



Planning and application consultant for building waterproofing and restoration

When buildings become damp or in need of restoration, this can quickly lead to more severe damage to the building structure. However, there are options for repairing such buildings. We'll show you ours.

Problems solved.



Problems solved. For any requirement.

Restoring, renovating, and modernising older existing buildings has become increasingly important in recent years. The most important aspect for permanently maintaining a building is protection against moisture.

It's imperative that the waterproofing is reliable. SCHOMBURG possesses decades of experience in this area, and we offer you an assortment of products that are matched exactly to each other.

This brochure is intended to provide you practical help and reliable solutions for upcoming tasks. Further information about SCHOMBURG and our product systems can be found at www.schomburg.com.



Planning and application consultant for building waterproofing and restoration



Contents

4 Planning and preparation

Protect and preserve value

- 4 Planning and using waterproofing
- 5 Water impact classes
- 6 Preparing substrates

8 Waterproofing systems

- 8 Cellar exterior waterproofing
 - 8 - Bituminous
 - 10 - Cementitious
- 12 Cellar interior waterproofing
- 14 Retroactive horizontal barrier
 - 14 - with liquid injection material
 - 16 - with paste injection material
- 18 Salt-loaded substrates
- 20 Ground level installation solutions
- 22 Garage repairs
- 24 Facade impregnation
- 26 Wastewater treatment plants
- 28 Service water containers
- 30 Vapour barrier for damp substrates
- 32 Foil sealing in new building waterproof concrete
- 34 Integral waterproofing of concrete components
- 36 Crack repairs, substrates
- 38 Crack repairs, wall surfaces
- 40 Retrospective execution of construction and movement joints in concrete construction
- 42 Execution of construction joints in concrete construction
 - 42 - with crystalline waterstop sheet
 - 44 - with injection hose system
 - 46 - with elastomer swelling joint tape

48 General information

for planning and execution

- 50 Joint tape
- 52 DIN 18533 criteria
- 54 German and European standards
- 56 Regulations



Planning and using waterproofing

Protect and preserve value

Protecting a building against penetrating moisture, ensuring a pleasant living environment on the interior, and granting the building eternal youth: Accepting these challenges means working with knowledge and precision to implement projects to the satisfaction of the building owner.

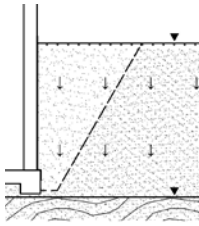
Living and working in an environment with a comfortable temperature, that is hygienic and - above all - healthy is no simple matter. To ensure long-term preservation of the value of a building, carefully planned waterproofing solutions are needed. Every building is continuously exposed to external environmental conditions and must be adjusted individually in accordance with the surrounding influences. The waterproofing products and system components must be compatible with each other and matched to suit each other.

From substrate preparation to waterproofing for waste water treatment plants and crack waterproofing, SCHOMBURG offers a complete package for every thinkable challenge. Building components in the ground especially require high-quality, professional implementation of waterproofing. Follow-up improvements or even essential restorations involve high costs and

require a lot of time, since after the building pit is filled in, the exterior area is difficult to access. For this reason, SCHOMBURG offers optimised solutions for cellar exterior waterproofing in particular to ensure a water-tight cellar.

Selection of matching waterproofing components for cellar masonry depends on a variety of factors. On the one hand, this depends on the use of the cellar, while on the other, various so-called "water impact classes" are involved. In this case, the type and method of penetrating moisture are referred to. Pressing groundwater from outside required another type of waterproofing application than normal ground moisture. The correct application is regulated by DIN 18533. This specifies corresponding waterproofing procedures for four different water impact classes.

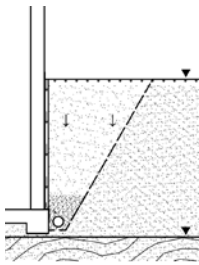
Water impact classes



W1.1-E – Ground moisture and non-pressing water for floor slabs and walls in direct ground

These impact classes are present when **severely water-permeable** ground is present ($k > 10^{-4}$ m/s) and the measured water level (maximum groundwater/maximum flood level) ≥ 50 cm lies below the lowest

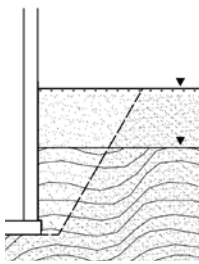
waterproofing level. This impact can be waterproofed using a polymer-modified bituminous thick layer coating (PMBC) or a cementitious, crack-bridging waterproofing slurry (MDS).



W1.2-E – Ground moisture and non-pressing water for floor slabs and walls in direct ground with drainage

These impact classes are present when **less water-permeable** ground is present ($k \leq 10^{-4}$ m/s) and the measured water level (maximum groundwater/maximum flood level) ≥ 50 cm lies below the lowest waterproofing level. The resulting water accumulation is removed by permanently functioning drainage. If the drainage does not function, pressing

water is present. This impact can be waterproofed using a polymer-modified bituminous thick layer coating (PMBC) or a cementitious, crack-bridging waterproofing slurry (MDS).



W2.1-E – Moderate influence of pressing water

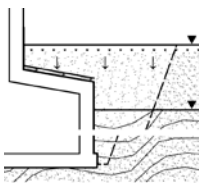
This impact class is present when groundwater, accumulating water, or flood water affect the component directly in the ground. Up to a water column of ≤ 3 m, the building component may be waterproofed with polymer-modified bituminous thick layer

coating (PMBC). The use of cementitious, crack-bridging waterproofing slurry is not intended for this impact class and may only be agreed to separately with the respective employer.

W2.2-E – High influence of pressing water

This impact class is present when groundwater, accumulating water, or flood water affect the component in direct ground and the foundation depth is ≥ 3 m. The impact class distinguishes between two situations. Situation 1: The groundwater and flood water level is beneath the foundation depth. Situation 2:

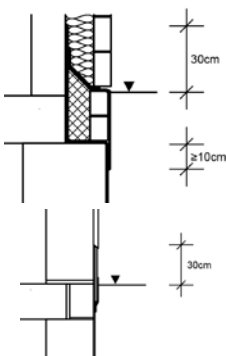
The groundwater and flood water level is 3 m above the foundation depth. With this exposure, the use of PMBC or flexible polymer-modified thick layer coatings (FPD) are to be agreed separately with the customer.



W3-E – Non-pressing water on earth-covered ceilings

This impact class is present if an earth-covered ceiling is impacted directly by precipitation with a water load of ≤ 10 cm accumulation depth and the measured water level is ≥ 30 cm below the lowest point of the ceiling. This

impact can be waterproofed using a polymer-modified bituminous thick layer coating (PMBC).



W4-E – Splash water at the wall base and capillary water in and under walls in direct ground

The "wall base" describes the area approx. 20 cm below the top edge and approx. 30 cm above the top edge. In this area, the building component must be waterproofed against penetrating moisture with polymer-modified bituminous thick layer coating or

a cementitious, crack-bridging waterproofing slurry. To avoid rising capillary water in walls in direct ground, it is possible to use a cementitious, crack-bridging waterproofing slurry as profile waterproofing.



Preparing substrates

For ideal results

A sustainably functioning waterproofing requires a thorough and carefully prepared building surface to be treated. After all, the finished waterproofing is only as good as the substrate will allow.



The waterproofing materials must harmonise with the substrate and require the best possible bonding for secure and long-lasting sealing function. For this reason, substrate preparation and its specific requirements are regulated in parts 1 and 3 of DIN 18533. The standard specifies the basic principles and details like the evenness, burr removal, and cleaning, as they apply to every user or installer.

The ideal pre-treatment of the substrate is based on the respective present waterproofing situation. For example, waterproofing on basement walls requires other procedures than with coatings in garages. Depending on the relevant area, there are different system solutions for the respective application area.

Building condition analysis

Before any waterproofing measures, a professional building condition analysis of the substrate must be completed. In case of concrete substrates, bubble formation frequently results in the still wet coating. This is due to the air voids that are hardly visible and often covered with concrete paste on the surface of the concrete. The air trapped in the pores expands due to exposure to sunlight and continuously pushes outwards. In this case, the fresh coating is pressed away from the substrate. This is prevented by removing the concrete paste with the help of a steel brush. In case of more stubborn concrete paste, sandblasting may even be necessary for clean removal. The open pores may then be filled with suitable mortar or with the right SCHOMBURG waterproofing following application of a primer.

Thanks to these work steps, the substrate is pre-treated optimally so that the waterproofing is able to be completed functionally after the drying phase of the mortar.



Substrate preparation with SCHOMBURG products

The substrate must be load-bearing, fine-pored, and free of dirt and dust. Unevenness and ridges must be cleared meticulously. As already discussed in the building condition analysis, open butt joints up to 5 mm and surface profiles and unevenness of stones (e.g. plaster grooves on brickwork or heavy concrete blocks) must be levelled using grouting, e.g. with AQUAFIN-1K. Depressions that are not closed and larger than 5 mm, e.g. mortar pockets or damaged areas must be closed with mortar, e.g. using ASOCRET-M30.

Furthermore, the surface must be free of gaping cracks and adhesion inhibiting substances, e.g. oil, paint, laitance layers, and loose components. On the floor slabs, laitance layers must be thoroughly removed mechanically down to the solid core to ensure a high level of bonding. The base slab-wall transition, which is a sensitive, delicate area, should be pre-treated with slurry using AQUAFIN-1K. Next, a covered fillet is applied while still wet using ASOCRET-M30. Alternatively, the covered fillet area can be applied using ASO-Joint-Tape-2000-S together with

AQUAFIN-RB400. After curing completely, the covered fillet area, including 15 cm of the front side, is also covered with AQUAFIN-RB400.

The substrate should be pre-wetted so that it is matt damp while applying the waterproofing layer. Strongly absorbent substrates like aerated concrete must be primed with ASO-Unigrund for improved adhesion. On metal substrates, use ASODUR-GBM (including quartz sand sprinkling) as a pore-sealed primer. If SOLOPLAN-30-PLUS is used to level off the surface in large layer thickness widths (up to 30 mm), the process is the same. If moisture from the rear is expected, then use ASODUR-SG2 instead.

Ideal substrates consist of dense concrete, cement-based screeds, P II and P III plaster, and fully grouted masonry work. Formwork and heavy concrete blocks, as well as uneven masonry must be levelled with cement-based mortar.



Cellar exterior waterproofing for new and existing buildings

Bituminous thick layer coatings (PMBC)

Dry and absolutely sealed basement areas cannot be taken for granted. Optimal cellar exterior waterproofing is among the most important requirements for a building that is intended to preserve sustainably it from water damage. Because moisture can penetrate basement spaces from a variety of angles, different waterproofing systems are required to produce comprehensive protection and a dry, mould-free living environment.

COMPONENTS

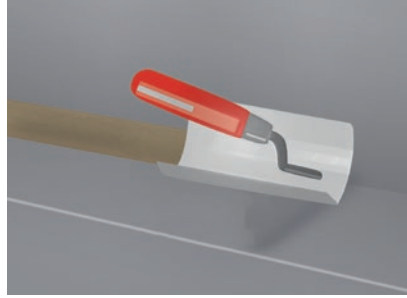
AQUAFIN-1K
ASOCRET-M30
ADF-Pipe-Gasket
AQUAFIN-RB400
COMBIFLEX-EL
ASO-Systemvlies-02
COMBIDIC-2K-CLASSIC /
COMBIDIC-2K-PREMIUM
ASOL-FE
ADF-Pipe-Gasket
ASO reinforcing fabric

Application



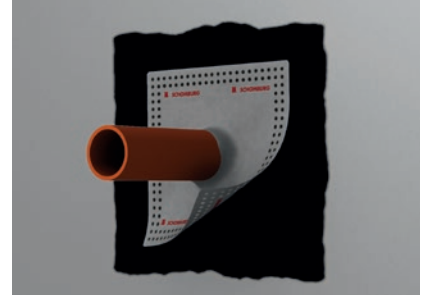
1. Level the substrate (as required)

Surface levelling with ASOCRET-M30 in a single application or AQUAFIN-1K in at least two applications by means of trowel techniques or with suitable spray equipment.



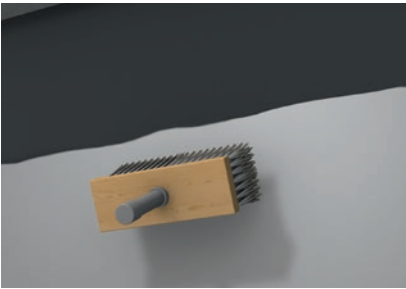
2. Waterproof the wall-floor transition

Install a cementitious sealing cove in the wall-floor transition with ASOCRET-M30. First apply a bonding slurry. This can consist of ASOCRET-M30 or AQUAFIN-1K. Alternatively, the sealing cove can be made of ASO-Joint-Tape-2000-S.



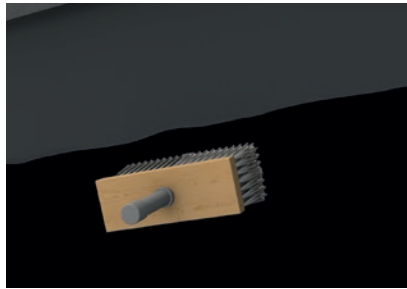
3. Waterproof pipe penetrations

Apply COMBIDIC-2K-CLASSIC or COMBIDIC-2K-PREMIUM with a 4 mm notched trowel and smooth it, adhere the ADF-Pipe-Gasket without wrinkles and then process it covering the whole area.



4. Base waterproofing transition

Apply AQUAFIN-RB400 in at least two application steps using a brush, flat trowel, or suitable spray equipment. Application at least 30 cm above and at least 20 cm below ground level.



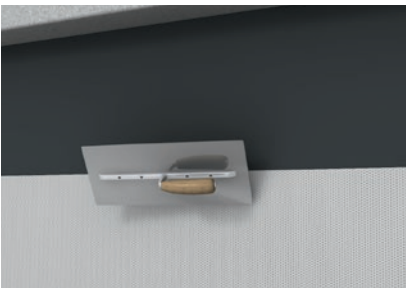
5. Primer

Before applying COMBIDIC-2K-PREMIUM or COMBIDIC-2K-CLASSIC, the substrate must be primed with ASOL-FE diluted 1:5 with water.



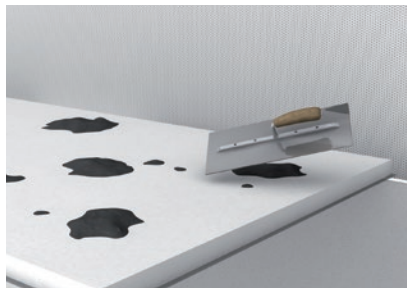
6. PMBC waterproofing

Apply COMBIDIC-2K-PREMIUM, COMBIDIC-2K-CLASSIC or COMBIFLEX-EL using trowel techniques with a load case-appropriate layer thickness. Apply the bituminous thick layer coating with an overlap of at least 10 cm on the base waterproofing (figure 4).



7. Protective and gliding fleece (for cationic bitumen)

Application for masonry work recommended, required for concrete components: Cut ASO-Systemvlies-02 (system fleece) to the correct length and apply it without overlapping to the fresh bitumen coating without wrinkles and brush it smooth.



8. Protection and drainage plates

After drying out the waterproofing layer, apply COMBIDIC-1K bituminous thick layer coating in heaps to the uncovered side of a suitable protection and drainage element, and then press it onto the waterproofed substrate.



9. Perimeter insulation

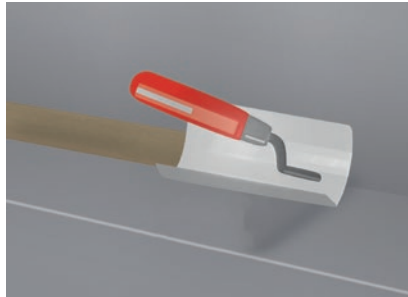
Adhere the insulation in accordance with the manufacturer's specifications close-fitting and offset covering the whole area using COMBIDIC-2K-CLASSIC or COMBIDIC-2K-PREMIUM.

Application



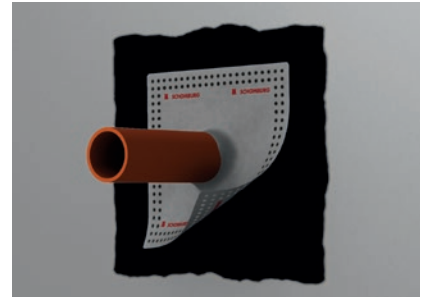
1. Level the substrate (as required)

Surface levelling with ASOCRET-M30 in a single application or AQUAFIN-1K in at least two applications by means of trowel techniques or with suitable spray equipment.



2. Waterproof the wall-floor transition

Install a cementitious sealing cove in the wall-floor transition with ASOCRET-M30. First apply a bonding slurry. This can consist of ASOCRET-M30 or AQUAFIN-1K. Alternatively, the sealing cove can be made of ASO-Joint-Tape-2000-S.



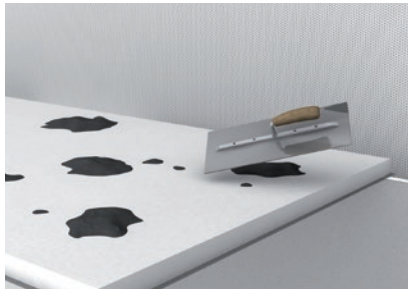
3. Waterproof pipe penetrations

Apply AQUAFIN-RB400 with a 4 mm notched trowel and smooth it, adhere the ADF-Pipe-Gasket) without wrinkles and then process it covering the whole area.



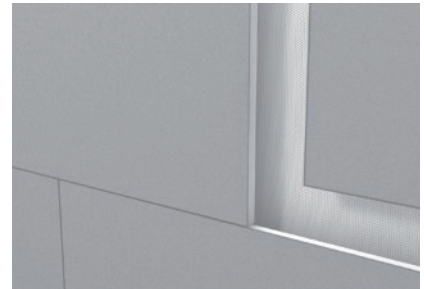
4. FPD-MDS waterproofing

Apply AQUAFIN-RB400 with a trowel/brush or the spray technique with a load case-appropriate layer thickness.



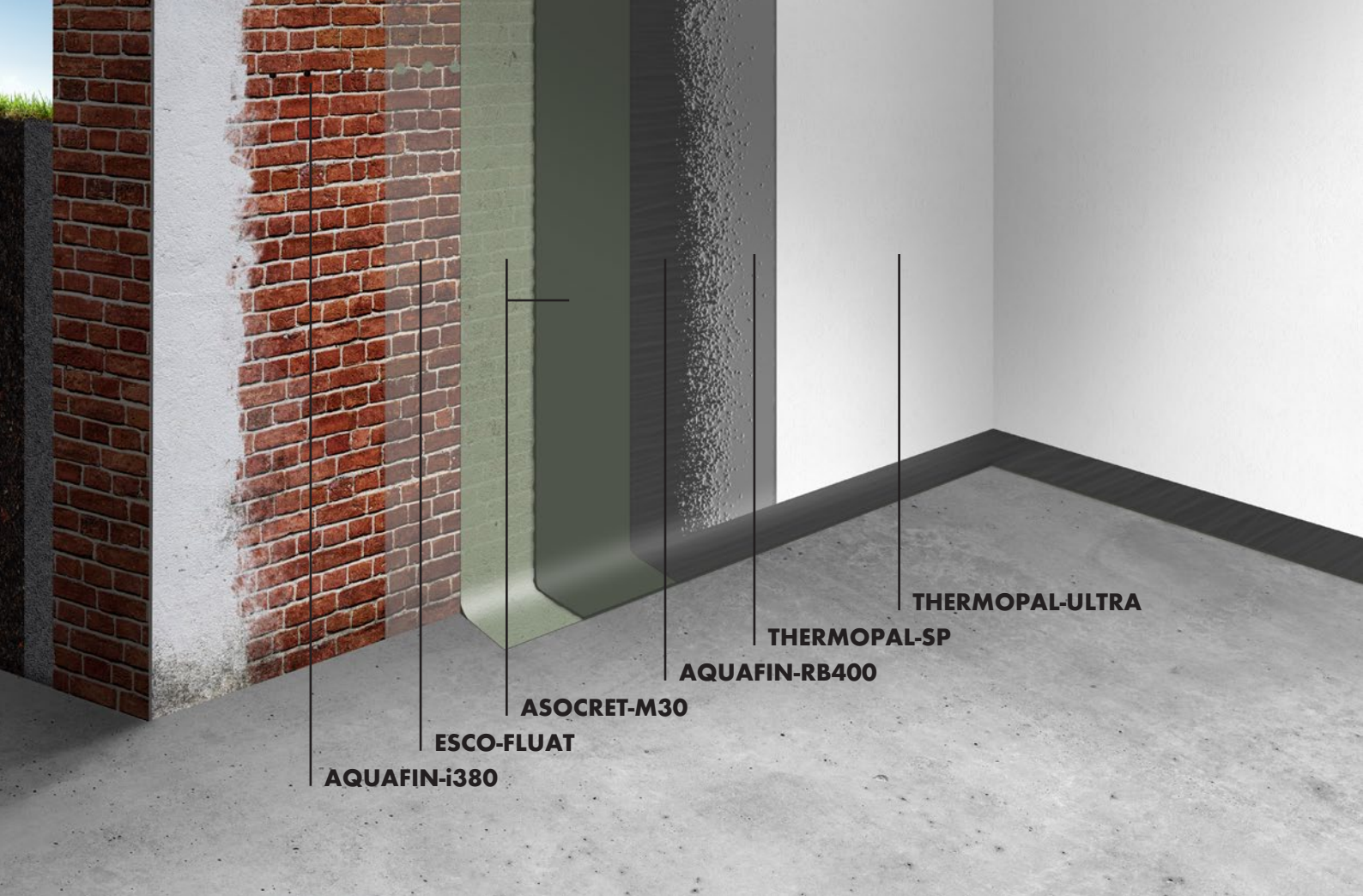
5. Protection and drainage plates

After the waterproofing layer has dried, the protective layers can be bonded to cover the whole area with a mixture of AQUAFIN-RB400 / quartz sand 0.1–0.35 mm and a suitable notched trowel using the Buttering-Floating method.



6. Perimeter insulation

Bond the insulation tightly with AQUAFIN-RB400 and offset, such that it covers the whole area in accordance with the manufacturer's instructions.



Cellar interior waterproofing in existing buildings

In the flexible system with radon protection

Protection for buildings against extended destruction by water is a central topic of building restoration. Buildings directly in the ground that are not protected against moisture are exposed to decay. A damp wall is also a thermal bridge that can result in subsequent damages. In light of increasing energy costs, a dry wall contributes to the reduction of energy costs. Additional aspects of renovation include improved living comfort and improved real estate value. Retroactive cellar interior waterproofing is the most efficient way to fulfil this requirement.

COMPONENTS

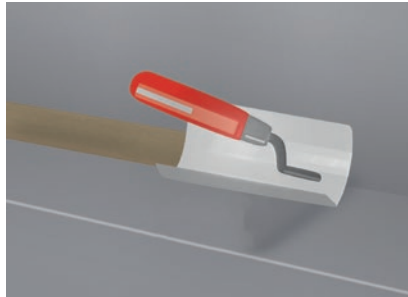
AQUAFIN-RB400
ASOCRET-M30
ESCO-FLUAT
THERMOPAL-SP
THERMOPAL-ULTRA
THERMOPAL-FS33

Application



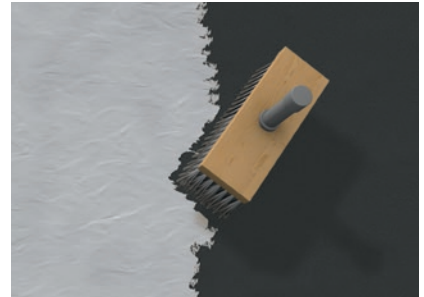
1. Levelling and pre-sealing

Levelling of the exposed, load-bearing wall surfaces and application of the pre-seal in one application step with ASOCRET-M30 as a levelling and waterproof plaster. Treat the wall surfaces with ESCO-Fluat beforehand.



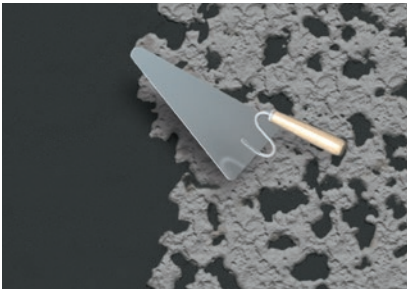
2. Waterproof the wall-floor transition

Install a cementitious sealing cove in the wall-floor transition with ASOCRET-M30.



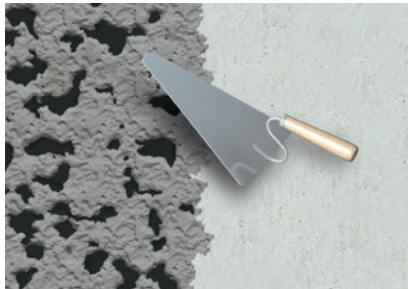
3. Waterproof the wall surfaces (subject to cracking)

After curing the surfaces, AQUAFIN-RB400 is applied in two application steps using a brush/trowel or spray techniques.



4. Splatterdash coat

A fully covering splatterdash coat of THERMOPAL-SP is applied to the waterproofed substrate for improved bonding of the following restoration plaster.



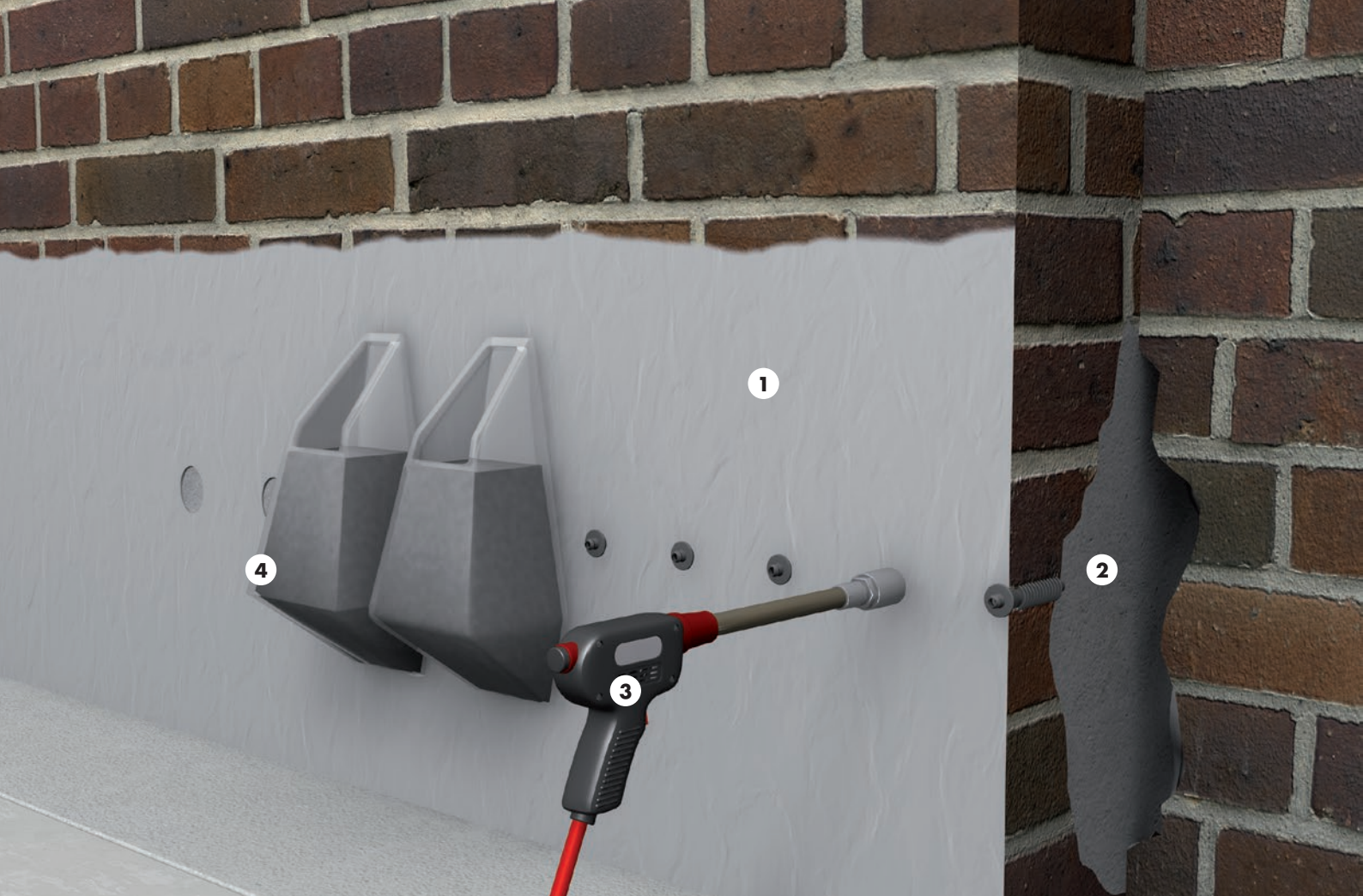
5. Apply restoration plaster

Apply up to max. 3 cm THERMOPAL-ULTRA in one application step. After sufficient standing time, the surface may be grid floated or rubbed down.



6. Apply fine plaster

Apply THERMOPAL-FS33 cementitious fine plaster using trowel techniques in the required layer thickness up to max. 3 mm. After drying, treat the surface with a sponge rubber or a felt or sponge board.



Retroactive horizontal barrier with liquid injection material

In case of damage due to capillary rising moisture, it is possible to apply a horizontal barrier to the masonry work retroactively. Depending on the thickness of the masonry work and the degree of moisture penetration, the pressure injection process may be suitable. In this case, holes featuring a distance from each other of 10–12.5 cm from hole centre to hole centre are drilled into the masonry work. The drilled holes are arranged horizontally in the bearing joint or at an angle of 45°. The drilled hole depth is approximately 5 cm less than the masonry thickness. Corresponding injection packers are used in the pressure process to inject the injection material into the substrate.

COMPONENTS

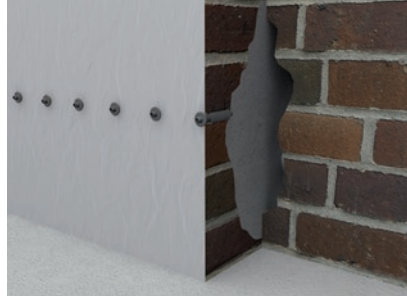
AQUAFIN-1K
ASOCRET-BM
ASOCRET-M30
AQUAFIN-F

Application



1. Level the wall surface

To optimise the distribution of the horizontal barrier, AQUAFIN-1K is applied up to approx. 10 cm above the planned drilled hole depth using brush techniques.



2. Fill voids

Fill voids and flaws in the substrate with ASOCRET-BM drilled hole material.



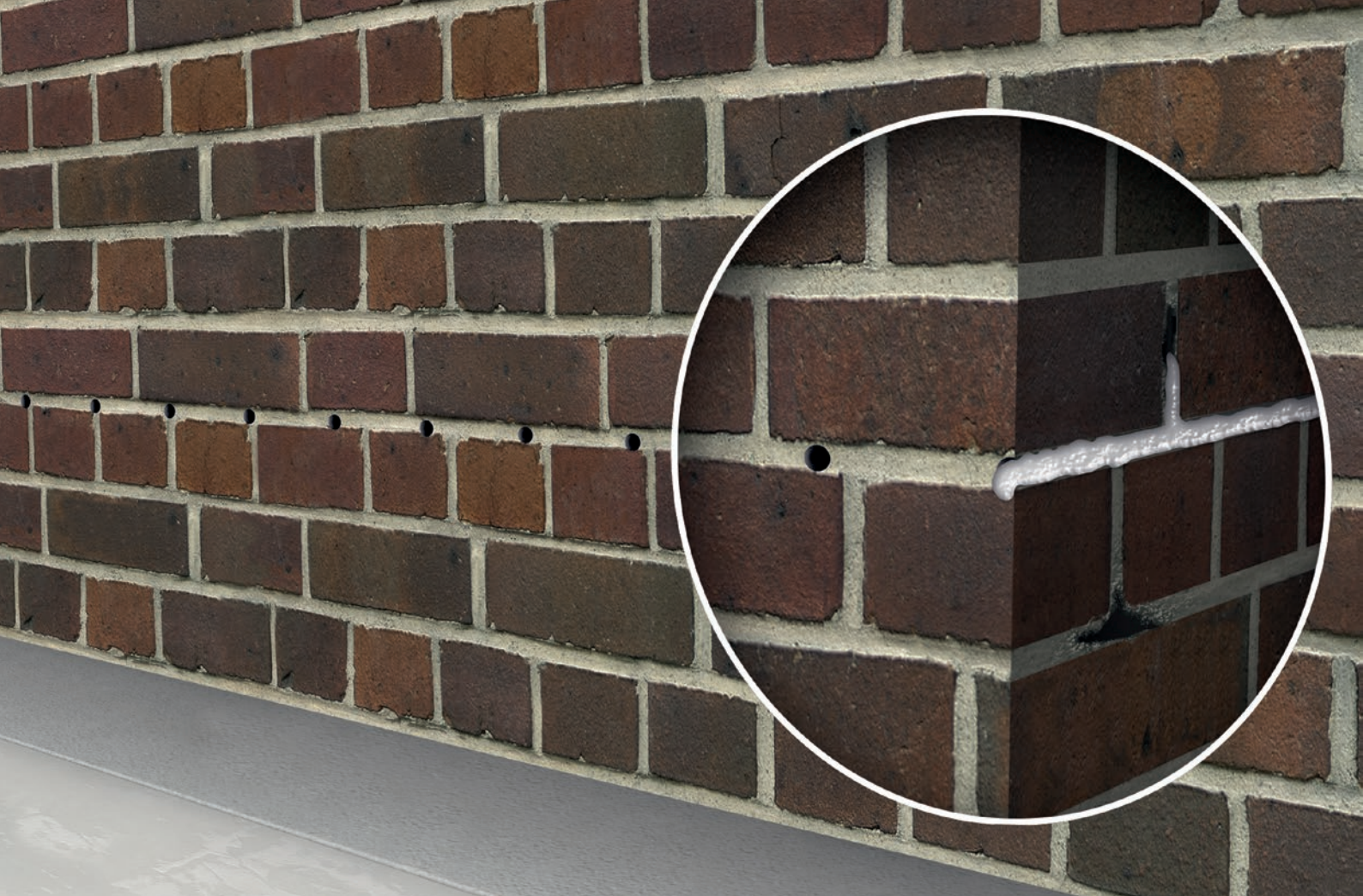
3. Produce the horizontal barrier

After drilling the holes (drilled hole distance between 10-12.5 cm), inject AQUAFIN-F with low pressure techniques (<10 bar) into the substrate using injection packers. The injection pressure is maintained until the area near the packer appears glossy-matte. After approx. 24 hours, remove the packers and close the holes with ASOCRET-BM.



4. Alternatively: Pressureless Injection

In a pressure-free process, storage containers are engaged in the drilled holes and filled with the injection material. The distribution in the substrate takes place exclusively via gravity and the absorptive behaviour of the substrate. Continue the filling process until no more injection medium is able to be absorbed. Similar to the pressure process, the drilled holes are sealed with the ASOCRET-BM or ASOCRET-M30 drilled hole mortar.



Retroactive horizontal barrier with paste injection material

AQUAFIN-i380 is an effective solution for retroactive horizontal barriers. The Silan-based injection cream is processed without any pressure or using the low pressure techniques and has a hydrophobic effect on rising moisture in the masonry work. The material has been tested and certified in accordance with the WTA data sheet ("masonry injection against capillary moisture") at a penetrating moisture level of 95%. Classic, aqueous horizontal barriers are applied without any pressure up to a penetrating moisture level of < 60%. At a moisture penetration level of > 60%, application using low pressure techniques is recommended. One of the many advantages of AQUAFIN-i380: Even in case of a moisture penetration level up to 95%, this injection cream can be used without any pressure. The active ingredient contained is very fine and highly effective due to its special production technique. It does not react with the water, but rather only with the substrate. AQUAFIN-i380 is hydrophilic and therefore distributes itself especially rapidly in the water present in the masonry work. This will lead to 100% saturation of the pores over time. After the reaction with the substrate, the capillaries have been made water-repellent. Capillary water transportation is prevented and

the substrate dries out.

The practical 550 ml tubular bag is applied using an injection pistol. Slowly pressing and simultaneously pulling out the injection hose ensures that the drilled holes are filled completely. Due to the creamy consistency, application is also possible on horizontal drilled holes and inhomogeneity in the masonry work. The risk of controlled run off like with aqueous horizontal barriers is omitted.

COMPONENTS

AQUAFIN-i380
ASOCRET-BM
ASOCRET-M30

Application



1. Drill holes

Create drilled holes at a distance of approx. 12.5 cm and a drill angle of 0° – 45° with an electro-pneumatic drill that operates as shudder-free as possible.



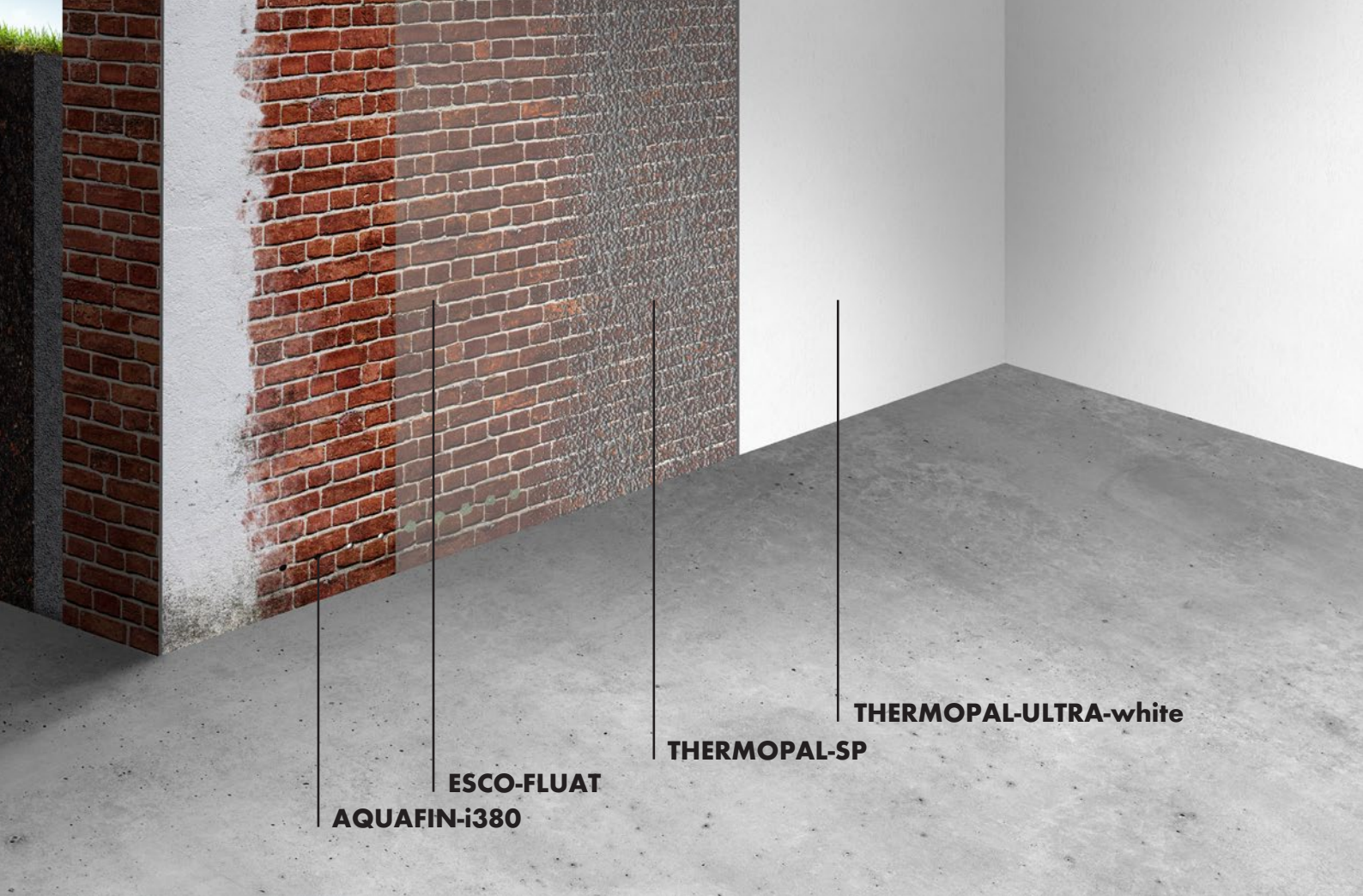
2. Clean drilled holes

Prior to injection, dust from drilling must be removed thoroughly to ensure maximum possible absorption of the active substance in the masonry work.



3. Produce the horizontal barrier

After cleaning the drilled holes, AQUAFIN-i380 is injected using an injection pistol without any pressure. Material must be pressed in until the drilled hole is filled completely. After successful horizontal waterproofing, drilled holes are sealed using ASOCRET-BM or ASOCRET-M30 drilled hole and void filling mortar in accordance with the structure.



AQUAFIN-i380
ESCO-FLUAT

THERMOPAL-SP

THERMOPAL-ULTRA-white

Renovation of salt-loaded substrates in the THERMOPAL system

Moisture and salt-loaded substrates frequently occur in legacy buildings. For professional and enduring restoration of these surfaces, the resulting salt loading must be analysed exactly to ensure that the right product systems can be used. The THERMOPAL system developed for this is not only suitable for surfaces like this, it also supports renovation of formerly mould-contaminated surfaces at the same time. Legacy buildings become completely restored structures.

COMPONENTS

ESCO-FLUAT
THERMOPAL-SP
THERMOPAL-GP11
THERMOPAL-ULTRA-white
THERMOPAL-FS33

Application



1. Salt-loaded surface

The salts present in the masonry work have a hygroscopic effect and migrate to the surface, since less moisture is present there due to the evaporation zone and good conditions for crystal formation are available there. This causes the plaster surface to decay.



2. Apply salt converter

Saturate the exposed masonry work with ESCO-FLUAT one or two times using brush techniques (depending on the salt loading and absorbency of the substrate). Salts that damage the building are transformed into salts that are less soluble and cannot be transmitted to the new, fresh plaster layer.



3. Apply splatterdash coat

Apply THERMOPAL-SP drying mortar as semi-covering plaster primer preparation in accordance with plastering technique standards (approx. 50% surface wetting) featuring a layer thickness of max. 5 mm. Pre-wet the substrate lightly as required to ensure good bonding.



4. Apply base plaster

In case of larger surface irregularities, THERMOPAL-GP11 is applied in layer thickness from 10 - 30 mm (in multiple layers in case of thicker surfaces). Strike off the previous layer with a plasterer's darby, and immediately after stiffening, roughen up horizontally and allow to dry.



5. Apply restoration plaster

Apply up to max. 3 cm THERMOPAL-ULTRA-white in one application step. After sufficient standing time, the surface may be grid floated or rubbed down.



6. Apply fine plaster (optional)

Apply THERMOPAL-FS33 cementitious fine plaster using trowel techniques in the required layer thickness up to max. 3 mm. After drying, remove the surface with a sponge rubber or a felt or sponge board.



Waterproofing of ground-level installation solutions

Double-façade masonry work, without basement

Waterproofing ground-level elements in double-façade wall structures is a special challenge for planners and the workers implementing it. The fact that waterproofing also involves a variety of professions is also difficult. The AQUAFIN sealing system, which consists of a variety of highly elastic joint tapes combined with AQUAFIN-RB400 flexible cementitious waterproofing, enables the particular element to be reliably waterproofed within the context of alternating materials.

COMPONENTS

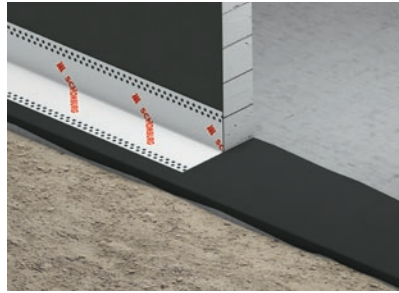
AQUAFIN-RB400
ASO-Joint-Tape-2000-S
ASO-Joint Tape-2000-S-corners
ASO-Connector-Joint-Tape

Application



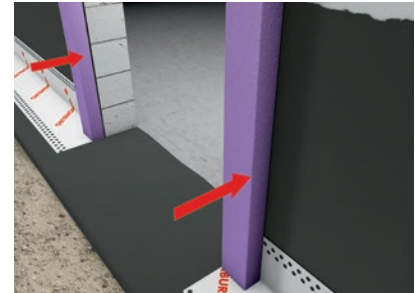
1. Wall-base slab connection waterproofing

The first application step is to apply waterproofing with AQUAFIN-RB400 until up to the front side of the concrete base slab.



2. Install ASO-Joint-Tape-2000-S

While the first application step with AQUAFIN-RB400 is still wet, ASO-Joint-Tape-2000-S is installed at an angle free of voids. Joint adhesion is always applied with an overlap of 5-10 cm.



3. Install wall edge insulation strips

Next, the wall edge insulation strip is installed or fastened in the area of the window soffit using AQUAFIN-RB400.



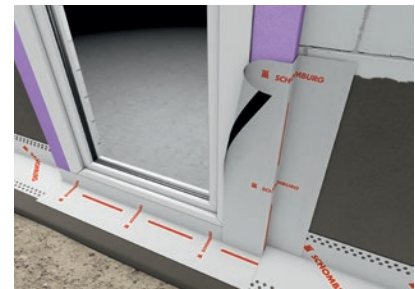
4. Ground-level element assembly

Installation and stabilisation of the ground-level element is completed in accordance with the manufacturer's instructions.



5. Horizontal feature waterproofing

Fasten ASO-Connector-Joint-Tape after removing the separating strip by pressing on the installation element and the insulation strip. The joint tape is adhered to the substrate using AQUAFIN-RB400.



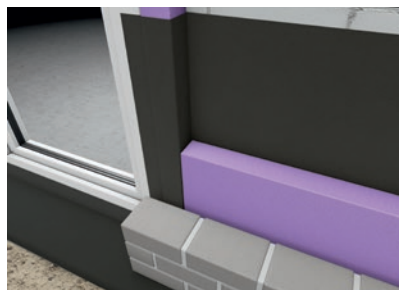
6. Vertical feature waterproofing

ASO-Connector-Joint-Tape is fastened on the installation element as described in step 5. The joint tape is also adhered to the substrate using AQUAFIN-RB400.



7. Protection against back floating possibility

In order to avoid back floating possibility, the area of the previously completed joint tape application and the corner of the insulation strip are secured by installing ASO-Joint-Tape-2000-S-Corner. AQUAFIN-RB400 is used for adhesion.



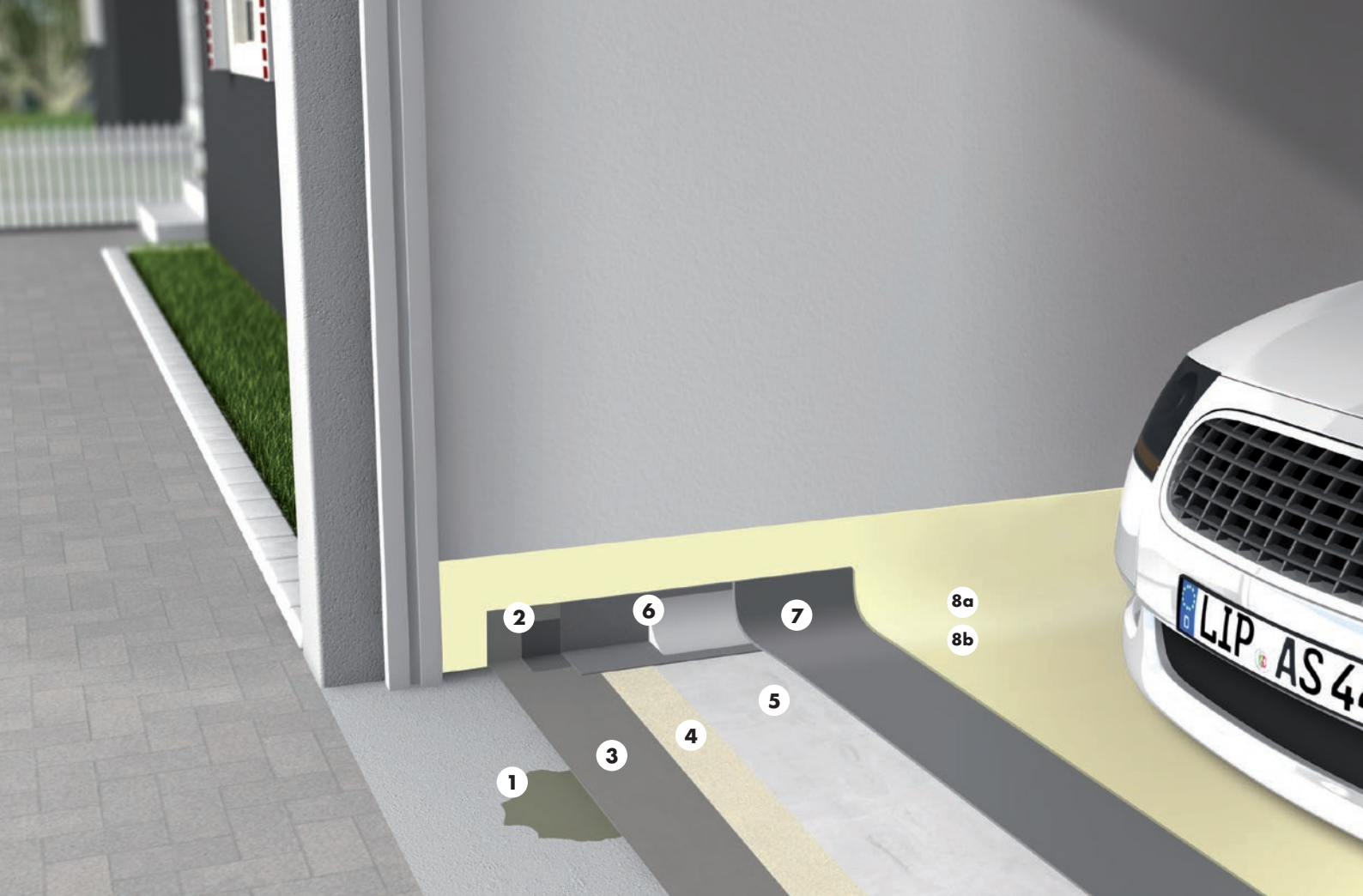
8. Installation in waterproofing

After installation of feature waterproofing, joint tapes in the area of the base waterproofing are coated in two layers with AQUAFIN-RB400.



9. Completely applied wall structure

After completely drying the base waterproofing, the insulation and facing structure is completed.



Garage repairs

With ASO restoration system

Frequent use of the garage area places high demands on the materials that are used. Because every time you drive a vehicle in or out, dirt, and high quantities of rainwater in particular, are also carried inside. The moisture can easily penetrate into the floor via the walls and cause moisture damage. In order to prevent these and other damages, SCHOMBURG has developed an ideal application technique with the right components. Damage that has already occurred are able to be repaired and the garage area is able to be repaired as best as possible.

COMPONENTS

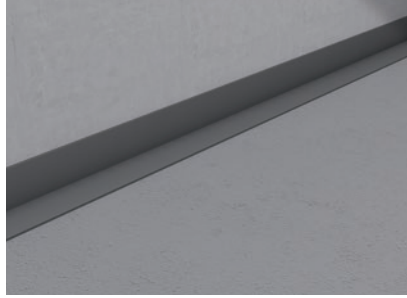
ASOCRET-M30
RD-SK50
ASOCRET-HFF
ASODUR-EMB
ASODUR-B351
ASODUR-V360W
ASODUR-V2250
ASODUR-SG2
ASO-Unigrund-GE
ASO-Unigrund-K
ASO-Antislid
INDU-Primer-S
INDUFLEX-PU
Quartz sand

Application



1. Level out damaged areas

Beforehand, the substrate must be mechanically prepared, either by shot-blasting or grinding and vacuuming. Widen existing cracks, vacuum and seal with ASODUR-GH-S. Close coarse damaged areas with ASOCRET-M30 using trowel techniques with a layer thickness of 3 to 30 mm.



2. Edging strips

Apply the RD-SK50 edging strips in the wall-floor transition. The substrate is bonded using a self-adhering foil. After fastening, RD-SK50 presses onto the wall so that straining and acoustic bridges may be prevented.



3. Applying primer

Apply suitable primer to the open-pored substrate.

- low load without moisture penetration ASO-Unigrund-GE or ASO-Unigrund-K
- moderate to high load with moisture penetration ASODUR-SG series



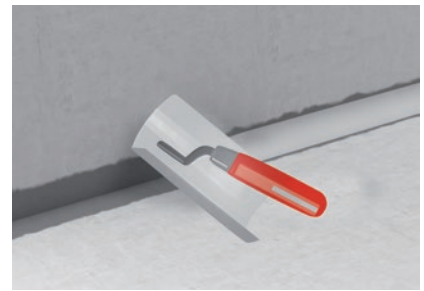
4. Quartz sand

If primed in advance with ASODUR-SG2, the surface must be evenly sanded with suitable quartz sand. After hardening, remove loose quartz sand by vacuuming. This entire work step is omitted if an ASO-Unigrund product is selected.



5. Level the surface

Mix ASOCRET-HFF self-levelling floor levelling compound with the specified quantity of water and apply in a single application step on the primed substrate to max. 35 mm. When selecting the primer, please observe the currently applicable technical data sheet!



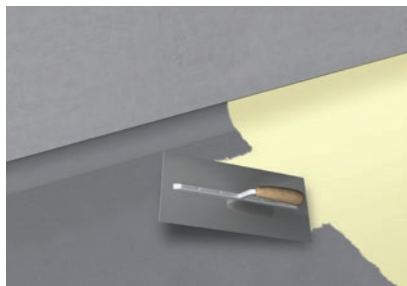
6. Create the covered fillet

Apply the created covered fillet wet in with ASOCRET-M30 with an edge height of at least 4 - 6 cm into the wet selected ASODUR primer against the edging strips (covered fillet stepped). After the covered fillet has hardened, remove the edging strips and prime the joint edges with INDU-Primer-S. The joint is sealed with INDUFLEX-PU.



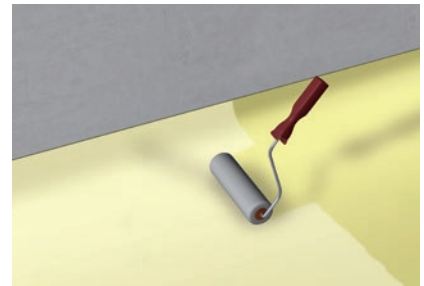
7. Prime the levelling layer

Apply the respective ASODUR primer to the open-pored substrate crosswise, filling the pores evenly using rolling techniques.



8a. Apply coating

In case of heavy use, ASODUR-B351 is applied evenly in a single application step with a rake and ventilated with a spiked roller in a criss-cross manner. Optionally apply non-slip sealing; for this purpose seal the hardened coating in a single application step with a mixture of ASODUR-V2250 and 10 wt.% ASO-Antislid using a rolling technique.



8b. Applying sealing

For light to moderate loads, ASODUR-V360W is applied in a single application step by means of crosswise rolling. Optionally apply non-slip sealing; for this purpose seal the hardened sealing in a single application step with a mixture of ASODUR-V360W and 10 wt.% ASO-Antislid using a rolling technique.



Facade impregnation

Colour deepening and prevention of fouling

Facade impregnation is one of the most frequent procedures involved with the area of building restoration and maintenance. The exterior area of a building is exposed weathering influences like rain, sunlight, wind, frost, etc. Clean and professionally installed facade impregnation protects the substrate against penetrating water using hydrophobic, water-repellent media. At the same time, the trapped water vapour is able to escape, which permanently avoids moisture damage. Thanks to ASOLIN-SFC45, facades consisting of brick, clinker, natural stone, lime-sand stone, and cementitious plasters are protected sustainably against damaging water influences, successfully treating them within the scope of care and maintenance of existing buildings.

COMPONENTS

ASOLIN-SFC45

Application



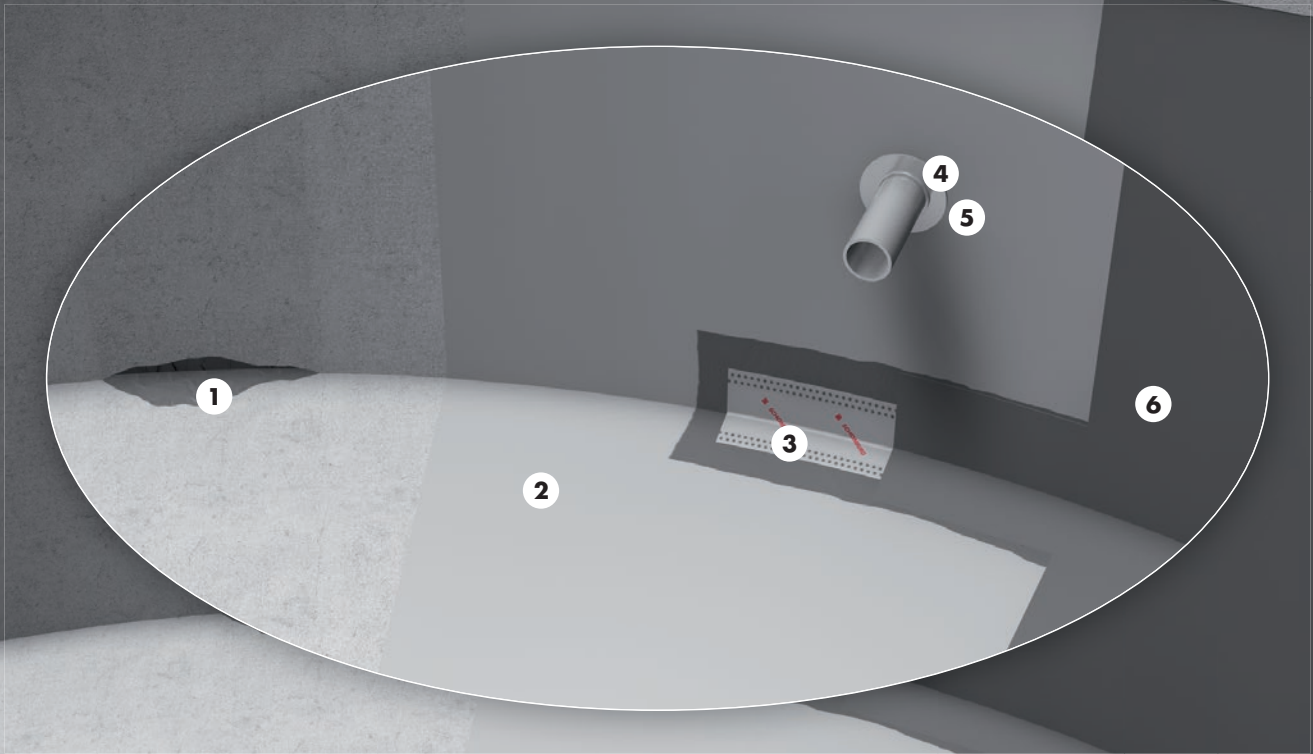
1. Cleaning

Clean the surface to be treated as hydrophobic thoroughly using a high-pressure cleaner with rotating jets. Fouling and moss or algae coatings are removed completely.



2. Apply impregnation

After the façade has dried completely, apply the solvent-free façade cream ASOLIN-SFC45 with a lambskin roller until it fully covers the entire surface. The paste consistency makes very economical, clean, and reliable application possible. A material buffer remains on the substrate during application, which enables very deep penetration of the effective substance into the substrate.



Waterproofing and repair of wastewater treatment plants

Cementitious restoration concept

Waterproofing and repairs on civic wastewater treatment plants represent very specific requirements for the materials and coatings that are used inside the building. The dirt and rain water that enters into the plant via the sewer system passes through various cleaning stages. Due to the various water qualities, the concrete surfaces are exposed to a variety of chemical stresses. Moisture from the rear and bubble formation due to osmotic pressure are only a part of the resulting damage scenarios. For this reason, water-contacting concrete elements must be permanently protected during repair procedures with specific special primers and water-repellent surface waterproofing.

COMPONENTS

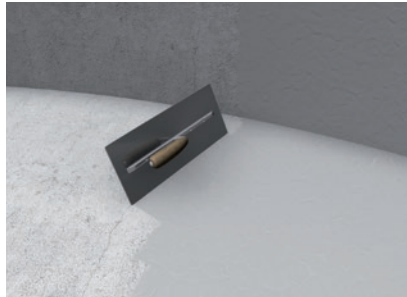
ASOCRET-KS/HB
ASOCRET-BIS-5/40
ASOCRET-BIS-1/6
AQUAFIN-2K/M-PLUS
ASO-Joint-Tape-2000-S
ASODUR-SG3-thix
Quartz sand

Application



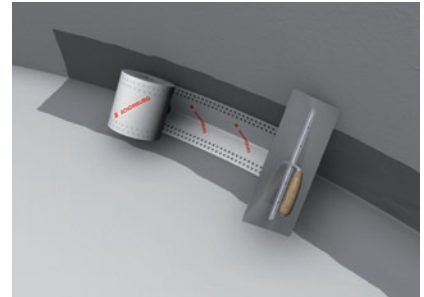
1. Level out damaged areas

Repair small crack damage and voids with a trowel or float. Application of ASOCRET-BIS-5/40 "while still wet" onto ASOCRET-KS/HB adhesive slurry.



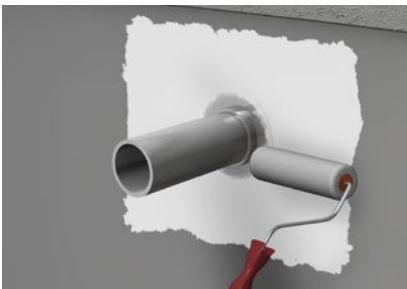
2. Level the surface

Apply ASOCRET-BIS-1/6 onto the prepared substrate in the desired layer thickness up to 6 mm in a single application step. The surface may not be processed retroactively with a wide brush or a wet flat trowel. For smooth transitions of the repair surfaces, rubbing with a sponge is possible.



3. Waterproof the wall-floor transition

Apply AQUAFIN-2K/M-PLUS in the transition between the wall and floor and across connecting joints using brush and trowel techniques and adhere ASO-Joint-Tape-2000-S free of voids and wrinkles. Application covering the whole area takes place during area waterproofing.



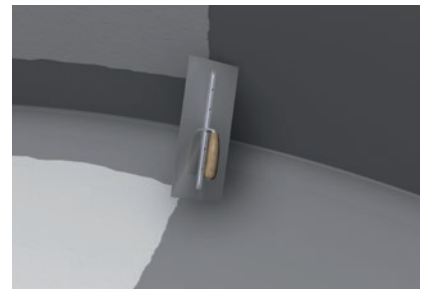
4. Transition to the flange structure

In the area of the flange structure, apply ASODUR-SG3-thix special pre-primer along the sanded flange structure using a brushing and rolling technique. After curing, apply the 2nd layer of ASODUR-SG3-thix using a rolling technique and scatter quartz sand 0.5 - 1.0 mm on the primer while still fresh.



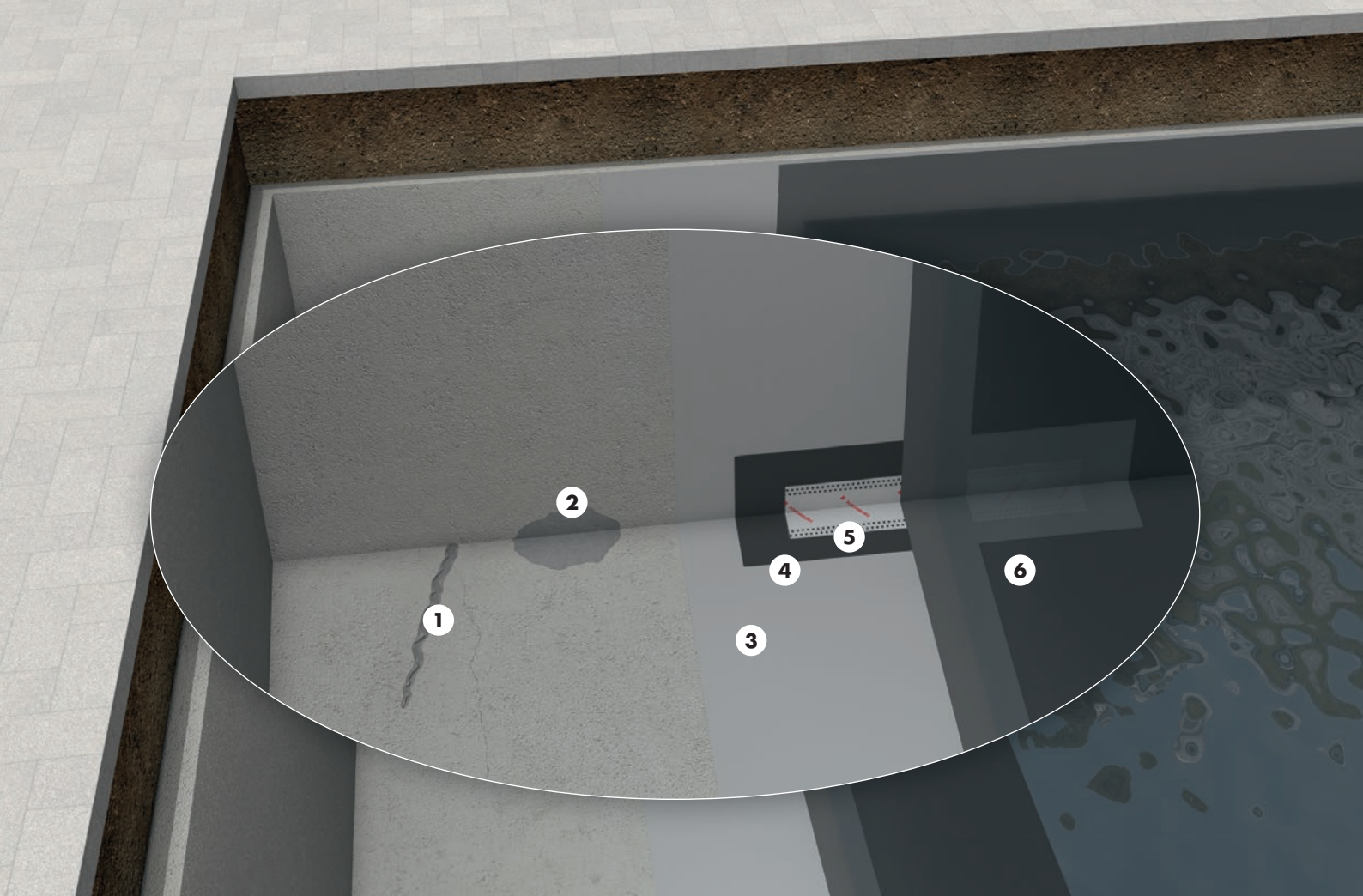
5. Quartz sand

After curing, apply the 2nd layer of ASODUR-SG3-thix using a rolling technique and scatter quartz sand 0.5 - 1.0 mm on the primer while still fresh.



6. Waterproof surfaces

Apply AQUAFIN-2K/M-PLUS in at least two application steps using spray, brush, or trowel techniques.



Waterproofing and repair of process water containers

Cementitious restoration concept

Whether commercial, industrial, or agricultural purposes are involved, process water must possess specific quality characteristics, depending on the required uses. Irrigation water, for example, must be free of ground and plant-damaging substances, while cooling water may not be allowed to damage devices with lime and algae. In spite of the different components and quality classes involved, all process water has one thing in common: They do not in fact have potable quality, but they still have high demands on the substrates of the respective container. Ideal, building-specific maintenance procedures are able to protect process water containers sustainably and reliably against potential stresses.

COMPONENTS

ASOCRET-KS/HB
ASOCRET-BIS-5/40
ASOCRET-BIS-1/6
AQUAFIN-RB400
ASO-JointTape-2000-S

Application



1. Crack restoration

Assess and seal cracks professionally (see the chapter on crack restoration).



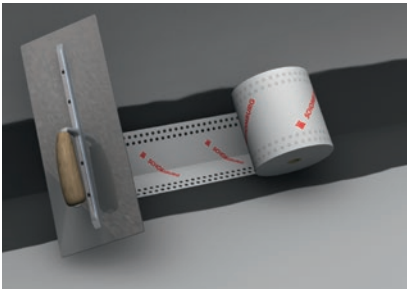
2. Level out damaged areas

Close damaged areas and voids with ASOCRET-BIS-5/40 using trowel techniques. Application is completed "while still wet" onto the ASOCRET-KS/HB adhesive slurry.



3. Level the surface

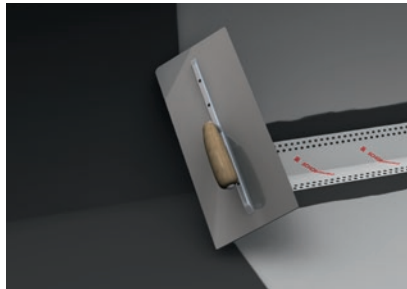
Apply ASOCRET-BIS-1/6 onto the prepared substrate in the desired layer thickness up to 6 mm in a single application step and processed retroactively using a felt or sponge board.



4. + 5. Waterproof the wall-floor transition

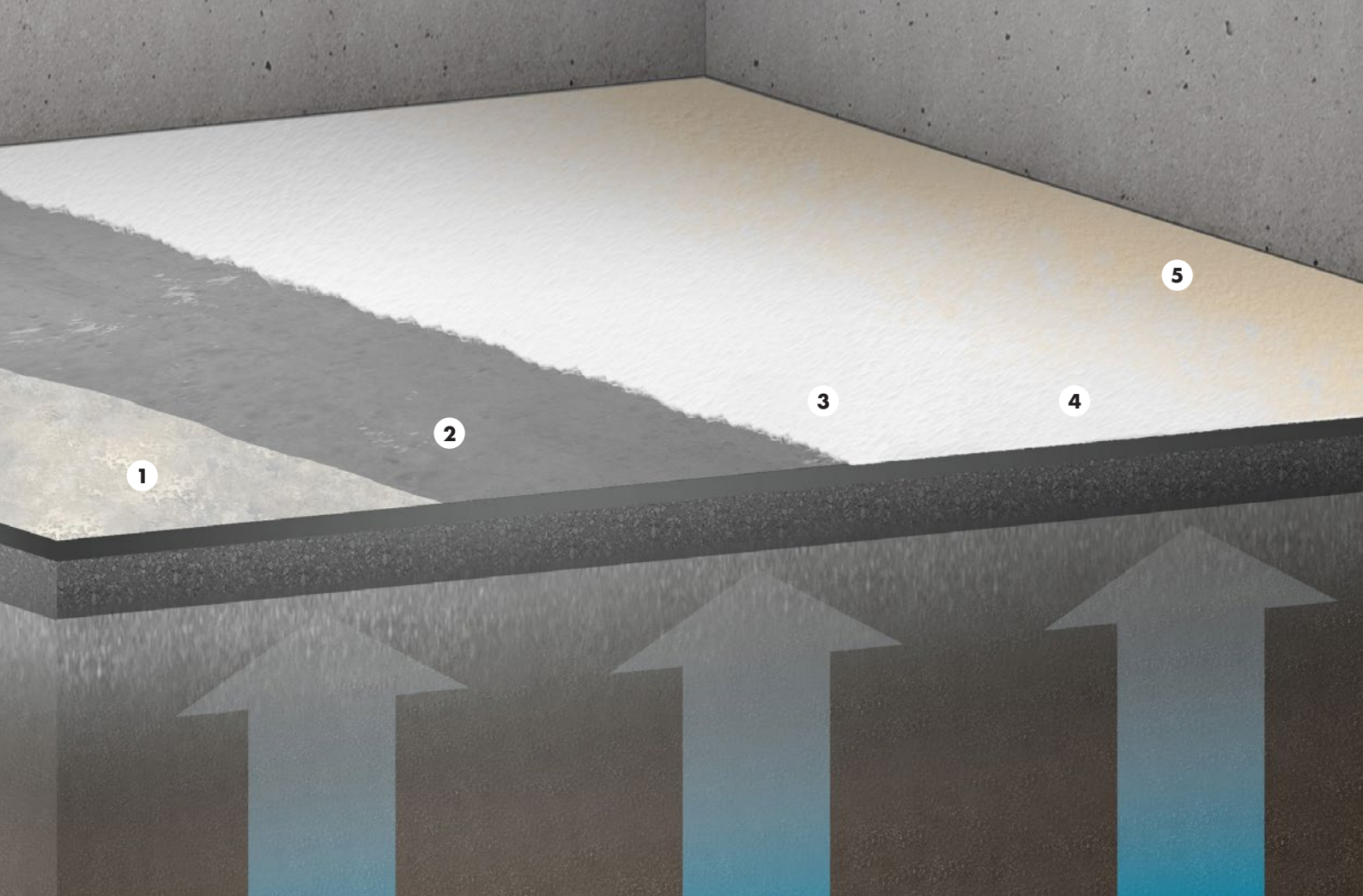
Apply AQUAFIN-RB400 in the transition between the wall and floor and across connecting joints using brush and trowel techniques and adhere ASO-Joint-Tape 2000-S free of voids and wrinkles.

Application covering the whole area takes place during area waterproofing.



6. Waterproof surfaces

Apply AQUAFIN-RB400 in at least two application steps using spray, brush, or trowel techniques.



Vapour barrier for damp substrates

In the epoxy resin system

Moisture from the rear and high residual moisture on “green” concrete substrates are frequently extremely prone to damage or prolong building time. The ASODUR-SG2 and ASODUR-SG3 special primers have been used successfully for many years to prevent the damaging influences of rising moisture, and they are also extremely resistant to chemical influences and able to be applied very diversely.

Besides application on industrial and commercial substrates and in agricultural buildings, use in private home and apartment construction when there is risk of rising moisture and valuable floor coverings like natural stone or parquet need to be protected for the long term.

COMPONENTS

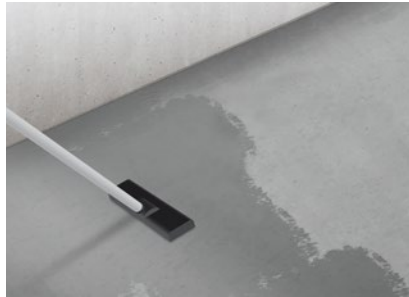
ASODUR-SG2
ASODUR-SG3

Application



1. Substrate preparation

Substrates must be load-bearing and sufficiently firm (concrete class: mind. C 20/25 and cement-based screed class min. CT-C35-F5), and free of separating and adhesion-inhibiting substances like paint residues. Depending on the texture of the substrate to be treated, suitable processes must be used, e.g. grinding.



2. Cleaning preparations

The dust particles resulting from this measure that is taken to prepare the substrate should generally be removed using an industrial vacuum.



3. Material application

The correctly mixed 2-component material is applied using a rubber lipped scraper on the pre-wetted substrate (matte damp appearance) and intensively brushed in using scrub brushes.



4. Rolling on

To ensure equal material film on the substrate surface, a suitable lamb's wool roll should be used to roll the still wet applied material out again equally.



5. Sanding

Immediately after applying the material, the wet applied primer layer, and only in case of ASODUR-SG2, should be sanded equally using suitable quartz sand. ASODUR-SG3 does not need to be sanded because a chemical bond results. After hardening, remove loose quartz sand by vacuuming.



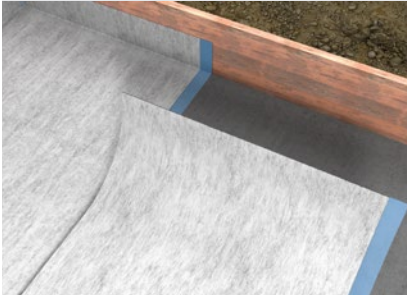
Foil sealing in new building waterproof concrete

Exterior waterproofing with fresh concrete waterproofing membrane

Even in classic watertight (waterproof) concrete, cracks, e.g. due to shrinkage and pressure, cannot be ruled out. Water penetrates deeper than planned into the concrete component or, in the case of separating cracks, even into the building. The classic remedy would be to inject resin until the crack closes. It becomes problematic when there is no water, but, for example, the radon gas or water is not always present and we consider inaccessible areas that have already been developed. In these cases, it makes sense to plan the AQUAFIN-WM12 fresh concrete waterproofing membrane as strip waterproofing. Inserted into the formwork, it forms a solid bond with the concrete that prevents water running behind it and forms an additional waterproofing layer.

COMPONENTS

AQUAFIN-WM12
AQUAFIN-WM12 corners
AQUAFIN-CA
PVC tape



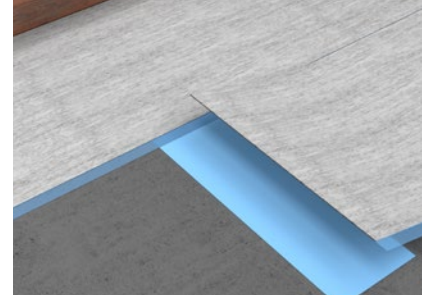
1. Joints with AQUAFIN-CA structural adhesive

Strips of the AQUAFIN-WM12 fresh concrete waterproofing membrane can be joined with the AQUAFIN-CA structural adhesive. Application takes place at least 4 cm on the PVC overlapping strips over the entire surface.



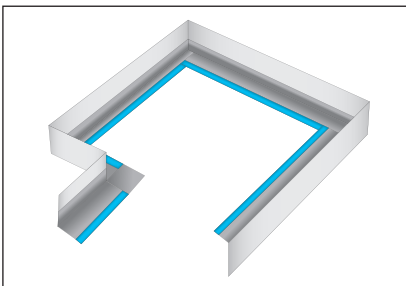
2. Thermal merging

The strips of the AQUAFIN-WM12 can be joined with hot air welders. A joint width of 4 cm is required here.



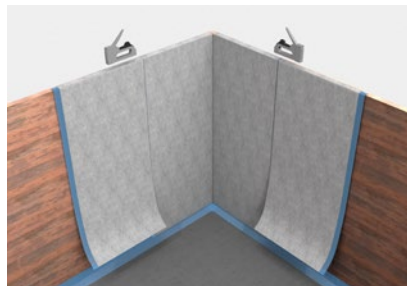
3. Area waterproofing

Waterproofing of the surface is carried out with T-prods. The PVC sheeting system component is overlapped by at least 5 cm and thermally jointed or bonded.



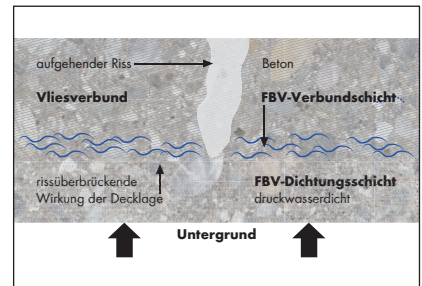
4. Floor application sequence

As the first work step, it is suggested to produce the surrounding edge upstand. After working out the details such as intersections, the surface closure takes place.



5. Wall installation / formwork

AQUAFIN-WM12 is installed on the formwork using impact staplers or clips. After stripping the formwork, the wall and floor waterproofing is connected to one another using PVC tape. Then seal tie and installation points with PVC tape.



6. Concrete protection / waterproofing gas / water

The fresh concrete waterproofing membrane has a high crack-bridging capacity so that even subsequently appearing cracks in the concrete component do not result in waterproofing problems. The PP fleece laminated to the PVC waterproofing layer creates a solid bond between the strip waterproofing and waterproof concrete that prevents water running behind it.



Integral waterproofing of concrete components

With crystalline waterproofing admixture

Even in classic watertight (waterproof) concrete, cracks, e.g. due to shrinkage and pressure, cannot be ruled out. Water penetrates deeper than planned into the concrete component or, in the case of separating cracks, even into the building. If the crystalline waterproofing admixture BETOCRETE is planned and used, crystals form on contact with water which can close cracks up to 0.4mm due to the increased and accelerated crack healing ability. Less water enters into the concrete and therefore fewer substances that damage the concrete, such as chlorides, CO₂ and chemicals.

COMPONENTS

BETOCRETE-CL
BETOCRETE-CP



Liquid dosage

BETOCRETE-CL is delivered in the IBC and added to the concrete mixture as a liquid product in the concrete plant via the dosing system. An alternative dosing can take place via canister in the mixer truck.



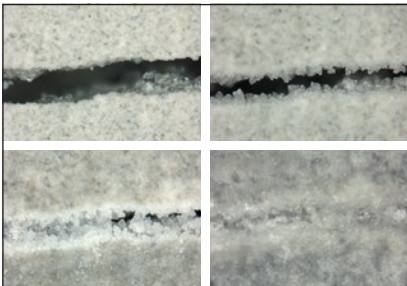
Dosing of powder products

BETOCRETE CP is delivered in watertight foil sacks for dosing in the concrete plant or as water-soluble sacks in the mixer truck.



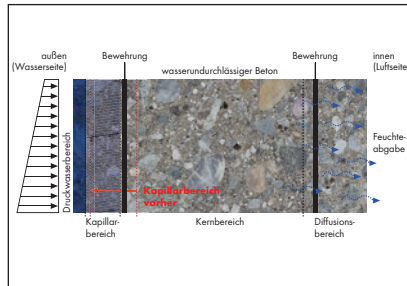
Integral concrete waterproofing

The watertight concrete with increased and accelerated crack healing ability emerges with the application of the concrete at the building site.



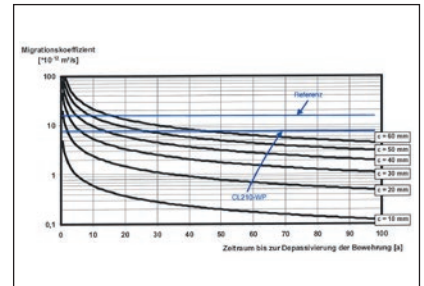
Crack healing ability

When the BETOCRETE concrete comes into contact with water, the active substance dissolves, reacts with the calcium hydroxide in the concrete and with CO₂; crystals are formed; cracks up to 0.4 mm can be sealed.



Reduction of water penetration depth

The formation of BETOCRETE crystals also takes place in the capillary pores so that a more compact concrete structure is produced with less water penetration.



Lifetime extension

The lower water ingress means that substances that damage concrete can only penetrate to a lesser extent. Less ingress of water, chlorides, CO₂ means an increase in the service life of the concrete part and greater economic efficiency.



Crack repair of substrates

In the epoxy resin system

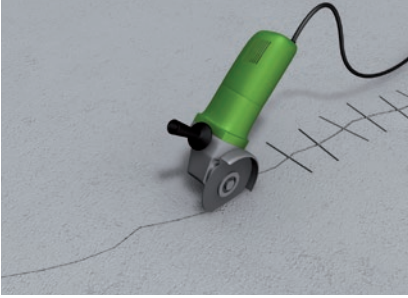
The rapid setting silicate casting resin ASODUR-GH-S is suitable for sealing cracks and joints in unheated and heated cementitious screeds, for crack and joint widths up to approx. 5 mm. The 2-component casting resin has very good penetration properties, is tested for low emissions and can be mixed without tools. In the practical complete kit - with precisely matched quantities of A and B components of the casting resin, the appropriate protective work gloves for application and 20 screed clamps - you have everything you need quickly and safely to hand.

COMPONENTS

ASODUR-GH-S
ASODUR-K900
Quartz sand



Application



1. Open the cracks

Open the crack or joint with a cutting disc along the length (approx. up to half or two thirds of the screed depth). Cut traverse sections featuring a depth of 10 cm length at a right angle at a distance of 30 cm.



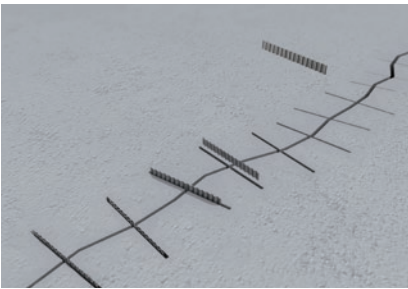
2. Clean

Remove dust and dirt and carefully clean the area that has been cut open with an industrial vacuum cleaner or a similar device.



3. Mixing

Mix the A and B components together and shake for a minimum of 15 seconds.



4. Insert screed clamps

Insert the included screed clamps into the cut groove.



5. Cast the cracks

Pour the mixed ASODUR-GHS material into the prepared grooves free of voids. Remove the excess material.



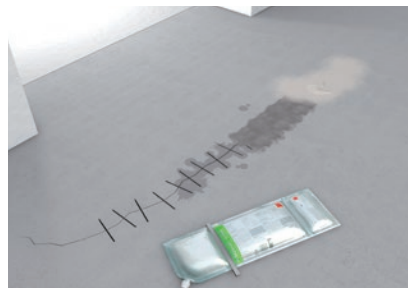
6. Quartz sand

After reaching the gel phase, evenly sprinkle in quartz sand (grain size 0.1 to 0.6 mm).



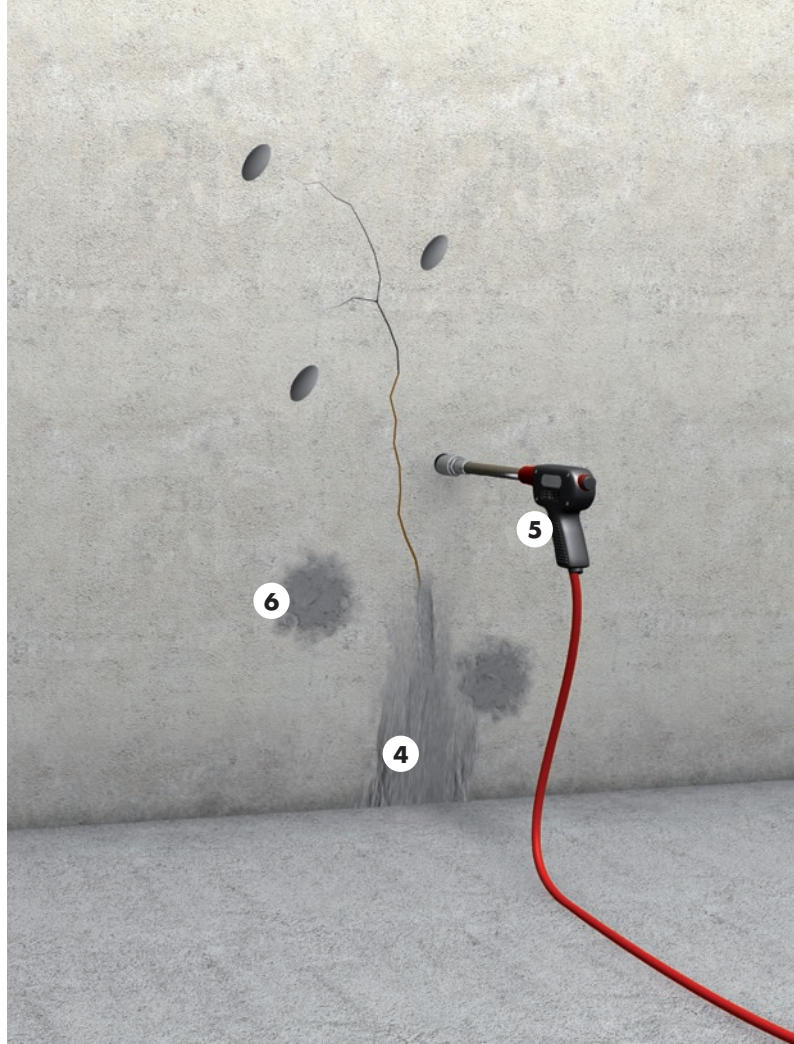
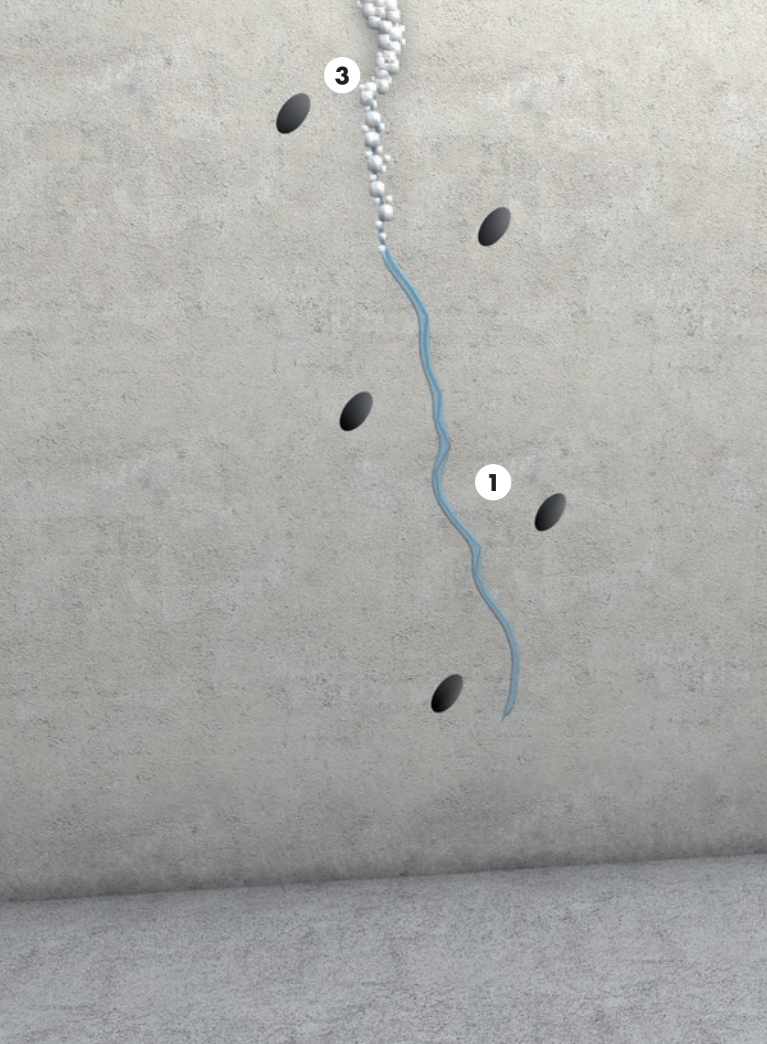
7. Vacuuming

After hardening, remove loose sand by vacuuming.



Alternatively

For fine cracks up to a width of 0.4 mm, use the epoxy resin grout ASODUR-K900.



Waterproofing of wall surfaces

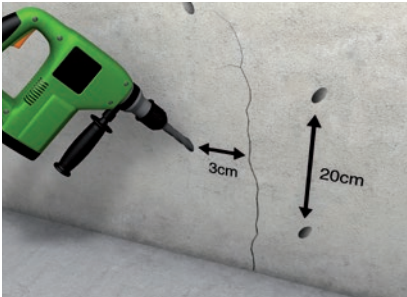
With crack injection

During building restoration and repairs, professional crack restoration is indispensable. Cracks result when the stresses influencing the substrate are larger than the resistance of the individual building components. If water penetrates the cracks, then they can place the usefulness of the building in enormous danger. For this reason, crack compression is absolutely necessary to recover the resistance of the substrate. Not only is this possible by filling individual cracks, but also by injecting special injection resins, which spread in the substrate and form a tough elastic foam under the influence of water. This system waterproofs cracks not only temporarily, but sustainably.

COMPONENTS

AQUAFIN-P1
AQUAFIN-P4
ASODUR-EKF
ASOCRET-BIS-1/6

Application



1. Drilling

Cracks that are present are offset at a respective distance of 20 cm at an angle of 45° to the crack.



2. Cleaning

Clear any drilling debris that has resulted in the drilled holes using oil-free compressed air.



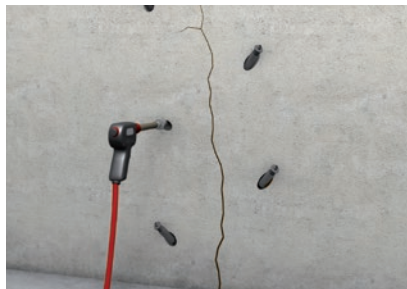
3. Waterproof water-conducting cracks

Insert corresponding injection packer into the drilled holes. Press AQUAFIN-P1 into water-conducting cracks. The material reacts with the water to produce a waterproof, tough elastic foam to stop water penetration. The excess foam is removed after curing so it is flush with the surface.



4. Dam up cracks

In case of cracks that do not conduct water, the crack area is insulated using ASODUR-EKF. AQUAFIN-P4 is injected after the insulating material cures completely.



5. Permanently waterproof cracks

During application of AQUAFIN-P1, additional injection using AQUAFIN-P4 elastic crack waterproofing is necessary.



6. Seal drilled holes

After the injection resin has hardened, insulation may be removed for visual reasons as required. Seal the drilled holes with ASOCRET-BIS-1/6.



Retrospective execution of construction/movement joints in concrete construction With thermoplastic joint tape

The highly flexible ASO-Tape sealing tape is particularly suitable for watertight structures. Combined with the epoxy resin universal adhesive ASODUR-K4031 it can be used for sealing construction and movement joints as well as sealing cracks and voids in concrete constructions. It is also suitable for additional sealing treatment on intersections, permeations or various construction materials.

COMPONENTS

ASO-Tape
ASODUR-K4031



Application



1. Substrate preparation

Prepare the cleaned, load-bearing substrate by mechanical means. Substrates must be load-bearing and sufficiently firm (concrete class: mind. C 20/25 and cement-based screed class min. CT-C35-F5), and free of separating and adhesion-inhibiting substances like paint residues.



2. Cleaning preparations

The dust particles resulting from this measure that is taken to prepare the substrate should generally be removed using an industrial vacuum.



3. Masking the surface

Mask off the expansion area on the substrate and on the tape. Mask off at the margin, the mortar should overlap the building component by at least 1 cm.



4. Applying adhesive

Stir comp. A and comp. B together and decant the mixture into a clean container. Then stir the mixture for a second time. In order to ensure bedding covering the whole area, apply ASODUR-K4031 at least 1 cm wider than the amount of ASO-Tape you use.



5. Peeling off the adhesive tape

Remove the adhesive tape in the area of the joint.



6. Inserting and pressing on

Lay out the ASO-Tape and press it on with a suitable tool.



7. Grouting and peeling off

Ensure the ASODUR-K4031 is spread over all of the ASO-Tape. Remove all adhesive strips.



8. Bonding

Ensure that there is an overlap of 5-10 cm with a minimum film thickness of 1 mm when bonding the ASO-Tape to the mortar.



9. Hot air welding

Using hot air and pressure, weld the tape joints with an overlap of at least 5 cm.



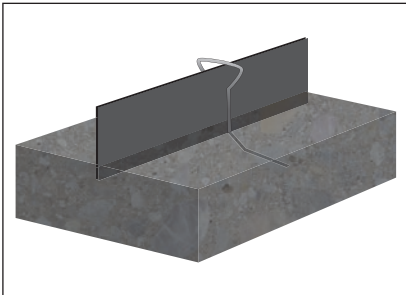
Execution of construction joints in concrete construction

With crystalline waterstop sheet

In the construction joint, the potential for water ingress due to improper waterproofing is relatively high. Waterproofing with AQUAFIN-CJ5 provides triple security. In addition to the circulation extension of penetrating water, the AQUAFIN-CJ5 waterstop sheet provides further security factors. The cementitious coating forms a strong adhesive bond with the waterproof concrete so that "breaks" and the resulting cracks tend not to occur. However, if the movement of the component results in a crack, the crystalline coating of the waterstop sheet provides support. In the event of contact with water, crystals form and cracks up to 0.4 mm can be sealed.

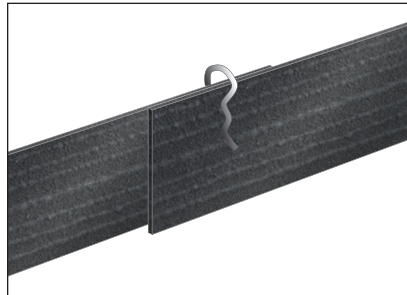
COMPONENTS

AQUAFIN-CJ5
Holding clips
Omega holder



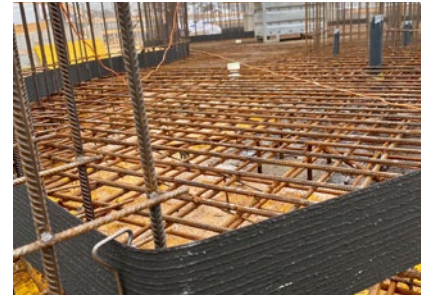
Fastening with omega clips

The crystalline waterstop sheet AQUAFIN-CJ5 is placed on the reinforcement with the omega clip in the middle of the joint. The omega clip is attached to the reinforcement with tie wire. A concrete inclusion of > 3 cm must be ensured.



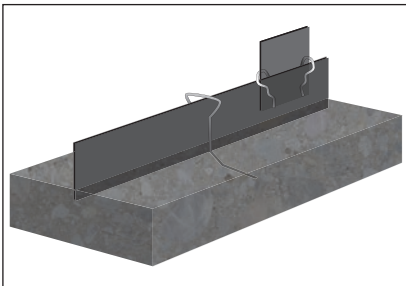
Jointing of waterstop sheets

With AQUAFIN-CJ5, secure overlap joints with retaining clips. For immersion depths of up to 8 m, fix in place with a holding clip with an overlap of 5 cm. For immersion depths of 8 to 20 m, fix in place with two holding clips with an overlap of 20 cm.



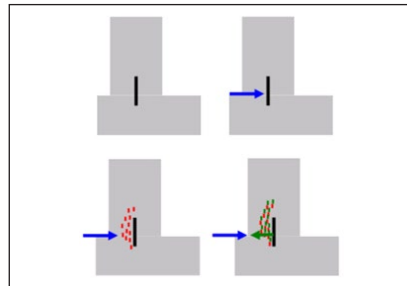
Corner solutions

In corners, the waterstop sheet AQUAFIN-CJ5 is simply bent into the required shape.



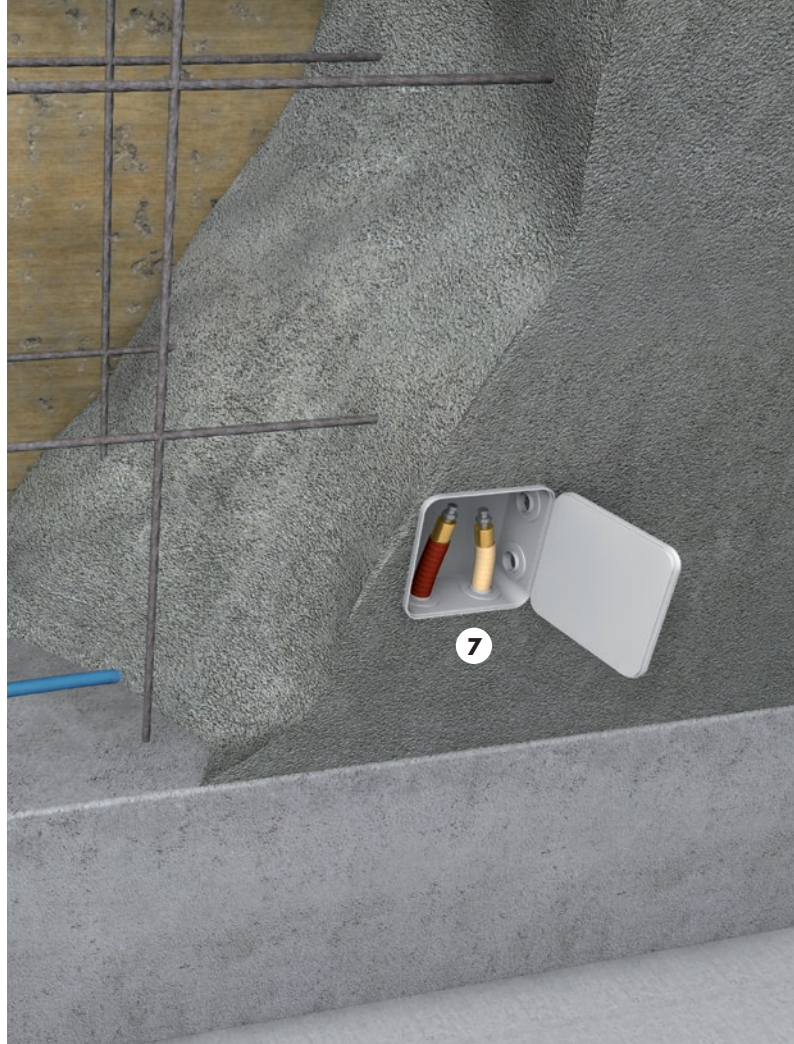
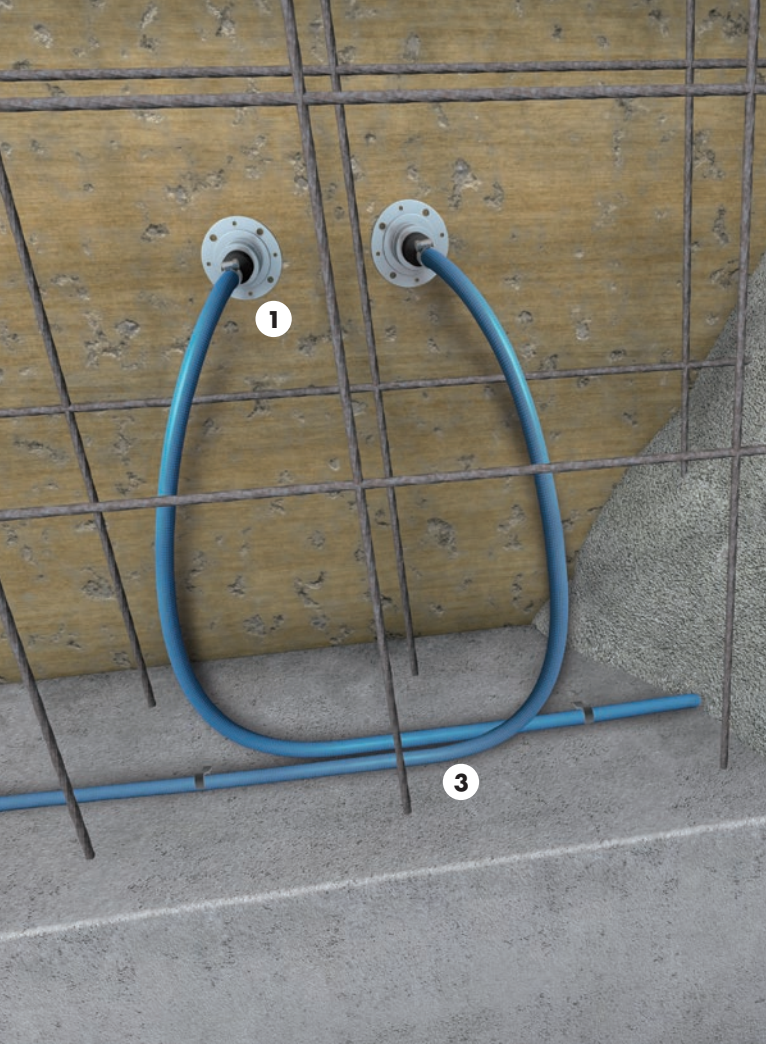
Construction joint wall / slab bonding

A transition from the working joint in the wall / floor transition to a vertical working joint is made using two holding clips that are attached on both sides. The overlapping of the waterstop sheet is at least 5 cm.



Secure sealing with AQUAFIN-CJ5

The cementitious coating forms a strong adhesive bond with the waterproof concrete so that "breaks" / cracks tend not to occur. However, if the movement of the component results in a crack, crystals form and cracks up to 0.4 mm can be sealed in the event of contact with water.



Execution of construction joints in concrete construction

With injection hose system

A "white tank" is a structure consisting of concrete with increased resistance to penetrating water. These parts are normally partially or completely in direct ground.

The concrete assumes a load-bearing as well as sealing function without additional waterproofing measures.

During building construction, concrete sections result in construction joints that must be waterproofed against groundwater and moisture using special procedures.

The advance installation of an injection hose made of PVC has also proved to be an effective system.

The injection of resin that distributes itself throughout the complete area of the joint and any possible voids throughout the concrete makes it possible retroactively to waterproof the concrete quickly and easily without costly work steps.

COMPONENTS

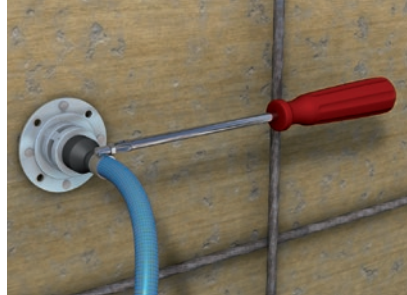
- AQUAFIN-CJ1**
- AQUAFIN-CJ-Set**
- AQUAFIN-P1**
- AQUAFIN-P4**

Application



1. Standard packer

Nail a standard packer at the start and end point (max. 10 m) on the inside of the formwork.



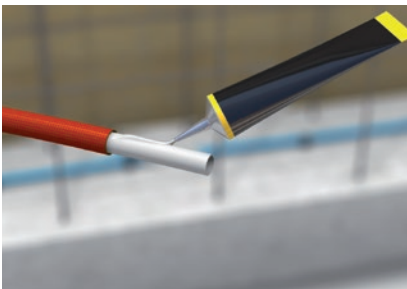
2. Fasten the injection hose

Fasten the AQUAFIN-CJ1 injection hose carefully with the help of the hose clamp on the packer.



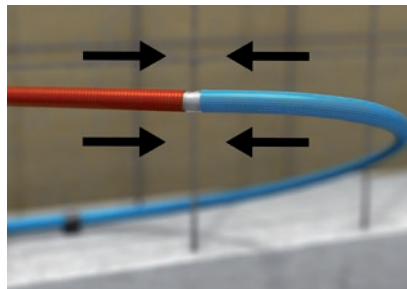
3. Lay out the injection hose

Lay the injection hose featuring a concrete covering of at least 8 cm to the water-conducting side and then fasten it with holding clips (6 per m) onto the concrete to prevent slipping or floating upwards.



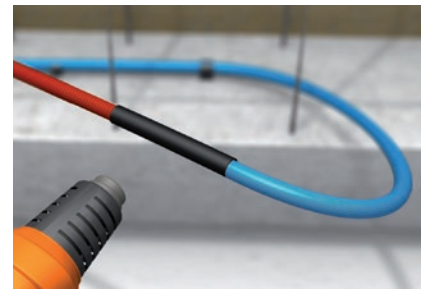
4. Adhere ventilation hose

Apply the included PVC adhesive on the projecting connection collar of the ventilation hose.



5. Connect the injection hose

Attach the AQUAFIN-CJ1 injection hose directly onto the prepared connection collar, and then wait for the drying time to finish.



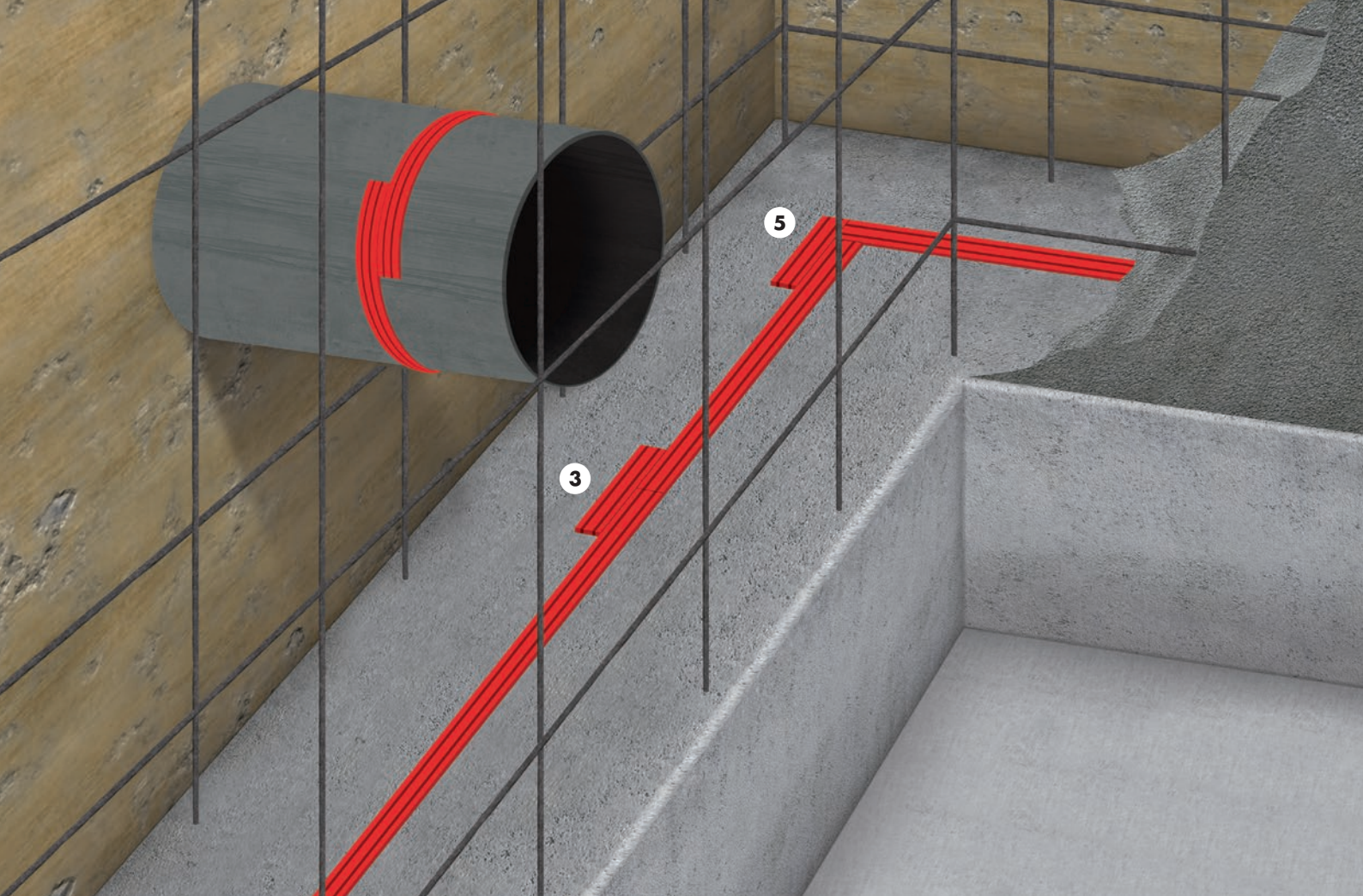
6. Connect the ventilation hose completely

Pull approx. 6–8 cm heat-shrink hose over the connection of the ventilation hose and the injection hose and use hot air to heat up the connection until the heat-shrink hose is tight and the connection has tightened.



7. Connect the various hose sections

Insert the hose ends of the ventilation hoses into a container for safekeeping and add injection nipples prior to injection (e.g. with AQUAFIN-P1 and AQUAFIN-P4).



Execution of construction joints in concrete construction

With swelling joint tape

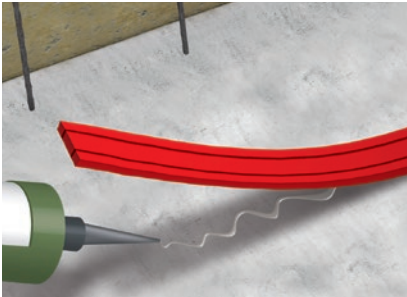
Another successful variation for waterproofing concrete construction joints is the use of so-called swelling rubber. Elastomer swelling tape consists of a special plastic and special filler materials, and they also react to water contact with strong and reliable swelling behaviour. Compared to swelling joint tape made of bentonite, elastomer joint tape has the advantage that it swells in a "form-stable" manner in contact with water (> 700%) and therefore cannot be washed out. The area of application includes construction joint waterproofing in in-situ concrete walls and element walls, joints that are constantly or temporarily exposed to loading from ground, slope, and/or surface water. Use is also possible in water exchange areas.

COMPONENTS

AQUAFIN-CA
AQUAFIN-CJ6*
Fastening mesh

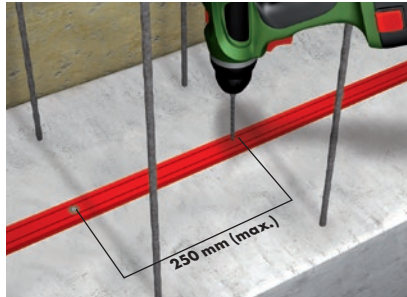
* As an alternative to AQUAFIN-CJ6, AQUAFIN-CJ3 or AQUAFIN-CJ4 can also be used.

Application



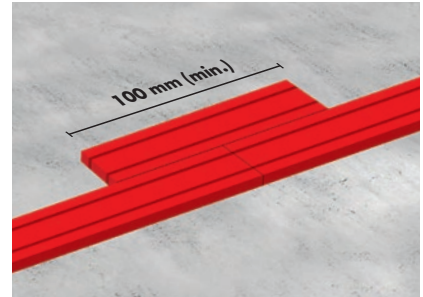
1a. Adhesion using assembly adhesive

Spray AQUAFIN-CA assembly adhesive onto the cleaned substrate using a hand cartridge and press in the AQUAFIN-CJ6 swelling joint tape covering the whole area until the assembly adhesive pushes out at the sides.



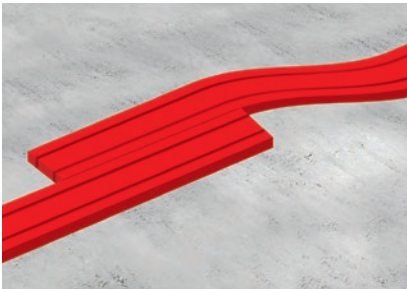
1b. Mechanical fastening

Alternatively, AQUAFIN-CJ6 can be fixed with a concrete covering of at least 8 cm to the water-conducting side with 4-6 fastening points or the fixing grid. The swelling joint tape must be applied covering the whole area of the concrete substrate.



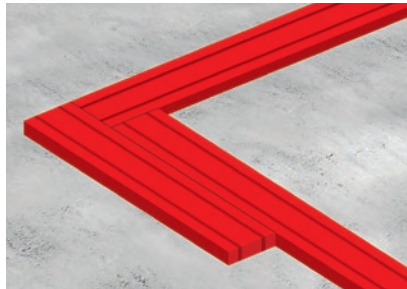
2. Blunt butt joints

Swelling tape connections can be applied as blunt connections. In case of larger wall profiles, secure the butt joints with a separate swelling tape featuring an overlap of at least 50 mm.



3. Butt joints overlapped

Alternatively, swelling tape connections can be applied with an overlap of at least 50 mm. In this case, both swellable waterstops should be positioned close together to prevent voids.



4. Corner connections

Corner connections should essentially be applied with an additional safeguard.



General information

for planning and execution

The right waterproofing for any exposure

	Bituminous waterproofing		
	COMBIDIC-1K	COMBIDIC-2K-CLASSIC/ PREMIUM	COMBIFLEX-EL
Building waterproofing			
Building waterproofing in accordance with DIN 18533, part 3, W1.1-E, W1.2-E	+	+	+
Building waterproofing in accordance with DIN 18533 part 3, W2.1-E	-	+	+
Building waterproofing in accordance with DIN 18533 part 3, W3-E	-	+	+
Building waterproofing in accordance with DIN 18533 part 3, W4-E	+	+	+
Retroactive building waterproofing in accordance with WTA datasheet 4-6-05D	+	+	+
Strip-shaped building waterproofing up to 0.25 mm opening width	-	+	+
Fastening protective and drainage panels	+	+	-
Full-surface adhesion of perimeter insulating materials	-	+	-

++ suitable for substrates that are subsequently not subject to cracking
+ suitable

o only suitable as protection against back floating in combination with flexible cementitious waterproofing slurry

- unsuitable



Cementitious waterproofing			
	AQUAFIN-1K	AQUAFIN-2K/M-PLUS	AQUAFIN-RB400
Building waterproofing			
Building waterproofing in accordance with DIN 18533, part 3, W1.1-E, W1.2-E	o	+	+
Building waterproofing in accordance with DIN 18533 part 3, W2-E pressing mountains	–	–	–
Building waterproofing in accordance with DIN 18533 part 3, W3-E	+	+	+
Building waterproofing in accordance with DIN 18533 part 3, W4-E	o	+	+
Retroactive building waterproofing in accordance with WTA datasheet 4-6-14/D	+	+	+
Cellar interior sealing in accordance with WTA datasheet 4-6-14/D	++	+	+
Strip-shaped building waterproofing up to 0.25 mm opening width*	–	+	+
Waterproofing in and under wall upstand surfaces	–	+	+
Wall-floor transition	o	+	+
Base waterproofing transition	++	+	+
Container waterproofing in accordance with DIN 18535 – water pressing from inside			
Drinking water containers	–	+	–
Service water container	++	+	+
Sewage treatment plants	++	+	+
Overflow basins	++	+	+
Water fountains, fonts	++	+	+
Bonded waterproofing in combination with tiled finishes			
Balconies/terraces	–	+	–
Shower areas in private buildings	–	+	–
Shower areas in public buildings	–	+	–
Swimming pools	–	+	–
Swimming pool decks	–	+	–

* Based on building regulations list A, part 2 sequential number 1.4, a special agreement is necessary between the employer/contractor

Note: The technical datasheets for the listed products must be observed.



Joint and feature waterproofing with **Joint tapes**

Every component features corners, edges, and intersections in the form of pipes, channels, screws, and dowels that need to be waterproofed. An essential aspect of protection of buildings against moisture is also the integration of detail points like floor drains, wall-floor transition joints, or building component joints using joint tapes.

Additionally, joint tapes need to absorb and dissipate possible movements and stresses from the substrate reliably so that damage cannot result.

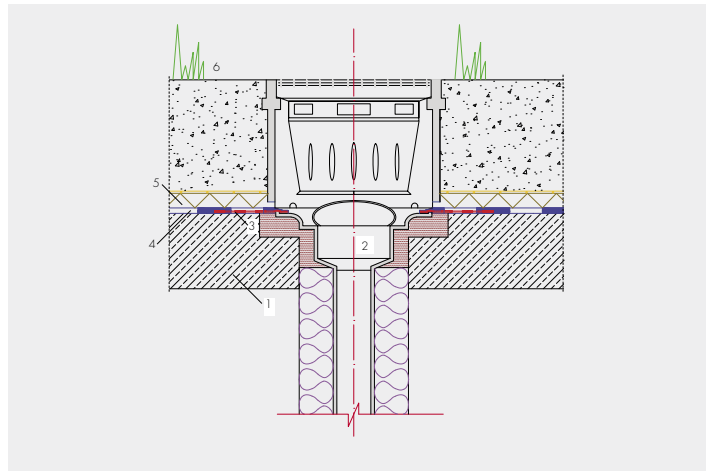




Special detail waterproofing solutions with sealing tape also need to protect building components and constructions in combination with the waterproofing layer against the influence of chemicals or hygienically questionable substances.

The reasons for damage can often be traced to the use of unsuitable joint tape or pre-formed pieces.

SCHOMBURG offers a wide assortment of diverse joint tapes and pre-formed pieces.



The benefits of joint tape constructions in the SCHOMBURG product palette

Impermeability to water

The most important requirement of waterproofing materials, impermeability to water in connection with high elasticity and crack bridging, is proven to be fulfilled completely by all SCHOMBURG joint tape types and pre-formed pieces.

Vapour permeability

SCHOMBURG joint tape materials are water vapour permeable. If the waterproofing material to be used on and underneath the joint tapes is applied during joint adhesion overlapped, SCHOMBURG joint tape ensures reliable drying.

High resistance to alkalinity

In case alkaline water penetrates up to the waterproofing layer, SCHOMBURG joint tape materials ensure that the joint tape cannot delaminate or disintegrate.

Resistance to chemical attacks

Especially during production of waterproofing solutions in application areas that are exposed to higher chemical stresses, joint tapes also need to be resistant against the possible effects of aggressive inorganic or organic substances. Corresponding certificates for SCHOMBURG joint tape are provided in our documents.

Connect the waterproofing material with the joint tape

SCHOMBURG joint tape guarantees very good surface adhesion of the waterproofing material used with the joint tape. This ensures good bonding with the substrate.

Reliability due to pre-formed pieces

SCHOMBURG offers a wide assortment of sophisticated pre-formed pieces. This increases the security of complete performance and saves costs. Cutting and the possible risk connected due to any resulting complaints.

Building-related special productions

If connections and joint waterproofing can no longer be reliably or economically completed with the standard types and solutions, we recommend ASO-Joint-Tape-2000-S wide products. This material enables building-related special products easy to produce on the building site.



DIN 18533 criteria

Waterproofing type classification

Area of application	Space utilisation class	Water impact classes	Crack class	Waterproofing type
In direct ground Walls and Plinth	RN1-E to RN3-E	W1-E, W2.1-E, W4-E	R1-E to R3-E	PMBC
	RN1-E to RN2-E	W1-E and W4-E	R1-E	Crack-bridging MDS
in direct ground Floor slabs	RN1-E to RN2-E	W1-E	R1-E	Crack-bridging MDS
	RN1-E to RN3-E	W1-E, W2.1-E	R1-E to R3-E	PMBC
Earth-covered ceiling slabs	RN1-E to RN3-E	W3-E	R1-E to R3-E	PMBC

Source: DIN 18533-1

Water impact classes

Class	Impact type
W1-E	Ground moisture and non-pressing water
W1.1-E	Ground moisture and non-pressing water in case of floor slabs and walls in direct ground
W1.2-E	Ground moisture and non-pressing water in case of floor slabs and walls with drainage in direct ground
W2-E	Pressure water
W2.1-E	Moderate influence from pressing water ≤ 3 m immersion depth
W2.2-E	High exposure to pressing water > 3 m immersion depth
W3-E	Non-pressing water on earth-covered ceilings
W4-E	Splash water and ground moisture at the wall base and capillary water in and under walls

Source: DIN 18533-1

Crack classes and crack-bridging classes

Crack class	Crack formation/crack width change in the substrate	Crack-bridging class in accordance with waterproofing type
R1-E	≤ 0.2 mm	RÜ1-E, low crack bridging ≤ 0.2 mm
R2-E	≤ 0.5 mm	RÜ2-E, moderate crack bridging ≤ 0.5 mm
R3-E	≤ 1.0 mm - crack offset ≤ 0.5 mm	RÜ3-E, high crack bridging ≤ 1.0 mm - crack offset ≤ 0.5 mm

Source: DIN 18533-1

Development of DIN standards

Old standard	New standard
18195-1	18195 - Waterproofing buildings - terms
18195-2	
18195-3	18531 - Waterproofing roofs
18195-4	
18195-5	18532 - Waterproofing concrete areas trafficable by vehicles
18195-6	
18195-7	18533 - Waterproofing building components in direct ground
18195-8	
18195-9	18534 - Waterproofing interior areas
18195-10	
	18535 - Waterproofing of tanks and pools

Source: DIN 18533-1

Space utilisation classes

Space utilisation classes	Dryness and room air requirements	Examples
RN1-E	Low requirement	Open factory and warehouse halls, underground garages
RN2-E	Conventional requirement	Recreation rooms, cellars in regular residential and office buildings
RN3-E	High requirement	Depot for storage of irreplaceable goods, space for central storage

Source: DIN 18533-1



Selection of rules to be observed

German and European standards

Cellar exterior waterproofing

Page 8

DIN 18531	Waterproofing roofs
DIN 18532	Waterproofing concrete areas trafficable by vehicles
DIN 18533	Waterproofing building components in direct ground
DIN 18533 part 1	Requirements and principles for design and execution
DIN 18533 part 2	Waterproofing with waterproofing materials in sheet form
DIN 18533 part 3	Waterproofing with liquid-applied waterproofing materials
DIN 18534	Waterproofing interior areas
DIN 18535	Waterproofing of tanks and pools
ATV-DIN 18336	Waterproofing work
DIN 1053	Masonry work
DIN 18020	Tolerances in building construction
DIN 4095	Building site: Drainage systems for protecting structures
DIN 4030	Assessment of water, soil and gases for their aggressiveness to concrete
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN EN 1504	Protection and repair of concrete structures
DIN 4108	Thermal protection in buildings
DIN 18550	Plastering and plastering systems - execution
DIN EN 998	Specification for mortar and masonry

cellar interior waterproofing

Page 12

DIN 18550	Plastering and plastering systems - execution
DIN EN 998	Specification for mortar and masonry
DIN 18560	Floor screeds in building construction
DIN EN 13813	Screed material, floor screeds, and screed materials, properties and requirements

Salt-loaded substrates

Page 18

DIN 18550	Plastering and plastering systems - execution
DIN EN 998	Specification for mortar and masonry

Garage repairs

Page 22

DIN EN 1504	Protection and repair of concrete structures
DIN 18560	Floor screeds in building construction
DIN EN 13813	Screed material, floor screeds, and screed materials, properties and requirements



Wastewater treatment plants and process water containers

starting page 26

DIN 18533	Waterproofing building components in direct ground
DIN 18533 part 2	Waterproofing with waterproofing materials in sheet form
DIN 18533 part 3	Waterproofing with liquid-applied waterproofing materials
DIN 18534	Waterproofing interior areas
DIN 18535	Waterproofing of tanks and pools
DIN 18020	Tolerances in building construction
DIN 4030	Assessment of water, soil and gases for their aggressiveness to concrete
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN EN 1504	Protection and repair of concrete structures

Crack repair (wall and substrates)

starting page 36

DIN 18534	Waterproofing interior areas
DIN 18535	Waterproofing of tanks and pools
DIN 18020	Tolerances in building construction
DIN EN 206	Concrete
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN EN 1504	Protection and repair of concrete structures

Execution of construction joints in concrete construction

from page 44

DIN 4095	Building site: Drainage systems for protecting structures
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN EN 1504	Protection and repair of concrete structures



Selection of rules to be observed

Acknowledge technical association datasheets		
Publisher	Type/part	Designation/application
Deutsches Institut für Bautechnik DIBt, Berlin	Building rule list	Part A - C
German Committee for Construction Contract Procedures (DVA)	VOB Part B	General conditions of contract relating to the execution of construction work - DIN 1961
	VOB Part C	Relevant general technical specifications in construction contracts
Deutsche Bauchemie e.V.	Relevant guideline	"Relevant guideline for planning and execution of waterproofing components in direct ground with flexible waterproofing slurry"
	Relevant guideline	"Relevant guideline for planning and execution of waterproofing components in direct ground with cementitious waterproofing slurry"
	Relevant guideline	"Relevant guideline for planning and execution of waterproofing with polymer-modified bituminous thick layer coatings"
Wissenschaftlich-Technische Arbeitsgemeinschaft für Bauwerkserhaltung und Denkmalpflege (WTA) e.V.	WTA datasheet 4-6	Retroactive waterproofing building components directly in the ground
	WTA datasheet 4-5	Evaluation of masonry work - masonry work diagnosis
	WTA datasheet 2-9	Restoration plaster systems
	WTA datasheet 4-4	Masonry work injection against capillary moisture
Deutscher Verein des Gas- und Wasserfaches e.V.	DVGW worksheet W270	Propagation of micro-organisms on work materials for drinking water - testing and evaluation
	DVGW worksheet W347	Hygienic requirements for cement-based construction materials in drinking water
Fachverband der Stuckateure f. Ausbau und Fassade Baden-Württemberg	Relevant guideline	Facade-building skirt render/outdoor plants
Deutscher Ausschuss für Stahlbeton e.V. (DAfStb)	Relevant guideline	Water-tight buildings consisting of concrete (WU relevant guideline)
	Explanation of the relevant guideline	Water-tight buildings consisting of concrete (WU relevant guideline)
Deutscher Betonverein e.V.	Structural engineering cement datasheet - H10	Water-tight concrete building components
	Concrete technology cement datasheet - B 22	Joints: Construction joints
Bundesanstalt für Strassenwesen	ZTV-Ing	Additional technical contract conditions and relevant guidelines for engineered structures
Studiengesellschaft für unterirdische Verkehrsanlagen e.V. -STUVA-	ABI datasheet	Waterproofing buildings via injection
Deutscher Holz- und Bautenschutzverband	Datasheet 01/10/S	Professionally prepared mould removal in interior spaces

The SCHOMBURG group develops, produces and distributes construction materials systems for the areas of:

- Waterproofing and repair of buildings
- Tiles/natural stone/screed application
- Ground protection/floor coating systems
- Concrete technology

For over 80 years SCHOMBURG's development competence has been a recognised feature in both the domestic and the worldwide marketplace. Building product systems that are produced in-house are highly prized around the world.

Experts value the quality and the efficiency of building product systems, the services and therefore the core competence of the group of companies.

To meet the demanding requirements of an ever-changing market, we continuously invest in the research and development of new and already existing products. This guarantees an ever increasing product quality to the satisfaction of our customers.

SCHOMBURG GmbH
Aquafinstrasse 2-8
D-32760 Detmold (Germany)
phone +49-5231-953-00
fax +49-5231-953-333
email export@schomburg.de
www.schomburg.com

