Tiles/natural stone/screed application

Swimming pools –
Plan and construct with confidence

Professional waterproofing of composite constructions with tiles and boards.

Problems Solved.

SCHOMBURG

Water is a sports and adventure space. That is why there are so many swimming pools, sports and leisure pools. Be it a sports pool, treatment pool or teaching pool or other, all types of pools represent a high technical challenge with regard to their functionality and demand longevity in terms of their life cycle. In new builds and renovations, the same parameters apply for appropriate functionality. Furthermore, in the course of expanding or making a pool more attractive, a refurbishment of the existing parts of the building is almost always considered. Continuous updating of the relevant technical regulations to their status today as well as the increasing demands for hygiene, health protection and sustainability have resulted in a significant rise in quality standards. On the one hand, this has implications for all those involved in the execution of such construction projects, and on the other hand, it requires experienced partners throughout the entire planning and construction process, also taking into account the expected investment costs.

Particularly for the commercial sector, the requirements are increasing with regard to digitalisation in the construction industry. In addition to the digitalisation of business models, this also includes the coordination of work assignments. Digital planning (BIM), communication via mobile devices and the availability of offers for the economic use and maintenance of real estate are essential components of a forward-looking construction system.

In the area of swimming pools, particular attention must be paid to the relevant waterproofing technology because there is no room for failure in the highly stressed tank bodies.

Rising demands necessitates that the tiling trade work with the highest quality and efficiency. It is therefore not without good reason that swimming pool construction is described by skilled specialists as the "supreme discipline" of the tiling and waterproofing industry.

It is frequently consequential damage resulting from mistakes in the waterproofing technology of earlier generations that - after extended downtimes or periods out of use - provides the impetus for thorough renovation of defective existing swimming pools.

However, such renovation measures are generally also seen as a real opportunity. It is not uncommon for developers to utilise pending substantial alterations as a chance to enhance the appearance of the project. As a result of this, the renovation project often looks like a new build on the old site.

The SCHOMBURG group offers swimming pool construction trades tried and tested, sealed system solutions - from the injection hose and the plastic-modified bituminous thick layer coating, right to the chemically-resistant joint mortar.

These make it possible for the planner and the execution company to impress the developer with reliable planning and execution, especially developers who have already had to complain about damage to their properties and therefore show a particular sensitivity for possible sources of error.

The expertise acquired over decades of development work across SCHOMBURG construction system materials offers the qualified specialist company significant added benefits. Those involved in construction benefit from competent advice on all aspects of efficient application technology, be it in relation to applications that comply with regulations or to special constructions and time-consuming work.


"Standards-compliant" waterproofing in the different areas of a pool

With the German waterproofing standards DIN 18534 "Waterproofing for indoor applications" and DIN 18535 "Waterproofing of tanks and pools", it is now possible to seal all areas of a swimming pool in compliance with standards for waterproofing in combination with tiles or boards (AIV).

Tried and tested products are available for you, for waterproofing in a wide range of areas with low to high exposure, and for applying and laying the selected tiles and boards.
This is referred to as "waterproofing in combination" (AIV). In Germany this is described in the standards DIN 18534 and DIN 18535 in accordance with water exposure classes.

Due to the outstanding technical clarification, we have based the following section on DIN 18534 and the water exposure classes described in it, without providing further details

In DIN 18535 "Waterproofing of tanks and pools", waterproofing is described with the following material groups:

- Waterproofing with non crack-bridging, cementitious waterproofing slurry (MDS)
- Waterproofing with crack-bridging, cementitious waterproofing slurry (MDS)
- Waterproofing with liquid polymer (FLK)
- Waterproofing with waterproofing materials in sheet form (AIV-B)
- Waterproofing with liquid application waterproofing materials in combination with tiles and boards (AIV-F)

The following products should always be part of a tested AIV system

- Joint tapes
- Sealing collars
- Reinforcing fabric
- Thin-bed mortar

and should be used in conjunction with the waterproofing system.

AREA		per DIN 18534 and DIN 18535	
		Designation	Description
Pools		W1-B W2-B	Waterproofing tanks and pools with a fill height of up to 5 m Waterproofing tanks and pools with a fill height of up to 10 m
		W3-B	Waterproofing tanks and pools with a fill height of over 10 m
Swimming pool surround		W3-I	Surfaces with very frequent or long-lasting exposure to splash and/or service water and/or water from intensive cleaning procedures, intensified by accumulating water.
Communal showers			
WC, wall surfaces in showers, substrates with drains/gutters		W2-I	Areas with frequent or long-lasting exposure to splash water and/or service water, mainly intensified on the floor by accumulating water.
Kitchenettes		W3-I	Surfaces with very frequent or long-lasting exposure to splash and/or service water and/or water from intensive cleaning procedures, intensified by accumulating water + chemical exposure due to chemically contaminated service water and particularly contaminated cleaning water.
Changing rooms	Wall	W1-I	Surfaces with frequent exposure to splash water or less frequent exposure to service water, without intensification due to accumulating water.
	Floor	W2-I	As in WC
Foyer	Wall	W1-I	As wall surfaces in changing rooms
	Floor	W1-I	As in changing rooms



in combination with tiles and boards

In accordance with the latest engineering practice, and also per DIN 18534, all surfaces per the water exposure classes W2-I and W3-I must be sealed. However, with water exposure class W1-I it is only necessary to seal substrates and wall surfaces manufactured from water-sensitive building products, or water-resistant building products if these are located directly behind water-sensitive building products, for example insulation.

PERMISSIBLE SUBSTRATES IN ACCORDANCE WITH DIN 18534 and DIN 18535	Recommended WATERPROOFING SYSTEM
Concrete, cement-based screed, cement plaster without lime hydrate	AQUAFIN-RS300
	–
Concrete, cement-based screed, cement plaster, lime cement plaster, cement-based construction boards, composite elements from expanded or extruded polystyrene	AQUAFIN-RS300
	AQUAFIN-RS300
As communal showers	AQUAFIN-RS300
As communal showers	AQUAFIN-RS300
As communal showers, additionally gypsum wall construction boards, gypsum fibre boards, gypsum boards with fleece reinforcement	AQUAFIN-RS300
Concrete, cement-based screed	AQUAFIN-RS300
As in changing rooms	AQUAFIN-RS300
Concrete, cement-based screed	AQUAFIN-RS300

In the case of wall surfaces exposed to water, waterproofing must be applied a minimum of 20 cm above the water intake point or above the height of the anticipated splash water area. In areas where it is only necessary to seal the substrate or floor, e.g. changing areas or the foyer of a swimming pool, the waterproofing layer must be applied min. 5 cm above the upper edge of the top floor covering.

All installation or assembly parts in the area of the waterproofing, e.g. drains, gutters, shower fittings, as well as all assembly parts in a pool that is to be waterproofed must have a min. 5 cm wide sealing flange running all round.

Whilst waterproofing with AIV-F

- crack-bridging, cementitious waterproofing slurry
- reaction resin

is possible in all neighbouring water exposure classes (DIN 18534) W0-I to W3-I and (DIN 18535) W1-B to W2-B, waterproofing with waterproofing materials in sheet form in combination with tiles and boards (AIV-B) is only applicable on surfaces with water exposure classes W0-I to W2-I (DIN 18534). In DIN 18535, the standard for waterproofing tanks and pools, waterproofing materials in sheet form (AIV-B) are not applicable.

Outside of Germany, other standards may be applicable (see page 20/21)

Water exposure classes W2-I and W3-I, high to very high water exposure

Swimming pool surrounds · Shower syst

In wet areas whose wall or floor surfaces are classified in water exposure classes W2-I or W3-I per DIN 18534, only subfloor constructions made of water-resistant building materials may be used (see tables pages 4 + 5). With AIV-F, polymer dispersions (DM) are only permitted on wall surfaces up to water exposure class W2-I and floor surfaces up to W1-I. Crack-bridging, cementitious waterproofing slurry (CM) and reaction resin (RM) may be used on wall and floor surfaces in all water exposure classes. Waterproofing with waterproofing materials in sheet form are permitted in combination with tiles and boards (AIV-B) for wall and floor surfaces up to water exposure class W2-I.

tems and sanitary rooms · Sauna areas

The allocation of suitable SCHOMBURG composite waterproofing systems to the water impact classes of the waterproofing standards DIN 18534 and DIN 18535 can be found in table form at www.schomburg.com.

EXAMPLE APPLICATION SEQUENCE: SWIMMING POOL SURROUND/WALL

1	Primer **ASO-Unigrund-GE** Solvent-free dispersion primer
2	Waterproofing **AQUAFIN-RS300** Rapid hybrid waterproofing
3	Application **SOLOFLEX** Flexible thin-bed mortar
4	Grouting **CRISTALLFUGE-HF** Water-repellent heavy duty grout

EXAMPLE APPLICATION SEQUENCE: SWIMMING POOL SURROUND/FLOOR

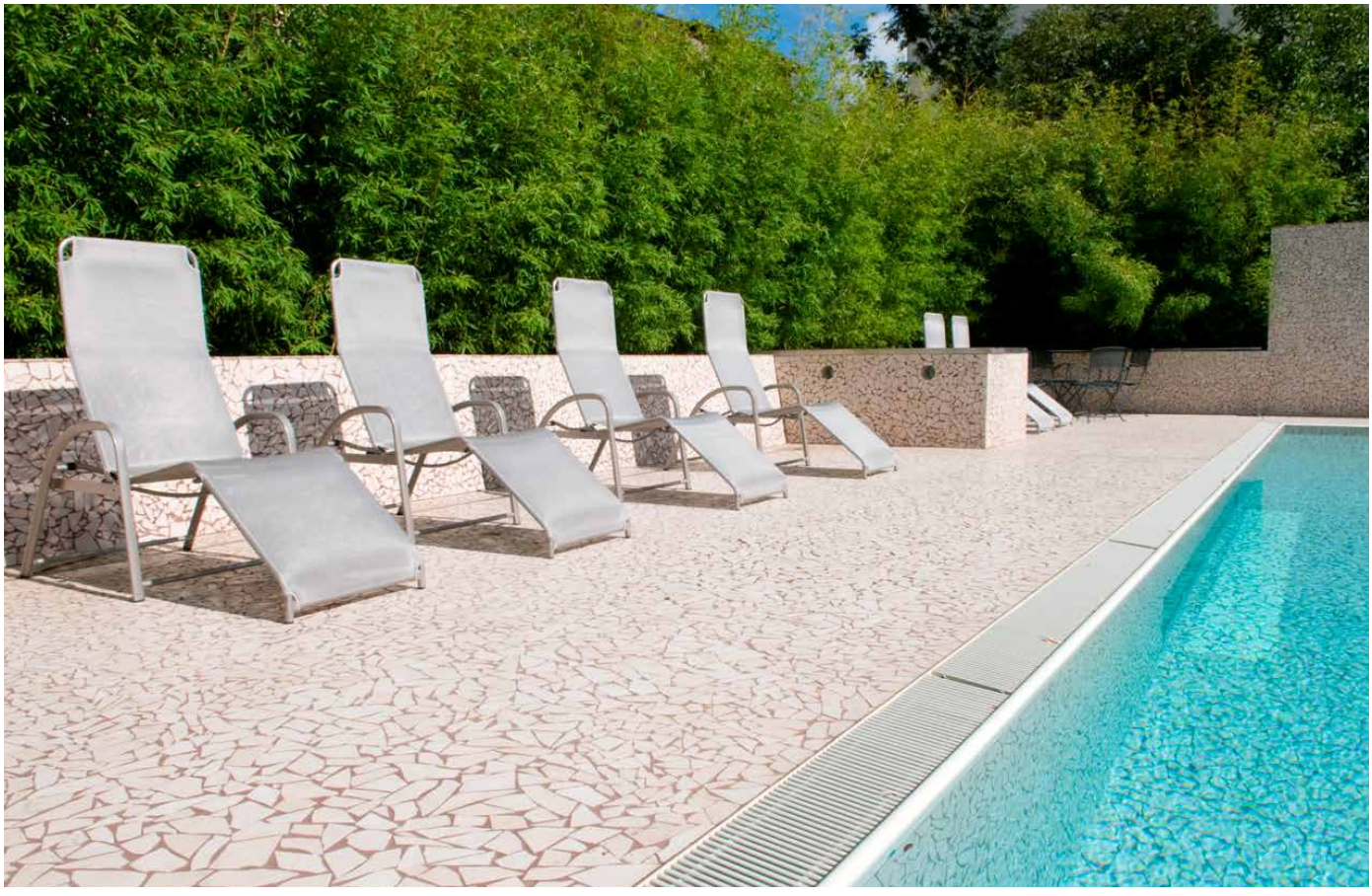
1	Primer **ASO-Unigrund-GE** Solvent-free dispersion primer
2	Waterproofing **AQUAFIN-RS300** Rapid hybrid waterproofing
3	Application **UNIFIX-S3** Flexible mortar C2 TE S2
4	Grouting **ASODUR-EK/F** Heavy-duty reaction resin grout

ZDB moisture exposure class B or DIN 18535 Water impact class W1-B/W2

Swimming pools in interior/exterior a

The allocation of suitable SCHOMBURG composite waterproofing systems to the water impact classes of the waterproofing standards DIN 18534 and DIN 18535 can be found in table form at www.schomburg.com.

Permissible installation surfaces and substrates are listed in Tables 2 and 3 of the ZDB bulletin "Bonded sealing (AIV)" – August 2019. As an alternative to cement plaster from the mortar group PIII CS IV per DIN EN 998-1 without the addition of lime hydrate, it is also possible to use mortar or



2-B

reas · Pool edges

levelling compounds (e.g. PCC mortar = Polymer-Cement-Concrete mortar) as a pre-blended dry mortar, which facilitates shortening the waiting time (drying time) until waterproofing/tiling by over 3 weeks.

Liquid application waterproofing materials used in pools include crack-bridging, cementitious waterproofing slurry (CM) or reaction resin (RM).

After completion and before producing the ceramic cladding, concrete pools that are furnished with bonded waterproofing should be subjected to leak-tightness testing for a minimum of 14 days, during which the pool should be filled with chlorinated water continuously. During this time, the pool water level must reach the maximum water level.

Before tiling with hydraulically hardening thin-bed mortar, the drying time of the concrete structure must be at least 6 months drying time. In addition, the surfacing material bedding must cover the whole area insofar as possible. With laying formats > 10 × 10 cm, apply the combination method (Floating-Buttering method).

EXAMPLE APPLICATION SEQUENCE: POOL/WALL

1	Bonding slurry **ASOCRET-KS/HB** Cementitious bonding slurry
2	Levelling **ASOCRET-M30** Swimming pool plaster
3	Waterproofing **AQUAFIN-RS300** Rapid hybrid waterproofing
4	Application **SOLOFLEX** Flexible thin-bed mortar
5	Grouting **CRISTALLFUGE-HF** Water-repellent heavy duty grout

EXAMPLE APPLICATION SEQUENCE: POOL/FLOOR

1	Bonding slurry **ASOCRET-HB-FLEX** Cementitious bonding slurry
2	Bonded screed **ASO-EZ4-PLUS** Water-repellent pre-blended dry mortar
3	Waterproofing **AQUAFIN-RS300** Rapid hybrid waterproofing
4	Application **UNIFIX-S3** Flexible mortar C2TE S2
5	Grouting **CRISTALLFUGE-HF** Water-repellent heavy duty grout

ZDB water exposure class C or DIN 18534, water impact class DIN 18535

Brine and seawater baths · Steam ba

The allocation of suitable SCHOMBURG composite waterproofing systems to the water impact classes of the waterproofing standards DIN 18534 and DIN 18535 can be found in table form at www.schomburg.com.

Permissible installation surfaces and substrates are listed in Tables 2 and 3 of the ZDB bulletin "Bonded sealing (AIV)" – August 2019. As already described with the swimming pools filled with water per DIN 19643, in thermal, mineral, brine or seawater pools, it is possible to use mortar or levelling compounds (e.g. PCC mortar = Polymer-Cement-Concrete mortar) as a pre-blended dry mortar as an alternative to cement plaster from the mortar group PIII CS IV per DIN EN 998-1 without the addition of lime hydrate.

Reaction resin systems are applied as liquid application waterproofing materials in thermal, mineral, brine or seawater pools, and in the neighbouring wet areas with chemical exposure.

Furthermore, the tested, two-component, reactive curing, flexible waterproofing slurry AQUAFIN-RS300 can be used as AIV in areas in and around bathing pools where the filling water is aggressive to concrete, up to exposure class XA2 per DIN 4030.

ths · Thermal and mineral baths

EXAMPLE APPLICATION SEQUENCE:
POOL/WALL UP TO XA2 DIN 4030

1	Bonding slurry **ASOCRET-KS/HB** Cementitious bonding slurry
2	Levelling **ASOCRET-M30** Swimming pool plaster
3	Primer **UNIGRUND-GE** Epoxy resin primer
4	Waterproofing **AQUAFIN-RS300** reaction resin waterproofing
5	Application **UNIFIX-S3** Epoxy resin thin-bed mortar
6	Grouting **ASODUR-EK/F** Epoxy resin joint mortar

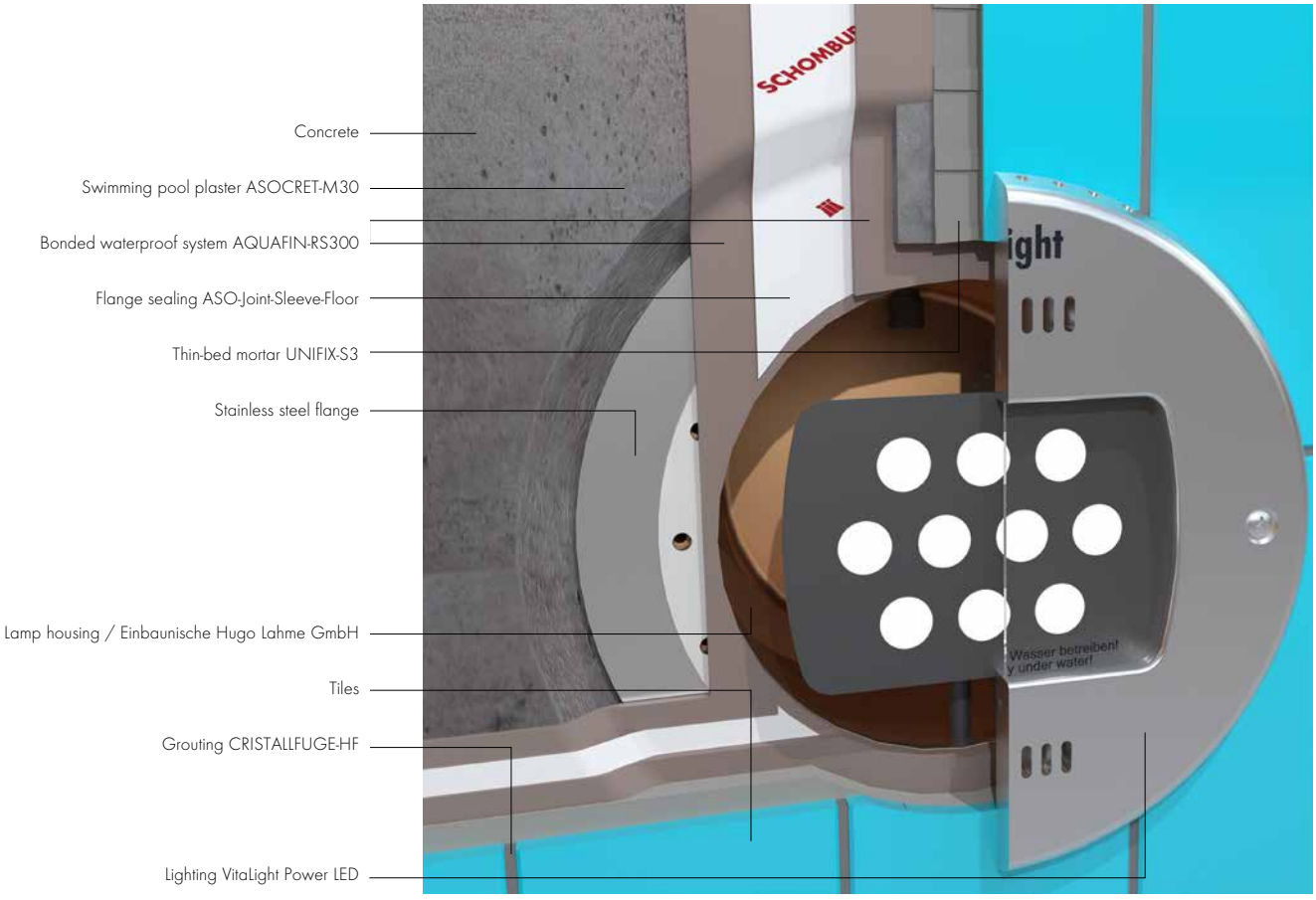
EXAMPLE APPLICATION SEQUENCE:
POOL/FLOOR UP TO XA2 DIN 4030

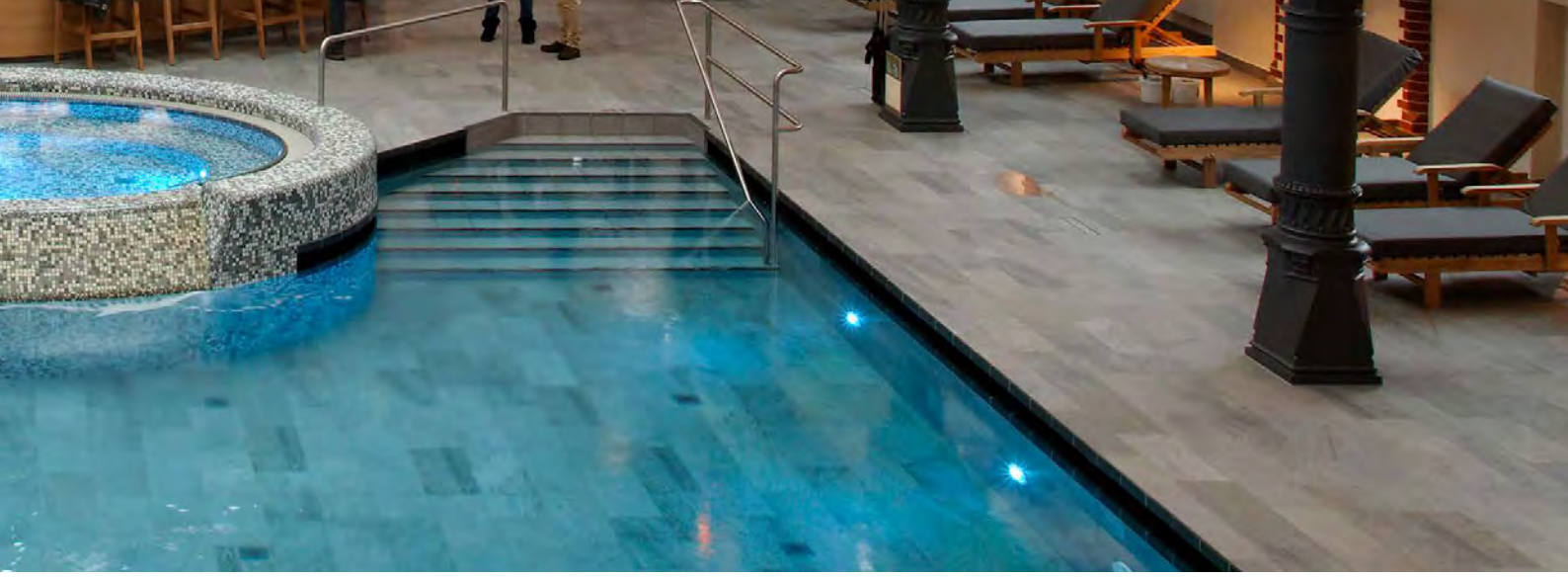
1	Bonding slurry **ASOCRET-HB-FLEX** Cementitious bonding slurry
2	Bonded screed **ASO-EZ4-PLUS** Water-repellent screed mortar
3	Primer **UNIGRUND-GE** Epoxy resin primer
4	Waterproofing **AQUAFIN-RS300** reaction resin waterproofing
5	Application **UNIFIX-S3** Epoxy resin thin-bed mortar
6	Grouting **ASODUR-EK/F** Epoxy resin joint mortar

Connection with assembly parts - Waterproofing of corners and joints

Intersections of the waterproofing level, for example in the area of drains, underwater lighting, inflows, etc., must be designed such that these can be professionally integrated in the waterproofing. For this reason, in areas of waterproofing in combination with tiles and boards (AIV) - in accordance with DIN 18534 and DIN 18535 - it is only permissible to use assembly parts with a circumferential flange.

In doing so, the flange width must be at least 50 mm. From the flange of the assembly part to min. 50 mm onto the neighbouring substrate, the waterproofing must be reinforced



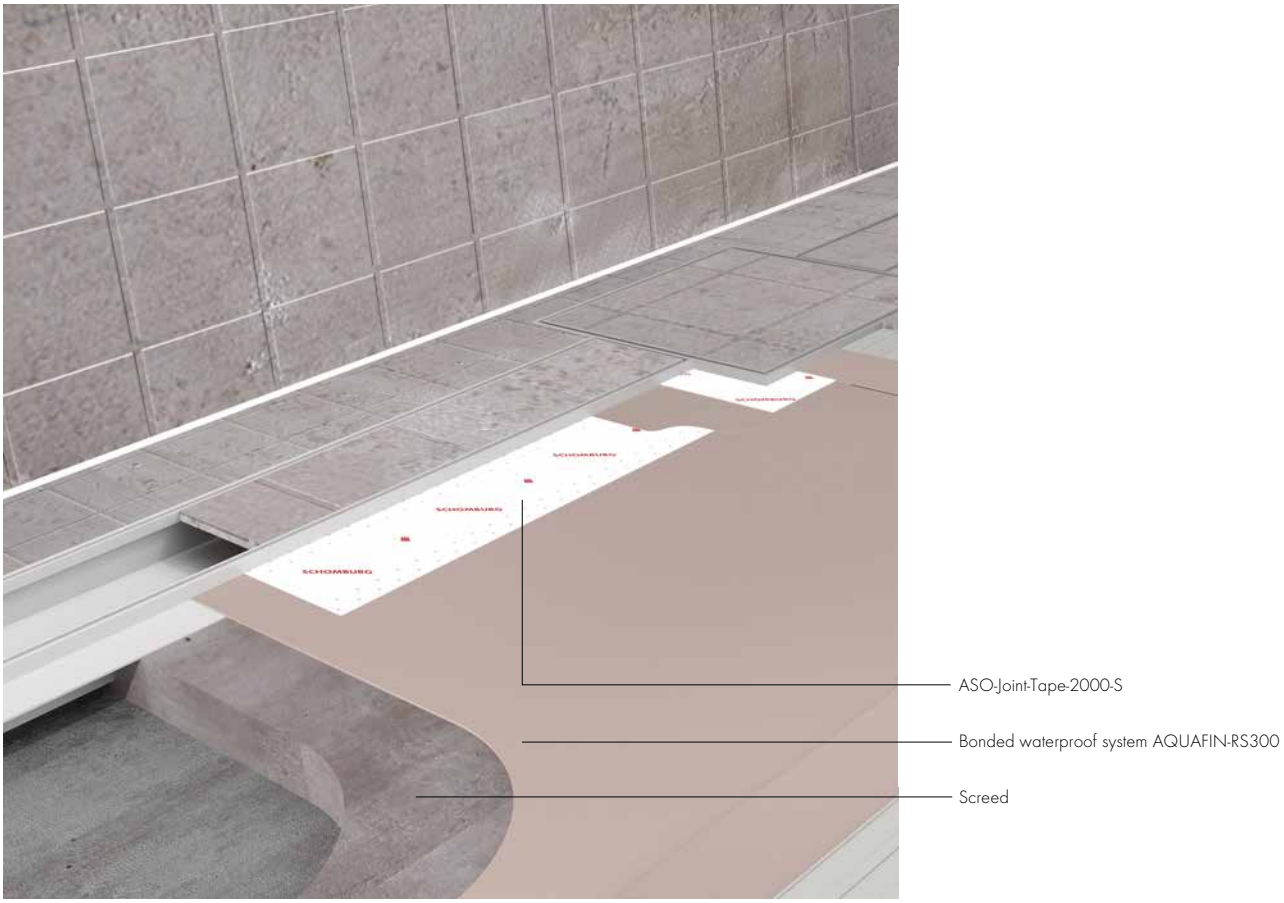


Floor drain

by inlaying a joint sleeve / joint tape compatible with the waterproofing system.

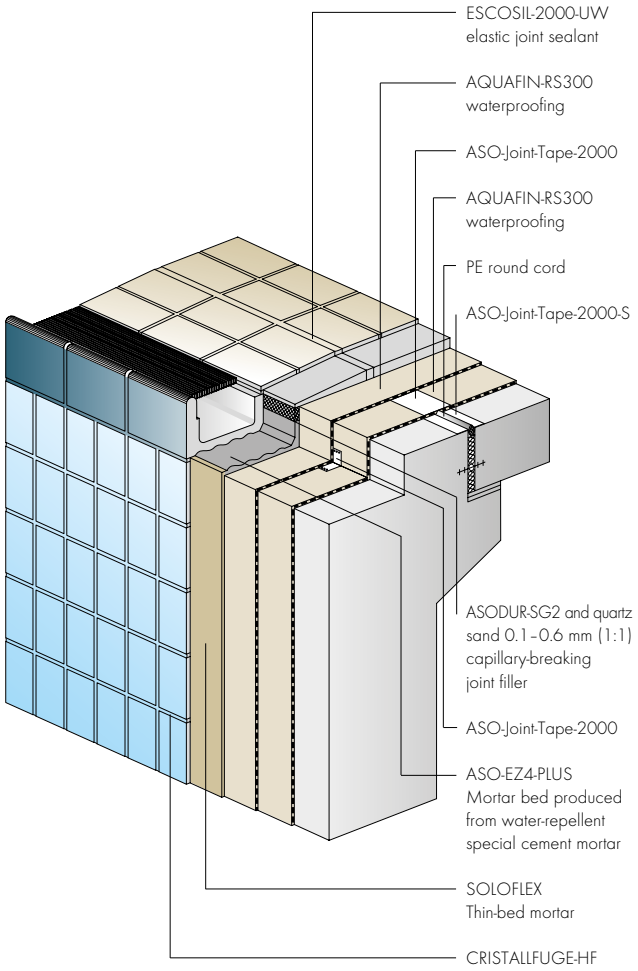
The task of the sealing collars/tapes is to protect components and structures from moisture penetration in combination with the waterproofing material – which can only be achieved if there is a sufficient connection surface to the installed components.

Flange pre-treatment

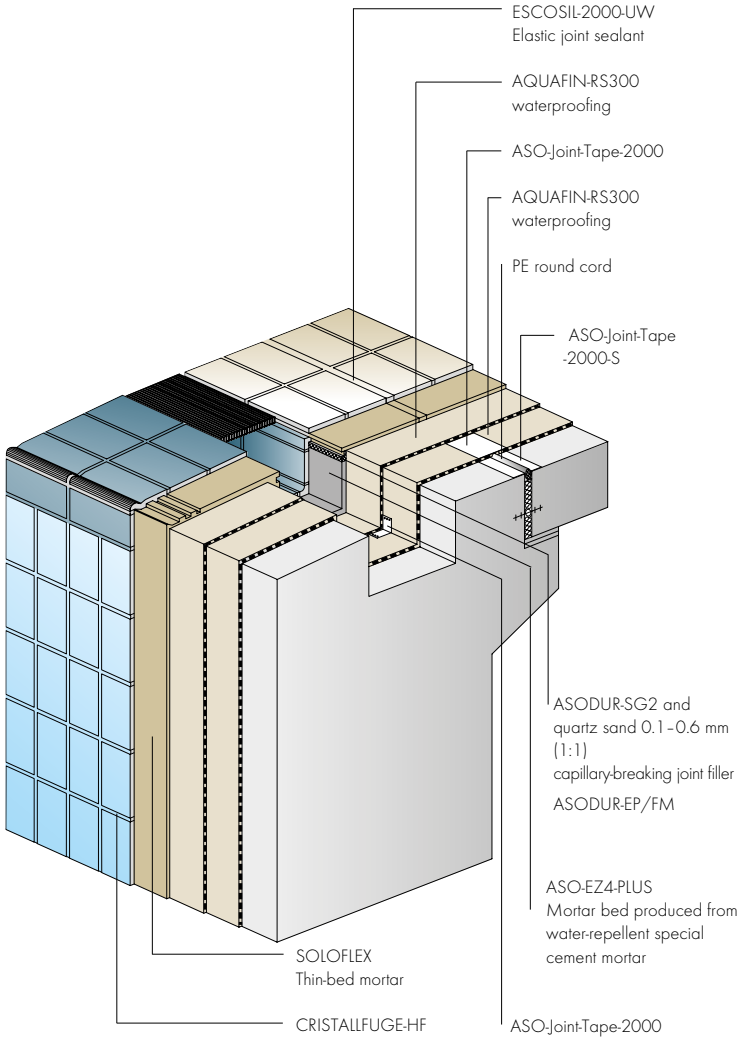


Comparison of pool edge systems

WIESBADEN POOL EDGE SYSTEM



FINLAND POOL EDGE SYSTEM



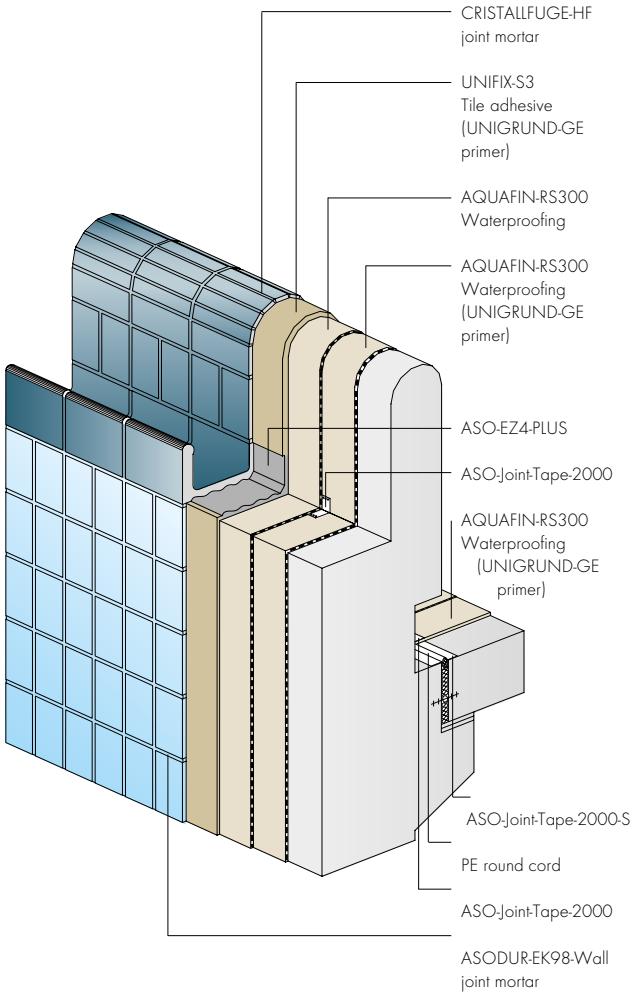
The Wiesbaden pool edge system is applicable with high or low-lying water levels.

The high Wiesbaden gutter shown here is an overflow system with specially shaped ceramic parts.
The water level is at the height of the pool edge. Whereby the ceramic overflow gutter is arranged outside the pool and will be covered with a grate.

The Finnish gutter is also a pool edge system with a high-lying water level.

The pool edge is applied with a beach-like gradient. The water level sits at the height of the overflow edge arranged outside the pool.
So, the Finnish gutter system enables numerous design options, in particular with rounded pool geometries.

THERAPY POOL IN THE WIESBADEN SYSTEM - LOW-LYING



The pool edge construction shown here, with low-lying water level, has proven outstanding in the design of therapy pools with brine. The water level is approx. 25-30 cm below the top edge of the pool and the swimming pool surround is lowered relative to the water level for patient care.

CAPILLARY-BREAKING JOINT

In the case of pool edge systems with a high-lying water level, exposure of the covering on the lower-lying pool surround to the effects of capillary water must be avoided.

In order to prevent water leakage, the capillary-breaking joint presented in the "Wiesbaden" and "Finland" pool edge systems is applied with **ASODUR-SG2,** mixed with quartz sand in a mix ratio of 1:1 parts by weight.

MOVEMENT JOINTS BETWEEN THE POOL EDGE AND SURROUND

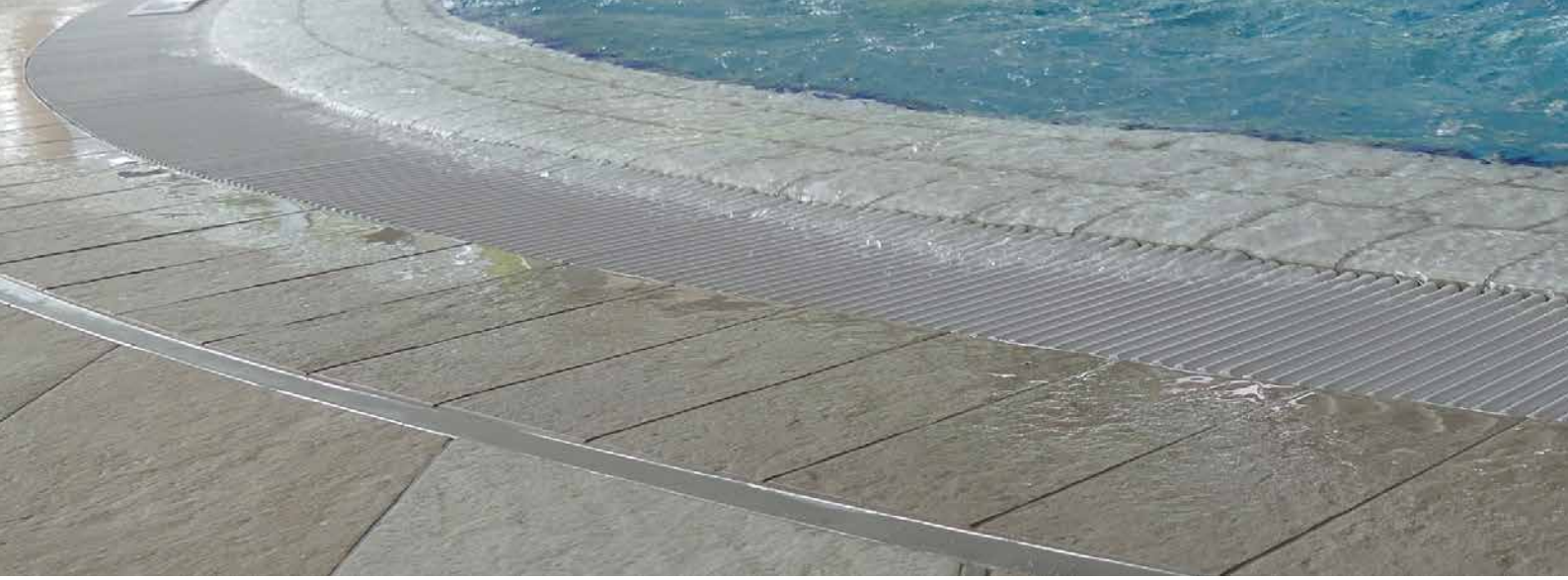
The tank body is often separated from the remaining load-bearing building components of a swimming pool by construction measures.

A tried and tested construction variant, for example, is the flexible bedding of the swimming pool surround on a reinforced concrete pool edge base.

The structural separating joint that arises here must be professionally protected against water ingress into the plant rooms below.

During the bonded waterproof system application and laying works, the joint is bridged with the joint tape technology compatible with the waterproofing system, as shown.

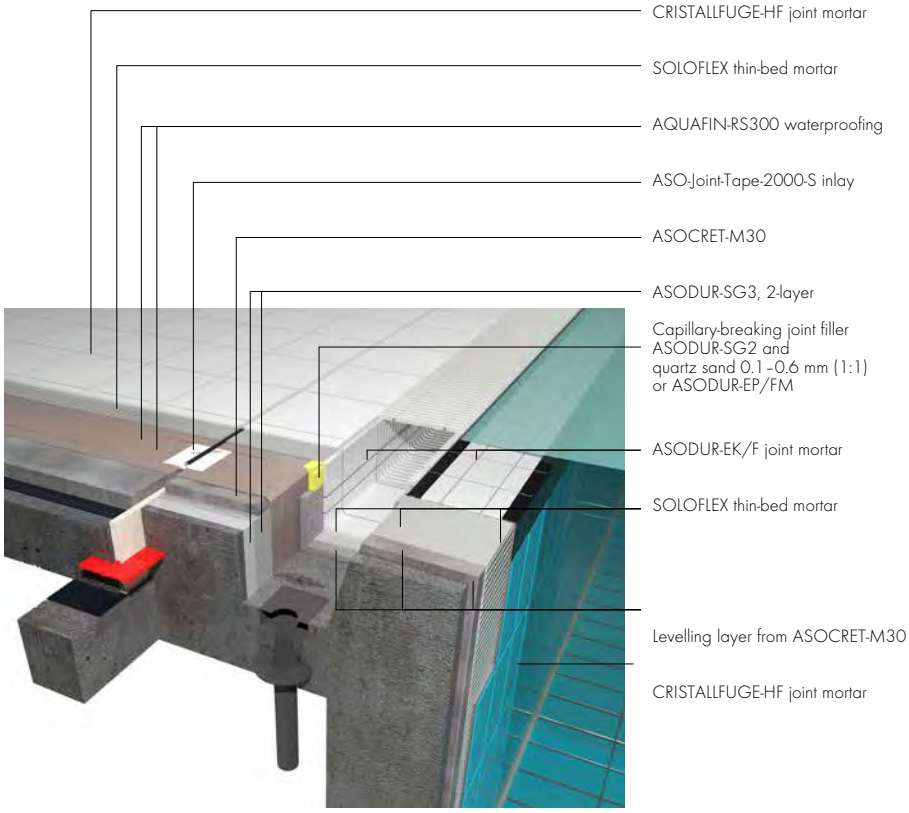
Interactive display



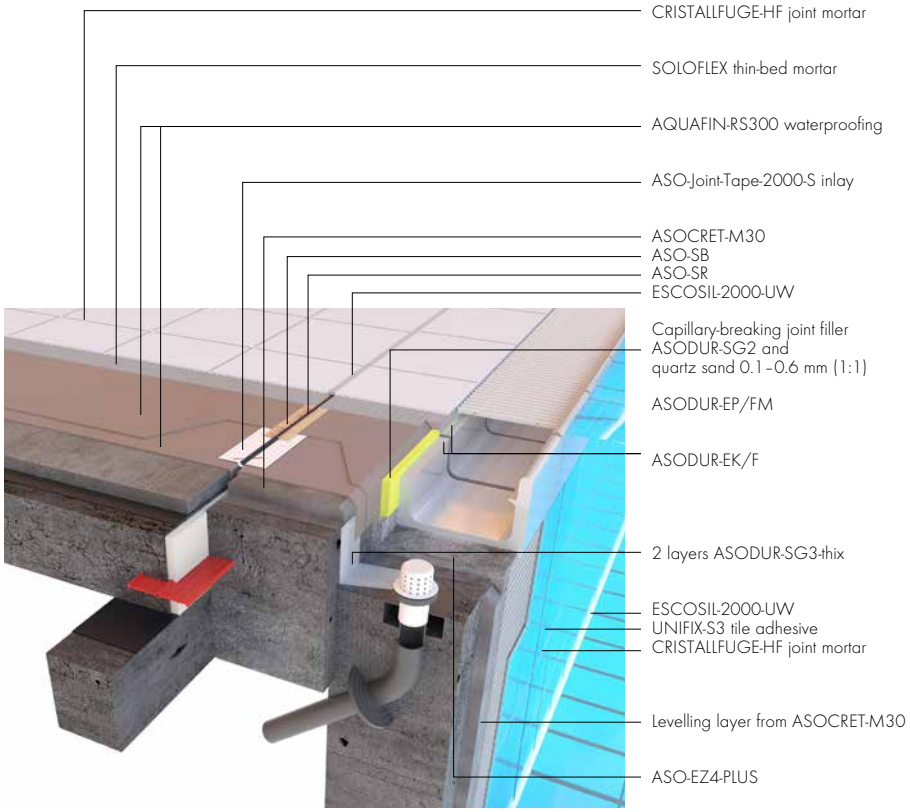
Pool edge waterproofing for unsealed

If no complete sealing of the waterproofing basin construction is planned, care must be taken when "sealing" the swimming pool surrounds to the basin to ensure that it is not possible for water to migrate behind this. Migration behind the waterproofing can lead not only to leaks but also to an impairment of the adhesive bond of the AIV-F to the substrate.

In order to counteract this, a so-called "receiving groove" is usually set into the concrete structure in the area of the pool edge, into which the waterproofing is fed in the swimming pool surround. DIN 1045 allows water to penetrate up to a maximum of 5 cm into the waterproof concrete construction. Experience shows that water usually penetrates 15 - 25 mm into the concrete. With the subsequent cutting of an approx. 3 cm deep " receiving groove", migration behind the waterproofing can be prevented.
However, this type of migration protection for the waterproofing reduces the thickness of the concrete cover in the area of the groove by more than half, which poses possible risks for the corrosion protection for the reinforcement at this point. If the construction of the so-called "receiving groove" is not included in the contract for the structural work, additional legal problems arise, as the cut in the waterproof concrete construction interferes with the preceding trade.



waterproof pool constructions

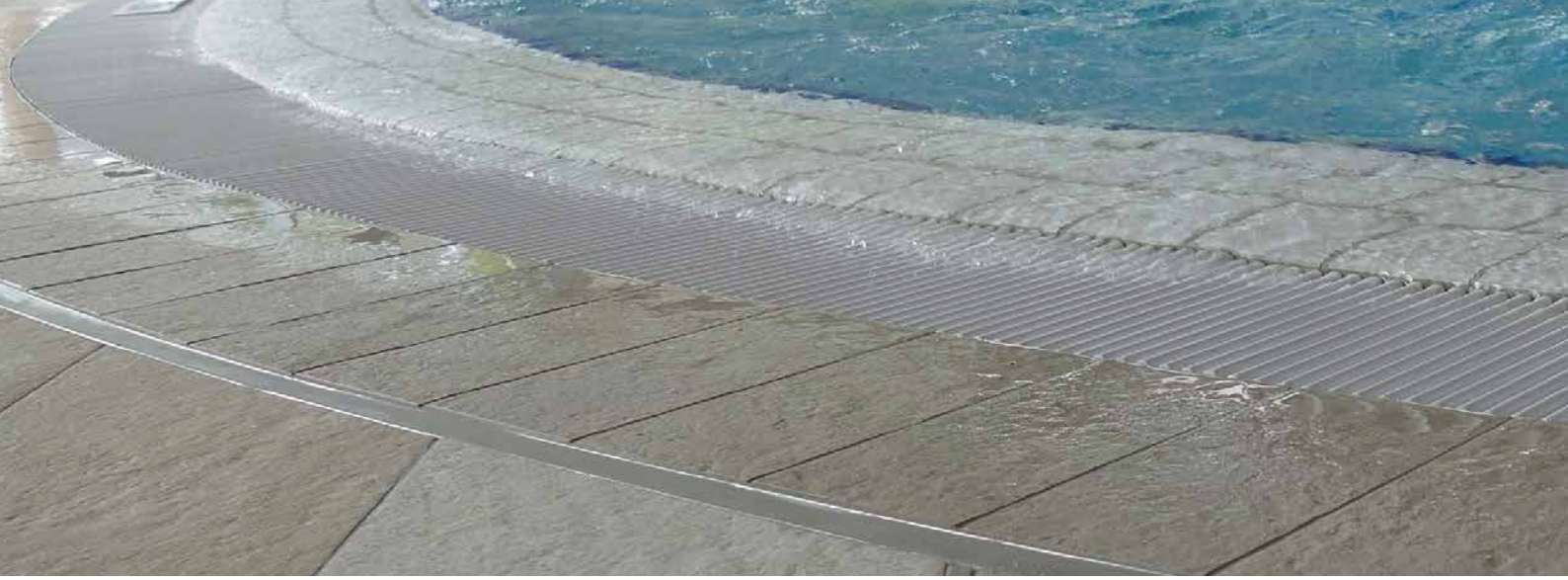


In order to prevent damaging influence due to water ingress behind the waterproofing layer on the adhesive bond of the waterproofing, we recommend the following possible design variants (see drawings):

- Application of a two-layer primer with the water-insensitive epoxy resin primer **ASODUR-SG3-thix**
- Producing the capillary grouting behind the Wiesbaden channel with capillary-tight epoxy resin mortar at full depth as far as the upstand surface (concrete) of the gutter blocks. With this variant, the waterproofing ends approx. 10 cm above the upstand surface of the gutter blocks on the concrete.

With these two variants, the reservations in terms of building law and construction relating to designs with a so-called "receiving groove", can be eliminated.

With these design variants, the water penetrating the concrete by capillary action must travel at least 12 cm in the concrete, parallel to the concrete surface, in order to reach the contact zone of the composite waterproofing (AIV). This can be excluded with a probability bordering on certainty if the waterproof concrete construction is carried out professionally.



International standards and regulations

In many countries, a range of regulations apply to construction works and in particular to the construction of swimming pools and their tanks. In Europe, these are largely regulated by European Standards (EN).

Standards	
DIN EN 206	Concrete/DIN 1045 Concrete and reinforced concrete
DIN EN 1069-1	Water slides from 2 m
DIN EN 1504	Products and systems for the protection and repair of concrete structures
DIN EN 12002	Mortar and adhesives for tiles and boards - Determination of transverse deformation for cementitious adhesives and grouts
DIN EN 12004	Mortar and adhesives for tiles and boards (Definition and specification)
DIN EN 13451-2	Swimming pool equipment
DIN EN 14891	Liquid applied water impermeable products for use beneath ceramic tiling bonded with adhesives

The waterproofing of swimming pools in combination with bonded tiled finishes is regulated in Europe by EN 14891. We confirm compliance with this with the following test certificate:

iBMB MPA

Allgemeines bauaufsichtliches Prüfzeugnis

Prüfzeugnis Nummer: P-1200/9067/ MPA BS

Gegenstand: Flüssige Abdichtung im Verbund mit Fliesen und Plattenbelägen (AIV-F)
AQUAFIN-2K/M-PLUS
zur Verwendung als Bauwerksabdichtung gemäß der Verwaltungsvorschrift Technische Baubestimmungen lfd. Nr. C 3.27

Antragsteller: SCHOMBURG GmbH & Co. KG
Aquafinstr. 2-8
32760 Detmold

Datum der Erstausstellung: 15.02.2019
Ausstellungsdatum: 14.12.2021
Geltungsdauer bis: 14.02.2022

Dieses allgemeine bauaufsichtliche Prüfzeugnis ersetzt das Allgemeine bauaufsichtliche Prüfzeugnis P-1200/9067/ MPA BS vom 26.03.2021

Dieses allgemeine bauaufsichtliche Prüfzeugnis umfasst 8 Seiten und 2 Anlagen.

kiwa

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Allgemeines bauaufsichtliches Prüfzeugnis

Prüfzeugnis Nr. **P 11140-2 / 17-492**
bis 06.11.2017
P-DD 4534/01/2010C

Gegenstand: **AQUAFIN®-RS300**

Verwendungszweck: Bauprodukt zur Herstellung einer Abdichtung im Verbund mit Fliesen- und Plattenbelägen gemäß Verwaltungsvorschrift Technische Baubestimmungen (VV TB), lfd. Nr. C 3.27

Antragsteller: **Schomburg GmbH & Co. KG**
Aquafinstraße 2-8
32760 Detmold

Ausstellungsdatum: 07.11.2017

1. Ergänzung: 11.01.2019

2. Ergänzung: 16.09.2019

3. Ergänzung: **20.05.2021**

Geltungsdauer: **06.11.2022**

Aufgrund dieses allgemeinen bauaufsichtlichen Prüfzeugnisses ist das oben genannte Bauprodukt nach den Landesbauordnungen verwendbar.

Extracts from the German test certificates for the products AQUAFIN-2K/M-PLUS and AQUAFIN-RS300.

However, a number of points are still controlled by national regulations or certificates.

Such testing of waterproofing bonded with tiles also applies in Belgium and we are able to provide verification accordingly.

Furthermore, our products are fully compliant with the swimming pool construction regulations that apply in the Russian-speaking region.


BUIgb

Technische Goedkeuring ATG met Certificatie

Ruwbouw - Waterdichting van vloeren en muren

Hydraulische waterdichtingscoating AQUAFIN-2K/M-PLUS/M-PLUS en tegellijm Unifix-S3

ATG 2011

Geldig van 05/10/2018 tot 04/10/2023

Goedkeuring- en Certificatieoperator

BCCA

Belgian Construction Certification Association

Aarlenstraat, 53 – 1040 Brussel

www.bcca.be – info@bcca.be

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1 Doel en draagwijdte van de Technische Goedkeuring

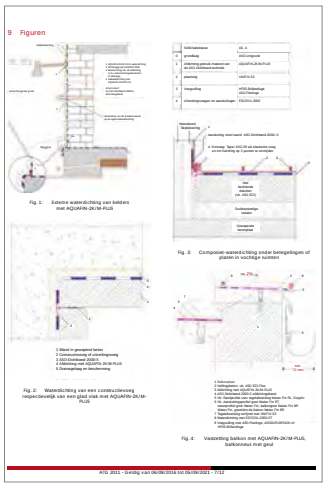

9 Figuren

Fig. 1: Externe waterdichting van kelders met AQUAFIN-2K/M-PLUS

Fig. 2: Composiet-waterdichting onder bekleedingen of platen in vochtige ruimten

Fig. 3: Waterdichting van een constructievoeg respectievelijk van een glad vlak met AQUAFIN-2K/M-PLUS

Fig. 4: Vastlijming balkon met AQUAFIN-2K/M-PLUS, balkonlaag met geul


Система нормативных документов в строительстве

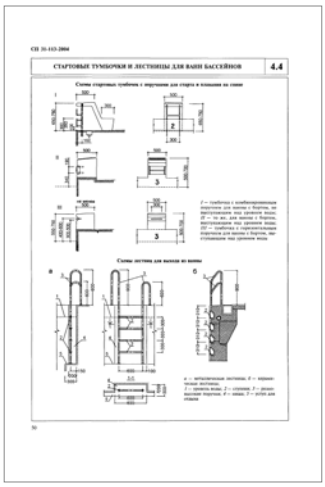
СВОД ПРАВИЛ ПО ПРОЕКТИРОВАНИЮ И СТРОИТЕЛЬСТВУ

БАССЕЙНЫ ДЛЯ ПЛАВАНИЯ

СП 31-113-2004

ИЗДАНИЕ ОФИЦИАЛЬНОЕ

Москва 2005


СП 31-113-2004

СТАРТОВЫЕ ТУМБОЧКИ И ЛЕСТНИЦЫ ДЛЯ ВАНН БАССЕЙНОВ 4.4

Extracts from a Belgian test certificate.

Extracts from a Russian test certificate.

As such, SCHOMBURG can also guarantee tailored advice and consultancy with consideration to local standards and requirements. And with the best technical solution every time!

Get in touch with us - we are certain to have the solution for your project.

Jointless floor coating

Technical rooms and recreation rooms with light exposure and no permanent wet load can be sealed with the water-emulsified epoxy resin **ASODUR-V360W.** The silk-matt surface of this sealing resin prevents the screed chalking, reduces wear and improves the cleanability. Whereby the surface structure of the screed remains largely intact. For a smooth or slip-resistant coating as well as for improved hygiene or work safety, the application of the pigmented 2-component EP coating **ASODUR-B351** is recommended**.** This is highly chemically resistant and withstands mechanical loading, does not contaminate food and is plasticizer resistant. The EP-floor coating **ASODUR-B351** also satisfies increased demands for a non-slip surface (R9–R11) and a particularly dense surface. In addition to the legal regulations in the workplace ordinance and workplace regulations, certain construction requirements also apply to recreation rooms. Furthermore, personal injury due to VOC emissions from synthetic resin coatings in occupied rooms, must be avoided. The vapour permeable sealing product **ASODUR-V360W** satisfies the assessment scheme of the German Committee for Health-Related Evaluation of Building Products ("AgBB") for the reduction of indoor air pollution, and is therefore ideal for industrial and commercial indoor spaces.
After sealing or coating are complete, thorough cleaning takes place with the industrial floor cleaner **ASO-R008**. This cleaning concentrate improves the cleanability during subsequent maintenance cleaning.

- approx. RAL 1001
- approx. RAL 1015
- approx. RAL 3009
- approx. RAL 5014
- approx. RAL 6011
- approx. RAL 7016
- approx. RAL 7023
- approx. RAL 7030
- approx. RAL 7032
- approx. RAL 7035
- approx. RAL 7037
- approx. RAL 7038
- approx. RAL 7040
- approx. RAL 7042
- approx. RAL 9002

Note: Additional colours are available upon request.
In this case, please contact our customer management service.

This colour card is not binding for printing reasons and colour deviations from the original colours may therefore arise.

Slip prevention

Non-slip floor coatings or tiles require surfaces with varying profiled or rough textures. Such floor coverings that are used in work rooms, commercial and public areas, must exhibit the specified degree of slip resistance in accordance with the evaluation groups R9 to R13 per DIN 51130.

CLASSIFICATION GROUP	ANGLE OF INCLINATION
R9	>6°-10° low static friction value
R10	>10°-19° moderate static friction value
R11	>19°-27° increased static friction value
R12	>27°-35° high static friction value
R13	>35° very high static friction value

WET BAREFOOT AREAS

In the barefoot areas of swimming pools, public saunas, at the pool and in cleaning areas of sports centres, evaluation takes place per the classification groups A (lowest requirements), B and C (highest requirements) in accordance with DIN 51097.

CLASSIFICATION GROUPS FOR SLIP RESISTANCE PER GUV.85.27

CLASSIFICATION GROUP	MINIMUM INCLINATION ANGLE	AREAS
A	12°	· Barefoot hallways (mainly dry) · Individual and group changing rooms with lockers · Pool floors in the non-swimmer areas, where the water level exceeds 80 cm
B	18°	· Barefoot hallways, if not classified in A · Showers · Area surrounding the disinfectant sprayers · Swimming pool surrounds · Pool floor in the non-swimmer areas, where the water level is lower than 80 cm · Pool floor in the non-swimmer areas in the tide effect pool · Lift slab floors · Paddling pools · Steps leading into the water · Steps, of maximum 1 m width with hand rails, leading into the water · Steps outside of the pool area
C	24°	· Steps leading into the water, if not classified in B · Foot baths · Inclined pool borders

Waterproofing of buildings

WATERPROOFING BUILDING COMPONENTS IN DIRECT GROUND

Moisture in buildings is a major cause of building damage. Errors in the planning and execution of waterproofing – in particular the incorrect formulation of existing building details – are critical here. In order to protect building components against water penetrating from the ground and to avoid damage in indoor areas, the exterior surfaces are sealed and insulated. The decisive standard here is DIN 18533.

INTERSECTIONS

Connections with intersections or similar must be established with floating or fixed flange constructions, adhesive flanges or suitable joint sleeves for example, depending on the water exposure class. In water exposure class W1.1-E, the connection can be established with **AQUAFIN-RB400** in conjunction with the **ADF pipe gasket** for example.

WALL/FLOOR TRANSITION

In the area of the wall/floor transition or structural movement joint, waterproofing from **AQUAFIN-RB400** for example is further reinforced by **ASO-Joint-Tape-2000-S**.

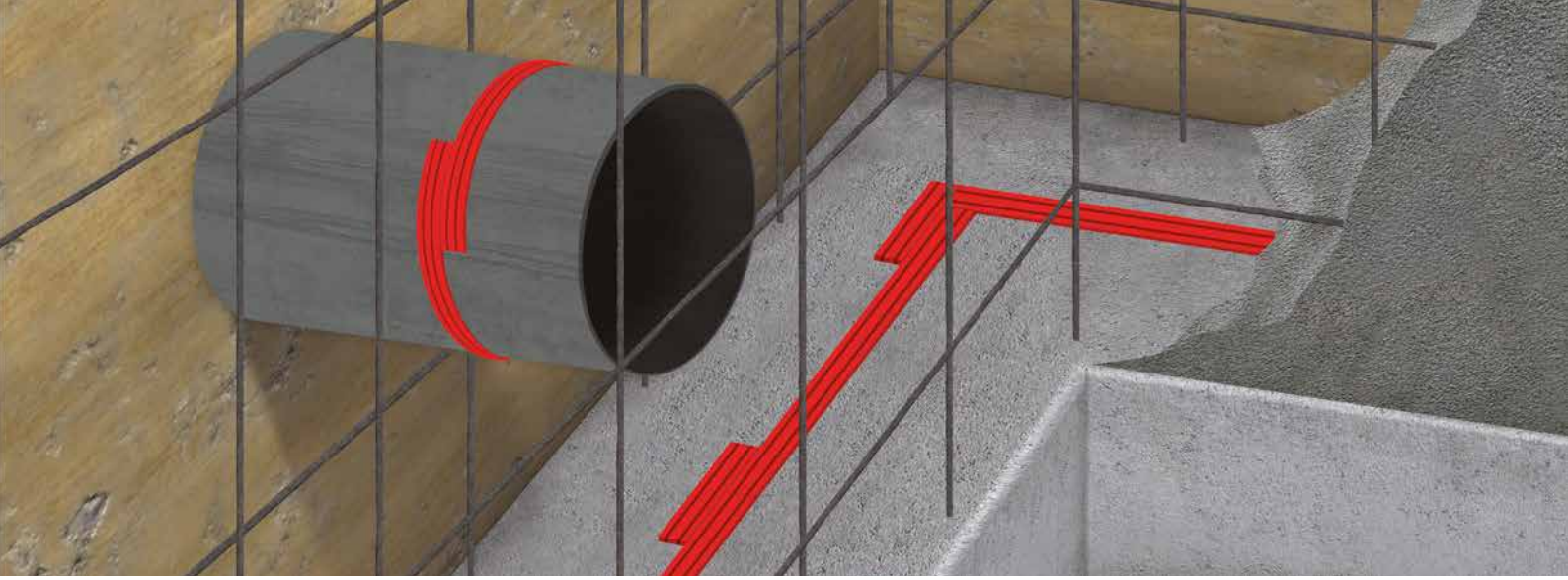
EXTERIOR WATERPROOFING

Exterior waterproofing covering the whole area of the surfaces in direct ground contact is applied with the aforementioned products, depending on the water exposure class. Waterproofing is fully covering and free of defects, and takes place in a minimum of two application steps with the required minimum dry film thickness. With water exposure class W2.1-E, it is necessary to document the layer thickness checks (quantity, position, result) and material rate of consumption, as well as the results of the drying test.

Planning and application consultant
for building waterproofing and restoration

WATER EXPOSURE CLASSES PER DIN 18533	DESCRIPTION	IMMERSION DEPTH	POSSIBLE PRODUCTS	CRACK BRIDGING CLASS		
				RÜ1-E	RÜ2-E	RÜ3-E
W1.1-E	Ground moisture and non pressure water in case of floor slabs and walls in direct ground	–	COMBIFLEX-EL COMBIDIC-2K-PREMIUM AQUAFIN-RB400	× × ×	× × –	× × –
W1.2-E	Ground moisture and non pressure water in the case of floor slabs and walls with drainage in direct ground contact	–	COMBIFLEX-EL COMBIDIC-2K-PREMIUM AQUAFIN-RB400	× × ×	× × –	× × –
W2.1-E	Moderate exposure to pressure water	≤ 3 m	COMBIFLEX-EL COMBIDIC-2K-PREMIUM	× ×	× ×	× ×
W3-E	Non-pressing water on earth-covered ceilings	–	COMBIFLEX-EL COMBIDIC-2K-PREMIUM	omitted omitted	omitted omitted	× ×
W4-E	Splash water and ground moisture at the wall base and capillary water in and under walls	–	COMBIFLEX-EL* COMBIDIC-2K-PREMIUM* AQUAFIN-RB400*	× × ×	× × –	× × –

× = suitable – = not suitable * = not as cross-section waterproofing



PROTECTIVE LAYERS / PERIMETER INSULATION

When adhering protective layers or perimeter insulation, make sure that the adhesive used is compatible with the products used for waterproofing. Depending on the water exposure class and building approval, the perimeter insulation is adhered with **COMBIDIC-2K-PREMIUM**.

WATERPROOFING CONSTRUCTION JOINTS

Waterproof concrete constructions (concrete in accordance with DIN EN 206-1 and DIN 1045-2) are produced as a sealed tank. However, construction or building sequence-related joints generally require joint sealing. Various waterproofing systems are available for construction joints, e.g. compressible injection hoses, swelling joint tapes, etc. **AQUAFIN-CJ-Set 1 or 2** can be used to seal such joints depending on the requirements.

With the injection hose **AQUAFIN-CJ-Set 1 or 2** the reinforcement arrangement in the concrete is not impeded and upstands are avoided. After concreting, the waterproofing measure is implemented with **AQUAFIN-P4**. This is a solvent-free 2-component elastic PUR injection resin that is tested for building approval in conjunction with **AQUAFIN-CJ-Set 1 or 2**.

Alongside injection hoses, expanding jointing bands like **AQUAFIN-CJ6** are also a suitable measure for sealing construction joints.

Due to the simple fastening method, they can also be adapted to awkward joint shapes. The thermoplastic elastomer contained in the bands reacts upon contact with water and their volume increases. Due to the resulting contact pressure, the material then seals the construction joint against the surrounding concrete flanks.

Products

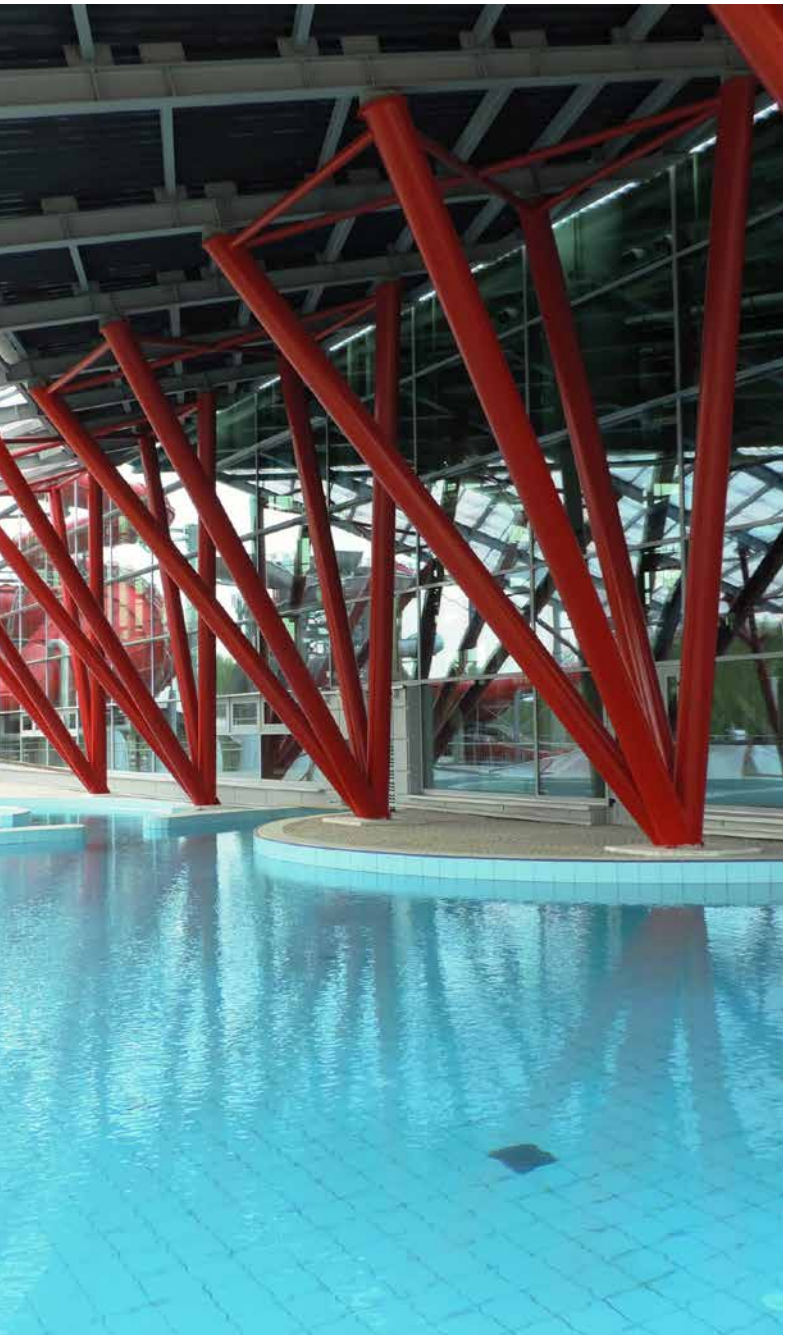
PRODUCT	PROPERTIES
AQUAFIN-2K/M-PLUS	▸ 2-comp., flexible, cement-based, cementitious waterproofing slurry for new and old buildings, channels, drains and swimming pools
AQUAFIN-RS300	▸ Rapid hybrid waterproofing for new and old buildings, channels, drains and swimming pools, suitable for tile application after 4 hours
AQUAFIN-CJ Set	▸ Injection hose for grouting all suitable injection resins, gels and acrylates, pressing water-tight
AQUAFIN-P1	▸ 1-comp. PU-injection resin for sealing water-bearing cracks and joints, ready to use
AQUAFIN-P4	▸ 2-comp. elastic PU-injection resin for sealing cracks and joints with the hose injection method
ASOCRET-HB-FLEX	▸ Contact and bonding slurries for cement-based screeds
ASO-Joint-Tape-2000	▸ Joint sealing tape for normal requirements
ASO-Joint-Tape-2000-S	▸ Special joint sealing tape for high requirements and heavy loads
ASO-Joint-Sleeve-Floor	▸ Pre-formed piece from the ASO joint tape system for waterproofing floor drains
ASODUR-EK/F	▸ Fine joint mortar and adhesive for joint widths from 1 – 7 mm, available in different colours
ASODUR-EKF	▸ Adhesive and joint compound for joint widths from 3 – 15 mm
ASODUR-EP/FM	▸ 2K-reaction resin joint filler
ASO-SEM	▸ Rapid setting pre-blended dry mortar
ASO-EZ4-PLUS	▸ Rapid setting, water-repellent pre-blended dry mortar
CRISTALLFUGE-FLEX	▸ Polymer modified joint slurry mortar – quick-hardening, for joints from 3 – 20 mm wide, available in different grey tones
ASO-Unigrund-GE	▸ Ready to use, solvent free primer, coloured green
ASO-Unigrund-K	▸ Solvent free primer concentrate, transparent or blue
ASOFLEX-SDM	▸ Elastic PU sealing compound, for producing artificial flanges
ESCOSIL-2000-UW	▸ Elastic,1-comp. joint sealing compound on a silicone rubber base, contains powerful fungicide, for the elastic grouting of expansion and building joints in underwater areas, such as swimming pools

CRISTALLFUGE-HF	▸ High-strength, flexible cement-based joint mortar, for joints from 3 – 20 mm wide, available in 2 grey tones
AQUAFIN-CJ6	▸ Thermoplastic expanding and joint band for construction joint sealing
ASO-LB	▸ Copper conductive strip for producing conductive layers in conductive waterproofing and floor coating systems
ASO-SR	▸ Closed-cell backfill material for elastic joint sealants
ASOCRET-KS/HB	▸ Cementitious corrosion protection and bond coat for ASOCRET-BIS-5/40
ASOCRET-BIS-5/40	▸ Cement-based repair mortar, 5 – 40 mm
ASODUR-SG2	▸ - Oil and vapour barrier, low-solvent, moisture tolerant, 2-comp. epoxy resin for substrates
ASODUR-SG2 thix	▸ Oil and vapour barrier, low-solvent, moisture tolerant, 2-comp. thixotropic epoxy resin for wall and overhead surfaces
ASODUR-V360W	▸ Aqueous concrete sealer, free of organic solvents, use as a primer and for sealing
ASODUR-EMB	▸ 2-component epoxy repair mortar
ASOCRET-M30	▸ Non slump, quick-hardening levelling compound, suitable for swimming pools, for layer thicknesses from 2 - 30 mm in one application step.
SOLOFLEX	▸ Flexible thin and medium-bed mortar: DIN EN12004, C2 TE; suitable for vitrified tiles, earthenware, porcelain stoneware, clinker, mosaic and natural stone materials that are non-translucent with no sensitivity to discolouration
UNIFIX-S3	▸ 2-component flexible mortar, water tight, frost-proof: DIN EN 12004, C1TE S2; suitable for thin-bed laying of vitrified tiles, earthenware, porcelain stoneware, clinker, mosaic and natural stone materials that are non-translucent with no sensitivity to discolouration

References

Aquapark Minsk, Belarus

Construction time:	2014
Number of pools:	3
Utilisable area:	12,000 m^2
Water area:	8000 m^2



Cruise ship pool, Vietnam

Construction time:	2015
Number of pools:	1
Utilisable area:	210 m^2
Water area:	80 m^2

Olympia aquatics centre, Poland

Construction time:	2010
Number of pools:	1
Utilisable area:	15,500 m^2
Water area:	1,250 m^2

Swimming pool complex, Croatia

Construction time:	2013
Number of pools:	4
Utilisable area:	8,830 m^2
Water area:	2,420 m^2

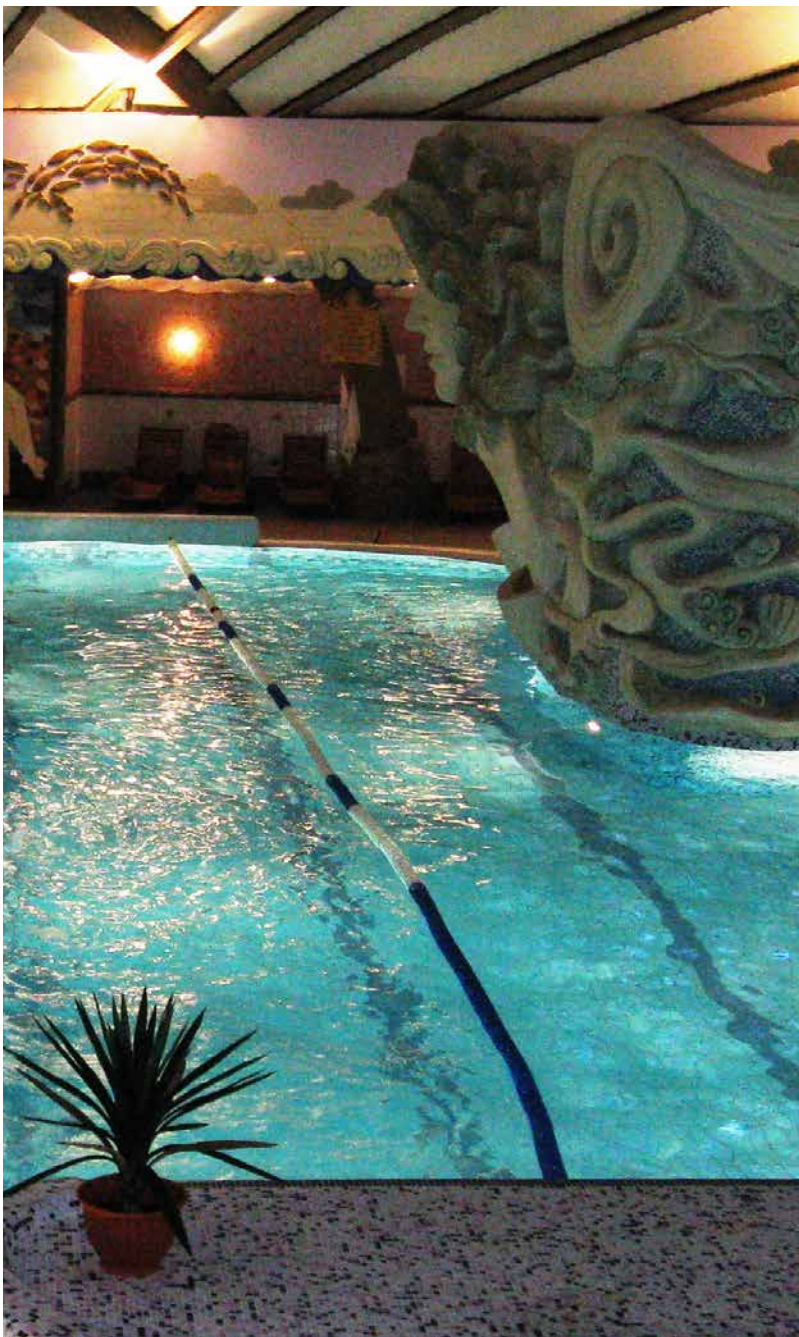
References

The Mountain Ski Centre, Russia

Construction time:	2013
Number of pools:	2
Utilisable area:	2,200 m^2
Water area:	1,000 m^2

Lietuva Sanatorium, Lithuania

Construction time:	2007
Number of pools:	2
Utilisable area:	7,400 m^2
Water area:	1,400 m^2



Finckensteinallee indoor swimming pool, Berlin

Construction time:	2011–2014
Number of pools:	1
Utilisable area:	12,500 m²
Water area:	1,250 m²

PREISTRÄGER
2015

Hydrotherapy centre, Slovakia

Construction time:	2010
Number of pools:	1
Utilisable area:	858 m²
Water area:	400 m²

Technical Services

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You can find further details for your personal contact partner on-site or your regional team at **www.schomburg.com**

The SCHOMBURG Group develops, produces and distributes building product systems for the areas of:

- Waterproofing/repairing 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.

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