28           | 27 - 29        |               | 50.1011        |               | 50.1251        |               | 50.1051        |               | 50.1211        |
| 38/30           | 29 - 32        |               | 50.1012        |               | 50.1252        |               | 50.1052        |               | 50.1212        |
| 42/33           | 32 - 35        |               | 50.1013        |               | 50.1253        |               | 50.1053        |               | 50.1213        |
| 46/36           | 35 - 38        |               | 50.1014        |               | 50.1254        |               | 50.1054        |               | 50.1214        |
| 49/39           | 38 - 41        |               | 50.1015        |               | 50.1255        |               | 50.1055        |               | 50.1215        |
| 52/42           | 41 - 44        |               | 50.1016        |               | 50.1256        |               | 50.1056        |               | 50.1216        |
| 55/45           | 44 - 47        |               | 50.1017        |               | 50.1257        |               | 50.1057        |               | 50.1217        |
| 58/48           | 47 - 51        |               | 50.1018        |               | 50.1258        |               | 50.1058        |               | 50.1218        |
| 62/52           | 51 - 55        |               | 50.1019        |               | 50.1259        |               | 50.1059        |               | 50.1219        |
| 66/56           | 55 - 59        |               | 50.1020        |               | 50.1260        |               | 50.1060        |               | 50.1220        |
| 70/60           | 59 - 63        |               | 50.1021        |               | 50.1261        |               | 50.1061        |               | 50.1221        |
| 74/64           | 63 - 67        |               | 50.1022        |               | 50.1262        |               | 50.1062        |               | 50.1222        |
| 78/68           | 67 - 71        |               | 50.1023        |               | 50.1263        |               | 50.1063        |               | 50.1223        |
| 82/72           | 71 - 75        |               | 50.1024        |               | 50.1264        |               | 50.1064        |               | 50.1224        |
| 86/76           | 75 - 79        |               | 50.1025        |               | 50.1265        |               | 50.1065        |               | 50.1225        |
| 95/80           | 79 - 84        |               | 50.1026        |               | 50.1266        |               | 50.1066        |               | 50.1226        |
| 100/85          | 84 - 89        |               | 50.1027        |               | 50.1267        |               | 50.1067        |               | 50.1227        |
| 110/90          | 89 - 94        |               | 50.1028        |               | 50.1268        |               | 50.1068        |               | 50.1228        |
| 115/95          | 94 - 99        |               | 50.1029        |               | 50.1269        |               | 50.1069        |               | 50.1229        |
| 120/100         | 99 - 104       |               | 50.1030        |               | 50.1270        |               | 50.1070        |               | 50.1230        |

| NOFIRNO® sleeve | cable diameter | sleeve length | article number | sleeve length | article number | sleeve length | article number | sleeve length | article number |
|-----------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|
| 12/6            | 5 - 7          | 140           | 50.1080        | 160           | 50.1120        | 210           | 50.1160        |               |                |
| 14/8            | 7 - 9          |               | 50.1081        |               | 50.1121        |               | 50.1161        |               |                |
| 16/10           | 9 - 11         |               | 50.1082        |               | 50.1122        |               | 50.1162        |               |                |
| 18/12           | 11 - 13        |               | 50.1083        |               | 50.1123        |               | 50.1163        |               |                |
| 20/14           | 13 - 15        |               | 50.1084        |               | 50.1124        |               | 50.1164        |               |                |
| 22/16           | 15 - 17        |               | 50.1085        |               | 50.1125        |               | 50.1165        |               |                |
| 26/18           | 17 - 19        |               | 50.1086        |               | 50.1126        |               | 50.1166        |               |                |
| 28/20           | 19 - 21        |               | 50.1087        |               | 50.1127        |               | 50.1167        |               |                |
| 30/22           | 21 - 23        |               | 50.1088        |               | 50.1128        |               | 50.1168        |               |                |
| 32/24           | 23 - 25        |               | 50.1089        |               | 50.1129        |               | 50.1169        |               |                |
| 34/26           | 25 - 27        |               | 50.1090        |               | 50.1130        |               | 50.1170        |               |                |
| 36/28           | 27 - 29        |               | 50.1091        |               | 50.1131        |               | 50.1171        |               |                |
| 38/30           | 29 - 32        |               | 50.1092        |               | 50.1132        |               | 50.1172        |               |                |
| 42/33           | 32 - 35        |               | 50.1093        |               | 50.1133        |               | 50.1173        |               |                |
| 46/36           | 35 - 38        |               | 50.1094        |               | 50.1134        |               | 50.1174        |               |                |
| 49/39           | 38 - 41        |               | 50.1095        |               | 50.1135        |               | 50.1175        |               |                |
| 52/42           | 41 - 44        |               | 50.1096        |               | 50.1136        |               | 50.1176        |               |                |
| 55/45           | 44 - 47        |               | 50.1097        |               | 50.1137        |               | 50.1177        |               |                |
| 58/48           | 47 - 51        |               | 50.1098        |               | 50.1138        |               | 50.1178        |               |                |
| 62/52           | 51 - 55        |               | 50.1099        |               | 50.1139        |               | 50.1179        |               |                |
| 66/56           | 55 - 59        |               | 50.1100        |               | 50.1140        |               | 50.1180        |               |                |
| 70/60           | 59 - 63        |               | 50.1101        |               | 50.1141        |               | 50.1181        |               |                |
| 74/64           | 63 - 67        |               | 50.1102        |               | 50.1142        |               | 50.1182        |               |                |
| 78/68           | 67 - 71        |               | 50.1103        |               | 50.1143        |               | 50.1183        |               |                |
| 82/72           | 71 - 75        |               | 50.1104        |               | 50.1144        |               | 50.1184        |               |                |
| 86/76           | 75 - 79        |               | 50.1105        |               | 50.1145        |               | 50.1185        |               |                |
| 95/80           | 79 - 84        |               | 50.1106        |               | 50.1146        |               | 50.1186        |               |                |
| 100/85          | 84 - 89        |               | 50.1107        |               | 50.1147        |               | 50.1187        |               |                |
| 110/90          | 89 - 94        |               | 50.1108        |               | 50.1148        |               | 50.1188        |               |                |
| 115/95          | 94 - 99        |               | 50.1109        |               | 50.1149        |               | 50.1189        |               |                |
| 120/100         | 99 - 104       |               | 50.1110        |               | 50.1150        |               | 50.1190        |               |                |

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS

### NOFIRNO® MULTI-FILLER SLEEVES



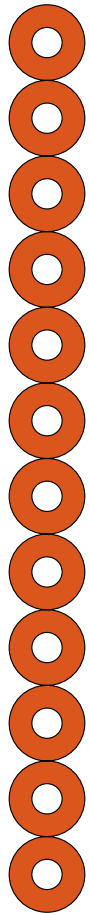
Filler sleeves are not split lengthwise

Operating temperatures:  
-50 °C up to +180 °C

NOFIRNO® Filler sleeves are supplied in multi-sets of 6, 8, 10 and 12 sleeves, depending on the outer dimensions of the sleeves. Single sleeves or smaller sets of sleeves can be torn off easily. To tear off sleeves from the multi-set, the procedure is to do this backwards/forwards and not sideways. This is because of the strength of the intermediate rubber parts.

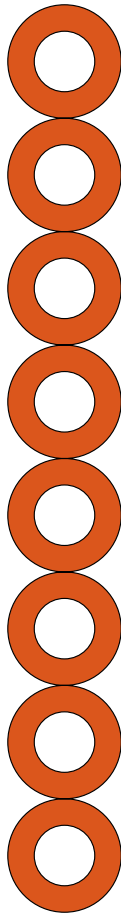
# INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS

## NOFIRNO® MULTI-FILLER SLEEVES



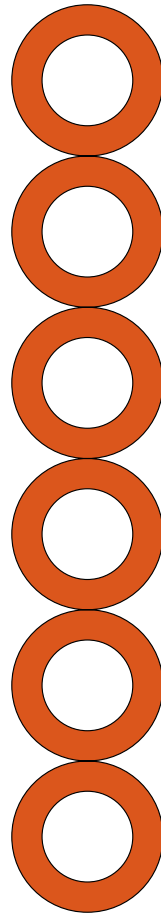
**NOFIRNO® Filler sleeve 10/4 multi 12**

art. no. 50.0301 for 60 mm length  
art. no. 50.0361 for 80 mm length  
art. no. 50.0311 for 110 mm length  
art. no. 50.0351 for 130 mm length  
art. no. 50.0321 for 140 mm length  
art. no. 50.0331 for 160 mm length  
art. no. 50.0341 for 210 mm length



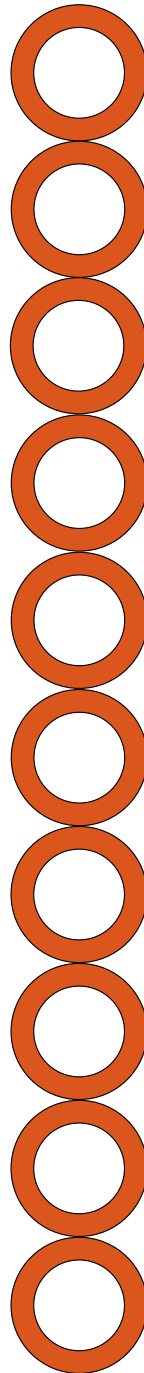
**NOFIRNO® Filler sleeve 15/8 multi 8**

art. no. 50.0302 for 60 mm length  
art. no. 50.0362 for 80 mm length  
art. no. 50.0312 for 110 mm length  
art. no. 50.0352 for 130 mm length  
art. no. 50.0322 for 140 mm length  
art. no. 50.0332 for 160 mm length  
art. no. 50.0342 for 210 mm length



**NOFIRNO® Filler sleeve 20/12 multi 6**

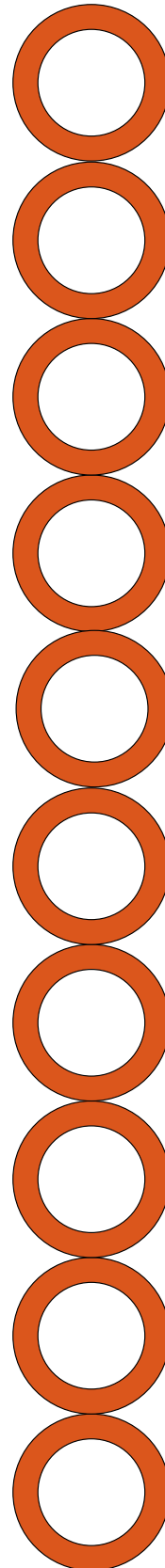
art. no. 50.0303 for 60 mm length  
art. no. 50.0363 for 80 mm length  
art. no. 50.0313 for 110 mm length  
art. no. 50.0353 for 130 mm length  
art. no. 50.0323 for 140 mm length  
art. no. 50.0333 for 160 mm length  
art. no. 50.0343 for 210 mm length



**NOFIRNO® Filler sleeve 18/12 multi 10**

art. no. 80.5050 for 60 mm length  
art. no. 80.5056 for 80 mm length  
art. no. 80.5051 for 110 mm length  
art. no. 80.5055 for 130 mm length  
art. no. 80.5052 for 140 mm length  
art. no. 80.5053 for 160 mm length  
art. no. 80.5054 for 210 mm length

to be used for larger conduit openings



**NOFIRNO® Filler sleeve 22/15 multi 10**

art. no. 80.5070 for 60 mm length  
art. no. 80.5076 for 80 mm length  
art. no. 80.5071 for 110 mm length  
art. no. 80.5075 for 130 mm length  
art. no. 80.5072 for 140 mm length  
art. no. 80.5073 for 160 mm length  
art. no. 80.5074 for 210 mm length

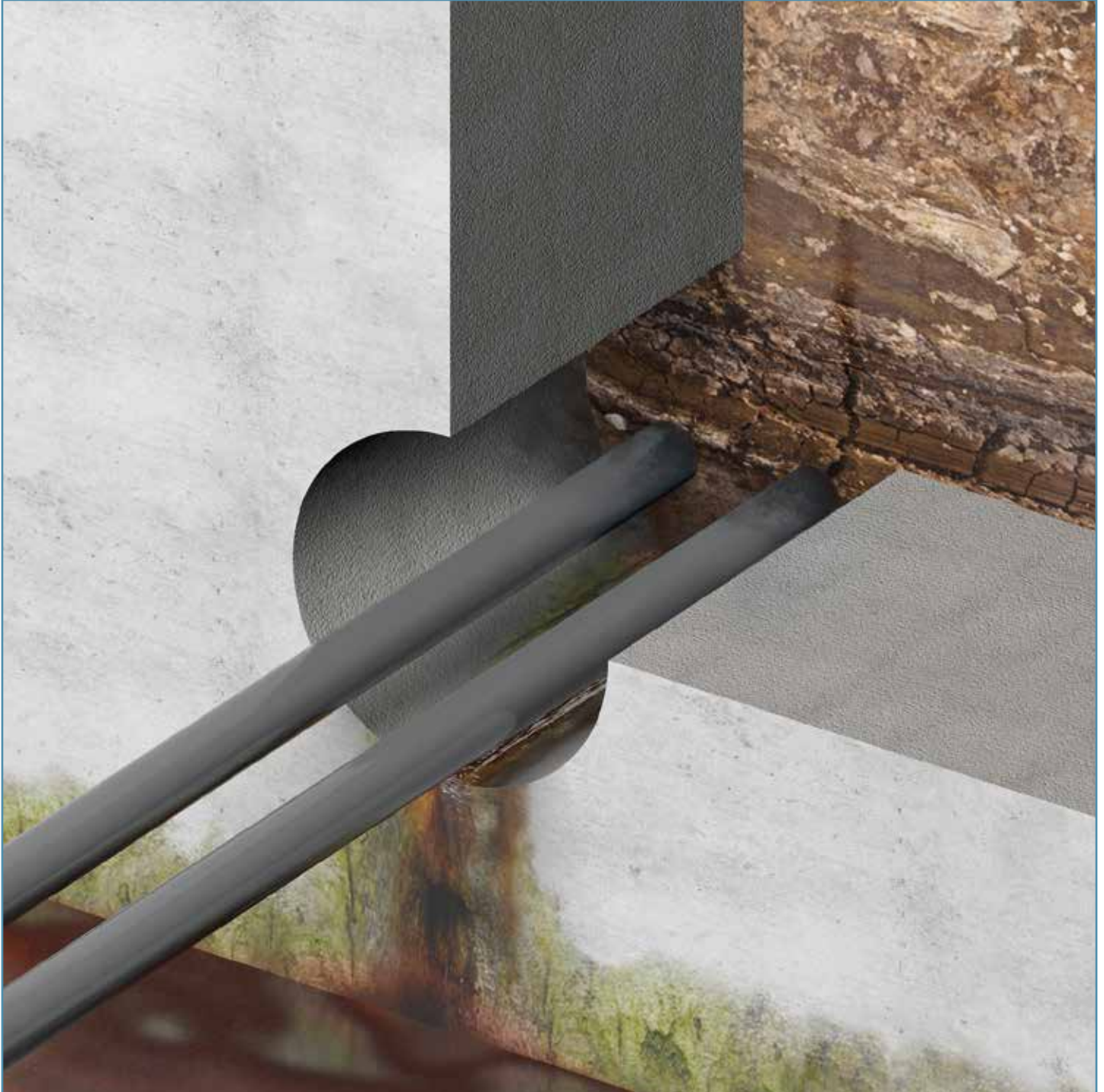
to be used for larger conduit openings

to be used for smaller conduit openings

Filler sleeves are supplied non-split

Operating temperatures:  
-50 °C up to +180 °C

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The AQUASTOP® - NOFIRNO® transit sealing system for leaking cable and pipe conduits is specially developed to seal leaking conduits where it is impossible to stop the water flow. In such cases, adhesion of materials to the wet surfaces is very problematic.

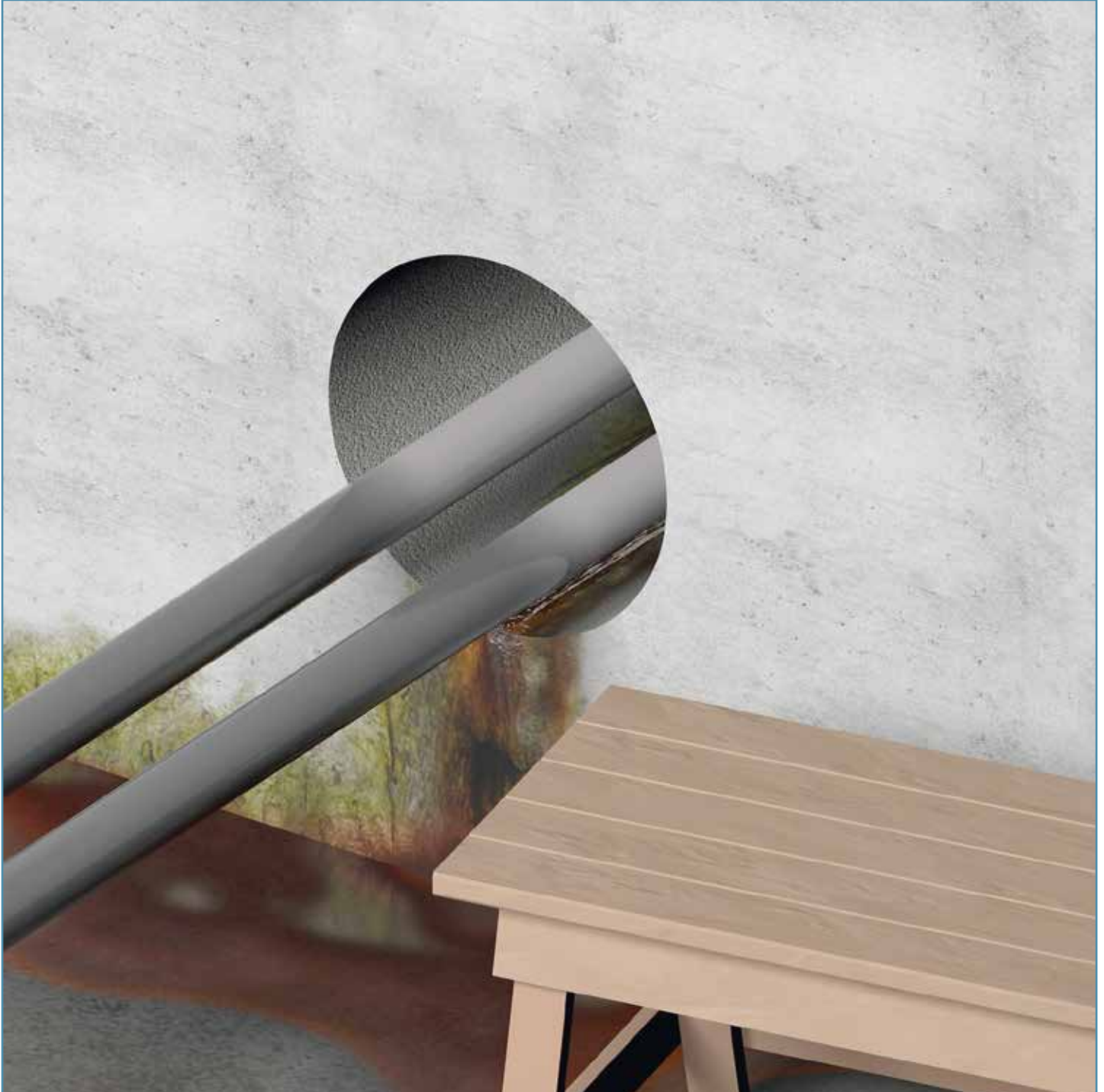
By making use of the AQUASTOP® rubber, which adheres very well to wet surfaces, the water flow can be stopped and final sealing of the conduit opening can be achieved with the NOFIRNO® sealant.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



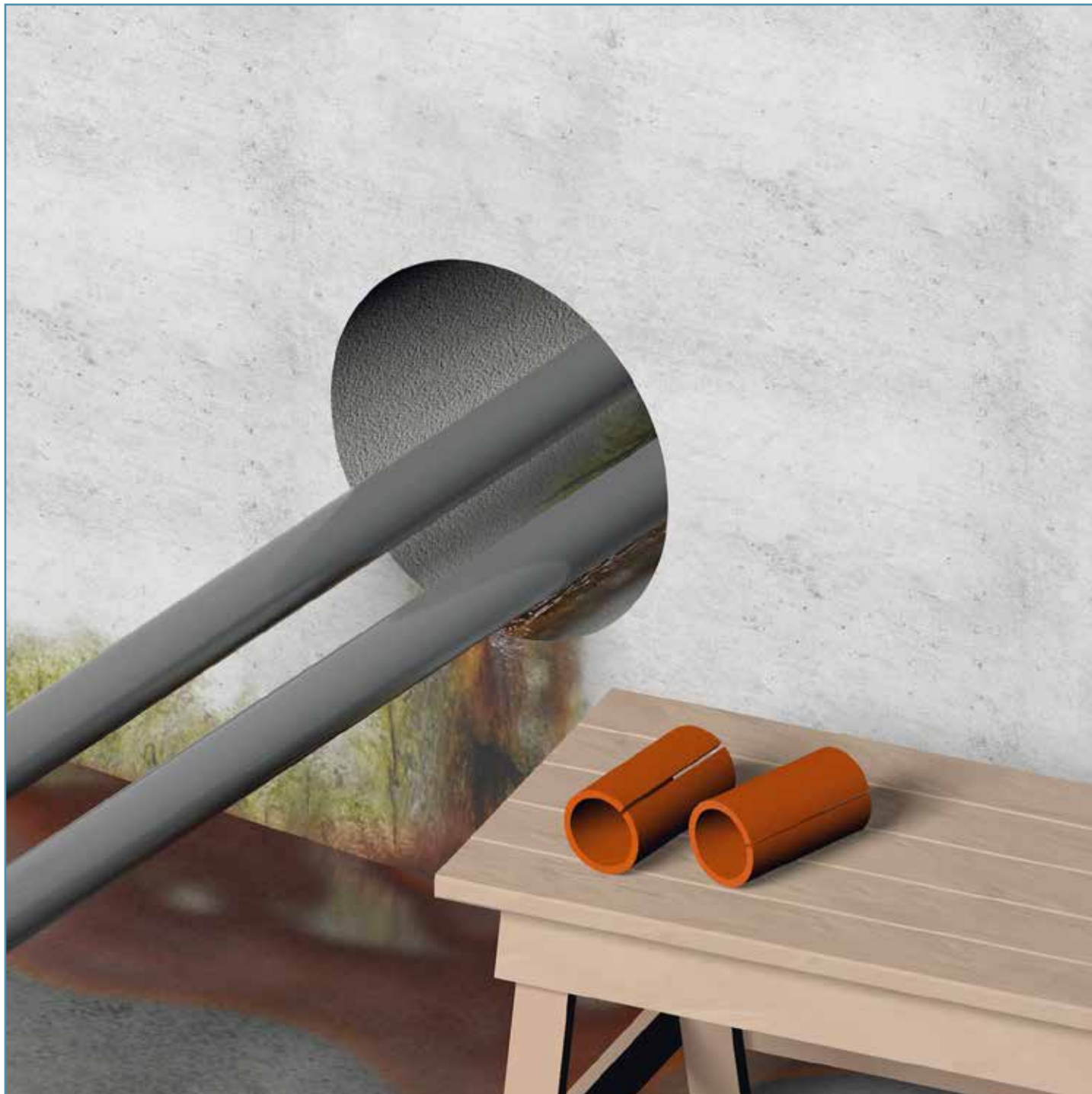
Clean and dry the ducted cables thoroughly. Any moisture, dirt or oil residues will have a negative impact on the adhesive properties of the AQUASTOP® mouldable rubber and the NOFIRNO® sealant to be applied after filling the conduit opening.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



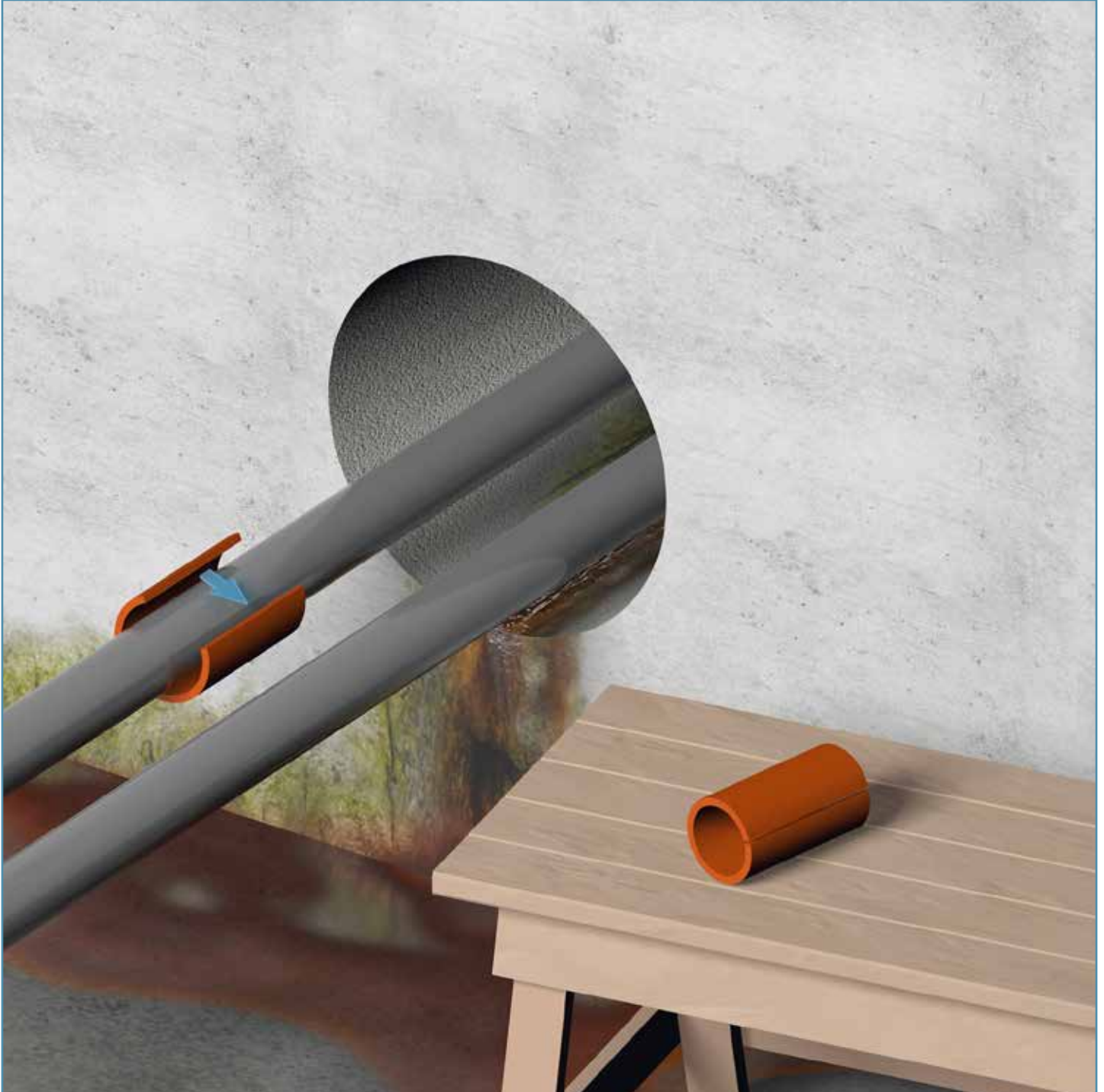
The cables have to be cleaned at the spot where the AQUASTOP® mouldable rubber and the NOFIRNO® sealant are to be applied in a later stage. This means 40 mm at the front of the conduit opening. If feasible, it is of course better to clean the cables over their full length inside the conduit opening.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



NOFIRNO® cable insert sleeves are used to separate the cables inside the conduit opening. The length of the sleeves is minimum 60 mm. It is advisable to use longer sleeves (when possible) to obtain higher mechanical stability.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The NOFIRNO® cable insert sleeves are split lengthwise. A precise fit of the NOFIRNO® cable insert sleeves around the cables is not required, however it is advisable to select the sleeves on the basis of the cable diameters as listed on page 7.

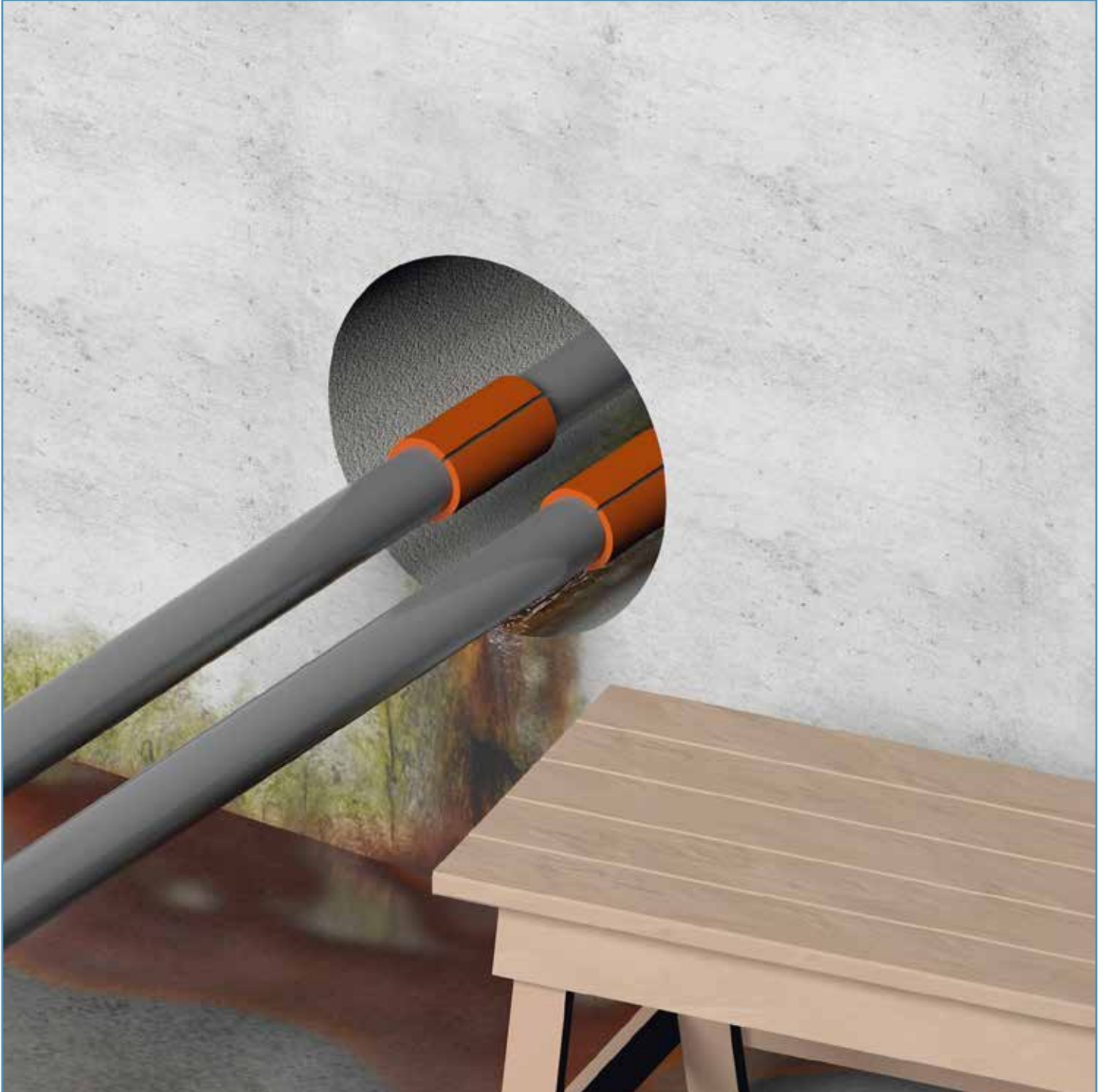
See also the installation instructions for the NOFIRNO cable transits.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



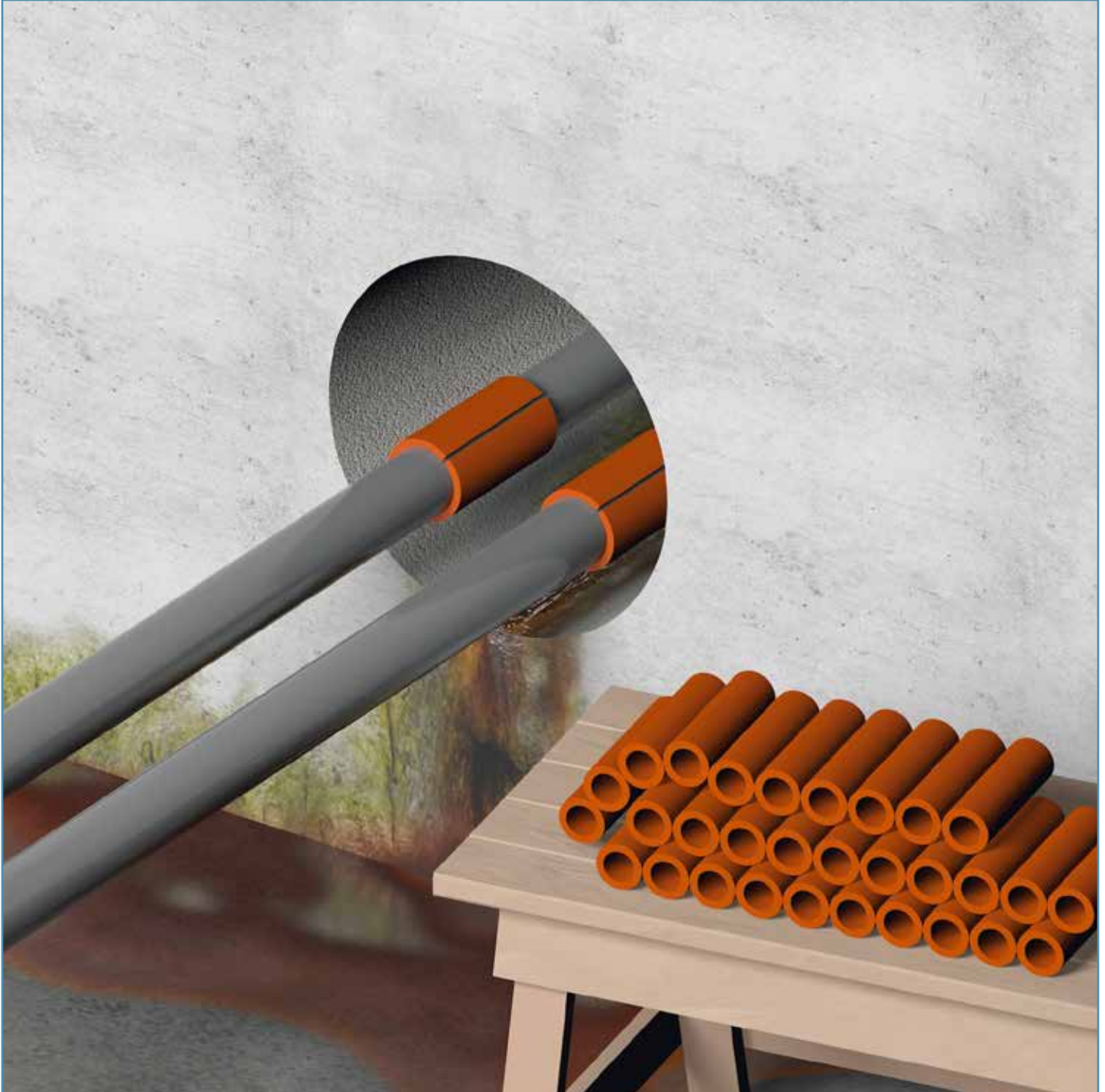
A NOFIRNO® cable insert sleeve is placed around the cable and then pushed inside the conduit opening.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



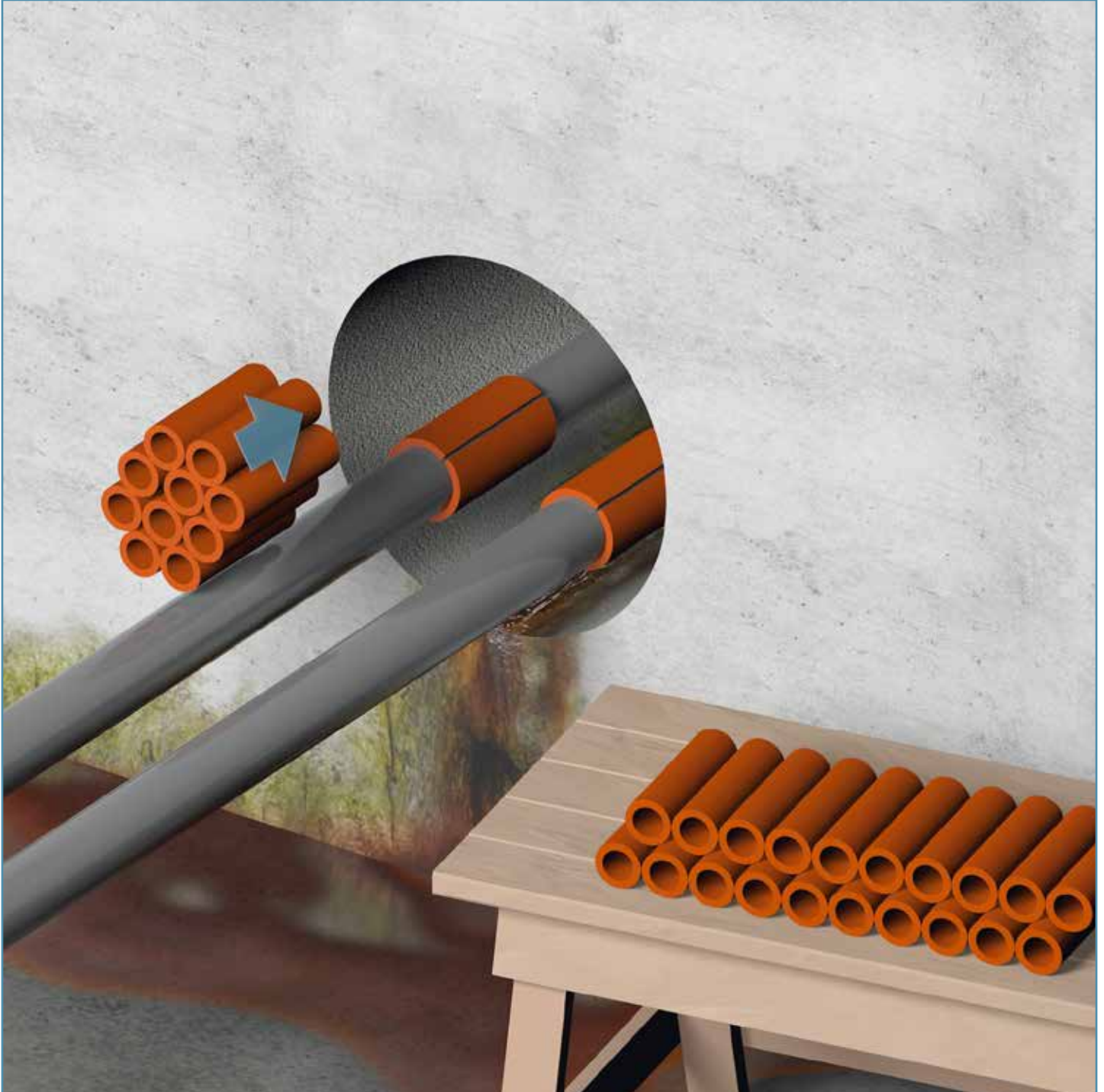
In this way, all ducted cables are sleeved with NOFIRNO® cable insert sleeves.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The remaining space in the conduit opening has to be filled with NOFIRNO® filler sleeves. Filler sleeves are supplied in multi-sets. There are 5 different dimensions available. The smaller types are used for smaller conduit openings. Generally the type 22/15 is used for conduit sizes larger than 100 mm.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



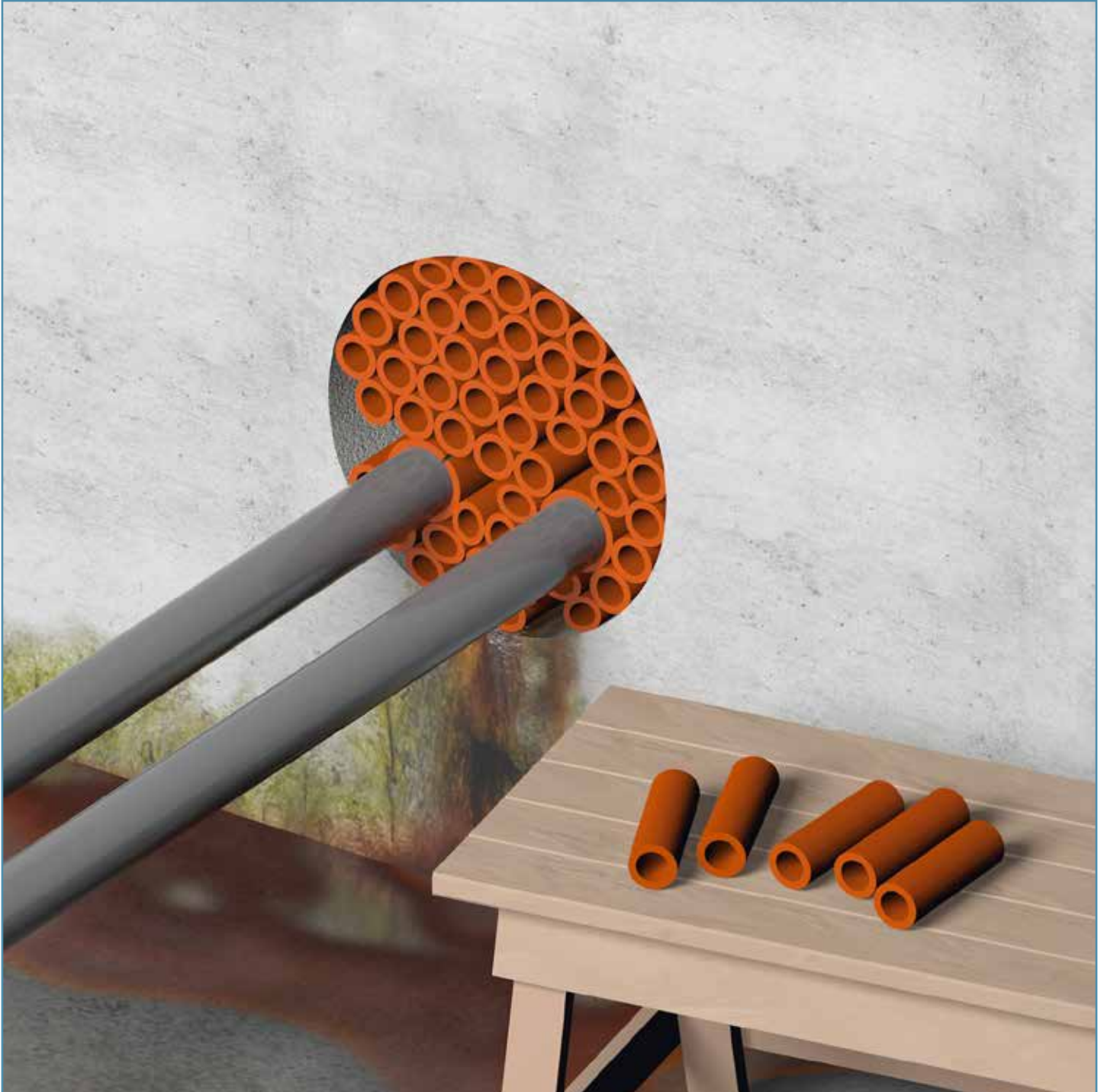
The NOFIRNO® multi-sets of filler sleeves can be rolled up for a quick filling of the conduit opening.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



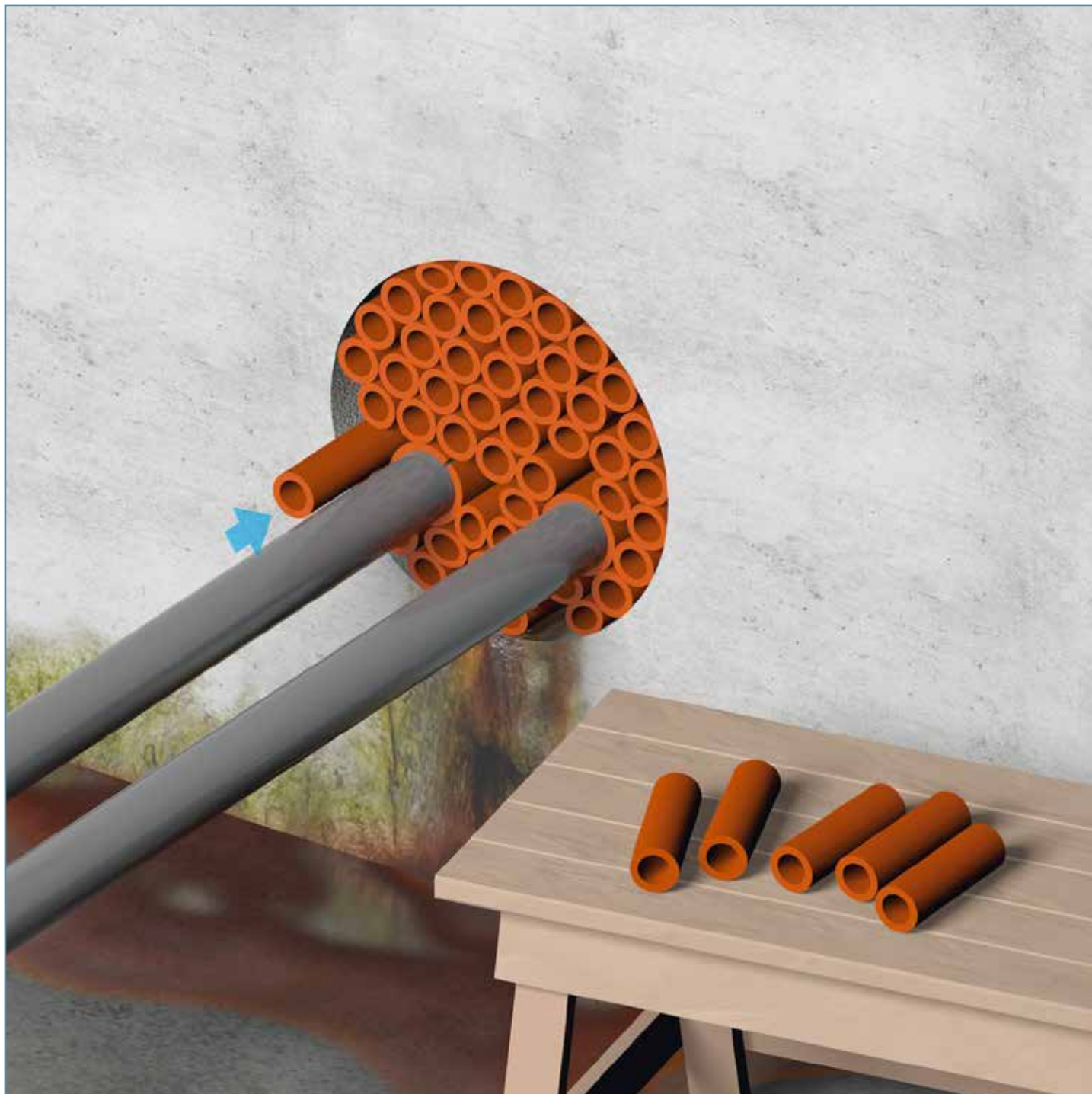
The set is then placed in the open space in the conduit opening.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



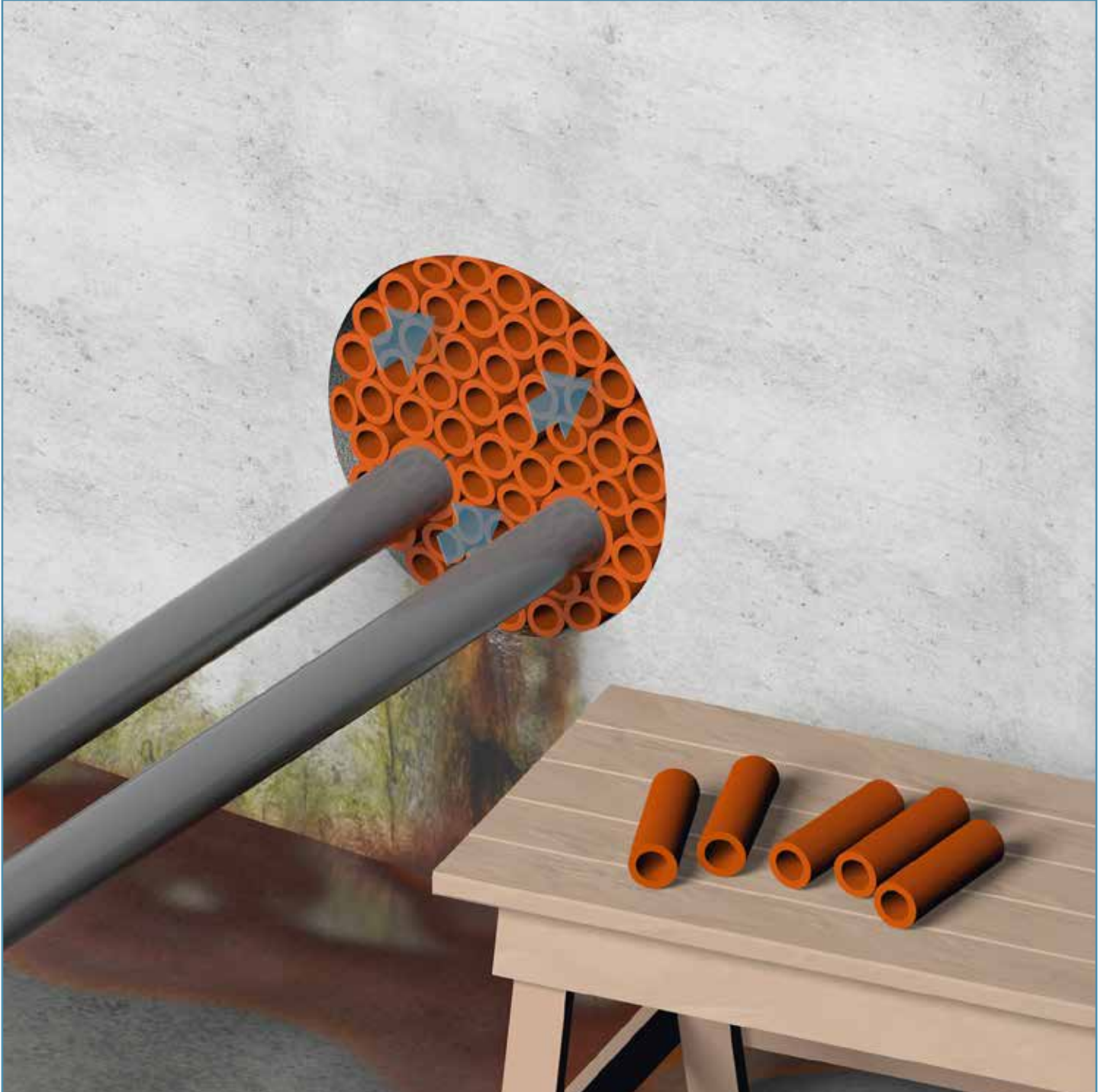
In this way, Filling of the open space continues. The smaller openings are now Filled with single Filler sleeves and/or with parts of the sets of multi-Filler sleeves. To tear off sleeves from the multi-set, the procedure is to do this backwards/forwards and not sideways. This is because of the strength of the intermediate rubber parts.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The smooth surfaces of the NOFIRNO® sleeves makes insertion of the single sleeves an easy job. There is no need for lubricating. Just insert the filler sleeve and push in by hand.

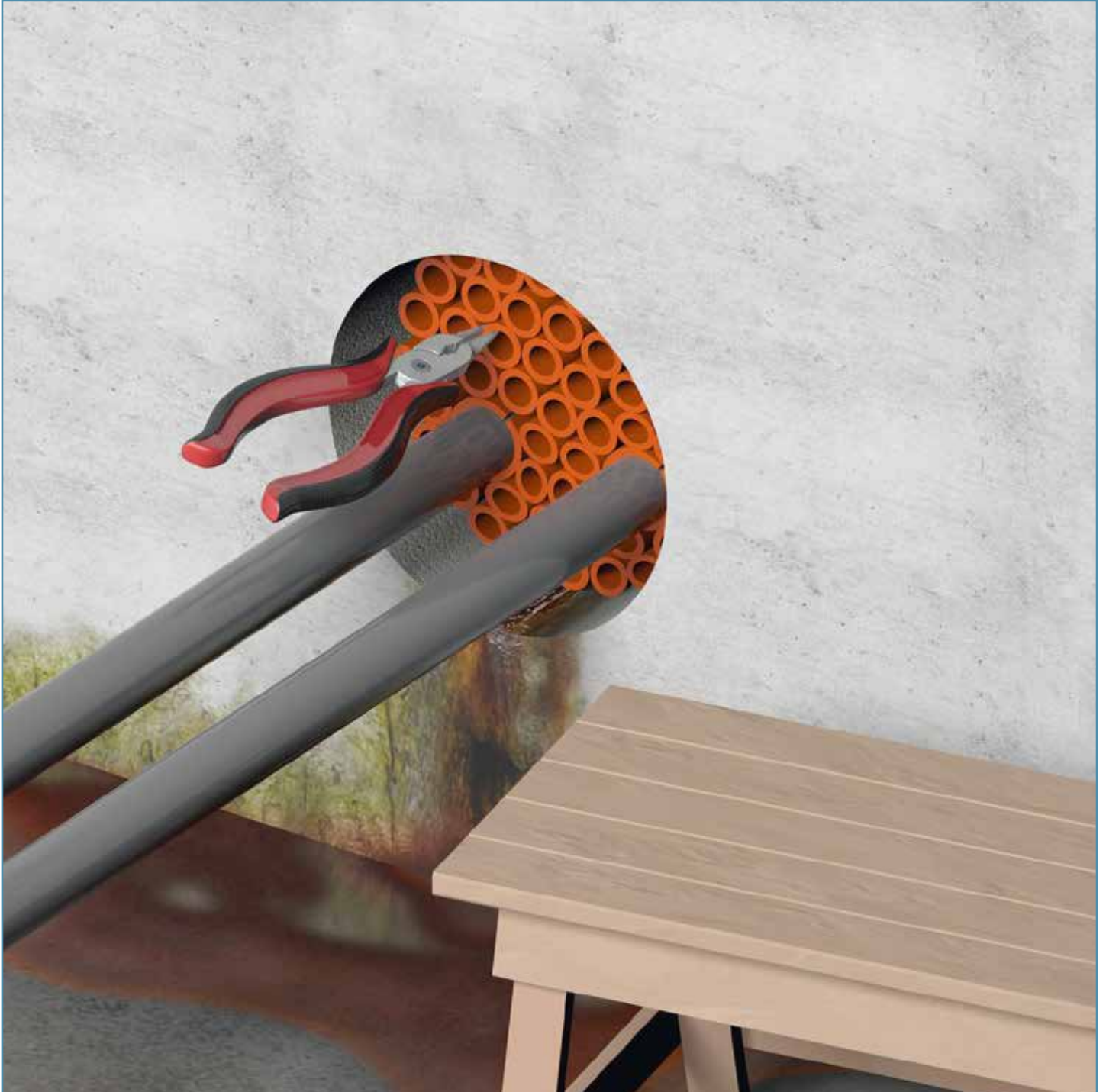
## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



It is very important that the set of NOFIRNO® cable insert and filler sleeves fits tightly in the conduit opening. This contributes not only the optimum mechanical stability, but also to obtain higher pressure ratings.

When the filling is complete, the whole set is pushed into the conduit opening, leaving ca. 40 mm free space at the front side inside the conduit opening.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



With a flat nose pliers, NOFIRNO® single Filler sleeves are inserted in the remaining smaller open spaces in the set of fillers. The flat nose pliers are also used to pull back sleeves which are inserted too deep into the conduit opening.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



With a piece of wood marked with the required 40 mm depth, or with the BEELE Engineering developed aluminum adjuster, the set of Fillers can be adjusted to the required 40 mm recess inside the transit. Use a plastic hammer to adjust the set of Filler sleeves with the NOFIRNO® adjuster.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



A ca. 20 mm thick layer of AQUASTOP® mouldable rubber has to be applied to stop the water flow. Work from the non-leaking area towards the leaking area when inserting the AQUASTOP® rubber into the wall opening against the existing sealing material. AQUASTOP® is not a material with high mechanical properties and therefore not applicable for higher pressure ratings.

Note: the rubber is sticky and is for this reason packed in polyethylene plastic. Please refer to the Safety Data Sheet for more information.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The AQUASTOP® mouldable rubber is applied against the wall of the conduit on top of the filling with the NOFIRNO® sleeves.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The AQUASTOP® mouldable rubber has to be applied very carefully on the cable sheathings in a way that adhesion all around the cable is obtained.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



Finally the mouldable rubber is applied at the spot of the water flow.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



Apply the AQUASTOP® rubber by hand thoroughly all around and in between the ducted cables and against the wall of the conduit opening.  
Most of the leakage might have stopped by this point.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



Start compressing the AQUASTOP® rubber by hand or with the aid of a piece of wood. This is essential to obtain a solid mass of the rubber inside the conduit.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



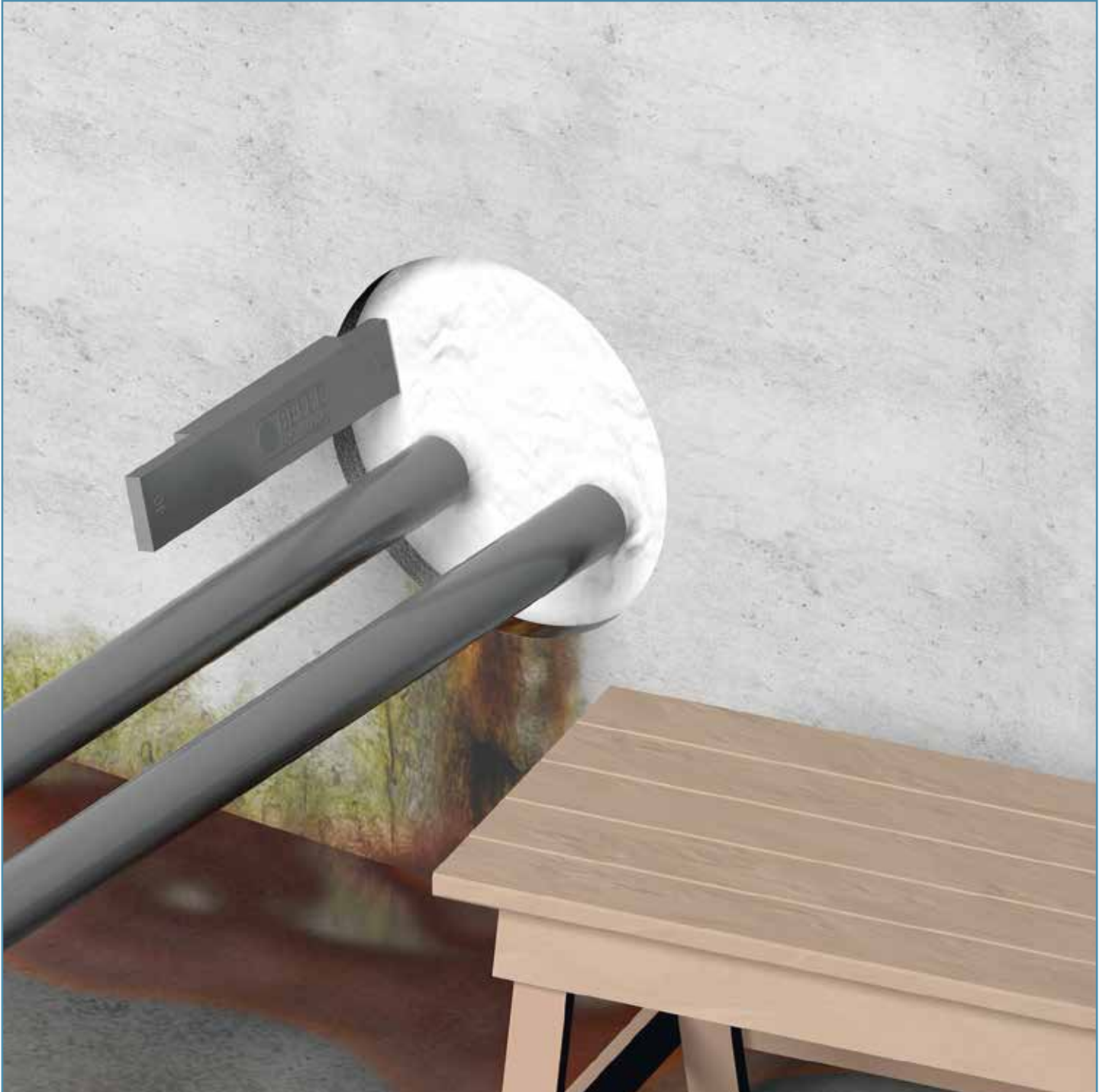
To stop the possible last leakages, the AQUASTOP® mouldable rubber is smeared out by hand against the wall of the conduit opening. Take care that there is 20 mm free space left to apply the sealant over the AQUASTOP® rubber.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



Special attention is required around the cables. Smear the AQUASTOP® mouldable rubber out by hand fully around the ducted cables. This is essential to stop the water flow on long term.

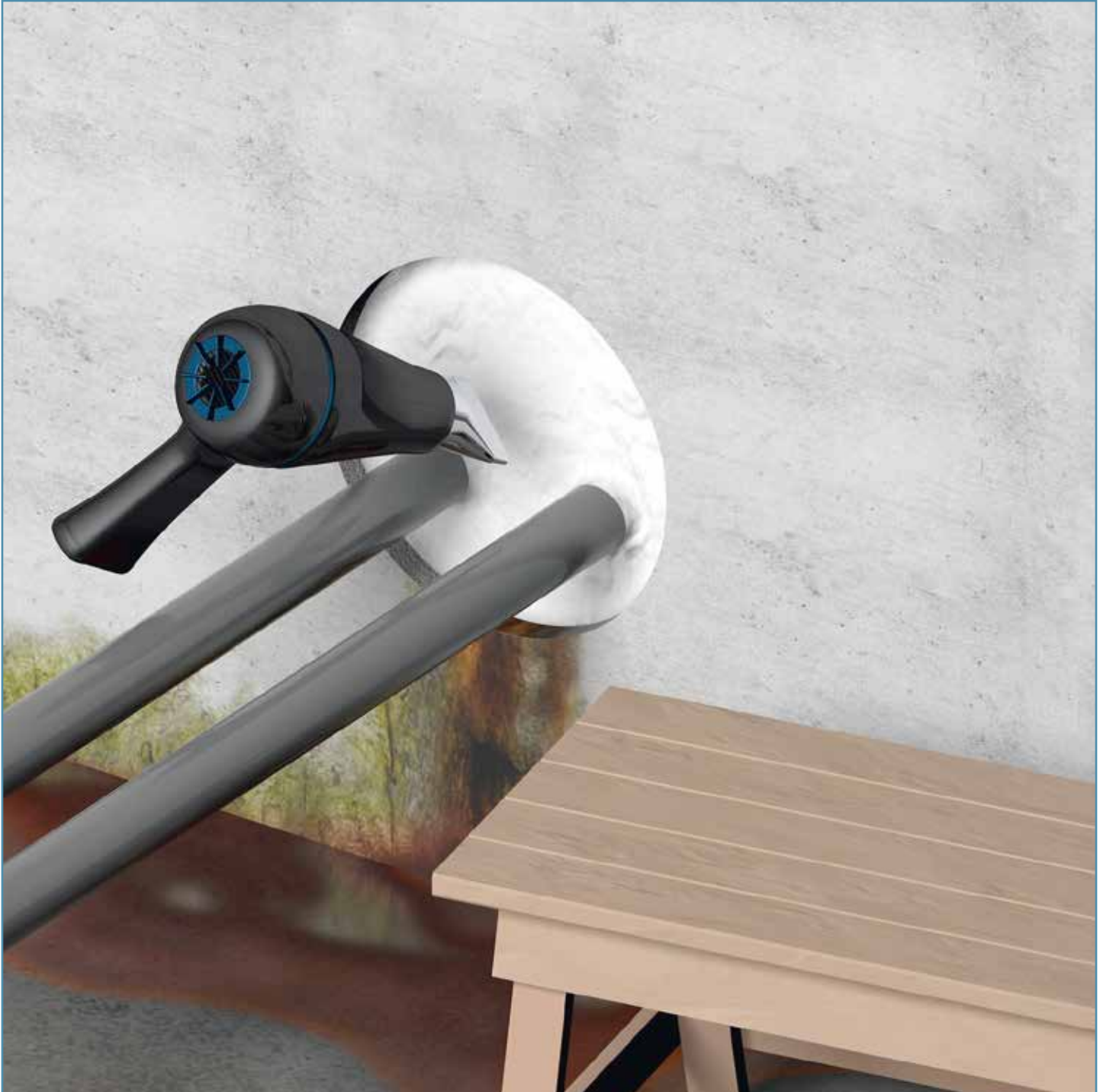
## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



It is advisable to apply a layer of ca. 15-20 mm NOFIRNO® sealant. With the BEELE® aluminum adjuster, the AQUASTOP® filling can be adjusted to the required 20 mm recess inside the transit.

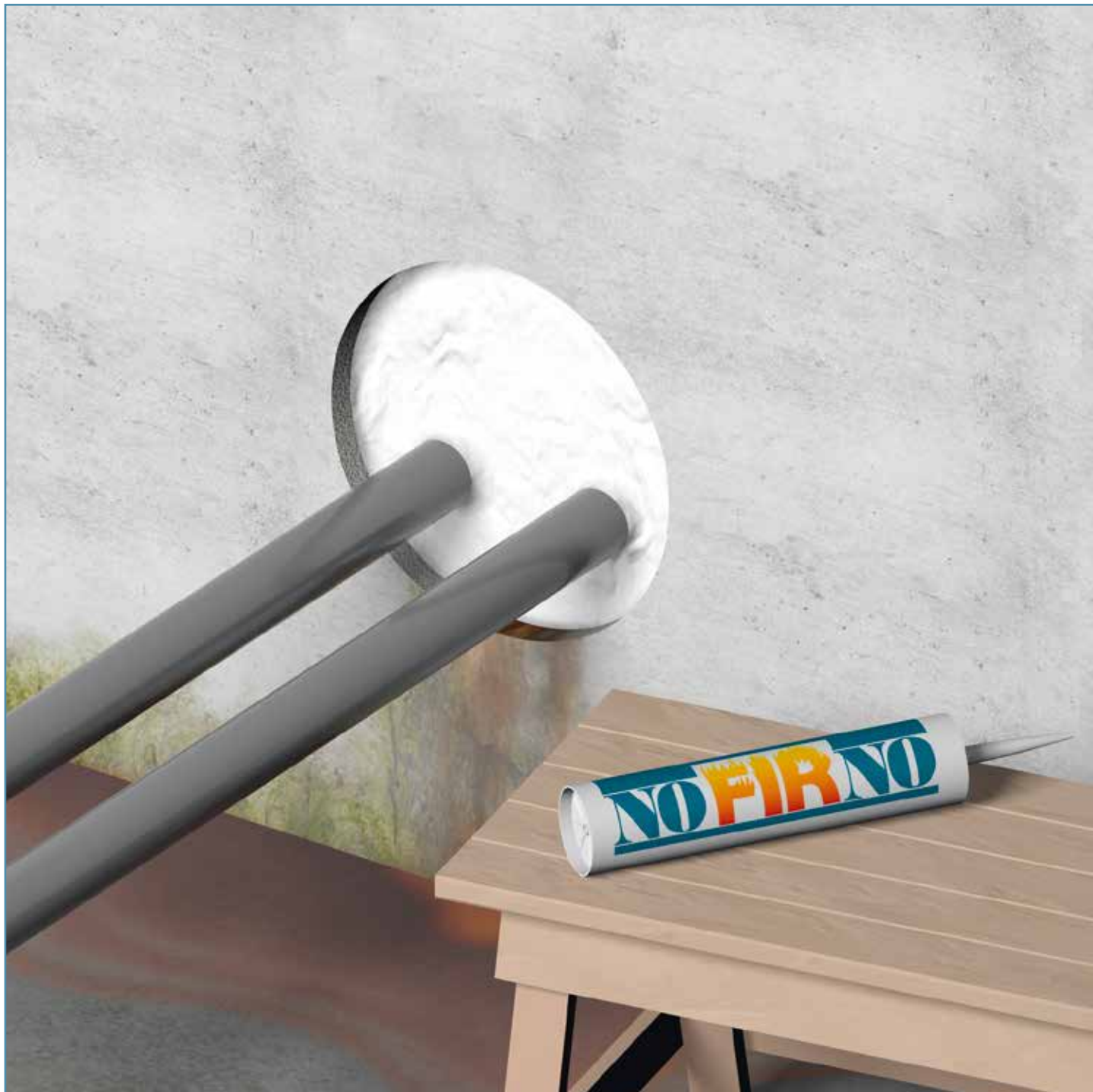
Note: the pressure ratings of the sealing system are optimum with a layer of 20 mm NOFIRNO® sealant.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



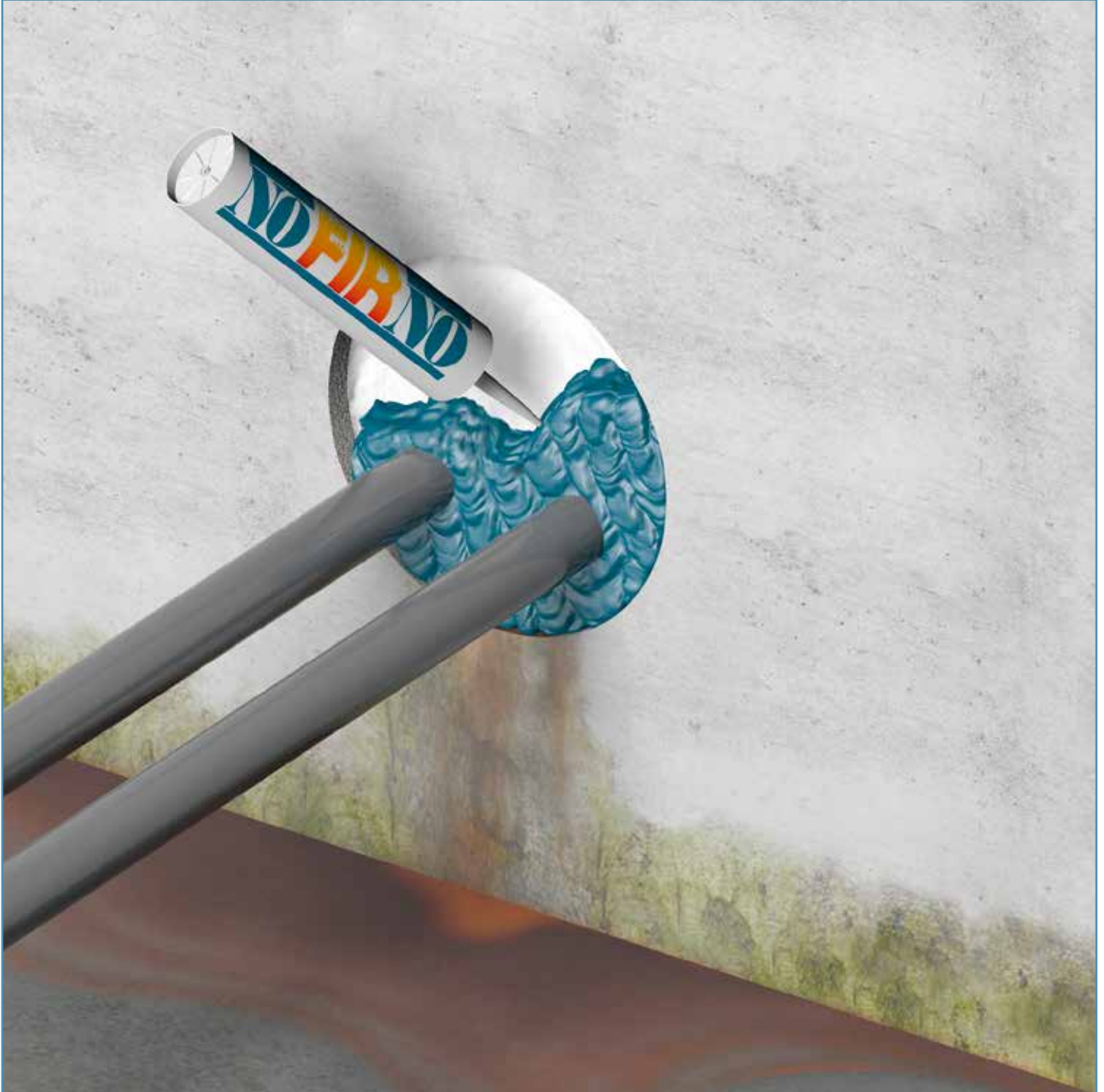
With an air blower, the wet surfaces, also that of the AQUASTOP® rubber, are dried properly. Be careful not to damage the cable sheathings. Note: a dry surface is needed to obtain optimum adhesion of the sealant.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



After drying, remove all dirt and other residues and start applying the NOFIRNO® sealant.  
Note: for optimum mechanical stability the sealant should be applied with a layer thickness of 20 mm.

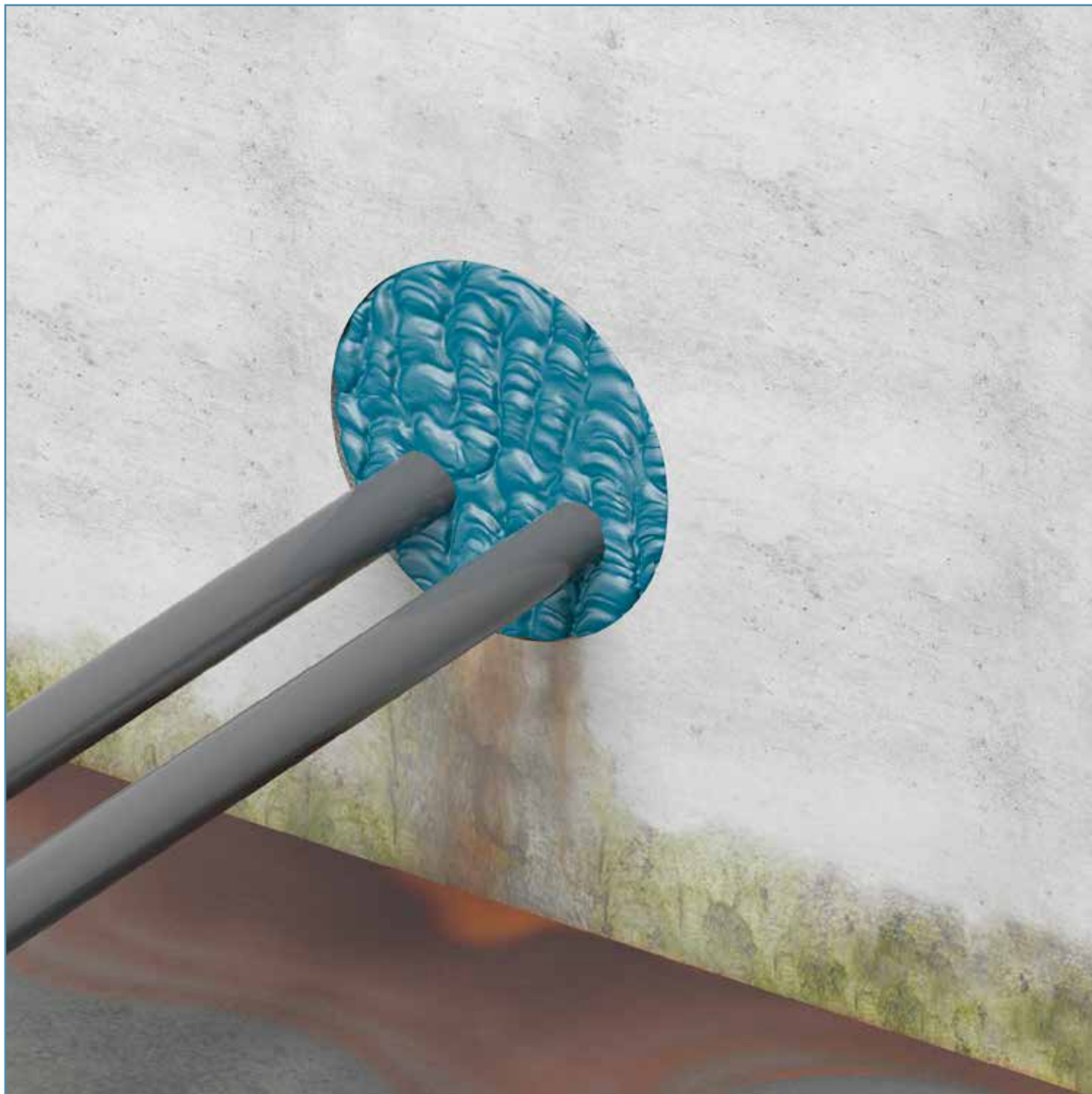
## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



A 15-20 mm thick layer of NOFIRNO® sealant is applied on top of the AQUASTOP® filling. NOFIRNO® sealant has an engineered viscosity, preventing the sealant from sagging and also allowing for a perfect flow of the sealant between the cables during injection. For multi-cable transits with a high filling rate, longer nozzles are available for the sealant cartridges.

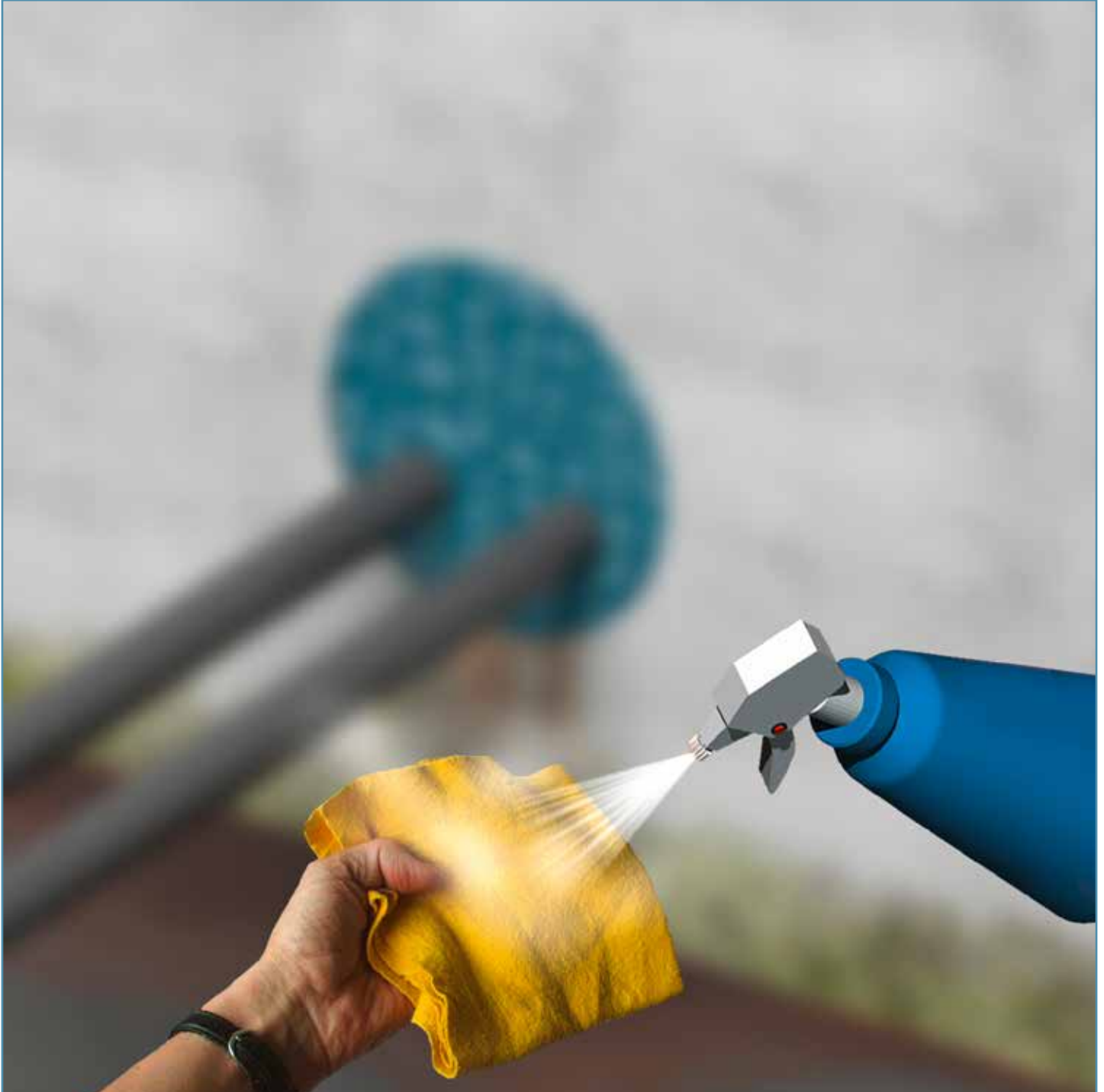
Wear protective gloves when working with NOFIRNO® sealant. Please refer to the Safety Data Sheet for more information.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



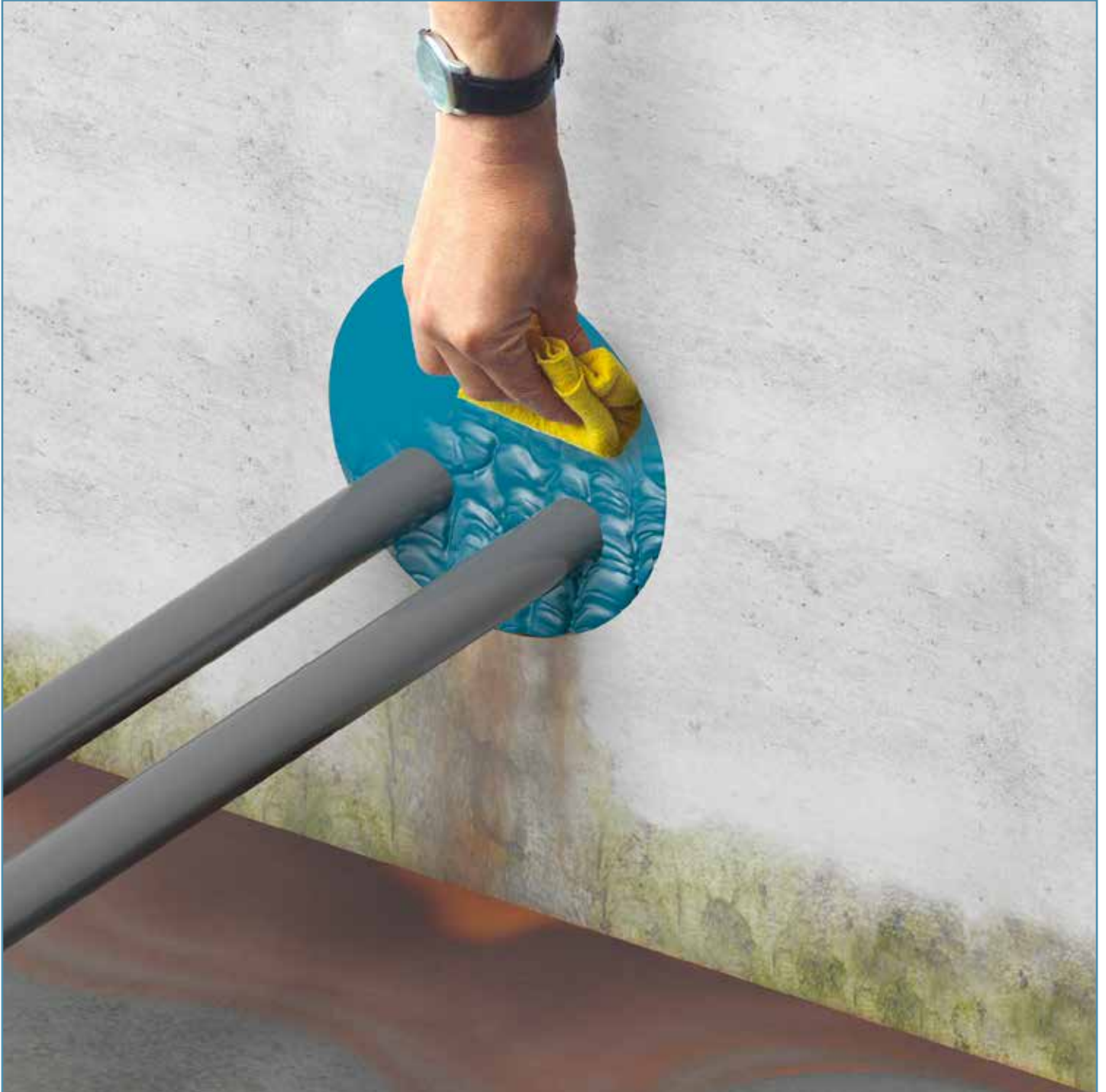
Skin formation of the sealant takes place after ca. 10-15 minutes. In case of larger conduits with a low cable filling rate, do not apply more sealant than can be finished within this time-frame. Start finishing the sealant layer directly after application.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



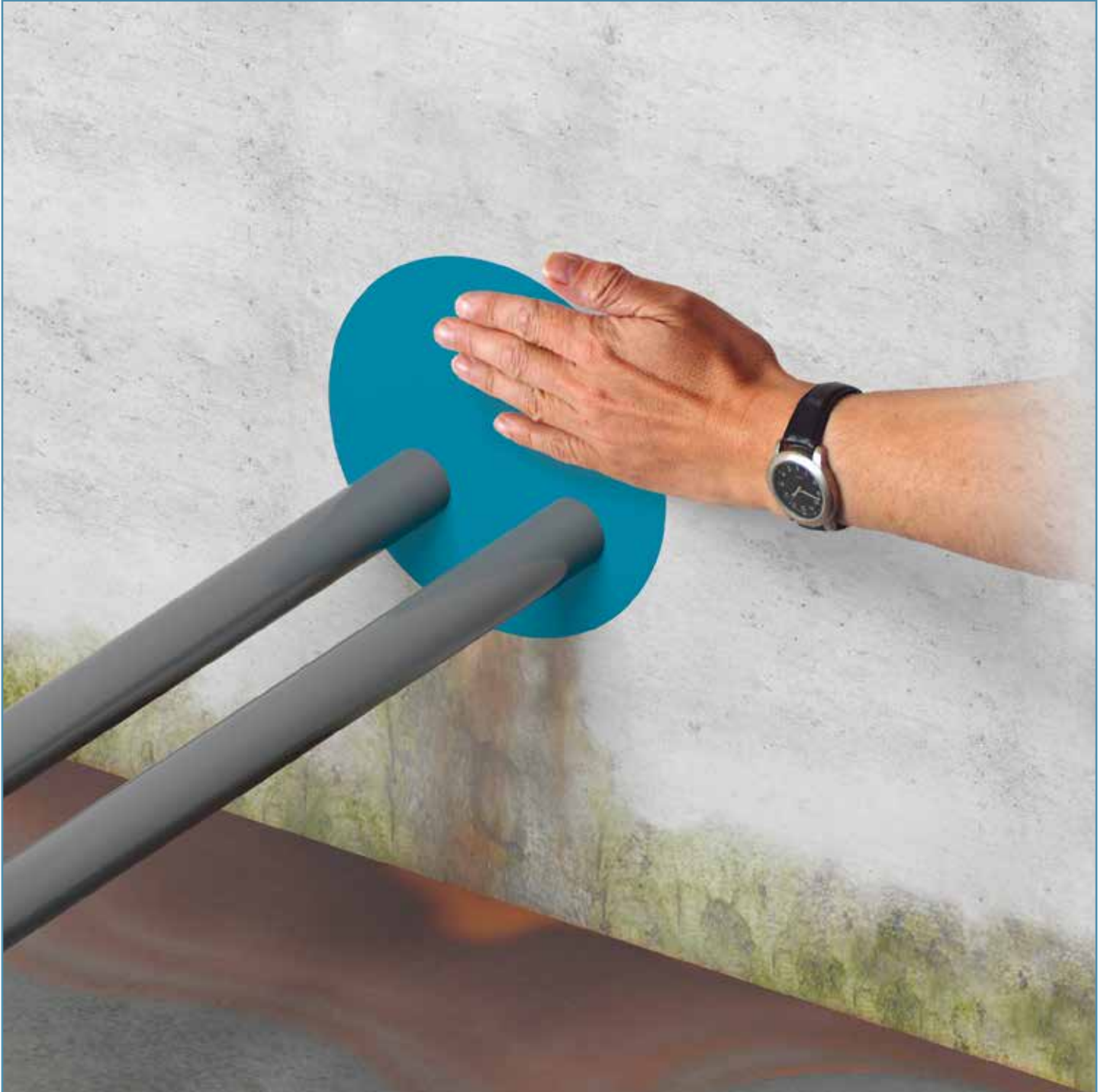
To smooth the surface of the NOFIRNO® sealant layer, a cloth is sprayed with water. This prevents the sealant from sticking to the cloth.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The cloth is then used to press down the sealant layer flush with the wall. It is of utmost importance to ensure that the sealant is compressed very tightly.

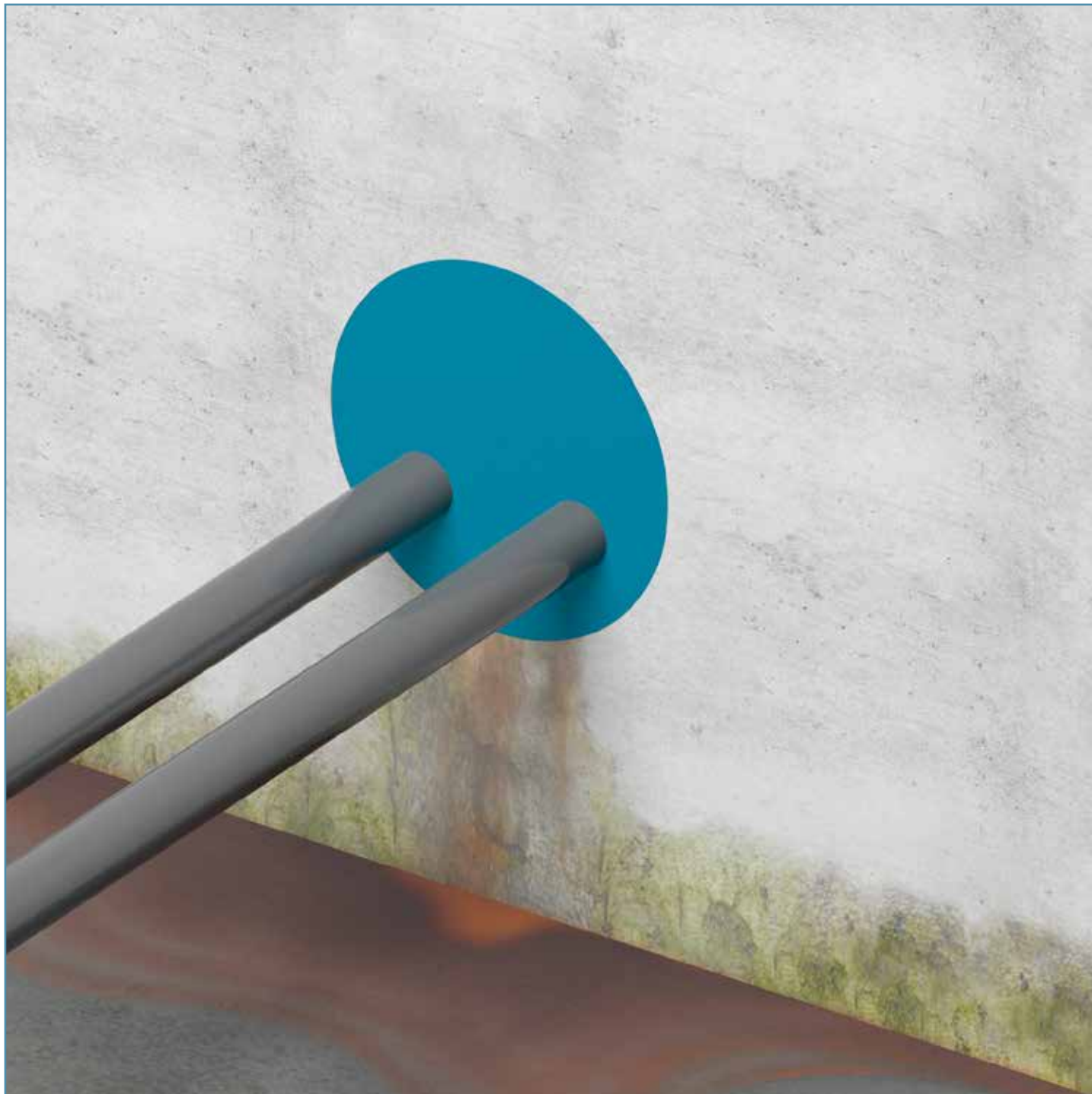
## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The surface can be smoothed by hand. Just wet the hands thoroughly with water. No dirty hands when working with NOFIRNO® and a very neat surface is the result. Note: this should only be a smoothing procedure. Do not pack or compress the sealant further when using soap water.

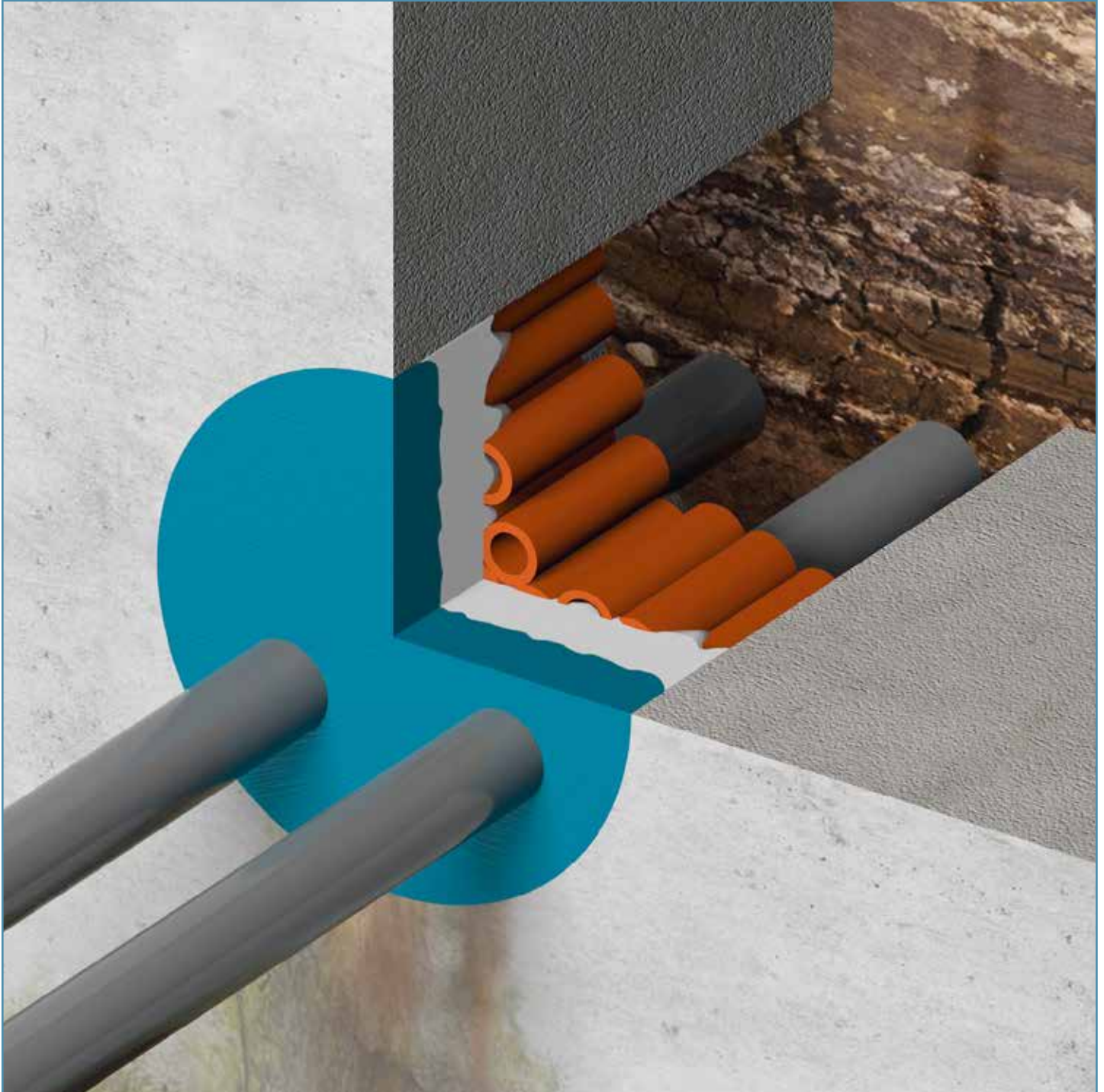
Wear protective gloves when working with NOFIRNO® sealant. Please refer to the Safety Data Sheet for more information.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



The NOFIRNO® sealant is water repellent so that water will drip off. Neat smoothing is helpful in this respect. The NOFIRNO® sealant is also seawater, UV, ozone and weathering resistant and offers a durability of decades.

## INSTALLATION INSTRUCTIONS AQUASTOP® - NOFIRNO® SEALING SYSTEM FOR LEAKING CONDUITS



To obtain optimum adhesion during the curing process of the sealant, all the cables should be tightly fixed at both sides of the transit, as close as possible to the transit, and immediately after finishing the transit. Movement of the cables during the curing process will impair the adhesion process to the cable sheathings.

Note: time needed for curing of the sealant is dependent on air humidity in combination with the environmental temperature. It is advisable to place a sticker near the finished transit, stating that the transit has been recently installed, and should not be touched or damaged.

# STATE-OF-THE ART MULTI-CABLE TRANSIT SEALING SYSTEMS



|| CONDUCTION ||



**CONTROFIL**  
MULTI-CABLE TRANSITS

**CET-A-SIL**

## RISE®

- For fire, gas, smoke and watertight sealing of multi-cable penetrations.
- Compact system. No precise fitting parts.
- No metal parts, no corrosion.
- Most cost-effective way of installation.
- No pre-engineering or special conduit frames.
- No restrictions on cable types and sizes, no insulation in front of the penetration needed.
- Adding or removing cables an easy matter.
- RISE® EXTEND-A-FRAME for upgrading block systems - doubles the usable space!
- RISE® CONDUCTION® for EMC penetrations - high attenuation values - no galvanic corrosion - no aging.
- **Proven - for new and upgraded installations.**
- The system of choice in shipyards worldwide for more than 25 years!

## NOFIRNO®

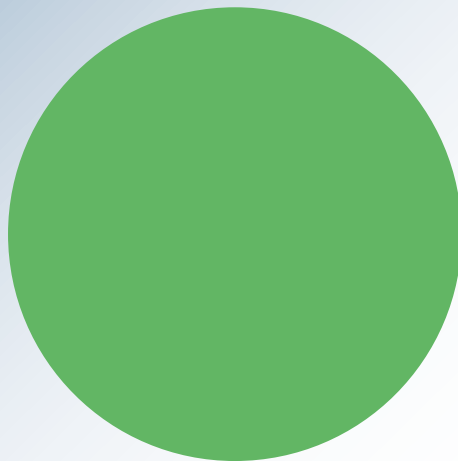
- System technology based on RISE®.
- Even easier installation.
- Even higher pressure ratings.
- Jet Fire tested for harshest applications.
- Bundled cable sets approved
- **Breakthrough - A-class with 15 mm both sides.**
- The system of choice for highest fire ratings and harshest environment!

## CONTROFIL®

- Newest technology for cable ducting and sealing.
- Newest rubber technology - CRUSHNOF® rubber.
- Shorter conduit depths - flexible composition.
- Prevents overfilling of cable transits.
- Fire tight - watertight.
- **Breakthrough - controlled filling of transits.**
- The system of choice for neat cable routing in installations.

## CET-A-SIL®

- Multi-gland system for electrical cabinets.
- Modular system - sealing plugs and modules.
- Suitable for IP 68 rated equipment.
- Watertight up to 4 meter water column.
- No compression on cable sheathings.
- No metal parts - no corrosion - no O-rings.
- **Breakthrough - no disassembling to add cables.**
- The alternative system for cable glands.



***WE CARE***

**BEELE ENGINEERING:  
A COMPANY DEDICATED  
TO SAFETY  
FOR OVER 45 YEARS**



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