

| SCHÖNOX POOL LINE

| Perfectly coordinated
for perfect execution |



Foto: FlisFram AS



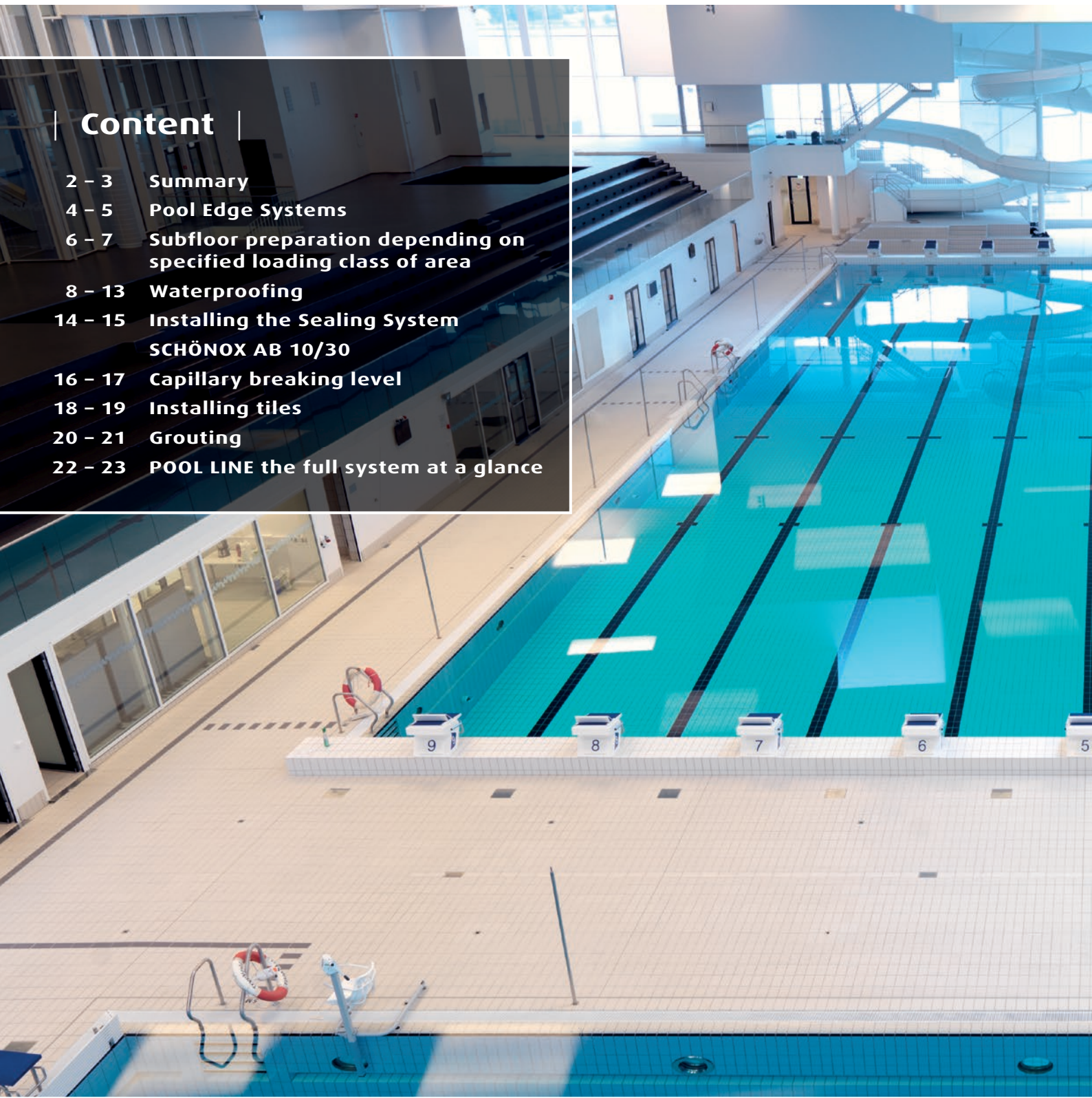
FOR PROFESSIONALS. SIMPLY BETTER.

| www.schonox.com |

 **SCHÖNOX**[®]
A SIKA BRAND

| Content |

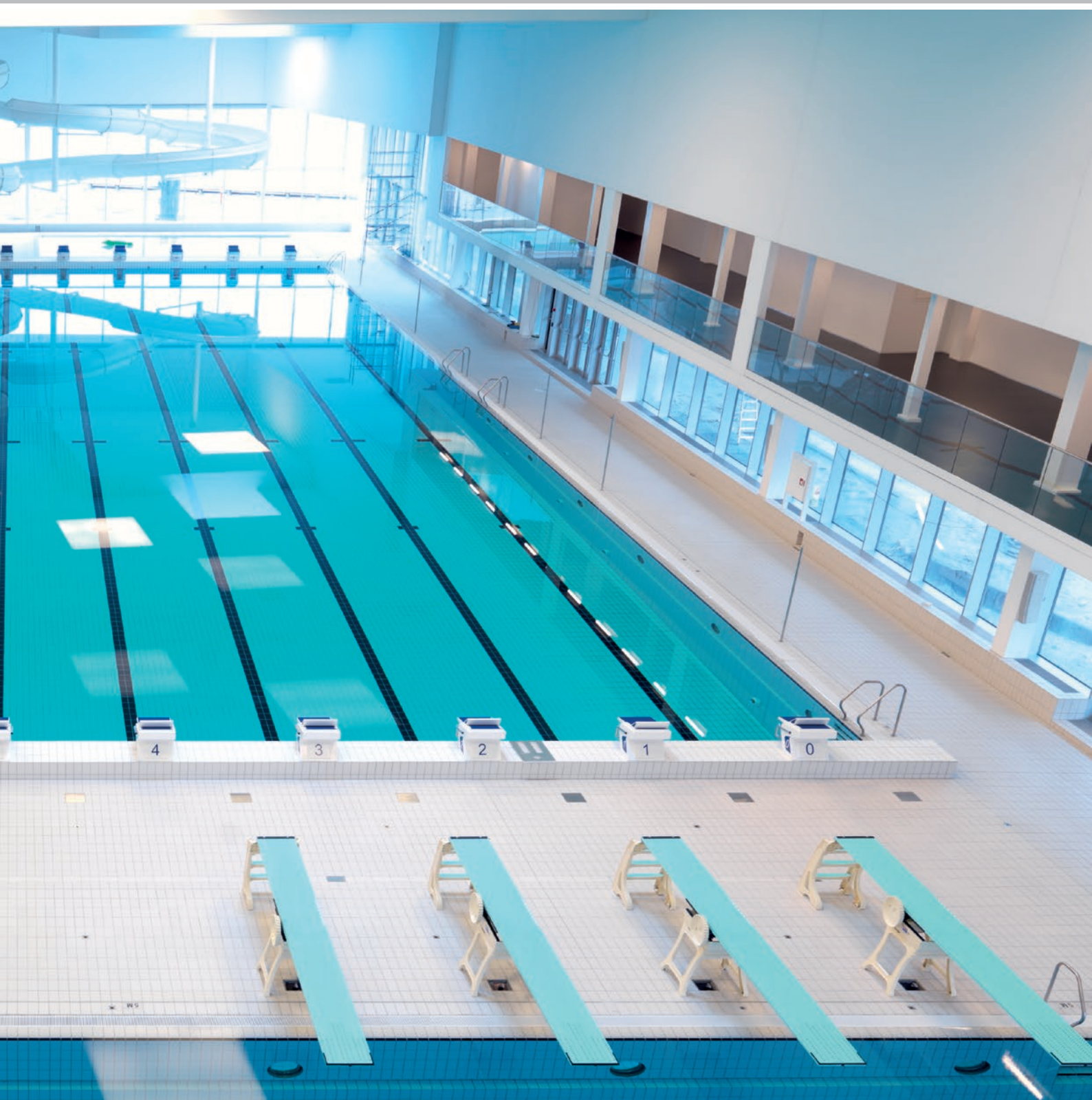
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What makes a pool particularly attractive?

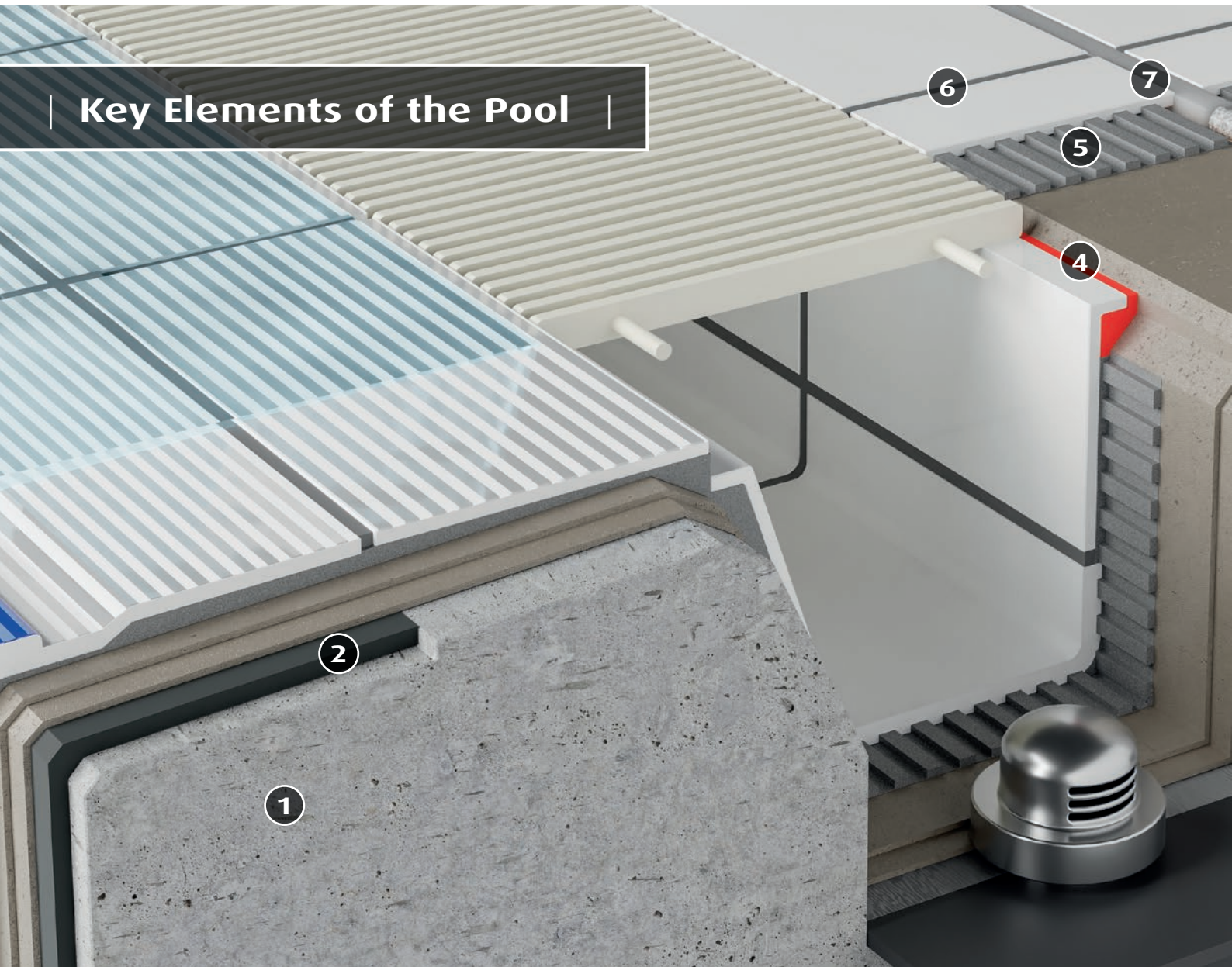
Shining tiles, a totally flawless appearance and perfect hygiene. That applies equally for both public and private pools. The mere sight of them is an invitation to plunge in, their use a sheer pleasure. Time and time again. Tiles undoubtedly create a better pool atmosphere and make it more attractive. Laying ceramic tiles in a pool also indis-

putably poses a particular challenge, especially in modern wellness centres with their mixture of different materials. In addition, pools are highly stressed structures on account of the water pressure and corrosive cleaning agents. With POOL LINE, SCHÖNOX can offer you a perfectly matched, high-quality product line that makes your work distinctly easier and ensures the long-term durability of your pool.



Every single product helps to ensure that the pool remains functional and attractive for a long, long time. All the photographs in this brochure show reference pools throughout Europe which were built with SCHÖNOX POOL LINE products.

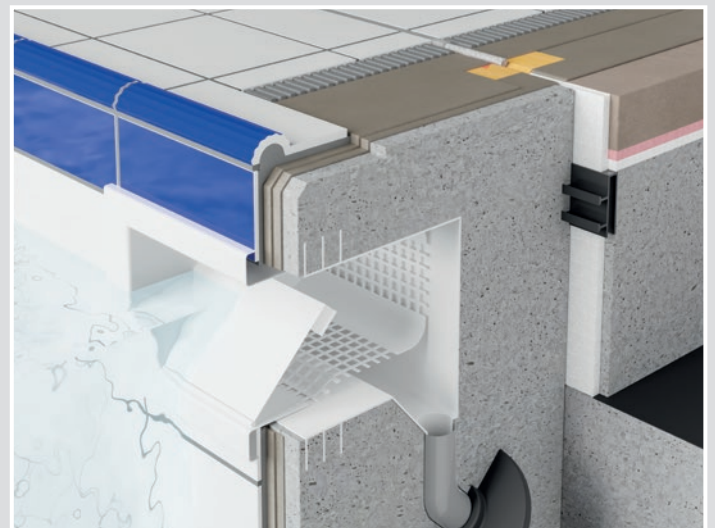
| Key Elements of the Pool |



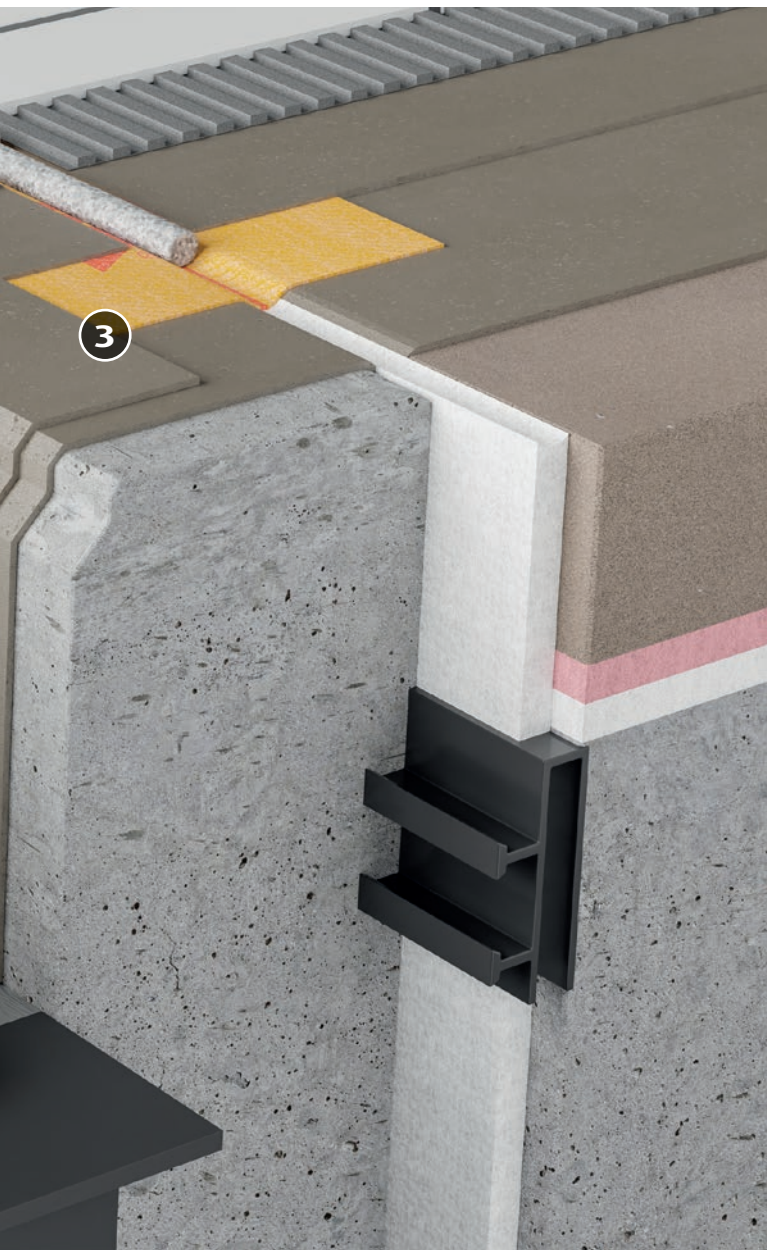
Pool Edge System Finland

higher water level for a beach-like effect

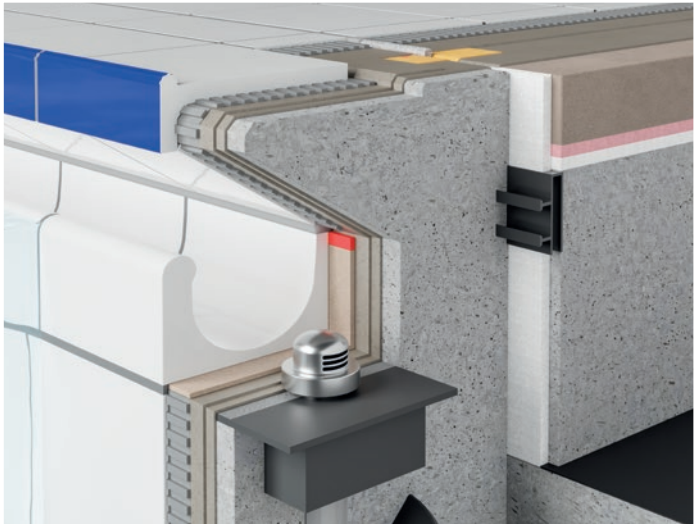
Particular attention must be paid to the pool edge when planning a pool. Different constructions can be selected here. A distinction is made between high and low water levels, although pools with low water levels are rarely built today. The "Finnish" system and the "Wiesbaden" system with high water levels are probably the most commonly used systems today.



Pool Edge System Skimmer

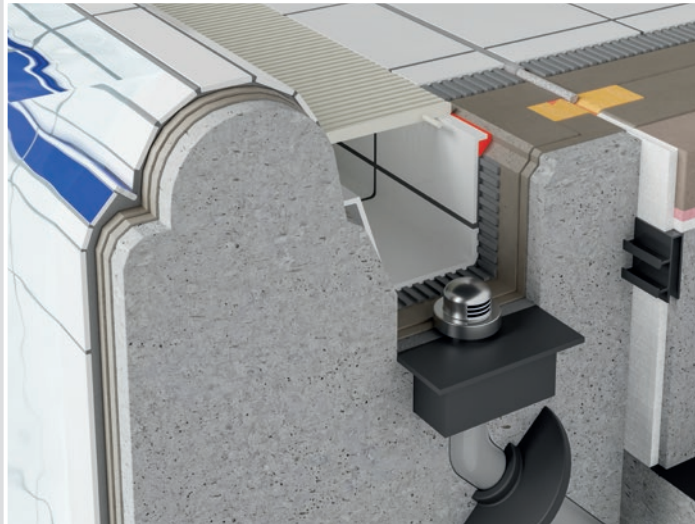


- System components**
- ① Waterproof Concrete
 - ② Wall Levelling: Sika MonoTop® 910 N and Sika MonoTop® 412 DE
 - ③ Sealing Membrane: SCHÖNOX 2K DS RAPID + SCHÖNOX ST FUGENDICHTBAND
 - ④ Sealing off capillaries: SCHÖNOX CON BODEN + QUARZSAND
 - ⑤ Tile Adhesive: SCHÖNOX Q6
 - ⑥ Grout Mortar: SCHÖNOX CF DESIGN
 - ⑦ Joint Sealant : Sika® Rundschnur PE + SCHÖNOX MES

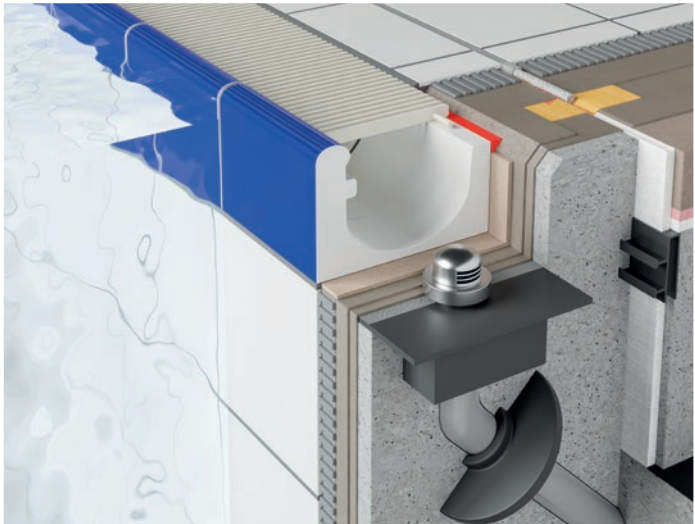


All drawings were kindly supported by www.interbau-blink.de

Pool Edge System Wiesbaden
deeper water level



Pool Edge System St. Moritz



Pool Edge System Wiesbaden
higher water level

Subfloor preparation depending on specified loading

Longstanding results require planning with care

Pool depth, the specific swimming pool areas as well as the type of the pool water used such as thermal, brine or seawater are to be considered as particularly highly loaded areas. Therefore, the planning requires a water analysis in order to be able to specify the suitable waterproofing system in accordance with DIN 4030 for water with aggressive lime.

Typically, chlorinated pool water is treated according to DIN 19643. Alternative disinfection methods such as using ozone support, are used in private areas with skimmers. The following loading classes are to be handled differently.



Photo: FlisFram AS

Highly loaded areas without the presence of hydrostatic pressure
Pool surroundings, shower rooms, rest rooms, sauna.



Highly loaded areas with hydrostatic pressure
Private and commercial/public pools, interior & exterior.



Highly loaded areas including areas with chemical loading
Swimming pools and associated facilities in thermal baths, brine and sea water pools, steam showers.

Water loading classes for containers according to DIN 18535

Swimming pools with a depth of more than 5 m are regarded as highly loaded areas and are subject to water exposure class W2-B, over 10 m water depth to class W3-B.

| Water loading class | Water depth |
|---------------------|-------------|
| W1-B | ≤ 5 m |
| W2-B | ≤ 10 m |
| W3-B | > 10 m |



LITERATURE TIP

Technical instruction
"Guidelines for the design and installation of swimming pools with ceramic coverings"



Subfloor preparation



The common type of concrete installed is concrete with high water penetration resistance, also known as water-impermeable concrete. A 14-day flood test of the new construction or alternatively after the water proofing system has dried, is essential prior to proceed. Other pool constructions, such as Glass fiber plastic basins (GFK) are to be specified on a case-by-case basis.



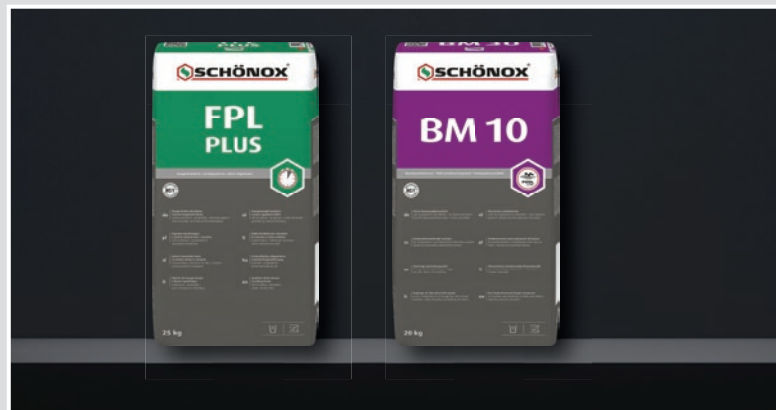
To identify the precise nature and specifics of the substrate and its load-bearing capacity is mandatory! Where necessary, a suitable subfloor preparation process including mechanical treatment such as water jet, air or sand blasting is essential to achieve a surface free of any bond breaking agents. Cracks of a widths > 0.2 mm are to be repaired with suitable systems such as injection materials and are to be coordinated with the specifier.

Wall and Floor Preparation

After the substrate has been pre-treated, the walls can be levelled, e.g. with SCHÖNOX PL in thicknesses of 1 - 10 mm. Any existing guide rails must be removed, and any gaps filled before sealing. For the PCC mortar variant, Sika MonoTop® 910 N is used as a bonding bridge and Sika MonoTop® 412 DE as a reprofiling and levelling mortar. The application can be carried out by hand or by wet spraying. If a composite screed is planned, using SikaScreed® 10BB (bonding bridge) and SikaScreed® 50 can significantly reduce the construction time. We recommend the use of SCHÖNOX FPL PLUS self-levelling compound if only a thin layer of floor levelling is required.



How to install a surface free of bond breakers



Installation of SCHÖNOX systems in private areas

Waterproofing using powder-based bonding slurries

A crack-bridging waterproofing may be done installing the elastic bonding slurry SCHÖNOX 1K DS PREMIUM, which is a two coat system. For best results, the use in conjunction with suitable built-in components parts is required. Basic specifications for those components are 'made of stainless steel, gunmetal or Vinyl. The flange 'contact area' must

be at least 5 cm in order to securely connect the composite tile seal. Other flanges are either to be widened up with adapter pieces or a suitable, capillary-breaking epoxy resin to protect the built-in component all around from a following moisture migration.



Sample repairs when insufficient flange contact area



Application of SCHÖNOX 1K DS PREMIUM



Installing SCHÖNOX 1K DS PREMIUM on moist concrete



Installation of a cement-based waterproofing system



1 or 2 component, flexible membranes for bonded water proofing



Suitable assemblies:
www.aptgmbh.com

2-component epoxy & polyurethane-based waterproofing system



Apply the epoxy based system component primer SCHÖNOX GEA using a suitable, short piled roller following the product data sheet.



After drying, sand broadcast in excess.



When the epoxy has dried accordingly, broom sweep and vacuum the surface removing any loose sand.



Apply the polyurethane based membrane SCHÖNOX EA PUR / EA PUR S using a 6 mm trowel.



Within 12 - 24 hrs apply the coloured coat of SCHÖNOX EA PUR using a suitable roller.

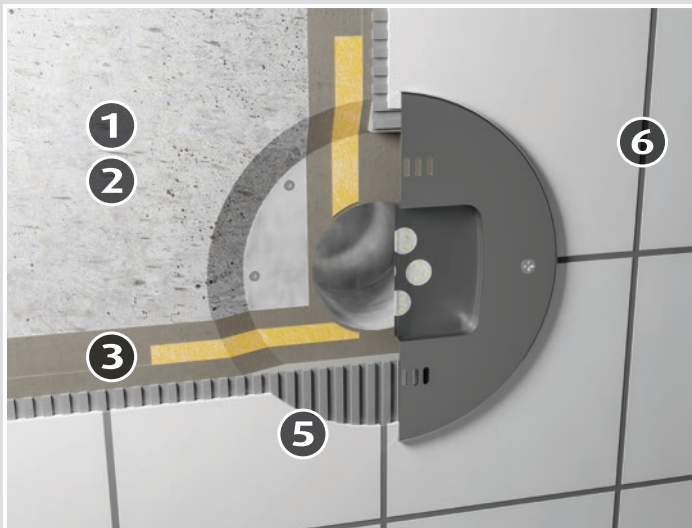


Sand broadcast & cleaning steps again following the product data sheet.

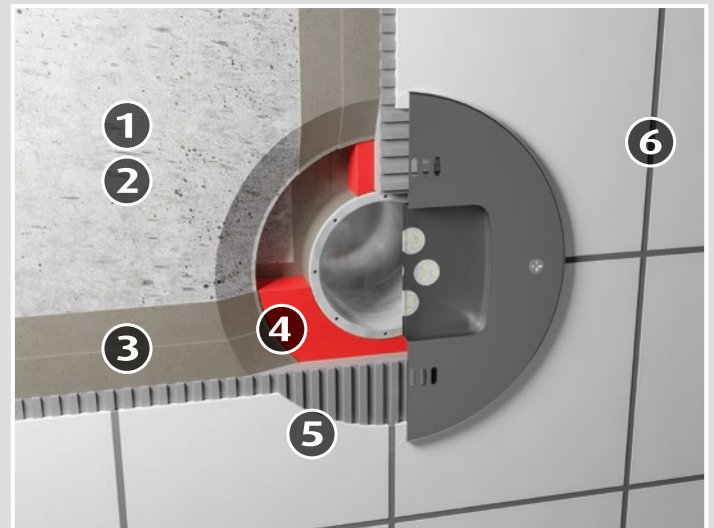
Design examples of penetrations and installation parts

| System components |

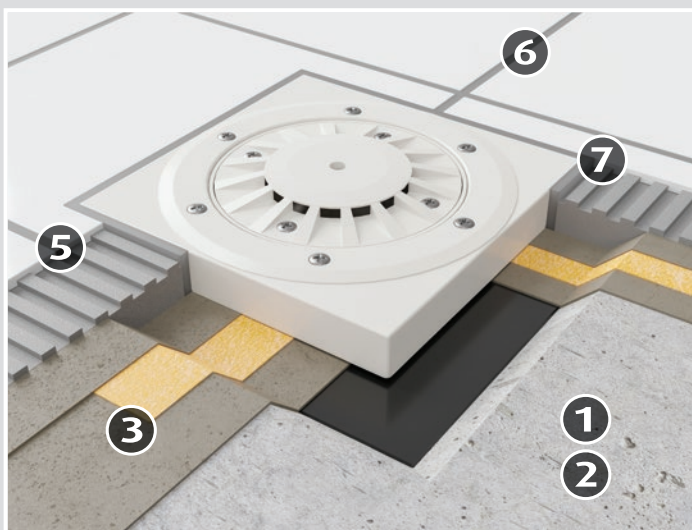
- ① Waterproof concrete or ② PCC-mortar: Sika MonoTop® 910 N and Sika MonoTop® 412 DE
- ③ Sealing membrane: SCHÖNOX 2K DS RAPID and SCHÖNOX FC sealing collar for floors
- ④ Sealing off capillaries: castable with SCHÖNOX CON BODEN + QUARZSAND 0,2 – 0,8 mm, sturdy with SikaDur® -31+
- ⑤ Tile Adhesive: SCHÖNOX Q6
- ⑥ Grout Mortar: SCHÖNOX CF DESIGN
- ⑦ Joint Sealant: SCHÖNOX MES



A standard flange installation: Using a flange $\geq 5\text{cm}$ example of an underwater spotlight.



If the flange contact area is too small, the waterproofing membrane (Pos.3) is used around the flange and, after drying, filled with SikaDur® -31+ up to the level of the surrounding concrete as capillary sealing system.



Bottom inlet nozzle. Standard compliant flange installed by using waterproofing membrane.



Example of installation parts



Flange installation solution where flange area is missing

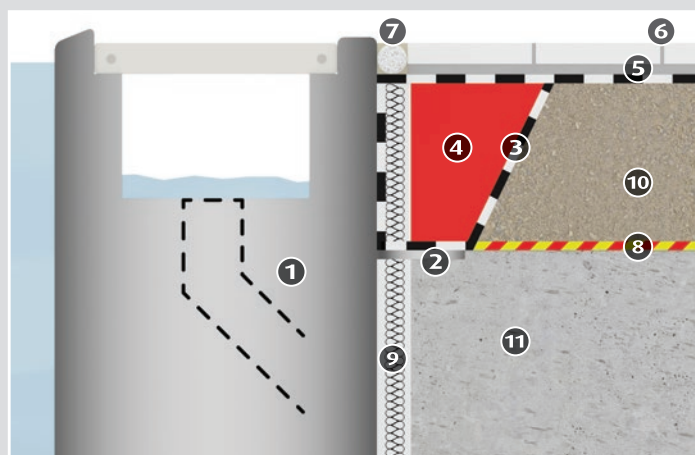
Design example: Connection to a stainless steel swimming pool

Stainless steel is becoming an increasingly popular material for swimming pools. The challenge lies in the transitions

between stainless steel pools and non-slip ceramic surrounds.



Project realisation



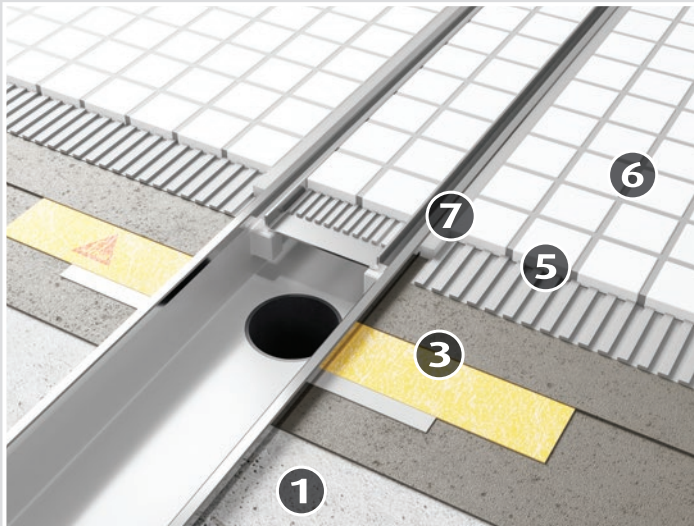
- ① stainless steel pool gutter with anchor angle
- ② SCHÖNOX AB bonded on steel with 2K PU SOLID
- ③ sealing membrane
- ④ sealing off capillaries
- ⑤ Tile Adhesive

- ⑥ Grout Mortar
- ⑦ joint Sealant
- ⑧ separating/slip layer
- ⑨ insulation layer
- ⑩ screed
- ⑪ concrete

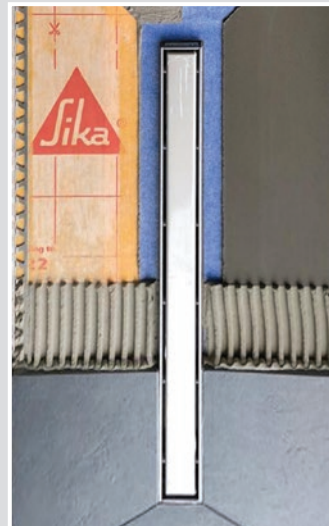
Spa and shower areas

Drainage via ground-level drainage situations in the shower and spa areas are in vogue. Floor-level drains not only offer a wide range of design options, but also benefits in

terms of hygiene and accessibility. The installation of such drainage options requires careful and professional planning.



Flange-able drainage channel for shower systems. Sealing gaiter integrated between the first and second layer of the bonded waterproofing (see page 10 for legend labelling).



Exemplary model structure of a linear and point drainage system with tested installation parts in combination with cementitious waterproofing sheet membrane in accordance with DIN 18534-3; -5.



Photo: F&S Fram AS



photo: Kessel AG

Installation of a linear drainage system



SCHÖNOX AB fullfils the requirements of the W3-I acc. to DIN 18534. The fast curing ensures a prompt utilisation of the sealed area.



Installation of a point, linear and wall drainage system.



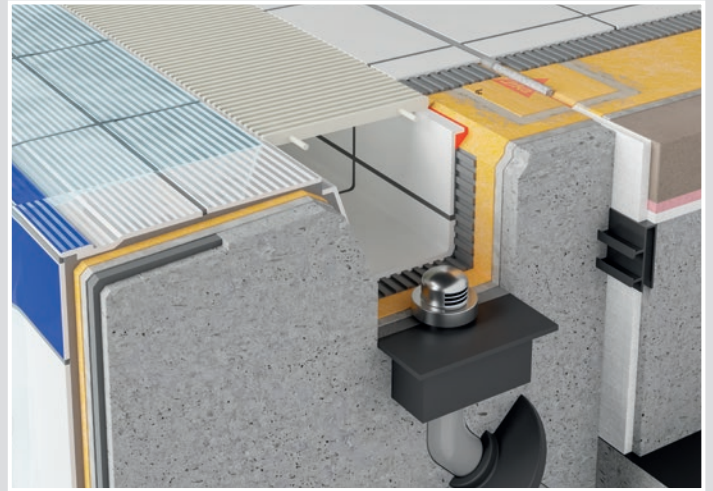
Examples of drainage in the pool surround area or shower facilities.

| Installing the Sealing System SCHÖNOX AB 10/30

Installing SCHÖNOX AB 10/30 using SCHÖNOX iFIX®

The sheet membrane SCHÖNOX AB 10/30 is installed using the rollable sealing adhesive SCHÖNOX iFIX® and is the preferable system solution for the highest loading classes.

After mixing the SCHÖNOX iFIX® components, SCHÖNOX iFIX is applied using the system roller to insert the 'cut to shape' sheet membrane SCHÖNOX AB 10/30 into the fresh adhesive ensuring a sufficient wetting.



Installing SCHÖNOX AB 10/30 using SCHÖNOX iFIX® and the SCHÖNOX Toolbox containing all required tools.

Install the sheet membrane within the open time of approx. 15 minutes to achieve the suitable bond. Joints are to be sealed using the SCHÖNOX ST50 Sealing Tape glued with SCHÖNOX iFIX®. Alternatively overlap SCHÖNOX AB sealing the overlaps using SCHÖNOX iFIX® as well. If installed in brine pools, the waterproofing system are installed using SCHÖNOX EA PUR S instead of SCHÖNOX iFIX®.



Pressing on SCHÖNOX AB 10/30 around suitable edges.

Case study: Renovation of a therapy pool

Renovation of a therapy pool with overflow unit type 'St. Moritz' and custom made stainless steel gutter.

Pool surroundings are water proofed using the SCHÖNOX iFIX® system and the joint mortar SCHÖNOX CON BODEN aggregated with SCHÖNOX QUARZ-SAND 0.2 - 0.8 mm. The surface is sand broadcasted with a coarser aggregate, grain size 0.7 - 1.2 mm in conformance with the relevant German standards (minimum joint width and depth of 15 by 50 mm).

Picture lower right: Installing of SCHÖNOX AB in under water area.

SCHÖNOX AB-system

The waterproofing properties of the installed system SCHÖNOX AB 10/30 bonded with SCHÖNOX iFIX® sealing adhesive and using the additional system components are approved according to the German standards up to 2.5 bar water pressure and 10 m pool depth.

Application in pools up to 10 m depth.

Technical Data

| | |
|--------------------------|-------------------------------------|
| Color: | yellow |
| Sheet width: | 1.00 m |
| Roll length: | 10.0 m and 30.0 m |
| Material thickness: | appr. 0.5 mm |
| Mass per unit area: | approx. 280 g/m ² |
| Application temperature: | not below +5 °C |
| Temperature resistance: | -30 °C to +90 °C |
| Burst pressure: | ≥ 3.9 bar |
| sd-value: | > 96 m tested according ETAG 022 |
| UV-resistance: | ≥ 500 hours |



| Capillary breaking level

The necessity of sealing the capillaries

The capillary sealing system based on epoxy is essential when installing/renovating high level overflow units! Pool water intends to level up with the pool surrounding, which is called 'communicating tubes'. So as a consequence of not sealing properly, the water will be most definitely penetrating downwards to the lower rooms or to the surroundings.

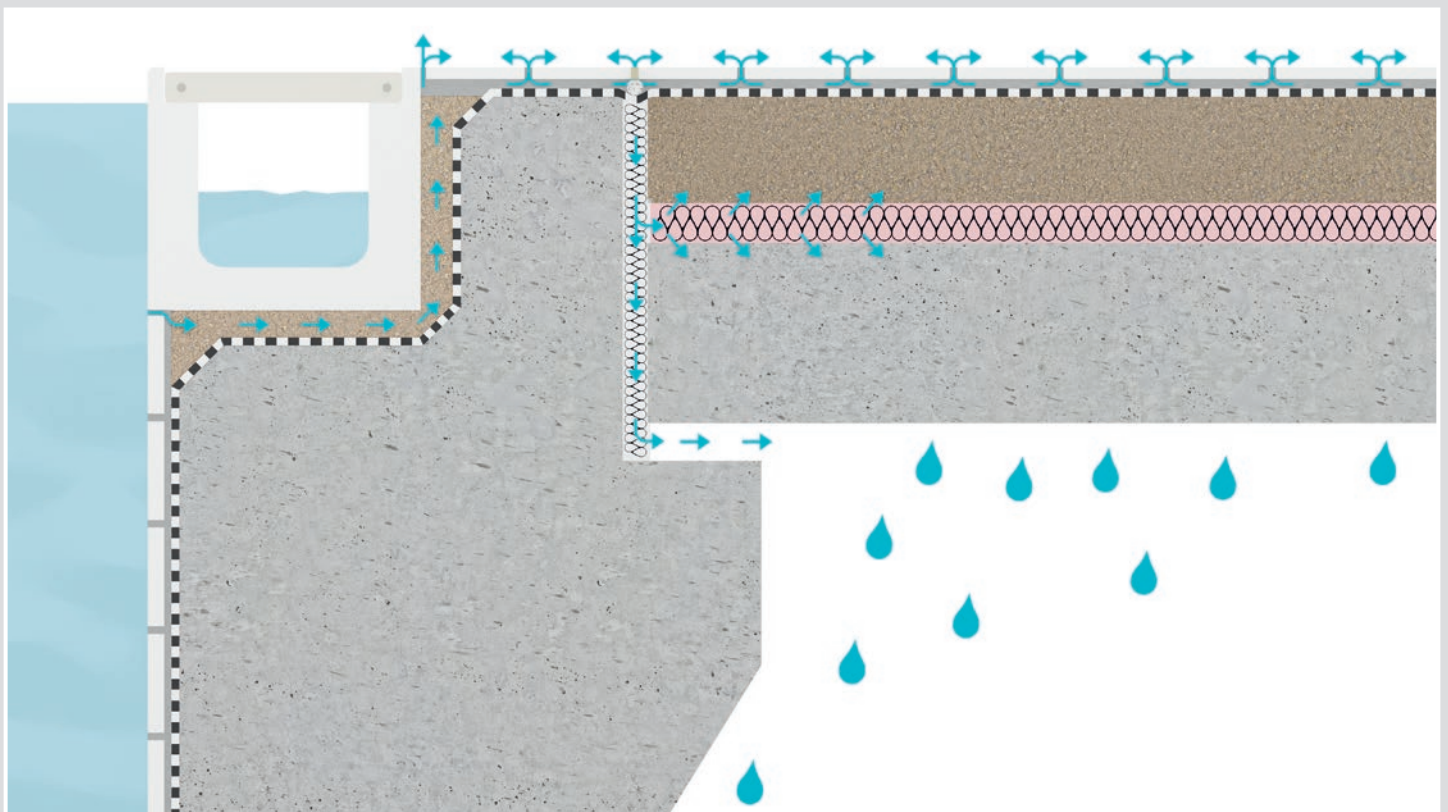
The minimum requirement following for filling 'joint chamber' properly, as specified following the German ZDB standard, is 15mm width by 50mm depth. The epoxy based sealing/filling is done with SCHÖNOX CON BODEN aggregated with SCHÖNOX QUARZSAND 0.2 - 0.8 mm, which then is broadcasted with the same aggregate after application.



The consequence of insufficient capillary sealing.



'Communicating tubes' without the sealing of the capillaries and water proofing tapes resulting in failures from penetrating moisture to the pool surroundings and/or the lower rooms.



The consequence of not sealing capillaries.

| How to install a 'capillary breaking' mortar system based on epoxy. |

Depending on type (grain size and amount) of the used aggregate, SCHÖNOX CON BODEN can be used with the required consistency – sturdy or flowable.



To maximise a suitable bond, the backing of the single components/form parts is primed with neat SCHÖNOX CON BODEN prior to embed into the aggregated mortar.



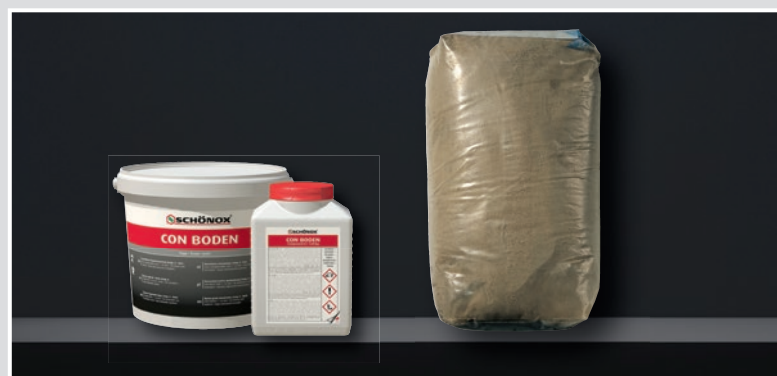
Detail picture of an embedded form part into the aggregated mortar



Installing the capillary breaking joint mortar section by section using prepared templates.

Sealing the offset of molded pool parts is an important part of the process, ideally performed with trass cement mortar. Alternatively, avoiding the risk of efflorescence and increasing the physical bond at the same time, the use of water-free, epoxy-based mortar, a mix of 1 part epoxy resin and 10 parts of aggregate such as SCHÖNOX QUARZSAND 0.1-3.0 mm, may be used.

Ideally, SCHÖNOX CON BODEN is being used for this application after aggregating the resin with SCHÖNOX QUARZSAND aggregate 0.2-0.8 mm.



Primer and Mortar system component based on epoxy

| Installing tiles

Since a variety of tile coverings (mosaic, natural stone, LFT) and mortar systems are available, installations in under water areas require specific approvals from the manufacturers. Not only the approval of all involved manufacturers is mandatory, but also the following installation of the full system is to follow all relevant guidelines and standards (floating buttering according to DIN EN 18157) avoiding voids as far as possible.

Depending on substrate and type of end-used pool water, cement-based, epoxy resin or polyurethane-based tile

adhesive are to be used. A water analysis (thermal and brine pools!) from the specifier or end user, are mandatory to be able to determine whether cement-based or epoxy resin-based systems are to be specified. The rules and regulations in regard to the covering manufacturers are to be followed installing 'void-free' and avoiding growths of microorganisms below the coverings, as well as other important topics such as slip resistance and general rules of swimming pool technology such as pool commissioning, maintenance, emptying process etc..



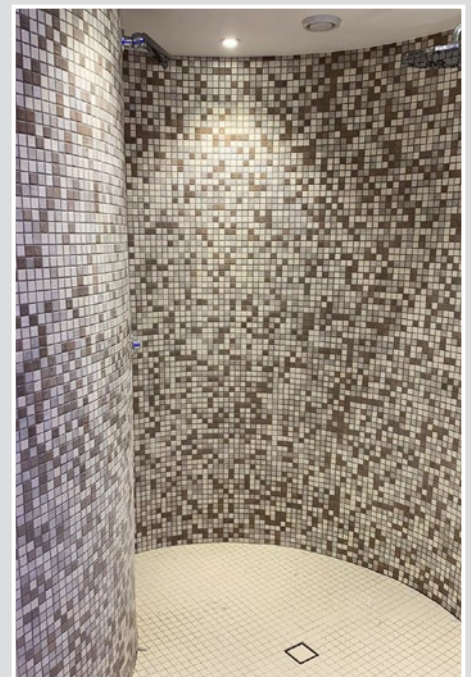
Installing following the floating buttering method resulting in a 'void-free' installation. Picture left: Approving a suitable wetting.



Movement joints are filled with suitable, permanently elastic joint fillers according to the ZDB leaflet "Movement joints in cladding and coverings made of tiles and slabs".

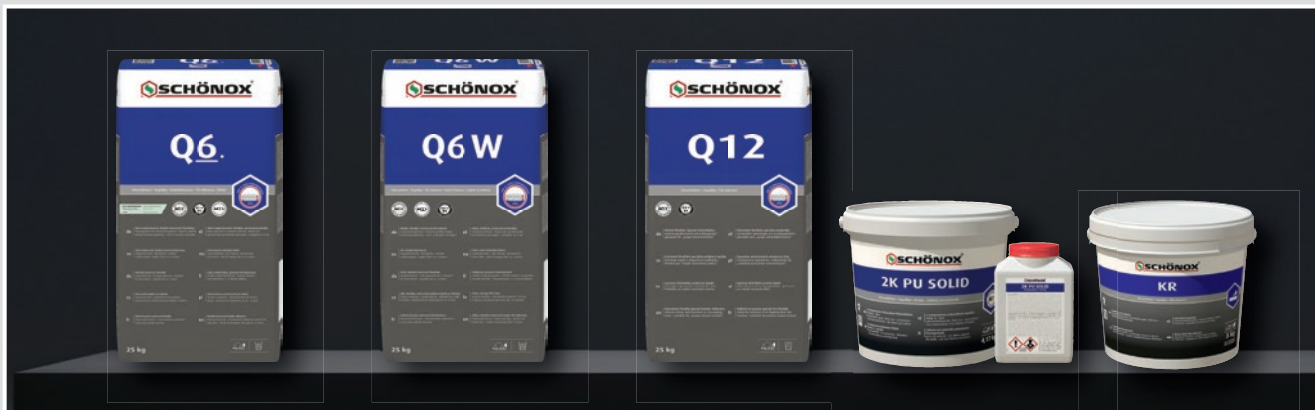


Glass mosaic mats for under water end are typically fixed together topically and must always be installed following manufacturer guidelines!





Installation of tiles in areas not exposed to the elements.



SCHÖNOX System Solutions approved in multiple projects around the globe.

| Tile Grouting – Best possible resistance including a brilliant visual appearance |



Joints are substantial and indispensable to relax movement and avoiding cracks. Top surface, colour and resistance of an installed joint mortar are essential to finish the installation of premium, hygienic ceramic tile coverings.



Use the professional board holder to spread the material deep into the joints.



Use hydro sponge to emulsify any residual material.



Wash the joints smooth and clean with a hydro sponge board.

Please follow the QR-Code to get to the application video of SCHÖNOX CF DESIGN



The ideal Joint Mortar solution for any type of tile and mosaic



SCHÖNOX CF DESIGN is suitable as adhesive as well as joint mortar for any suitable glass mosaic tiling.

To ensure the system can withstand the typical moving and cleaning loadings of swimming pools, we recommend using premium products (such as grout mortar following DIN EN 13888 CG) only! Premium cementitious or epoxy based systems are suitable for these loading classes..

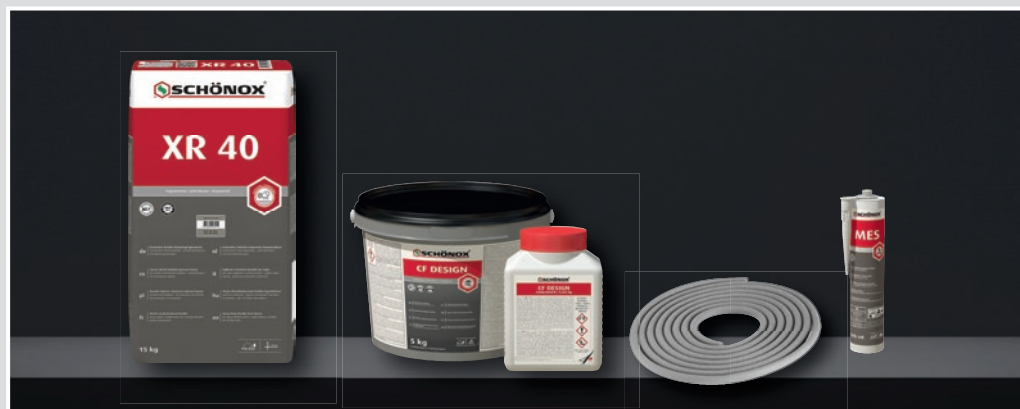
To install glass mosaic, we recommend using epoxy-based tile adhesive as well as grout mortar.

The system is completed following a cleaning concept as specified by Witty, our recommended supplier of cleaning systems.























































PRACTICE TIP

For professional application use SCHÖNOX EPOXY TOOL-BOX. It includes ideal tools for grouting epoxy tile joints.















































The best possible joint system solution for any type of loading.


Full system for extraordinary results

| Product category | Product name | Underwater area | Pool surrounding / shower area |
|-------------------------------|---|---|---|
| Levelling Compounds / Screeds | SCHÖNOX® PL Universal repairing mortar |  |  |
| | SCHÖNOX® PL PLUS Ready mixed repair mortar for use from 3 - 30 mm |  |  |
| | Sikascreed® BB 10 Special cement, polymer modified bonding bridge |  |  |
| | Sikascreed® 50 Premixed rapid setting screed |  |  |
| | SCHÖNOX® FPL PLUS Self-levelling compound for use from 3 - 60 mm |  |  |
| | Sika MonoTop® 910 N Polymer modified, 1-component cementitious bonding primer |  |  |
| | Sika MonoTop® 412 DE 1-component, fibre reinforced and low shrinkage repair mortar and waterproofing |  |  |
| | Sikadur®-31 CF Rapid 2-component thixotropic epoxy-based adhesive |  |  |
| Membranes | SCHÖNOX® 1K DS PREMIUM Rapid setting, flexible waterproofing membrane |  |  |
| | SCHÖNOX® 2K DS RAPID Rapid setting, flexible 2-component cementitious membrane |  |  |
| | SCHÖNOX® EA PUR / EA PUR S 2-component polyurethane waterproofing |  |  |
| | SCHÖNOX® AB 30 / AB 10 Sealing and uncoupling layer |  |  |
| | SCHÖNOX® iFIX® 2-component rollable waterproof adhesive |  |  |
| | SCHÖNOX® ST Systemkomponenten Sealing sleeves and tapes |  |  |
| Capillary Sealing | SCHÖNOX® CON BODEN + QUARZSAND Epoxy resin concentrate + Aggregate |  |  |
| Tile Adhesives | SCHÖNOX® Q4 RAPID Highly dust reduced, rapid setting, flexible adhesive for wide range of applications |  |  |
| | SCHÖNOX® Q6 Highly dust reduced, flexible universal powder adhesive |  |  |
| | SCHÖNOX® Q6 W White, highly dust reduced, flexible universal powder adhesive |  |  |
| | SCHÖNOX® Q12 Highly dust reduced, extremely flexible special powder adhesive |  |  |
| | SCHÖNOX® KR Epoxy-based 2-component tile adhesive |  |  |
| | SCHÖNOX® CF DESIGN Epoxy-based tile grout and adhesive for glass mosaics and tiles |  |  |
| | SCHÖNOX® 2K PU SOLID White, 2-component polyurethane tile adhesive |  |  |
| Grouting Compounds | SCHÖNOX® XR 40 Cementitious grouting mortar for hard wearing |  |  |
| | SCHÖNOX® CF DESIGN Epoxy tile grout and adhesive for glass mosaics and tiles |  |  |
| Sealing Compounds | Sika® Rundschnur PE Polyethylene Foam Backer Rod for filling cracks |  |  |
| | SCHÖNOX® MES Natural stone silicone |  |  |

Precise details on use and processing can be found in the applicable product data sheets at www.schoenox.com.

| Steam shower / liquid membranes or membrane applies construction board | Brine, thermal or sea water pool | Glass fiber polymer pool (GfK) |
|---|---|---|
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 preferred use

 possible use

Recommendations for cleaning:

As agreed with our partner Witty (supplier of cleaning agents), find our mutual cleaning recommendation attached:

- Rinse filter regularly
- Empty pool once per year for cleaning; drain and refill the pool slowly and uniformly
- Clean pool bottoms twice per week
- Clean pool sides every two weeks
- Clean overflows every week



| SCHÖNOX POOL LINE – Die Systemkomponenten |

Levelling Compounds / Screeds:

- SCHÖNOX® PL / PL PLUS
- Sikascreed® BB 10
- Sikascreed® 50
- SCHÖNOX® FPL PLUS
- Sika MonoTop® 910 N
- Sika MonoTop® 412 DE
- Sikadur®-31 CF Rapid

Membranes:

- SCHÖNOX® 1K DS PREMIUM
- SCHÖNOX® 2K DS RAPID
- SCHÖNOX® EA PUR / EA PUR S
- SCHÖNOX® AB / iFIX®
- SCHÖNOX® ST Systemkomponenten

Capillary Breaking Level:

- SCHÖNOX® CON BODEN +
- SCHÖNOX® QUARZSAND (0.2 – 0.8 mm)
- SCHÖNOX® QUARZSAND (0.1 – 3.0 mm)

Tile Adhesives:

- SCHÖNOX® Q4 RAPID
- SCHÖNOX® Q6 / Q6 W
- SCHÖNOX® Q12
- SCHÖNOX® KR
- SCHÖNOX® CF DESIGN
- SCHÖNOX® 2K PU SOLID

Grouting and Sealing Compounds:

- SCHÖNOX® XR 40
- SCHÖNOX® CF DESIGN
- Sika® Rundschnur PE
- SCHÖNOX® MES



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