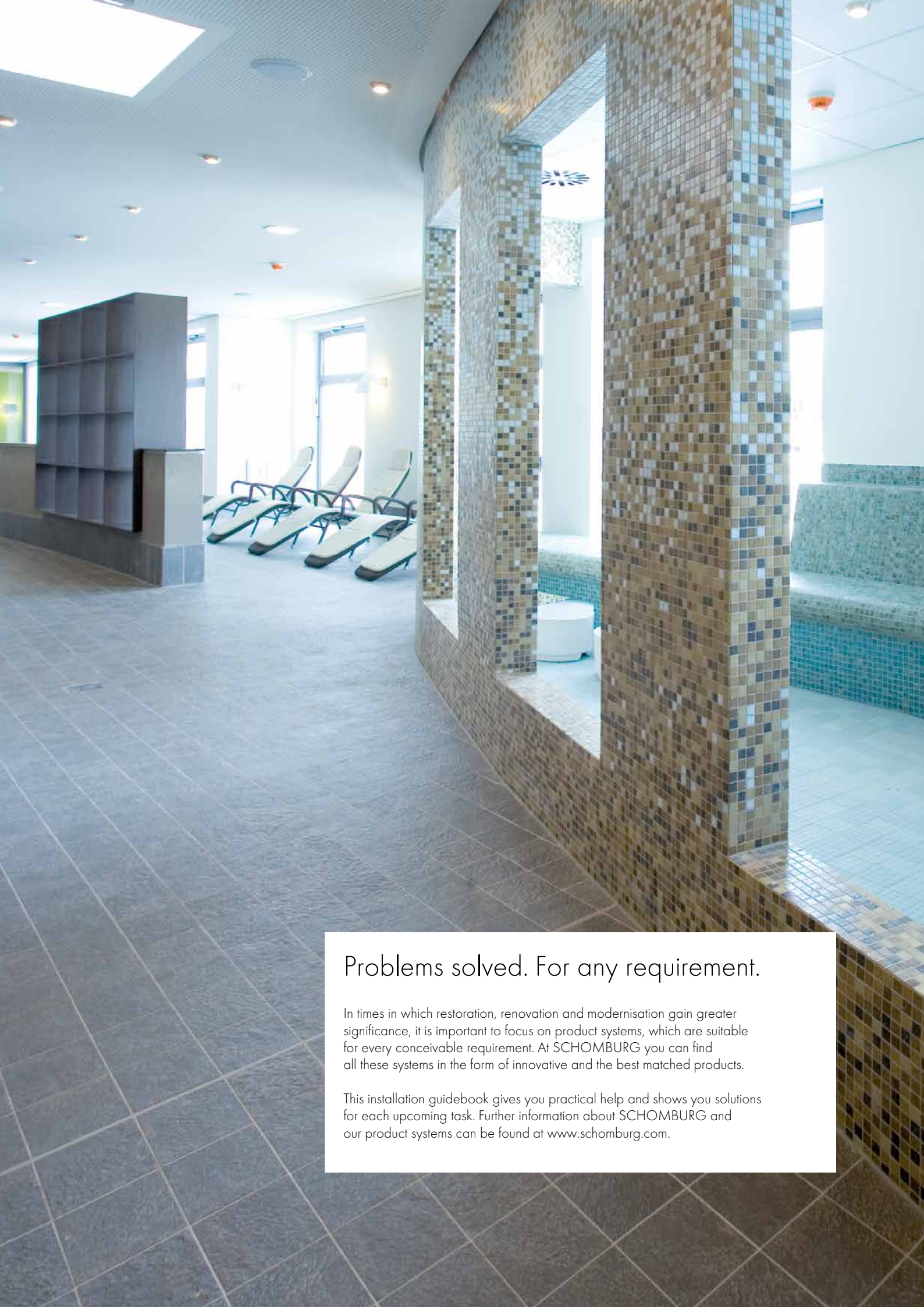
Planning and installation guide

for tile, natural stone and screed installation

Different substrates, materials and areas often present a challenge when waterproofing and laying tiles and boards. We show you what is important and which systems will ensure your success.

Problems solved.

SCHOMBURG



Problems solved. For any requirement.

In times in which restoration, renovation and modernisation gain greater significance, it is important to focus on product systems, which are suitable for every conceivable requirement. At SCHOMBURG you can find all these systems in the form of innovative and the best matched products.

This installation guidebook gives you practical help and shows you solutions for each upcoming task. Further information about SCHOMBURG and our product systems can be found at www.schomburg.com.

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Continuation Content

From waterproofing specialist
to complete system provider

The core competency of the SCHOMBURG group is due to over 80 years in the development of effective product systems for structural waterproofing and repair. Through its proximity to all market segments and substantiated research and development of innovative products, SCHOMBURG has advanced to become a supplier of complete systems for the installation of tile and stone in a variety of applications. This guidebook gives ideal installation advice for the tiling trade covering a variety of requirements. For alternative solutions, consult the "General information" category from page 50.

Priming
SCHOMBURG offers a wide spectrum for substrate preparation from concentrated primers to two-component, flexible waterproofing slurries through one-component bonding agents. These primers fulfil many functions: They consolidate the substrate and bind surface dust, they reduce the absorption and guarantee an even setting of levelling compounds, they protect against damp and provide good bonding for following products.

Levelling
For levelling surface irregularities on the wall and floor, SCHOMBURG offers smoothing and levelling compounds which fulfil current standards and are suitable for almost all applications. In particular, large format finishes require tight tolerances in flatness. Lipping – height differences of more than one millimetre between the edges of adjacent tiles – should be avoided. Smoothing and levelling compounds leave a flat substrate and provide an exceptional basis for following work.

De-coupling/Insulation
SCHOMBURG supplies the product STEPBOARD, a polyester fibre impact sound reducing and de-coupling board available in 4 mm, 9 mm and 15 mm thicknesses. This system is predominantly used beneath ceramic tiles and boards, natural stones, synthetic stones and laminate in interior areas.

Waterproofing
When waterproofing, you can trust in the core competency of SCHOMBURG, grown over more than 60 years. A range of proven waterproofing materials are available for each type of application. Properties such as impermeability to water, water vapour permeability, chemical resistance as well as resistance to alkalis are but a few of the virtues that these waterproofing materials offer. SCHOMBURG provides technical solutions through a combination of progressive technology and substantiated technical knowledge.

Installation
Whether tile, natural stone, mosaic, cotto or ceramic. Whether thin-bed, medium-bed or thick-bed. Whether white, strong or smooth consistency – you'll find the correct adhesive for each covering, with reduced dust and harmless to your health. Only with suitable bedding mortar is a simple and clean installation possible. The use of unsuitable laying materials can even spoil natural stone. SCHOMBURG offers you the correct product for each application.

Grouting
The tiling trade is in luck with the aid of a colourful diversity of grouts and joint sealants. Finish off your project assuredly with SCHOMBURG products – for each laying material and every type of application. Inserting an unsuitable grout can make the value of the entire work questionable.

Applying to
different substrates

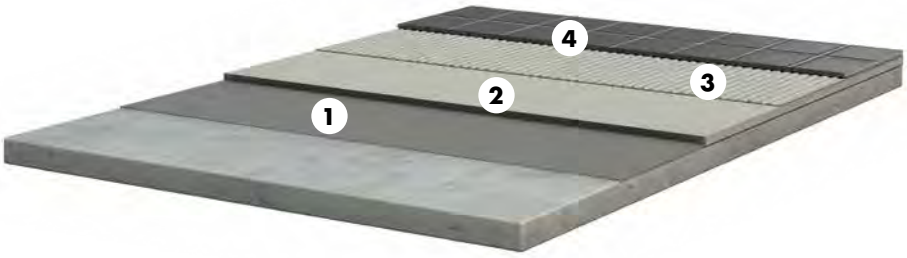
Each substrate has its own individual properties and therefore places different demands on the substrate preparation and the materials used. Matched products in the SCHOMBURG system offer the greatest possible success and reliability in the results.

Installation on heated and unheated cement-based screed (CT)

Carry out a moisture test first.
The carbide method moisture content may not exceed 2.0 CM% for screed on insulation or separating layers. Heated screeds must be commissioned beforehand. With bonded CT screeds, moisture measurements are not necessary.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
2 LEVELLING	Floor levelling compound from 2–30 mm, in interior and exterior areas	**SOLOPLAN**-30-PLUS
3 APPLYING	Smooth consistency for applying flexible adhesive	**SOLOFLEX**
	Grey, highly flexible mortar for interior and exterior use	**MONOFLEX**-XL
	Flexible natural stone adhesive	**CRISTALLIT-**FLEX
4 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

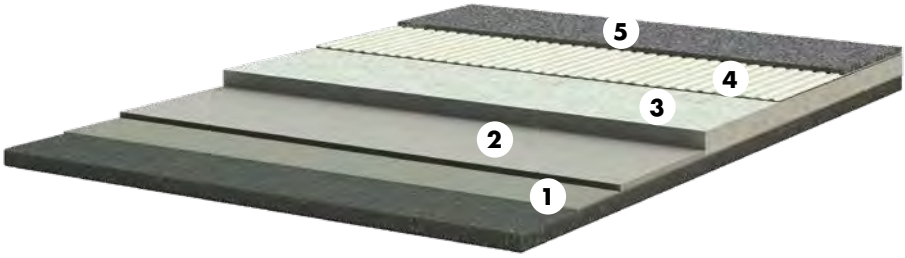
Installation on heated and unheated calcium sulphate screed (CA)



With normal moisture content: CA flow screeds must be abraded, vacuumed and, as with all calcium sulphate substrates, primed with ASO-Unigrund. Heated screeds must be heated in accordance with recognised standards before installation of coverings. Moisture measurement should be carried out with the CM device to assess whether it is ready for laying on. (CA screeds without floor heating system: 0.5 CM%, CA screeds with floor heating system: 0.3 CM%)

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
	For use when installing large format tiles and boards that are spread with quartz sand while the primer is still wet	**ASODUR**-GBM
2 LEVELLING	Floor levelling compound for floor surfaces, 2 – 30 mm, in interior areas	**SOLOPLAN**-30-CA
3 APPLYING	Smooth consistency for applying flexible adhesive S1	**MONOFLEX**-XL
	Rapid hardening, ductile flexible adhesive S1 for interior and exterior use	**MONOFLEX**-fast
	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-FB
	Flexible natural stone adhesive	**CRISTALLIT-**FLEX
	Flexible thin-bed mortar for CA screeds, prevents the formation of ettringite	**UNIFIX**-AEK
4 GROUTING	Rapid hardening flexible grout, 3 – 20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1 – 10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Interior installation on poured asphalt (AS)



In order to install tiles on poured asphalt, this must be of minimum quality AS-IC 10 and have a minimum thickness of 25 mm. The asphalt screed must have from 10 – 15 mm movement joints against adjoining building components, which are to be brought through to the final floor surface. If the screed is newly installed, ensure that it is fully covered with quartz sand. If this is not the case, then the substrate must be primed with an epoxy resin such as ASODUR-GBM spread with 0.2 – 0.7 mm aggregate quartz sand while still wet, before waterproofing or tiling.

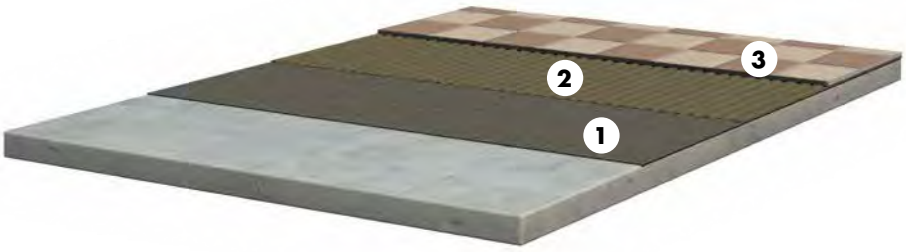
Procedure		**Product**
1 PRIMING	Universal priming with epoxy base	**ASODUR**-GBM
2 LEVELLING	Applied to a maximum layer thickness of 10 mm	**SOLOPLAN**-30-CA
3 DE-COUPLING/ INSULATION	Thermally insulating impact sound deadening and de-coupling board, 4/9/15 mm	**STEPBOARD**
4 APPLYING	Smooth consistency for applying flexible adhesive S1	**MONOFLEX**-XL
	Deformable, rapid hardening flexible adhesive for heavy loads, also for natural stone, with FAST TECHNOLOGY	**UNIFIX-S3**-fast
	Flexible natural stone adhesive	**CRISTALLIT-**FLEX
5 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Installation on magnesite and xylolite screed (MA)

Direct contact between cement-based tile adhesives and magnesite screeds leads to the destruction of the magnesite screed due to a chemical reaction known as 'magnesite pouring'. Moisture pressure from the rear of the substrate must be prevented through appropriate measures. Mechanically roughen the magnesite substrate, prime with the epoxy resin ASODUR-GBM and, while the primer is still wet, spread to excess with 0.5 - 1.0 mm aggregate quartz sand. Tiles can be installed after waiting a further 12 – 16 hours approximately.

Procedure		**Product**
1 PRIMING	Universal priming with epoxy base	**ASODUR**-GBM
2 LEVELLING	Floor levelling compound for floor surfaces, when using on magnesite screeds do not exceed a max. layer thickness of 15 mm	**SOLOPLAN**-30-CA
3 APPLYING	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-FB
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
4 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Installation on green cement-based screed (CT) (> 28 days)



By using the highly flexible tile adhesive UNIFIX-S3/UNIFIX-S3-fast it is possible to lay tiles on a 'green' cement-based screed as soon as it is able to bear foot traffic. When laying tiles on 'green' cement-based screed the not yet completed setting process of the screed and the resultant low strength must be taken into account.

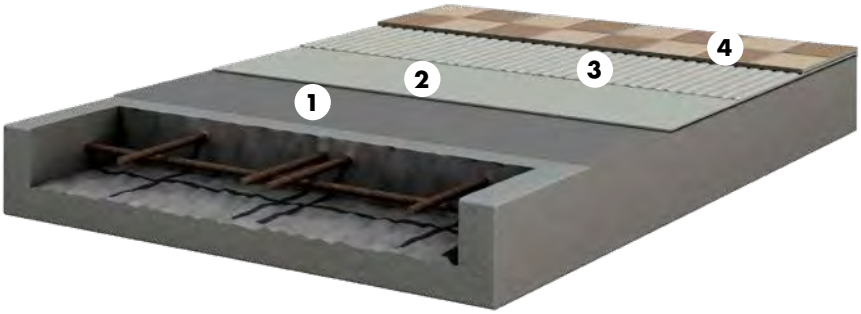
No heavy loads can be set down on the substrate. Laitance layers must be removed before laying the tiles. When laying natural stones, it is essential that only materials that are tolerant of discolouration and deformation are used.

Procedure		**Product**
1 WATERPROOFING	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
2 APPLYING	Highly ductile flexible adhesive for heavy duty areas to compensate for substrate stresses	**UNIFIX-**S3
	Highly ductile, rapid setting flexible adhesive for heavy duty areas to compensate for substrate stresses	**UNIFIX-**S3-fast
3 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

NOTE

This type of installation does not comply with the generally recognised rules of technology and must be contractually agreed separately.

Installation on concrete (> 3 months)



In accordance with DIN 18157 the installation of tiles to dense concrete is only recommended after 6 months at the earliest. Causes for damage are the high shrinkage stresses that 'green' concrete substrates exhibit. In our experience, when installing on 'green' substrates, only highly elastic tile adhesives such as UNIFIX-S3 or UNIFIX-S3-fast are recommended. Only a product which exhibits this type of highly deformable technological profile – reliably dissipating high shear forces – can be used. Before installing the tiles, it is mandatory to prepare the substrate using shot blasting, high pressure washing or similar techniques.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
2 WATERPROOFING	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
3 APPLYING	Deformable, rapid hardening flexible adhesive for heavy loads, also for natural stone, with FAST TECHNOLOGY	**UNIFIX**-S3-fast
	Highly ductile flexible adhesive for high loads	**UNIFIX**-S3
4 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

NOTE

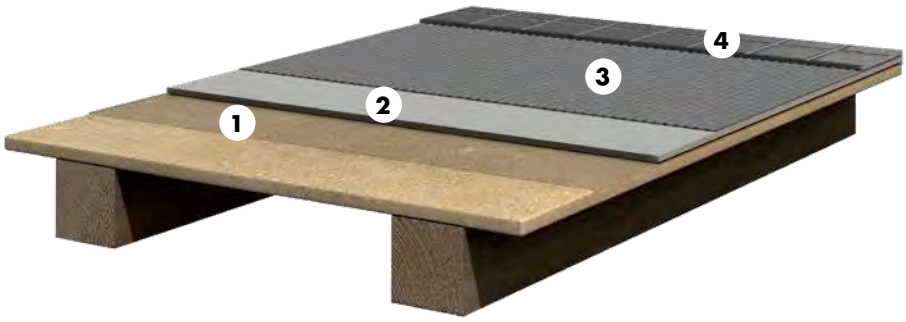
Ensure that there is no rising damp coming from the substrate.
This type of installation does not comply with the generally recognised rules of technology and must be contractually agreed separately.

Installation on concrete (> 6 months)

Before waterproofing and tiling concrete substrates it is mandatory to prepare the substrate using shot blasting, high pressure washing or similar techniques in order to remove laitance layers present.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
2 WATERPROOFING	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
3 APPLYING	Smooth consistency for applying flexible adhesive S1	**MONOFLEX**-XL
	Rapid hardening, ductile flexible adhesive S1 for interior and exterior use	**MONOFLEX**-fast
	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-FB
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
4 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Installation of tiles and boards on chipboard and floorboards



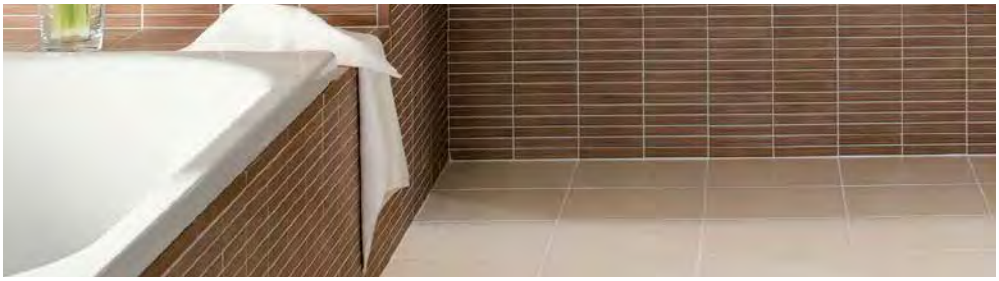
Wood substrates must be clean, dry and load bearing. Chipboard must be laid bonded, screwed and glued. Faulty wood/board substrates must be replaced, loose floor boards must be professionally fixed (e.g. screws, etc.). Seal joints between boards, planks. Please refer to our additional Technical Information No. 10.

Procedure		**Product**
1 PRIMING	Rapid drying, quartz-filled dispersion primer for absorbent and non-absorbent substrates	**ASO**-Unigrund-S
2 LEVELLING	Self-levelling fibre-reinforced cement-based floor levelling compound for wood substrates, min. 10 mm thickness	**SOLOPLAN**-FA
DE-COUPLING/ INSULATION	Thermally insulating impact sound deadening and de-coupling board, 4/9/15 mm	**STEPBOARD**
WATERPROOFING OPTIONAL	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
3 APPLYING	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-FB
	Rapid hardening, ductile flexible adhesive S1 for interior and exterior use	**MONOFLEX**-fast
	Smooth consistency for applying flexible adhesive S1	**MONOFLEX**-XL
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
4 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Installation of large format tiles and boards on wood substrates

The epoxy resin light screed ASODUR-LE offers a particularly rapid, light and water-free solution for simultaneous levelling of substrates. When installing large format tiles with an edge length over 40 cm and a surface area over 0.18 m², we recommend the following construction design:

Procedure		Product
1 PRIMING	Universal priming with epoxy base In rooms in which AgBB regulations apply, prime with the binder from ASODUR-LE	**ASODUR**-GBM
2 LEVELLING	Lightweight epoxy resin screed	**ASODUR**-LE
WATERPROOFING OPTIONAL	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
3 APPLYING	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-XL
	Lightweight, low dust flexible adhesive for thin, medium and thick-bed installation techniques	**LIGHTFLEX**
	Rapid hardening, ductile flexible adhesive S1 for interior and exterior use	**MONOFLEX**-fast
	Polymer dispersion	**UNIFLEX**-F
4 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

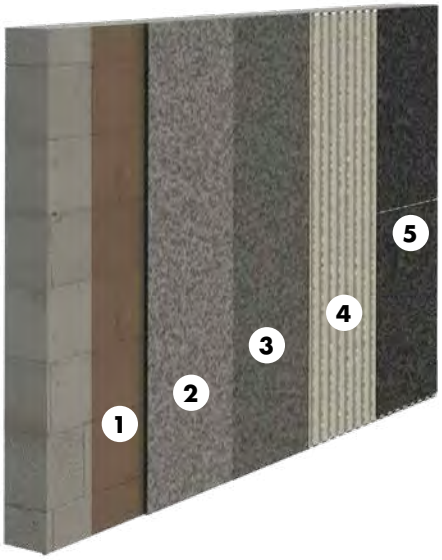


Installation on lime sand blocks, bricks and aerated concrete masonry work

Blocks with binders (e.g. limestone blocks) must have reached an age of at least 6 months before installation of tile and boards (6 months after the production of the block) in order to prevent damage to the tiles, which can be traced back to shrinkage stresses.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
LEVELLING OPTIONAL	Non-slump, cement-based, rapid hardening, polymer-modified, low-stress and smooth consistency levelling compound, 2–50 mm	**SOLOCRET**-50
2 WATERPROOFING	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
3 APPLYING	Lightweight, low dust flexible adhesive for thin, medium and thick-bed installation techniques	**LIGHTFLEX**
	Highly ductile flexible adhesive for high loads	**UNIFIX**-S3
	Grey, highly flexible mortar for interior and exterior use	**MONOFLEX**-XL
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
4 GROUTING	Simple to use grout, up to 6 mm joint widths	**CRISTALLFUGE**
	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

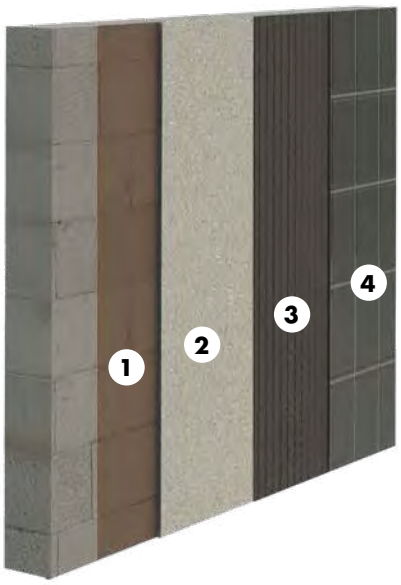
Laying on plaster
(mortar group PII and PIII to DIN 18550)



All plasters beneath ceramic tiles or natural stone must be struck off tightly with a straight edge. The surface must remain rough and may not be smoothened or felt boarded. To enable an orderly tile installation, increased requirements for flatness of the plaster should be contractually stipulated.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
2 LEVELLING	Non-slump, cement-based, rapid hardening, polymer-modified, low-stress and smooth consistency levelling compound, 2–50 mm	**SOLOCRET**-50
3 WATERPROOFING	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
4 APPLYING	Lightweight, low dust flexible adhesive for thin, medium and thick-bed installation techniques	**LIGHTFLEX**
	Rapid hardening, highly non slump flexible adhesive for interior and exterior use	**SOLOFLEX**-fast
	Flexible adhesive mortar with good slump resistance	**MONOFLEX**
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
5 GROUTING	Simple to use grout, up to 6 mm joint widths	**CRISTALLFUGE**
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

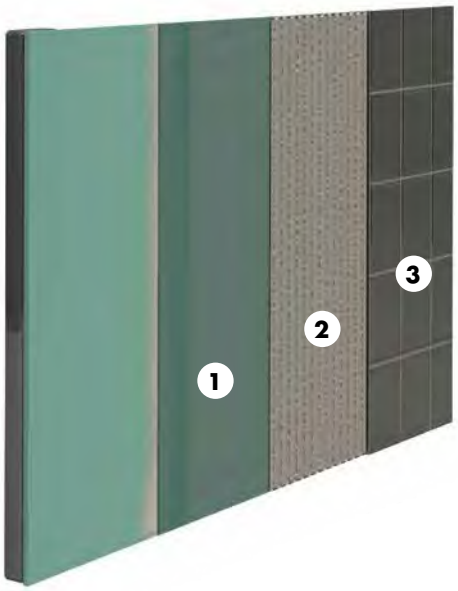
Installation on gypsum plaster (mortar group PIV to DIN 18550)



All plasters beneath ceramic tiles or natural stone must be struck off tightly with a straight edge. The surface must remain rough and may not be smoothened or felt boarded. Gypsum plaster is only suitable as a substrate for domestic bathrooms.

Procedure		**Product**
1 PRIMING	Rapid drying, quartz-filled dispersion primer for absorbent and non-absorbent substrates	**ASO**-Unigrund-S
2 WATERPROOFING	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
3 APPLYING	Grey, highly flexible mortar S1 for interior and exterior use	**MONOFLEX**-XL
	Smooth consistency for applying flexible adhesive	**SOLOFLEX**
	Lightweight, low dust flexible adhesive for thin, medium and thick-bed installation techniques	**LIGHTFLEX**
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
4 GROUTING	Simple to use grout, up to 6 mm joint widths	**CRISTALLFUGE**
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1 – 10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

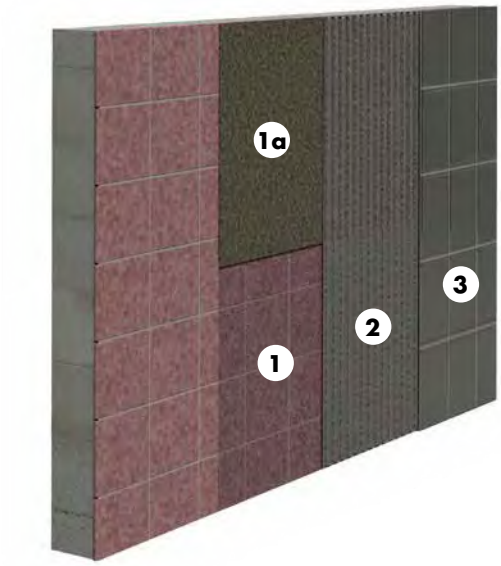
Installation on gypsum fibre boards and building boards



Gypsum fibre board is only permitted as a substrate for moderately exposed wall surfaces in rooms, such as domestic bathrooms. The building board must be protected against moisture damage with a bonded tiled waterproofing.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
WATERPROOFING OPTIONAL	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
	Brush, roller or trowel applied waterproof coating for walls and floors	**SANIFLEX**
2 APPLYING	Lightweight, low dust flexible adhesive for thin, medium and thick-bed installation techniques	**LIGHTFLEX**
	Smooth consistency for applying flexible adhesives	**SOLOFLEX**
	Grey, highly flexible mortar for interior and exterior use	**MONOFLEX**-XL
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
3 GROUTING	Simple to use grout, up to 6 mm joint widths	**CRISTALLFUGE**
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1 – 10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Installation on old tiled finishes

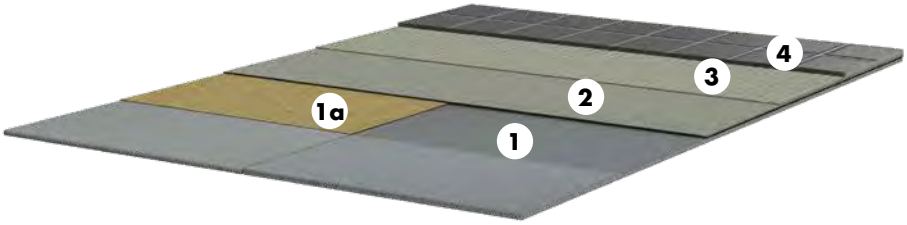


The existing tiled finish must be firm and load bearing.
Remove loose areas and level with MGIII cement-based mortar.
The substrate must be cleaned and all adhesion inhibiting components, such as lime, grease, dirt, etc., must be removed.

Resin repair cracks in the substrate with a reaction resin. Abrading the old tiled finish increases the bond of the primer or scratch coat.

Procedure		**Product**
1 PRIMING	Rapid drying, quartz-filled dispersion primer for absorbent and non-absorbent substrates	**ASO**-Unigrund-S
WATERPROOFING OPTIONAL	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
2 APPLYING	Grey, highly flexible mortar S1 for interior and exterior use	**MONOFLEX**-XL
	Rapid hardening, highly non slump flexible adhesive for interior and exterior use	**SOLOFLEX**-fast
3 GROUTING	Simple to use grout, up to 6 mm joint widths	**CRISTALLFUGE**
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1 – 10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Installation on metal and stainless steel



It is necessary to clean the surface until free from grease and remove any possible existing corrosion. Where necessary, the metal must be abraded and primed. Wipe over stainless steel sparingly with INDU-Primer-N. Before installing tiles and boards, apply an intermediate flexible layer of ASOFLEX-AKB. Due to the range of metals, we recommend seeking technical advice for the application.

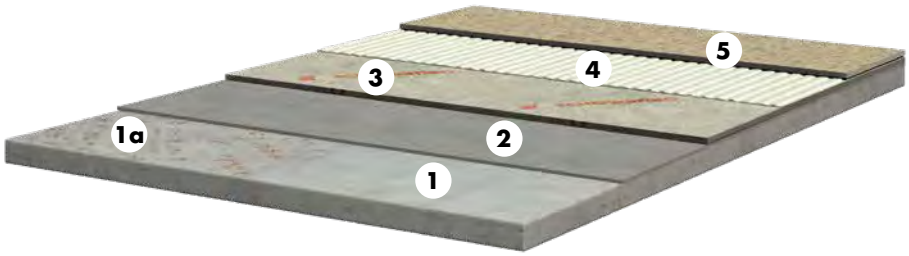
Procedure		**Product**
1 PRIMING	Primer and adhesion promoter for non-absorbent substrates	**INDU**-Primer-N
1a	Universal priming with epoxy base	**ASODUR**-GBM
2 WATERPROOFING	Waterproofing material bonded with tile and board coverings, for wall or floor as required	**ASOFLEX**-AKB
3 APPLYING	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
4 GROUTING	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Installation on critical substrates

When carrying out building conversions or renovation work, critical substrates are often encountered. They have to be levelled, de-coupled and impact sound transmission reduced before installing tiles. Here the impact sound deadening and de-coupling board STEPBOARD can be used. To reliably prevent height differences, it is recommended that existing cracks in the substrate are adhesively sealed, e.g. ASODUR-K900.

Procedure		**Product**
1 PRIMING	Rapid drying, quartz-filled dispersion primer for absorbent and non-absorbent substrates	**ASO**-Unigrund-S
LEVELLING OPTIONAL	The selection depends on the substrate and demands of the area in use	**SOLOPLAN**-FA
2 DE-COUPLING/ INSULATION	Thermally insulating impact sound deadening and de-coupling board, 4/9/15 mm	**STEPBOARD**
WATERPROOFING OPTIONAL	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
3 APPLYING	Grey, highly flexible mortar S1 for interior and exterior use	**MONOFLEX**-XL
	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-FB
	Rapid hardening, ductile flexible adhesive S1 for interior and exterior use	**MONOFLEX**-fast
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
4 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Installation on substrates with adhesive and paint residues



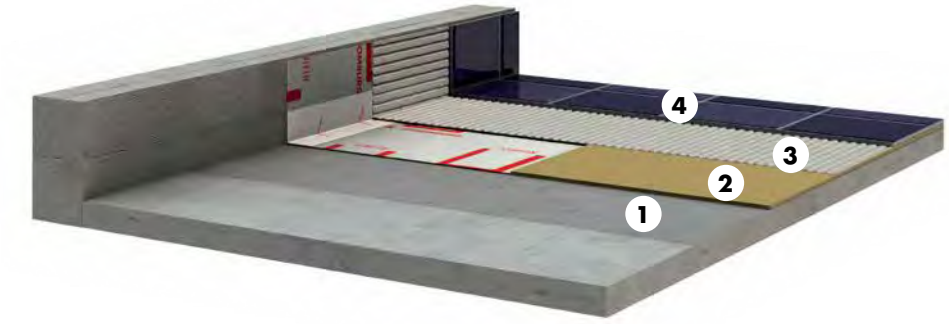
Water soluble paints and adhesive residues must be removed.
Lacquers or oil-based paints must be abraded as necessary.
Prevent or impede rising damp from the substrate.

Procedure		**Product**
1 PRIMING	Rapid drying, quartz-filled dispersion primer for absorbent and non-absorbent substrates	**ASO**-Unigrund-S
1a	Universal priming with epoxy base	**ASODUR**-GBM
2 LEVELLING	Non-slump, cement-based, rapid hardening, polymer-modified, low-stress and smooth consistency levelling compound, 2–50 mm	**SOLOCRET**-50
	Floor levelling compound from 2–30 mm, in interior and exterior areas	**SOLOPLAN**-30-PLUS
3 DE-COUPLING/ INSULATION	Thermally insulating impact sound deadening and de-coupling board, 4/9/15 mm	**STEPBOARD**
WATERPROOFING OPTIONAL	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
4 APPLYING	Grey, highly flexible mortar S1 for interior and exterior use	**MONOFLEX**-XL
	Rapid hardening, highly non slump flexible adhesive for interior and exterior use	**SOLOFLEX**-fast
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
5 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Natural stone silicone for discolouration-free grouting	**ESCOSIL**-2000-ST

Waterproofing and laying
interior and exterior areas

Whether swimming pools, brine pools or saunas – with SCHOMBURG you can fall back on intelligent systems for ideal installation and waterproofing solutions. Due to perfectly matched individual components, you will achieve the best quality and save considerably in time and costs.

Waterproofing and laying in private bathrooms



Due to the grouting, tiled and board finishes are not water tight. Therefore, in areas exposed to water, they require waterproofing in order to protect the substrate against moisture.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
LEVELLING OPTIONAL	Self-levelling, cement-based levelling compound, 2–30 mm	**SOLOPLAN**-30-PLUS
	Non-slump, cement-based, rapid hardening, polymer-modified, low-stress and smooth consistency levelling compound, 2–50 mm	**SOLOCRET**-50
2 WATERPROOFING	Sealing foil that can be spread, rolled and applied by spatula	**SANIFLEX**
	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Joint tape for bridging bay sizing joints and connecting joints	**ASO**-Joint-Tape-2000
3 APPLYING	Grey, highly flexible mortar S1 for interior and exterior use	**MONOFLEX**-XL
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX
4 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Silicone joint sealant for use with natural stone	**ESCOSIL**-2000-ST

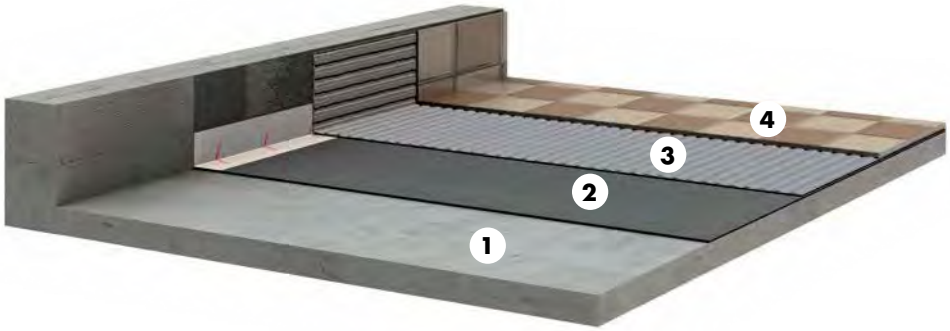
Waterproofing and laying on balconies and terraces

The selection of a suitable system is very important for the sound installation of stone and ceramic on balconies and terraces.
Due to different expansion of the materials used, stresses occur in the build-up of the layers, due to the temperature changes experienced.
These must be permanently compensated.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
LEVELLING OPTIONAL	Non-slump, cement-based, rapid hardening, polymer-modified, low-stress and smooth consistency levelling compound, 2–50 mm	**SOLOCRET**-50
	Water-repellent, rapid hardening, screed mortar with high strength	**ASO**-EZ4-PLUS
2 WATERPROOFING	Non-woven laminated, sheet-like bonded waterproof system	**SANIFIN**
	Joint tape for bridging bay sizing joints and connecting joints	**ASO**-Joint-Tape-120
3 APPLYING	Grey, highly flexible mortar S1 for interior and exterior use	**MONOFLEX**-XL
	Highly ductile flexible adhesive for high loads	**UNIFIX**-S3
4 GROUTING	Cement-based, water impermeable grout with improved mechanical and chemical resistance for joint widths from 3 – 20 mm	**CRISTALLFUGE**-HF
	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Silicone joint sealant for movement joints	**ESCOSIL**-2000

Reliable waterproofing and laying on terraces and balconies
AQUAFIN-TBS

System with the highest safety factor proven over decades

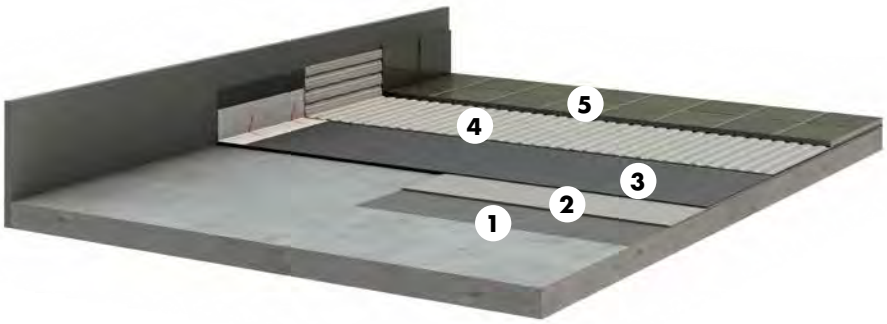


10 YEARS GARANTIE

Decades of experience has resulted in the development of a reliable system for waterproofing and laying of ceramic coverings on terraces and balconies. The AQUAFIN-TBS system is underpinned by a 10-year guarantee from the professional user. The individual system components are available as rapid setting and normal setting variants.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
LEVELLING OPTIONAL	Non-slump, cement-based, rapid hardening, polymer-modified, low-stress and smooth consistency levelling compound, 2–50 mm	**SOLOCRET**-50
	Water-repellent, rapid hardening screed mortar with high strength	**ASO**-EZ4-PLUS
2 WATERPROOFING	Flexible, cementitious, vapour-permeable waterproofing slurry for increased demands in interior and exterior areas	**AQUAFIN**-RS300
	Joint tape for bridging bay sizing joints and connecting joints	**ASO**-Joint-Tape-2000
3 APPLYING	Highly ductile flexible adhesive for high loads	**UNIFIX**-S3
	Deformable, rapid hardening flexible adhesive for heavy loads, also for natural stone, with FAST TECHNOLOGY	**UNIFIX**-S3-fast
4 GROUTING	Cement-based, water impermeable grout with improved mechanical and chemical resistance for joint widths from 3 – 20 mm	**CRISTALLFUGE**-HF
	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Silicone joint sealant for use with natural stone	**ESCOSIL**-2000-ST

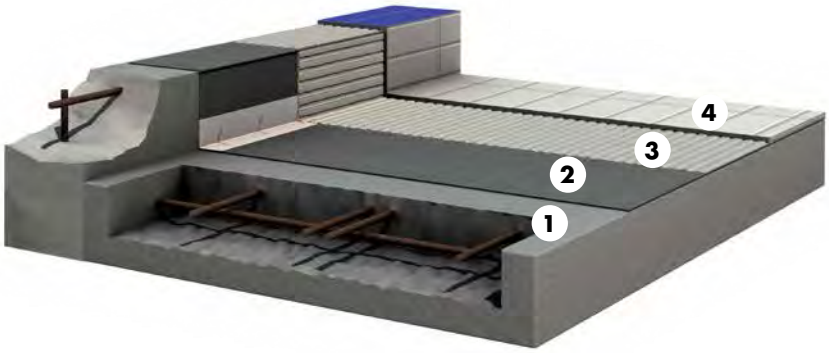
Waterproofing and laying in public showers and swimming pools



In commercially used wet areas, a particular type of waterproofing is necessary due to the large amounts of water present.
The use of bonded waterproof systems (including the bedding mortar for the tiles and boards) protects all building components against moisture.

Procedure		Product
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
2 LEVELLING	Non-slump, cement-based, rapid hardening, polymer-modified, low-stress and smooth consistency levelling compound, 2–50 mm	**SOLOCRET**-50
	Water-repellent, rapid hardening screed mortar with high strength	**ASO**-EZ4-PLUS
3 WATERPROOFING	One-component, flexible waterproofing slurry, wall/floor	**AQUAFIN**-1K-PREMIUM
	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
4 APPLYING	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-FB
	Grey, highly flexible mortar S1 for interior and exterior use	**MONOFLEX**-XL
5 GROUTING	Cement-based, water impermeable grout with improved mechanical and chemical resistance for joint widths from 3 – 20 mm	**CRISTALLFUGE**-HF
	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Silicone joint sealant for use with natural stone	**ESCOSIL**-2000-ST

Waterproofing and laying in fountains and swimming pools

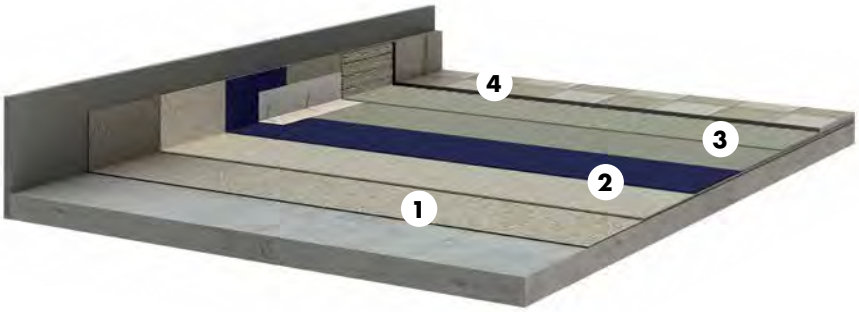


In order to impede the penetration of bathing water in the levelling layer and the concrete construction of swimming pools, suitable and approved waterproofing systems bonded with the tiled finish are used.

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
	Universal priming with epoxy base	**ASODUR**-SG3-thix
LEVELLING OPTIONAL	Water-repellent multi-mortar up to 30 mm	**ASOCRET**-M30
	Water-repellent, rapid hardening screed mortar with high strength	**ASO**-EZ4-PLUS
	When levelling is required, a cement replacement system can be used together with a bond coat	**ASOCRET**-BIS-5/40
2 WATERPROOFING	Flexible, cementitious, vapour-permeable waterproofing slurry for increased demands in interior and exterior areas	**AQUAFIN**-RS300
	Special waterproof tape for heavy duty exposure and highly demanding areas	**ASO**-Joint-Tape-2000-S
3 APPLYING	Highly flexible tile adhesive	**UNIFIX**-S3
	Cementitious, flexible thin-bed mortar	**SOLOFLEX**
	Chemical-resistant, thin-bed mortar based on epoxy resin	**ASODUR**-EKF
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
4 GROUTING	Cement-based, water impermeable grout with improved mechanical and chemical resistance for joint widths from 3 – 20 mm	**CRISTALLFUGE**-HF
	Chemical-resistant fine grain epoxy grout	**ASODUR**-EKF
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
	Silicone joint sealant for underwater areas	**ESCOSIL**-2000-UW **ESCOSIL**-2000-ST


Dampfbad

Waterproofing and laying in sauna areas



Sauna landscapes have different areas (e.g. dry saunas, steam saunas, showers and other wet rooms) which are subject to different levels of exposure. The waterproofing and installation systems must therefore be adapted to the respective load range.

Due to high levels of exposure to steam in a steam sauna, the waterproofing and installation system must also have a vapour barrier function. This can only be fulfilled by reaction resin systems.

Procedure		**Product**
1 PRIMING	Epoxy resin-based barrier primer	**ASODUR**-SG3-thix
2 WATERPROOFING	Trowellable, chemically-resistant, vapour barrier-bonded, polyurethane-based waterproof system	**ASOFLEX**-AKB
3 APPLYING	Chemical-resistant fine grain epoxy grout	**ASODUR**-EKF
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
4 GROUTING	Chemical-resistant fine grain epoxy grout	**ASODUR**-EKF
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
	Silicone joint sealant for movement joints	**ESCOSIL**-2000

Waterproofing and laying
special areas

Whether commercial kitchens, clean rooms, milking or sewage treatment plants – with SCHOMBURG products you are always on the safe side, even in special areas. Perfectly matched system components offer safety for planners and installers.

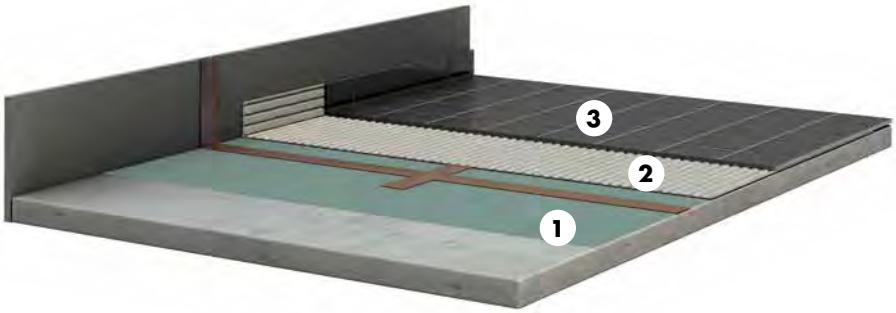
Waterproofing and laying in commercial kitchens and cool rooms

In commercial kitchens and cool rooms with surfaces to be clad in stone or ceramic, there are considerations, dependent on the area, related to exposure to aggressive media such as lactic acid, fatty acids, blood, cleaning materials, etc., for example. The choice of the waterproofing and installation system is geared towards chemical exposure. The corresponding ranges of the applicable load group must be specified by the planner in accordance with the ZDB data sheet or DIN 18534.

The optional use of a conductive strip and conductive lacquer between primer and the waterproofing membrane gives the possibility of a non-destructive test for impermeability of the membrane using a spark coil test to DIN 55670 under high voltage. The time consuming and costly testing of the waterproofing measures via a trial fill of the waterproofed area with water can be dispensed with.

Procedure		**Product**
1 LEVELLING	When levelling is required, a cement replacement system can be used together with a bond coat	**ASOCRET**-BIS-5/40
	Water-repellent, rapid hardening screed mortar with high strength	**ASO**-EZ4-PLUS
2 PRIMING	Epoxy resin-based barrier primer	**ASODUR**-SG3-thix
3 WATERPROOFING	Trowel-off, chemically-resistant bonded polyurethane-based waterproof system	**ASOFLEX**-AKB
	Special waterproof tape for heavy duty exposure and highly demanding areas	**ASO**-Joint-Tape-2000-S
4 APPLYING	Chemical-resistant, thin-bed mortar based on epoxy resin	**ASODUR**-EKF
5 GROUTING	Chemical-resistant fine grain epoxy grout	**ASODUR**-EKF
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
	Silicone joint sealant for movement joints	**ESCOSIL**-2000

Conductive installation in hazardous areas, clean rooms, chemical, pharmaceutical and electronics industry



Electrostatic charge must be prevented in many sensitive industrial and medicinal areas. Vapours, gases or dust can ignite as a result of electrostatic discharge. In addition, electric fields can accumulate due to electrostatic charge build-up, which can destroy or damage electronic components. Therefore a conductive finish is always mandatory in petrol stations.

laboratories, chemical and electronics industries, computer areas, clean rooms and operating theatres, etc. The goal is to reduce the resistance to earth to such a level that electrostatic charge can be dissipated in non-critical areas.

Cementitious system

Procedure		**Product**
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
2 APPLYING	Self-adhesive conductive earthing strip in a < 4 x 4 m grid	**ASO**-LB
	Conductive dispersion for pre-mixing with the gauging water for the cementitious tile adhesive	**ELEKTRON**-PLUS
	Grey, highly flexible mortar for interior and exterior use	**MONOFLEX**-XL
	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-FB
3 GROUTING	Conductive dispersion for pre-mixing with the mixing water for CRISTALLFUGE-HF	**ELEKTRON**-PLUS **CRISTALLFUGE**-HF
	Silicone joint sealant for movement joints	**ESCOSIL**-2000
	Polyurethane jointing compound for heavily exposed areas	**INDUFLEX**-PU

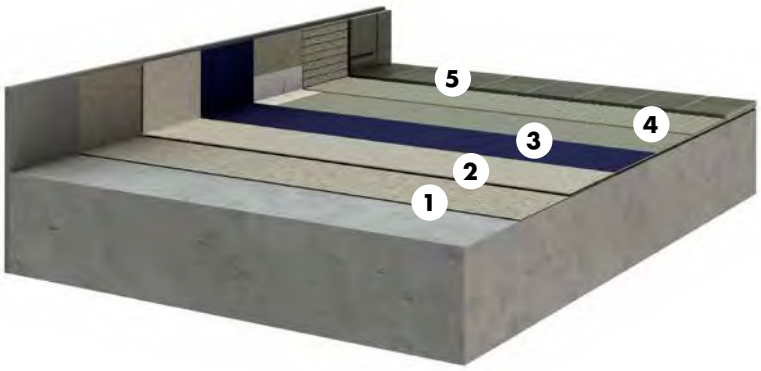
The use of conductive tiles or those with a conductive glaze is a prerequisite.

Within the SCHOMBURG product range you will find a cementitious system as well as an epoxy resin-based system in order to cope with all the economical, mechanical and chemical demands and, not least, all safety aspects.

Epoxy resin-based system

Procedure		**Product**
1 PRIMING	Self-adhesive conductive earthing strip in a < 4 x 4 m grid	**ASO**-LB
	Epoxy resin-based conductive lacquer	**ASO**-LL
	Components for producing an especially low shunt resistance	
2 APPLYING	2-component epoxy resin binder	**ASODUR**-EK/C
	Conductive quartz sand to be added to the epoxy resin binder	**ASO**-LQ
3 GROUTING	2-component epoxy resin binder	**ASODUR**-EK/C
	Conductive quartz sand to be added to the epoxy resin binder	**ASO**-LQ
	Polyurethane jointing compound for heavy duty movement joints	**INDUFLEX**-PU

Waterproofing and laying in milking parlours

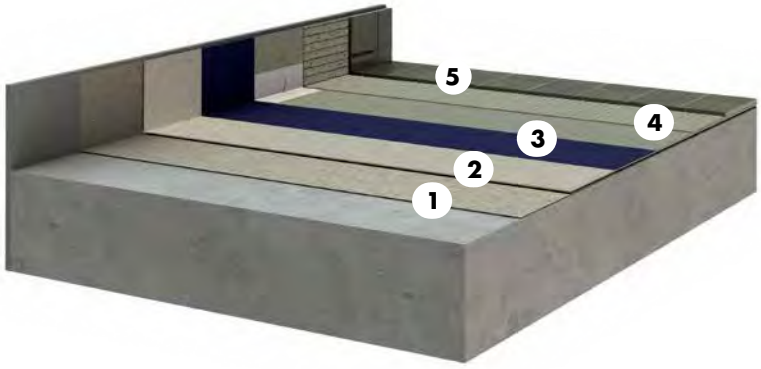


Milking parlours when correctly installed to suit demands should help a smooth continuous and efficient milking process to be carried out. The use of anti-slip tiles which are safe underfoot meets the intense requirements for cleaning and hygiene.

The bonded tiled system must also be highly resistant to chemicals and mechanical stresses.

Procedure		**Product**
1 LEVELLING	When levelling is required, a cement replacement system can be used together with a bond coat	**ASOCRET**-BIS-5/40
	Alternatively a bonded screed together with a bonding slurry can be installed	**ASO**-EZ4-PLUS
2 PRIMING	Epoxy resin-based barrier primer	**ASODUR**-SG3-thix
3 WATERPROOFING	The waterproofing is carried out with different colours of the chemically-resistant polyurethane waterproof membrane ASOFLEX-AKB with ASO-Joint-Tape-2000-S. The last coat is sanded with quartz sand.	**ASOFLEX**-AKB **ASO**-Joint-Tape-2000-S
4 APPLYING	Chemical-resistant, thin-bed mortar based on epoxy resin	**ASODUR**-EKF
5 GROUTING	Chemical-resistant fine grain epoxy grout	**ASODUR**-EKF
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
	Polyurethane jointing compound for heavy duty movement joints	**INDUFLEX**-PU

Waterproofing and laying in sewage treatment plants



Concrete surfaces in wastewater treatment plants are permanently subjected to chemical, biological and mechanical stresses. Areas with vehicular traffic are also subjected to a high load and fitted with wearing tiles as a rule. For this reason, there are intense demands on the waterproofing and installation systems.

Procedure		**Product**
1 LEVELLING	When levelling is required, a cement replacement system can be used together with a bond coat	**ASOCRET**-BIS-5/40
	Alternatively a bonded screed together with a bonding slurry can be installed	**ASO**-EZ4-PLUS
2 PRIMING	Epoxy resin-based barrier primer	**ASODUR**-SG3-thix
3 WATERPROOFING	The waterproofing is carried out with different colours of the chemically-resistant polyurethane waterproof membrane ASOFLEX-AKB with ASO-Joint-Tape-2000-S. The last coat is sanded with quartz sand.	**ASOFLEX**-AKB **ASO**-Joint-Tape-2000-S
4 APPLYING	Chemical-resistant, thin-bed mortar based on epoxy resin	**ASODUR**-EKF
5 GROUTING	Chemical-resistant fine grain epoxy grout	**ASODUR**-EKF
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
	Polyurethane jointing compound for heavy duty movement joints	**INDUFLEX**-PU

Installation of particular laying materials

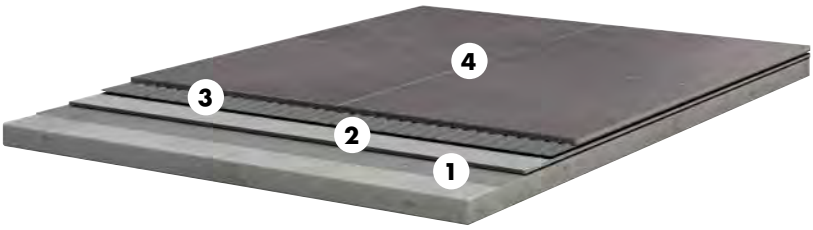
Installation of laying materials such as natural stone, porcelain stoneware, mosaic or even large format tiles and boards present a particular challenge in the selection of suitable products and in their application. SCHOMBURG offers safe solutions and systems for reliably installing even special laying materials.

Installation of porcelain stoneware

Porcelain stoneware tiles are designated as tiles with water absorption of ≤ 0.5%. This concerns a fully vitrified laying material with an extremely high density.
To install porcelain stoneware tiles, polymer modified bedding mortars are needed in order to produce optimum bonding to the very dense surface of the tile.
Grouts with accelerated binding are particularly suitable for the grouting of porcelain stoneware tiles.

Procedure		**Product**
1 PRIMING	See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".	
LEVELLING OPTIONAL	See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".	
DE-COUPLING/ INSULATION OPTIONAL	Thermally insulating impact sound deadening and de-coupling board, 4/9/15 mm	**STEPBOARD**
WATERPROOFING OPTIONAL	See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".	
2 APPLYING	Lightweight, low dust flexible adhesive for thin, medium and thick-bed installation techniques	**LIGHTFLEX**
	Grey, highly flexible mortar for interior and exterior use	**MONOFLEX**-XL
	Rapid hardening, ductile flexible adhesive S1	**MONOFLEX**-fast
3 GROUTING	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX
	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant for movement joints	**ESCOSIL**-2000

Installation of large format tiles and boards



A prerequisite for the installation of large format tiles and boards is a flat substrate. The larger the tiles, the flatter the substrate needs to be.

A substrate that conforms to the requirements of DIN 18 202 for producing surfaces is not always adequate for the installation of large format tiles. Levelling of unevenness and irregularities during tiling is almost impossible with large format tiles. Plasters and screeds must therefore be largely flat. If this is not the case, then a levelling coat will be needed. Various levelling materials are suitable such as SOLOPLAN-30-PLUS, SOLOPLAN-30-CA (self-levelling) or SOLOCRET-15 (non slump).

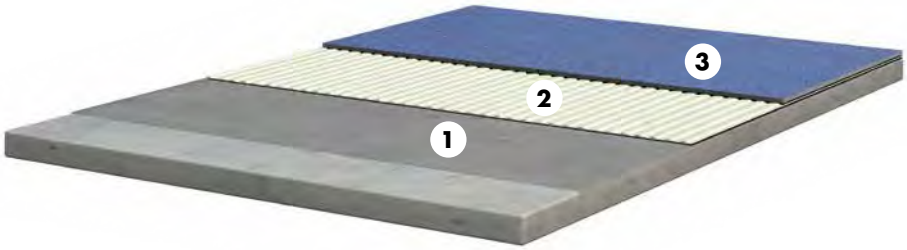
Above a format of 40/40 cm, apply a contact layer to the rear of the tile or board. If this contact coat is not adequate to fully cover the rear of the tile, then use the floating buttering method. When an adequate bond between the laying material and the substrate is achieved, then any stresses that occur can be reliably dispelled, thus preventing stress cracks in the finish. Any residual moisture present beneath the tiling e.g. from the concrete slab, screed and bedding mortar, can only very slowly dry out through the small number of joints. Where substrates are sensitive to moisture, this can lead to damage. The appropriate primer should be used to afford adequate protection.

Procedure		Product
1 PRIMING	**Calcium sulphate screeds:** Universal priming with epoxy base	**ASODUR**-GBM
	Cement-based screeds: Solvent-free primer for interior and exterior use *	**ASO**-Unigrund
2 LEVELLING	**Calcium sulphate screeds:** Floor levelling compound up to 30 mm	**SOLOPLAN**-30-CA
	Cement-based screeds: Floor levelling compound up to 2–30 mm for interior and exterior use	**SOLOPLAN**-30-PLUS
	Non-slump, rapid hardening levelling compound up to 50 mm	**SOLOCRET**-50
WATERPROOFING OPTIONAL	Crack-bridging mineral-based waterproofing slurry	**AQUAFIN**-2K/M-PLUS
3 APPLYING	Lightweight, low dust flexible adhesive for thin, medium and thick-bed installation techniques	**LIGHTFLEX** 1)
	Grey, highly flexible mortar for interior and exterior use	**MONOFLEX**-XL 1)
	Accelerated hardening, fluidised bed flexible mortar	**MONOFLEX**-FB 1)
	Highly ductile flexible adhesive for high loads	**UNIFIX**-S3
	Deformable, rapid hardening flexible adhesive for heavy loads, also for natural stone, with FAST TECHNOLOGY	**UNIFIX**-S3-fast
	Flexible natural stone adhesive	**CRISTALLIT**-FLEX 1)
4 GROUTING	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Rapid hardening flexible grout, 3–20 mm joint width	**CRISTALLFUGE**-FLEX

* See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".

1) For cement-based thin-bed mortars, we recommend the addition of polymer dispersion coatings such as UNIFLEX-F to compensate for stresses that occur between the substrate and the ceramic covering material.

Installation of synthetic stones

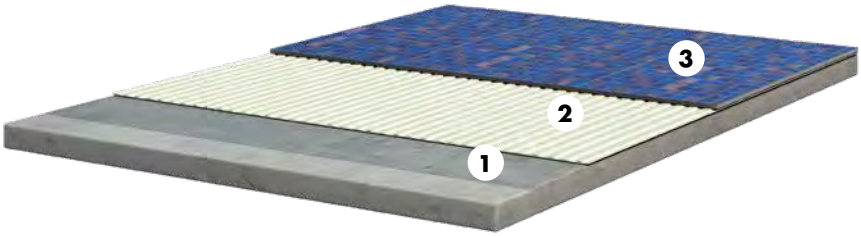


Synthetic stones are agglomerates of natural stones, which are bound with cement or resin. A few of these materials have pronounced expansion.
As a rule, they can be laid with a highly polymer-modified thin-bed mortar with rapid crystalline binding of the mixing water.

A few of these materials, especially those with high serpentinite components can 'curl' which can only be prevented by installing with a reaction resin adhesive. Our technical department is available for individual advice.

Procedure		**Product**
1 PRIMING		
LEVELLING OPTIONAL	Preparatory work depends on the type of substrate and its condition, followed by waterproofing appropriate to the wear class. See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".	
WATERPROOFING OPTIONAL		
2 APPLYING	Epoxy resin-based, chemical-resistant mortar	**ASODUR**-EKF
	Deformable, rapid hardening flexible adhesive for heavy loads, also for natural stone, with FAST TECHNOLOGY	**UNIFIX**-S3-fast
	Natural stone medium bed mortar S1, 2 - 30 mm	**CRISTALLIT**-FLEX-max
	Polymer dispersion	**UNIFLEX**-F
3 GROUTING	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1 – 10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Rapid hardening flexible grout, 3 – 20 mm joint width	**CRISTALLFUGE**-FLEX
	Silicone joint sealant for use with natural stone	**ESCOSIL**-2000-ST

Installation of glass tiles and mosaics

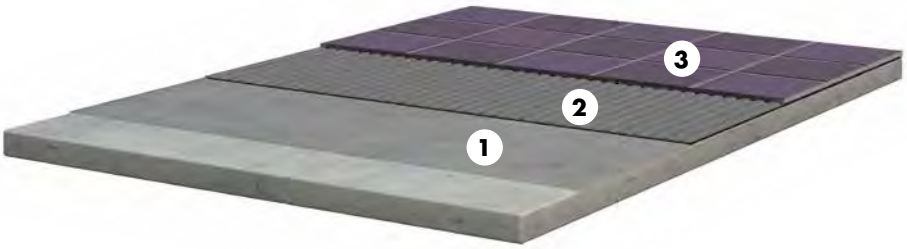


Glass tiles and mosaics are translucent or transparent with a coating to the rear. Without a rear coating, the bedding mortar is visible. Selecting a white bedding mortar intensifies the colour of the glass tile or mosaic. CRISTALLFUGE-EPOX can be used for the installation and grouting of translucent glass mosaics for equal colour. To achieve good bonding to the glass, a highly modified bedding mortar should be used. Optimum results are achieved, as a rule with epoxy resin-based adhesives, which can also serve as the grouting for glass tiles and mosaics.

Procedure		**Product**
LEVELLING OPTIONAL	Non-slump, cement-based, rapid hardening, polymer-modified, low-stress and smooth consistency levelling compound, 2–50 mm	**SOLOCRET**-50
	Self-levelling, cement-based levelling compound, 2–30 mm	**SOLOPLAN**-30-PLUS
	Water-repellent, rapid hardening screed mortar with high strength	**ASO**-EZ4-PLUS
1 PRIMING	Solvent free universal primer, resistant to water/alkalis	**ASO**-Unigrund
	Epoxy resin-based barrier primer	**ASODUR**-SG3-thix
WATERPROOFING OPTIONAL	Flexible, cementitious, vapour-permeable waterproofing slurry for increased demands in interior and exterior areas	**AQUAFIN**-2K/M-PLUS **AQUAFIN**-RS300
	Trowel-off, chemically-resistant bonded polyurethane-based waterproof system	**ASOFLEX**-AKB
2 APPLYING	White flexible adhesive for installation using thin-bed techniques	**MONOFLEX**-white [1]
	White, rapid hardening, flexible adhesive for installation in thin-bed techniques	**UNIFIX**-S3-fast [2]
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
3 GROUTING	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1–10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Chemical-resistant fine grain epoxy grout, 3-component and solvent free	**CRISTALLFUGE**-EPOX
	Silicone joint sealant for movement joints	**ESCOSIL**-2000

1) Modified with UNIFLEX-F 2) Not for installation in underwater areas

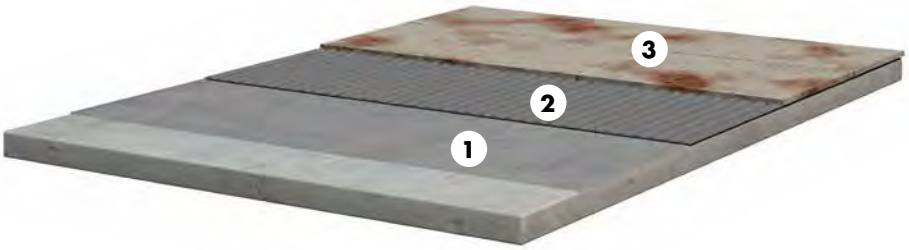
Installation of cotto



Cotto is an elaborate production process from fired clay material with a quite particular charm. Particular care and practical knowledge is needed to install cotto. Installation on damp screeds can quickly lead to efflorescence. In order to keep drying times short, a thin- or medium-bed adhesive with rapid crystalline binding of the mixing water should be used. Before grouting, it is recommended to impregnate the dry tiles in order to ease the wash-off process during grouting. Once hardened, the tiles must be meticulously acid washed. This is still necessary with a cleanly washed surface to remove the tiles own lime. The covering must then thoroughly dry out before the final treatment with cotto wax or oil is applied.

Procedure		**Product**
1 PRIMING	See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".	
LEVELLING OPTIONAL	See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".	
WATERPROOFING OPTIONAL	See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".	
2 APPLYING	Rapid hardening, highly non slump flexible adhesive for interior and exterior use	**SOLOFLEX**-fast
3 GROUTING	Natural stone medium bed mortar S1, 2 - 30 mm	**CRISTALLIT**-FLEX-max
	Cleaner for removing cement or lime contamination	**ASO**-R005
	Silicone joint sealant, neutral curing, free from plasticisers	**ESCOSIL**-2000-ST

Installation of natural stone



Natural stone offers fascinating variations in structure and surfaces that make the whole area unique. The atmosphere of a room is especially enhanced by natural products. An assured and effective alternative is offered by the CRISTALLIT natural stone range. The mixing water is quickly bound in a crystalline way and is only in contact with the laying material for a very short time.

Procedure		**Product**
1 PRIMING	Dependent on the substrate, as a rule with: Acrylic dispersion concentrate *	**ASO**-Unigrund-K
LEVELLING OPTIONAL	Dependent on the substrate and area of application, e.g. Floor levelling compound from 2 – 30 mm in interior and exterior areas for cement-based substrates	**SOLOPLAN**-30-PLUS
	Floor levelling compound for floor surfaces up to 30 mm in interior areas for calcium sulphate bound substrates *	**SOLOPLAN**-30-CA
WATERPROOFING OPTIONAL	See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".	
2 APPLYING	Natural stone medium bed mortar S1, 2 - 30 mm	**CRISTALLIT**-FLEX-max
	Grey, highly flexible thin-bed and medium-bed adhesive with rapid crystalline binding of the mixing water, FAST TECHNOLOGY	**MONOFLEX**-fast
3 GROUTING	Cementitious multi-function flexible grout for tiles, natural stone and other finishes Coverings of 1 – 10 mm joint width with FAST TECHNOLOGY	**CRISTALLFUGE**-PLUS
	Silicone joint sealant, neutral curing, for natural stone	**ESCOSIL**-2000-ST

* See also table of contents "Installation on various substrates" and "Waterproofing and laying, for interior and exterior use".

General information
for planning and execution

The planning and execution of a successful tile installation depends on a number of different factors. We will show you what you need to consider when evaluating and preparing the substrate, for example, and which choice for different floor and wall surfaces or also for the different water impact classes and DIN standards is right for you.

Substrate evaluation and preparation
Methods, requirements, and options

One of the most important requirements for permanent success during application of decorative or protective coatings is professional examination, evaluation, and preparation of the substrate.
The substrate must be prepared so that an ideal connection between the concrete surface and the applied system is achieved.

Inspection
The inspection enables accumulations on the Substrates to be coated (dirt, dust, mortar splashes, etc.), loose and crumbling components, condensate, cracks, and rough unevenness to be determined.

Testing evenness
The permitted measurement tolerances are described in DIN 18202 "Tolerances in building construction". Inspection takes place with a measuring stick and a measuring wedge.

Knock test
Knocking with a hammer enables hollow position and thin, hard laitance layers to be detected according to changes in sound patterns.

Wetting test
Application of water, e.g. with a brush, tests the absorption ability of the substrate. The water must be absorbed by the substrate within a short amount of time. If this is not the case, this could be an indicator of high moisture, separating agent residues. cement slurry, or similar.

Grid scratch test
Diamond-shaped scratches on the surface of the substrate using the grid scratch testing device enable the surface condition (layers, hardness, etc.) to be evaluated. No breakages may be present at intersections along with simultaneous scratch resistance.

Moisture measurement
The moisture measurement is a test to determine the suitability of the substrate for coating, which is measured with a CM measuring device. The max. moisture content for plastic resin priming and coatings is ≤ 4.0 CM-%. In case of special priming coats, the moisture may also be higher. Electronic moisture measuring devices can in fact be used for non-destructive measurement, since the exactness is nevertheless is not present, but they certainly provide a starting point.

Pressure resistance test
A rebound hammer (Schmidt hammer) can be used to non-destructively test the compressive strength of the concrete at one point at a time.

Crack repair (floor surfaces)
Prior to applying the primer, cracks must be opened cleaning and professionally sealed with injection resin and inserted steel clamps (injection resin system ASODUR-K900 as a secure and clean solution).

Repairing holes and damaged voids
The evenness of the substrate must be prepared prior to applying the primer, and a robust, highly durable epoxy resin mortar is especially well-suited (e.g. ASODUR-EMB). Suitable tools are spatulas and floats.

Producing a fillet
A fillet is created in the wall-base connection area with epoxy resin mortar. This makes a secure connection with the subsequent coatings possible, and damaging influences from chemicals and humidity are able to be prevented.

Milling
Flat removal millimetres up to multiple centimetres is possible to level out unevenness.

Shot blasting
The most conventional method for preparing the substrate to create an equal, open-pored roughness.

Grinding
Mechanical surface processing with less material removal.

High-pressure water jetting
Uses for poorly accessible floor surfaces and vertical surfaces.

Sandblasting and water-sandblasting
Removal of adhesion inhibiting surface components on vertical surfaces as well.

Sweeping and vacuuming
Removal of loose fine particles after the actual surface preparation.

Surface tensile strength
Specification of surface tensile strength by vertically pulling off an adhered peel-off stamp. The minimum tensile strength for coating work is 1.5 N/mm².

The right primer for every application

Primers for subsequent tiling (without waterproofing)									
	ASO-Unigrund-GE	**ASO**-Unigrund-K	**ASO**-Unigrund-S	**ASODUR**-GBM	**ASODUR**-SG2	**ASODUR**-SG2-thix	**ASODUR**-V360W	**ASODUR**-SG3-superfast	**ASODUR**-SG3-thix
Substrate floor surfaces									
Concrete	++	++	++	++	++	++	++	++	++
Cement-based screed	++	++	++	++	++	++	++	++	++
Calcium sulphate screed [4]	++	++	++	++			++	++	++
Calcium sulphate flow screed [1] [4]	++	++	++	++			++	++	++
Xylolite/magnesite screed				++			++	++	++
Mastic asphalt screed			++	++	++			++	++
ASODUR-LE epoxy resin coating				++			o	++	++
Terrazzo or stone floors [2]			++	o	++	++		o	o
Existing tiled finishes			++	++	++ [3]	++ [3]		++	++
Substrate wall surfaces									
Concrete	++	++	++	++	o	++	++	++	++
Aerated concrete	++	++	++				++		
Lime-cement plaster, cement plaster	++	++	++	++	o	++	++	++	++
Gypsum plaster	++	++	++						
Gypsum plasterboard	++	++	++						
Existing tiled finishes			++	++		++		++	++
Chipboard			++	++		++		++	++

++ particularly suitable o limited suitability

1) Calcium sulphate screeds must be abraded and be ready to apply finishes.
2) Terrazzo and stone flooring must be free from separating layers.
3) Lightly abrade tiled finishes with 20 or 40 grit paper.
4) When fixing large format tiles, prime with ASODUR-GBM.

NOTE

When using ASODUR primers, spread quartz sand onto the primer while it is still wet. The technical data sheets of the listed products should be observed.

The correct waterproofing for water exposure

Reclassification according to DIN 18531, DIN 18534, DIN 18535		
Application areas	**Standard**	**Water exposure class**
	DIN 18534:	W0-I: low
Areas in rooms subject to direct and indirect exposure in which service water and cleaning water are not very often used, e.g. in domestic bathrooms, hotel bathrooms.	DIN 18534:	W1-I: moderate
Areas exposed to direct and indirect exposure in exterior areas with non-pressurised water, e.g. on balconies and terraces (not above used rooms).	DIN 18531-5:	
Directly and indirectly exposed areas in rooms in which very frequent or prolonged use is made of service and cleaning water.	DIN 18534:	W2-I: high
Surfaces of containers subjected to water under pressure, e.g. public and private indoor and outdoor swimming pools.	DIN 18535:	W1-B Fill level ≤ 5 m
		W2-B Fill level ≤ 10 m
Directly and indirectly exposed areas in rooms in which very frequent or prolonged use is made of service and cleaning water with limited chemical stress on the waterproofing, e.g. in commercial kitchens and laundries.	DIN 18534:	W3-I: very high

×1 no waterproofing required if water-repellent surface ×2 only on walls

Water exposure	Usable seals					
	SANIFLEX	**AQUAFIN**-1K-PREMIUM	**AQUAFIN**-2K/M-PLUS	**AQUAFIN**-RS300	**ASOFLEX**-AKB	**SANIFIN**
Low Areas with less frequent effect of splash water. Examples • Areas of wall surfaces above wash-basins in bathrooms and sinks in domestic kitchens. • Areas of floor surfaces in domestic areas without drains, e.g. in kitchens, utility rooms, guest WCs.	× [1]	× [1]	× [1]	× [1]	× [1]	× [1]
Moderate Surfaces with less frequent effect of service water, without increase in accumulating water. Examples • Wall surfaces above bathtubs and in showers in bathrooms. • Floor surfaces in the domestic area with drain. • Floor surfaces in bathrooms with/without drain without high exposure to water from the shower area.	×	×	×	×	×	×
Waterproofing for balconies, loggias and arcades (usable platform that is not located above a used room).	–	×	×	×	×	–
High Areas with frequent exposure to splash water and/or service water, mainly on the floor but temporarily intensified by accumulating water. Example • Wall surfaces of showers in sports facilities/commercial sites. • Floor surfaces with drains and/or gutters.	× [2]	×	×	×	×	× [4]
Waterproofing of tanks and pools	–	–	×	×	×	–
	–	–	×	×	×	–
Very high 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. Examples • Surfaces related to swimming pools. • Areas in industrial sites (professional kitchens, laundries, breweries).	–	× [3]	× [3]	× [3]	x	–

× [3] only if no additional chemical action × [4] sealing surfaces with additional chemical effects, if necessary, in accordance with PG-AIV

The right bedding mortar for every application

++ particularly suitable o limited suitability

Substrates/Application	Information on Subsurface preparation	Primer
Wall coverings, for interior and exterior use		
Plasters PG II-III in accordance with DIN 18550	Remove excess plaster	ASO-Unigrund
Masonry work in accordance with DIN 1053, Part 1	Masonry work flat and fully grouted, apply reinforced plaster to mixed masonry work, masonry work of stones bonded with binder min. 6 months old	ASO-Unigrund
Minimum age 6 months [5]	Remove laitance layers if necessary, e.g. using shot blasting, high-pressure cleaner	ASO-Unigrund
Minimum age 3 months [5]	Remove laitance layers if necessary, e.g. using shot blasting, high-pressure cleaner	ASO-Unigrund
Minimum age 28 days [5]	Remove laitance layers if necessary, e.g. using shot blasting, high-pressure cleaner	
Dry lining boards, e.g. gypsum fibre boards in accordance with DIN 18181, gypsum fibre, mesh-reinforced polystyrene	Adequately load-bearing and suitable as a substrate for tile installation	ASO-Unigrund
Ceramic coverings, natural and synthetic stone well bonded, load bearing	Clean and degrease, abrade if necessary	Apply ASO-Unigrund-S or scratch coat with AQUAFIN-2K/M-PLUS
Paints and coatings well bonded, load bearing	Remove emulsion paints, abrade lacquers and oil paints. We recommend a trial adhesion. Ensure that there is no rising damp coming from the substrate.	Apply ASO-Unigrund-S or scratch coat with AQUAFIN-2K/M-PLUS
Styrofoam, e.g. bath panels	Contact coat with MONOFLEX, LIGHTFLEX, SOLOFLEX	
Wood substrates, load bearing, e.g. chipboard on rigid studwork	Additional screws as necessary, test for suitability	ASO-Unigrund-S, STEPBOARD 9 or 15 mm
Floor finishes for the interior		
Heated cement-based screeds in accordance with DIN 18560, separating layer or insulation, minimum age 28 days and residual moisture < 2.0% by the carbide CM method	Adhesively seal cracks present with ASODUR-K900 and sand off	ASO-Unigrund
Heated cement-based screeds in accordance with DIN 18560, separating layer or insulation, minimum age 28 days and residual moisture < 2.0% by the carbide CM method	Follow the heating process	ASO-Unigrund
'Green' cement-based screed [1] on separating layer or insulation heated and unheated, will take foot traffic (min. 3 days old) in accordance with DIN 18560, load bearing	Non sanded, follow heating process after tiling.	

3) In exterior and wet areas, waterproofing is always required before installing tiles and boards. You will find the suitable products in the product overview. If there are no deviating specifications, then DIN 18157 is compulsory regarding substrate, substrate preparation and installation.
4) Only use together with the bonded waterproof membrane ADF-Balkonfolie.

1) When installing tiles on 'green' cement-based screeds, the fact that the binding process of the screed is not yet complete and will consequently have lower strength must be taken into account. Do not place any heavy loads (e.g. pallets of tiles, etc.) on the substrate.
2) When installing natural and synthetic stones, take into account the specific properties of the laying material. We recommend trial layings. Dependent on the covering, coat as necessary with UNIFLEX-F.

Classification in accordance with DIN EN 12004/bedding mortar															
C1 TE S2	C2 FTE S2	C2 TE S1	C2 TE S1	C2 FE S1	C2 TE	C2 TE S1	C2 FTE S1	C2 TE	C2 TE S1	C1 FE	C1 T	C2 FT	C2 FE S1	R2 T	R2 T
UNIFIX-S3	**UNIFIX**-S3-fast	**LIGHTFLEX**	**MONOFLEX**	**MONOFLEX**-FB	**SOLOFLEX**	**MONOFLEX**-white	**MONOFLEX**-fast	**AK7P**	**MONOFLEX**-XL	**ADF**-Systemkleber-FB	**UNIFIX**-AEK	**CRISTALLIT**-FLEX	**CRISTALLIT**-FLEX-max	**ASODUR**-EKF	**CRISTALLFGE**-EPOX
o	o	++	++		++	++	++	++	++		++	++	++	++	
o	o	++	++		++	++	++	++	++		++	++	++	++	
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++	++														

5) When bonding with ASODUR-EKF, priming must first be carried out with ASODUR-GBM spread with 0.2 – 0.7 mm quartz sand.
6) Modify with UNIFLEX-F dependent on the area of application 2 to 8.33 kg UNIFLEX-F/25 kg.

Table continues on next page

Continuation of bedding mortar table

++ particularly suitable o limited suitability

Substrates/Application	Notes for substrate preparation	Primer
Floor finishes for the interior		
Calcium sulphate screeds in accordance with DIN 18560 and calcium sulphate bound substrates, e.g. levelling compounds, unheated	Abrade screed, moisture content < 0.5% acc. to CM method, exclude rising damp from the substrate	ASODUR-GBM, ASO-Unigrund-S, ASO-Unigrund-GE
Calcium sulphate screeds in accordance with DIN 18560 and calcium sulphate bound substrates, e.g. levelling compounds, heated	Abrade screed, moisture content < 0.3% acc. to CM method, exclude rising damp from the substrate	ASODUR-GBM, ASO-Unigrund-S, ASO-Unigrund-GE
Calcium sulphate screeds in accordance with DIN 18560 and calcium sulphate bound substrates, e.g. levelling compounds, heated and unheated with a moisture content < 1.5% or < 1.0% acc. to the carbide CM method.	Abrade screed, exclude rising damp from the substrate	ASO-Unigrund-K, MV 1:3 or ASO-Unigrund-GE ASO-Unigrund-S
Minimum age 6 months, concrete in accordance with DIN 1045 [4] [5]	Remove laitance layers, e.g. grit blasting	ASO-Unigrund
Minimum age 3 months, concrete in accordance with DIN 1045 [4] [5]	Remove laitance layers, e.g. grit blasting	ASO-Unigrund
Magnesite screeds heated in accordance with DIN 18560	Ensure that there is no rising damp coming from the substrate	ASODUR-V360W, sprinkle with 0.2 – 0.7 mm quartz sand
Magnesite screeds unheated in accordance with DIN 18560	Ensure that there is no rising damp coming from the substrate	ASODUR-GBM
Poured asphalt screeds of hardness class IC10 in accordance with DIN 18560	Only for interiors, screeds must be rubbed down with sand, prime shiny screeds with ASODUR-GBM if necessary.	ASODUR-GBM, sprinkle with 0.2 – 0.7 mm quartz sand
PVC covering well bonded, load bearing	Clean with wax remover, abrade/roughen	Scratch coat with UNIFIX-S3
Wood substrates, load bearing, e.g. chipboard, parquet, floor boards	Prime wood substrate with ASODUR-GBM and lay ASODUR-LE while primer is still wet. Additional screws as necessary, seal joints between floor boards, etc. with Tagomastic. Build-up with 9 or 15 mm STEPBOARD de-coupling boards.	ASODUR-GBM ASO-Unigrund-S, ASODUR-GBM
Ceramic covering, natural and synthetic stone well bonded, load bearing	Clean and degrease, abrade if necessary	ASO-Unigrund-S or scratch coat with AQUAFIN-2K/M-PLUS
Dry lining boards, e.g. gypsum fibre boards, mesh-reinforced polystyrene	Do not use gypsum-based joint fillers	ASO-Unigrund

Please note the instructions on the previous page.

Classification in accordance with DIN EN 12004/bedding mortar															
C1 TE S2	C2 FTE S2	C2 TE S1	C2 TE S1	C2 FE S1	C2 TE	C2 TE S1	C2 FTE S1	C2 TE	C2 TE S1	C1 FE	C1 T	C2 FT	C2 FE S1	R2 T	R2 T
UNIFIX-S3	**UNIFIX**-S3-fast	**LIGHTFLEX**	**MONOFLEX**	**MONOFLEX**-FB	**SOLOFLEX**	**MONOFLEX**-white	**MONOFLEX**-fast	**AK7P**	**MONOFLEX**-XL	**ADF**-Systemkleber-FB	**UNIFIX**-AEK	**CRISTALLIT**-FLEX	**CRISTALLIT**-FLEX-max	**ASODUR**-EKF	**CRISTALLFGE**-EPOX
o	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
o	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
o											++				
++	++	++	++	++	++	++	++	++	++	++	o	++	++	++	++
++	++													++	++
++	++	++	++	++	++	++	++	o	++	++	o	++	++	++	++
++	++	++	++	++	++	++	++	++	++	++	o	++	++	++	++
++	++	++	++	++	++	++	++		++			++	++	++	++
++	++														
++	++													++	++
o	++	o	o	++	o	o	++	o	o			++	++	++	++
++	++	o	o	o	o		o		o			o	++	++	++
++	++	++	++	++	++	o	++	++	++	++		++	++	++	++

Table continues on next page

NOTE

Observe the technical data sheets for the listed products. The recommendations do not replace technical advice.

Continuation of bedding mortar table

++ particularly suitable o limited suitability

Substrates/Application	Notes for substrate preparation	Primer
Exterior floor coverings without insulation layers		
Minimum age 6 months, concrete in accordance with DIN 1045 [4] [5]	Remove laitance layers if necessary, e.g. using shot blasting, high-pressure cleaner	ASO-Unigrund
Minimum age 3 months, concrete in accordance with DIN 1045 [4] [5]	Remove laitance layers if necessary, e.g. using shot blasting, high-pressure cleaner	ASO-Unigrund
Cement-based screed, will take foot traffic (after min. 3 days) in accordance with DIN 18560, load bearing [1]	Non sanded	
Ceramic coverings, natural and synthetic stone well bonded, load bearing	Clean with universal cleaner, sand if necessary	ASO-Unigrund-S
Tiled and board finishes		
Tile installation, earthenware tiles		
Tile installation, vitrified tiles		
Tile installation, porcelain stoneware (ceramic tiles with water absorption < 0.5%)		
Synthetic stone and natural stone installation, thin-bed (adhesive thickness up to 5 mm), for interior use [2]		
Synthetic stone and natural stone installation, medium-bed (> 5 mm adhesive thickness), for interior use [2]		
Glass mosaics and glass tiles [2]		
Large formats [2]		
Cotto [2]		

NOTE

Observe the technical data sheets for the listed products. The recommendations do not replace technical advice.

Classification in accordance with DIN EN 12004/bedding mortar															
C1 TE S2	C2 FTE S2	C2 TE S1	C2 TE S1	C2 FE S1	C2 TE	C2 TE S1	C2 FTE S1	C2 TE	C2 TE S1	C1 FE	C1 T	C2 FT	C2 FE S1	R2 T	R2 T
UNIFIX-S3	**UNIFIX**-S3-fast	**LIGHTFLEX**	**MONOFLEX**	**MONOFLEX**-FB	**SOLOFLEX**	**MONOFLEX**-white	**MONOFLEX**-fast	**AK7P**	**MONOFLEX**-XL	**ADF**-Systemkleber-FB	**UNIFIX**-AEK	**CRISTALLIT**-FLEX	**CRISTALLIT**-FLEX-max	**ASODUR**-EKF	**CRISTALLFGE**-EPOX
++	++								++ [4]	++ [4]				++	++
++	++								++ [4]	++ [4]				++	++
++	++								++ [4]	++ [4]					
++	++								++ [4]	++ [4]					
++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
++	++	++	++	++	++	o	++	o	++	o	o	++	++	++	++
	++					o	++			o		++	++	o	o
	o						o					o	++		
	++					o [6]						o [6]	o	++	++
++	++	++	++	++	o		o		++		o	o	+	o	o
	++				o	o [6]	++	o		++		++	++		

1) When installing tiles on 'green' cement-based screeds, the fact that the binding process of the screed is not yet complete and will consequently have lower strength must be taken into account. Do not place any heavy loads (e.g. pallets of tiles, etc.) on the substrate.

2) When installing natural and synthetic stones, take into account the specific properties of the laying material. We recommend trial layings. Dependent on the covering, coat as necessary with UNIFLEX-F.

3) In exterior and wet areas, waterproofing is always required before installing tiles and boards. You will find the suitable products in the product overview. If there are no deviating specifications, then DIN 18157 is compulsory regarding substrate, substrate preparation and installation.

4) Only use together with the bonded waterproof membrane ADF-Balkonfolie.

5) When bonding with ASODUR-EKF, priming must first be carried out with ASODUR-GBM spread with 0.2 – 0.7 mm quartz sand.

6) Modify with UNIFLEX-F dependent on the area of application 2 to 8.33 kg UNIFLEX-F/25 kg.

The right mortar system for cotto, natural and synthetic stone

Mortar layer thickness			
Rock			
Igneous rocks	Intrusive igneous rocks (plutonite)	Granite	Rosa Beta, Imperial Red, Baltic brown, Lausitz, Waldstein yellow, Baltic brown, Lausitz, Waldstein yellow
		Granite	Padang Crystal, Padang light, Bianco Sardo
		Diorite	Fürstensteiner, Nero Tijuca
		Gabbro	Impala, Nero Impala, Star Galaxy
		Syenite	Cardinal, Blue Pearl
		Foyaite	Azul Bahia, Namibia Blue
	Extrusive igneous rocks (vulcanite)	Rhyolite/Porphyry	Trentine Porphyry, Porfiris, Porfido
		Basalt lava	Basaltino, Rhine basalt lava
Sedimentary rocks	Sedimentary rock	Lime breccia	Breccia Aurora
		Serpentine breccia	Rosso Levanto
		Sandstone	Red Main sandstone, Ruhr sandstone, Abstwind sandstone (Schilfsandstein), Weser sandstone
		Lime sandstone	Anröchte lime-sandstone
		Tonschiefer	Porto slate, Korling slate, Mustang, Papagaios Black
	Chemical sedimentary rocks	Limestone	Trani, Jura yellow, Jerusalem stone, Botticino, Solnhofen limestone, Travertine fine limestone, Onyx, Bad Cannstatt, Bad Langensalza
			Moleanos
			Lacustrine limestone, Blaubank core stone, core stone, Belgian granite, Nero Marquina, Kleinziegenfeld, Dolomite
Transformed rocks (metamorphic rocks)		Marble	Thassos, Bianco Carrara, Estremoz, Arabescato, Namaqua
		Dolomitic marble	Palisandro, Norwegian Rose
		Gneiss	Soglio, Onserone, Maggia
			Rio Branco, Kashmir White, Imperial White, Juparana Gold, Sarizzo
		Quarzite	Verde Spugla, Azul Imperial, Quartzite yellow, Azul Macaubas, Pacific Blue
		Muscovite quartzite	Alta Quartzite
		Slate	Peacock, Multicolour, Otta slate, Theuma Fruchtschiefer
		Serpentinite	Verde Alpi, Verde Naoussa, Verde Tino, Rosso Levanto, Tinos Green, Tauerngrün
Synthetic stones	Cement-based	Artificial stone	Breccia Aurora, Alpine marble beige, Carrara white, Quarella series: "Bianco Arco Iris"
	Resin-based	Without Serpentinite parts	Arabescato, Granite 90; Quarella series: Fantasia, Millennium, Cromatica, Granitica, Pastelli, Luciente; Omnistone series: Starlight series and others; Object-Stone: Micronite series and others; Prossime Superfici series: Luce, Cristallo, Oriente
		With Serpentinite parts	Veltro 90; Quarella: Verde Tirreno, Rosso Levanto, Verde Levanto
	Cotto		Several types

++ particularly suitable + suitable o limited suitability

1) 25 kg of adhesive modified with 2 kg UNIFLEX-F.
2) Treat the rear of the stone with UNIFIX-S3-fast before installing using thick-bed techniques.

Thin-bed and medium-bed methods					Thick-bed method
Rapid hardening Rapid crystalline binding of the mixing water White	Rapid hardening For interior and exterior areas White	Water-free Reaction resin	Highly ductile Rapid hardening Rapid crystalline binding of the mixing water White	Rapid hardening Rapid crystalline binding of the mixing water Grey	For interior and exterior areas
3 - 10 mm	2 - 30 mm	up to 5 mm	up to 5 mm	3 - 10 mm	15 - 50 mm
CRISTALLIT-FLEX	**CRISTALLIT**-FLEX-max	**ASODUR**-EKF	**UNIFIX**-S3-fast	**MONOFLEX**-fast	**ASO**-EZ4-PLUS
++	++	o	++	o	++
++	++	o			
++	++	++	++	++	++
++	++	++	++	++	++
++	++	++	++	++	++
++	++	++			
++	++	++	++	++	++
++	++	++	++	++	++
++	++		++		++ [2]
		++			
++	++	o		++	o
++	++			++	++
o [1]	+	++	o [1]	o [1]	
++	++				++ [2]
++	++				
++	++			++	++ [2]
++	++				++ [2]
++	++				++ [2]
++	++	++		++	++
++	++			o	
++	++				
++	++	++	++	++	++
++ [1]	++	++	++	++ [1]	
		++			
++	++	++	++	++	++
++ [1]	++	++	++		
		++			
++	++			++	

NOTE

- Where there are larger variations in stone thickness, use thick-bed installation methods with the screed mortars ASO-EZ4-PLUS or ASO-SEM.
- Generally install uncalibrated natural stone tiles using medium-bed methods.
- Please contact the Technical Services Department for detailed information.

The correct grout for each application

Grouts for each area of application						
	CRISTALLFUGE Joint width 1.5–6 mm	**CRISTALLFUGE**-PLUS Joint width 1–10 mm	**CRISTALLFUGE**-FLEX Joint width 3–20 mm	**CRISTALLFUGE**-HF Joint width 3–20 mm	**CRISTALLFUGE**-EPOX Joint width 1–15 mm	**ASODUR**-EKF Joint width 3–10 mm
Base material	cement	cement	cement	cement	Reaction resin	Reaction resin
Strength DIN EN 13888	CG2	CG2 WA	CG2 WA	CG2 WA	RG2	RG2
Area of application						
Earthenware tile	++	+	–	–	++	++
Vitrified tiles	+	++	+	++	++	++
Porcelain stoneware tile[1]	–	++	++	++	++	++
Natural stone, sensitive to discolouration	–	++	+	+	+	+
Natural stone, not sensitive to discolouration	–	++	++	++	+	+
Cotto[2]	–	+	++	++	–	–
Household cleaner bath/shower	–	–	–	–	++	++
Limited chemical resistance	–	–	–	–	++	++
High chemical resistance	–	–	–	–	++	–
High mechanical resistance	–	–	+	++	+	++
Water- and stain-repellent	–	++	+	+	++	++
Glass mosaic dry area	+	++	–	–	++	++
Glass mosaic shower area	–	+	–	–	++	++
Glass mosaic underwater area	–	–	–	–	++	++
Swimming tap water	+	–	++	++	++	++
Swimming pool salt/thermal water	–	–	–	–	++	++
Swimming pool low water hardness	–	–	–	–	++	++
Balconies/terraces	–	–	++	++	+	+

*Do a trial jointing

[1] With polished porcelain stoneware, colour pigments can get stuck in the micro-pores that may be present in the surface of the boards. Therefore a strong colour contrast between tile and joint is not recommended.

[2] With open-pored coverings, e.g. Cotto and hand-moulded tiles, grouting tools (e.g. Möller Chemie, Fila, Patina Fala, Stingel Chemie) may need to be used before grouting.

++ especially suitable
\+ suitable
– not suitable

Subject to changes. The valid issue of the corresponding technical bulletin legally applies.

The correct joint sealant for each application

	Joint sealants for each application				
	ESCOSIL-2000	**ESCOSIL**-2000-ST	**ESCOSIL**-2000-UW	**INDUFLEX**-PU	**ASODUR**-EP/FM
Base material	Silicone acetoxy cure	Silicone neutral oxime cure	Silicone neutral oxime cure, silicone oils	1-component polyurethane	Epoxy polyurethane
Interior areas	++	++	++	++	++
Exterior areas	++	++ [1]	++ [1]	++	
Underwater areas		++ [1]	++ [1]		++
Wall areas	++	++	++	++	
Floor areas	++	++	++	++	++
Restricted chemical exposure	++	++ [1]	++ [1]	++	++
Heavy duty mechanical stresses				o	++ [3]
Tiles	++	++	++	++	++
Tiles with surface coating, e.g. Ceramicplus	++ [1]	++ [1]	++ [1]	++	++
Synthetic stone		++ [1]	++ [1]	++	
Natural stone		++			
Sandstone		++ [3]			
Cotto		++			
Glass, glass mosaics and glass tiles	++	++	++ [1]	++	
Cementitious substrates, such as concrete, plaster, masonry work	o	++ [1]	++ [1]	++ [1]	++
Artificial stone, cement tiles		++ [1]			
Stainless steel	++ [1]	++ [1]	++ [1]	++	++ [2]
Cast iron		++ [1]	++ [1]	++	++ [2]
Iron, abraded		++		++	++ [2]
Aluminium, untreated	o	++	++ [1]	++	++ [2]
Aluminium, anodised	o	++	++ [1]	++	++ [2]
Copper		++ *		++	++ [2]
Brass		++ *		++	++ [2]
Zinc	o	++ [1]	++ [1]	++	++ [2]
Thinplate	o	++ [1]	++ [1]	++	++ [2]
Wood, glazed	o	++		++	
Melamine resin	++ [1]	++ [1]	++ [1]	++	
Plastic profiles	++	++	++	++	++ [2]
PVC	++	++	++	++	++ [2]

++ particularly suitable o limited suitability

*Possible reaction with non-ferrous metal ("tarnishing")

1) Prime beforehand if necessary
2) Prime with suitable primer
3) Prime with ASODUR-GBM

Distinguished

Sustainability – not only in restoration but also in environmental protection. The SCHOMBURG group of companies places great emphasis on this. A range of our products has been subjected to strict testing.

Certified safety
From multi-purpose primers through levelling compounds, waterproofing products and on to the installation of tiles with the low dust flexible adhesive LIGHTFLEX and grouting with CRISTALLFUGE PLUS, the range is complete.

ÖKOPROFIT
Since April 2014 SCHOMBURG has been engaged with the environmental project ÖKOPROFIT (Ecological Project for Integrated Environmental Technology), which supports companies with environmental and climate protecting measures. The building materials specialist from East Westphalia has now been awarded) the corresponding certificate for its exemplary environmental performance, which documents the success of the measures implemented. This demonstrates that the company sets new benchmarks regarding the requirements for sustainable economies, construction and ultimately also for living.

ÖKOPROFIT® IM KREIS LIPPE

DGNB and LEED
The adhesives and jointing compounds selected can now also be found in the Green Building product database at www.greenbuildingproducts.eu.
The products listed here contribute towards points in the LEED and DGNB systems. SCHOMBURG supports its customers with successful building certification according to LEED and DGNB.

SCHOMBURG transparently provides certification-relevant information. Standardised LEED and DGNB declarations can be downloaded from the product database at www.greenbuildingproducts.eu. Product research and documentation is made easier for planners, architects and construction companies.

EMICODE
In addition, many SCHOMBURG products also carry the EMICODE seal. EMICODE is a trademark protected logo for identifying installation materials, adhesives and construction products. These building products offer the best possible assurances against indoor air pollution. The EMICODE system forms the basis of an exactly defined test chamber determination to EN ISO 16000 with strict classification criteria. The tested building materials are free from solvents and hazardous substances. Meanwhile, many SCHOMBURG products also carry the EC1 mark or even EC1Plus. SCHOMBURG purposefully subjected its products to the strict tests and requirements in order to achieve the best protection for applicator and user. Also, SCHOMBURG products with the VOC France logo have especially environmentally friendly properties. The emissions limits are stricter than the US LEED limits for VOC emissions.

SCHOMBURG sets new benchmarks relating to the requirements for sustainable building and economies, including the health and comfort of the user in particular. This is assured, above all, by the use of low emission products.

NOTE

Additional information about the topic is available on our website at www.green-schomburg.de.

Overview of the "distinguished products"

	EMICODE of the GEV	AgBB [1]	Emission class in accordance with VOC France	VOC-Belgium [2]
ADF system adhesive	EC1-PLUS	✔	A+	✔
AK7P	EC1-PLUS	–	A+	✔
AQUAFIN-2K/M-PLUS	EC1-PLUS	–	A+	–
AQUAFIN-RS300	EC1-PLUS	✔	A	–
ASO-Connector-Joint-Tape	–	–	A+	–
ASO-Joint-Tape-2000	EC1-PLUS	✔	A+	–
ASO-Joint-Tape-2000-S	EC1-PLUS	–	–	✔
CRISTALLFUGE-FLEX	EC1-PLUS	✔	A+	✔
ASO-Fugenbreit	EC1-PLUS	✔	A+	✔
CRISTALLFUGE	–	✔	A+	–
ASO-Unigrund-K	EC1-PLUS	✔	A+	✔
ASO-Unigrund-GE	EC1-PLUS	✔	A+	✔
ASO-Unigrund-S	EC1-PLUS	✔	A+	✔
CRISTALLFUGE-EPOX	EC1-PLUS	✔	A+	✔
ASODUR-B351	–	–	C	–
ASODUR-EB/L	–	✔	A+	–
ASODUR-G1270	–	–	C	–
ASODUR-G1275	–	–	A+	–
ASODUR-LE	–	✔	A+	–
ASODUR-SG3	–	✔	A+	–
ASODUR-SG3-superfast	EC1-PLUS	✔	A+	✔
ASODUR-V2250	EC1-PLUS	✔	A+	✔
ASOFLEX-AKB-Floor/Wall	EC1-PLUS	✔	A+	✔
CRISTALLFUGE-PLUS	EC1-PLUS	✔	A+	✔
ESCOSIL-2000	EC1-PLUS	–	A+	–
ESCOSIL-2000-ST	EC1-PLUS	–	A+	–
LIGHTFLEX	EC1-PLUS	✔	A+	–
MONOFLEX	EC1-PLUS	✔	A+	✔
MONOFLEX-fast	EC1-PLUS	✔	A+	✔
MONOFLEX-XL	EC1-PLUS	✔	A+	✔
REMISIL-SI	EC1 PLUS	✔	A+	✔
SANIFIN	EC1-PLUS	✔	A+	–
SANIFLEX	EC1-PLUS	✔	A+	✔
SOLOFLEX	EC1-PLUS	✔	A+	✔
SOLOPLAN	EC1-PLUS	✔	A+	–
SOLOPLAN-30-CA	EC1	–	A	–
SOLOPLAN-30-PLUS	EC1-PLUS	–	A+	–
SOLOPLAN-FA	EC1-PLUS	✔	A+	–
STEPBOARD	EC1-PLUS	–	–	–
UNIFIX-S3	EC1-PLUS	✔	A+	✔

1) Committee for the health-related evaluation of building products, State/Federal board in Germany in accordance with EN ISO 16000
2) In accordance with the royal decree to determine limiting values for emissions from construction products in interior rooms specific to the intended occupancy

FAST TECHNOLOGY
From 0 to 100 in 4.6 seconds. That is one good way to describe the FAST TECHNOLOGY from SCHOMBURG. Products labelled with this symbol stand out as the water is bound in a crystalline form, therefore offering protection against curling and discolouration. Initially FAST products can be applied as normal setting systems but after the pot life is exhausted, they develop their strength quickly. The working time and strength development depend on the temperature. FAST products are however noticeably less sensitive than other rapid setting systems.

Dust reduced
Products that contain the reduced dust formula are identified by this symbol. Here there is a real environmental advantage, as there is less dust released during application, which in turn can lead to less unpleasant dust to be inhaled or contamination of objects and rooms.

4 in 1
The multi-talented among the SCHOMBURG products. Products with this symbol benefit from the newly developed 4-in-1 formula and can be used for the most varied of installation techniques such as thin-bed, medium-bed, thick-bed and flow-bed as well as for smoothing work. Optimum working properties complement their multi-talents.

Tile format XXL
Products that are labelled with the "TILE FORMAT XXL" logo are especially suitable for the installation of large format tiles. Current SCHOMBURG adhesive technology makes it possible. Exceptionally strong grab and high deformability guarantees the easy and assured fixing of large format tiles.

TopTEC
The new TopTEC binder system is the basis for many SCHOMBURG products. Products in the TopTEC family excel through an outstanding combination of special properties such as rapid reactive hardening, increased assurance through extremely low shrinkage and a resource friendly ecological balance, for example.

EMICODE
Many SCHOMBURG products also carry the EMICODE seal. EMICODE is a trademark protected logo for identifying installation materials, adhesives and construction products. These building products offer the best possible assurances against indoor air pollution.
The EMICODE system forms the basis of an exactly defined test chamber determination to EN ISO 16000 with strict classification criteria.
The tested building products are free from solvents and hazardous substances.

Selection of rules to be observed

Heated and unheated surfaces	
DIN EN 12004	Mortars and adhesives for tiles and boards – Definitions and specifications
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 18157	Execution of ceramic coverings using the thin-bed method
DIN EN 13813	Screed mortars, screed materials, floor screeds, properties and requirements
DIN 18560	Floor screeds in building construction
ZDB data sheet	Movement joints in cladding and coverings made of tiles and boards
ZDB data sheet	Ceramic tiles and boards, natural stone and artificial stone on cement-based floor constructions
ZDB data sheet	Ceramic tiles and boards, natural stones and concrete stones on calcium sulphate bound screeds
ZDB data sheet - Technical information	Cement-based heated screeds of the central association of the sanitary, heating, air-conditioning industry: Interface coordination for heated screed constructions
BEB data sheet	Assessment and preparation of substrates

Residual coverings, coatings, old tiles and paints	
DIN EN 12004	Mortars and adhesives for tiles and boards – Definitions and specifications
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 18157	Execution of ceramic coverings using the thin-bed method
DIN 18560	Floor screeds in building construction

Liquid waterproofing and waterproofing membranes in showers and bathrooms	
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN 18157	Execution of ceramic coverings using the thin-bed method
DIN 18534	Waterproofing interior areas
ZDB data sheet	Movement joints in cladding and coverings made of tiles and boards
DIBt Construction Products Lists	Parts A – C
ZDB data sheet	Bonded waterproof system

Gypsum fibre boards, dry screeds, fibre cement and construction boards	
DIN EN 12004	Mortars and adhesives for tiles and boards – Definitions and specifications
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 18157	Execution of ceramic coverings using the thin-bed method
ZDB data sheet	Movement joints in cladding and coverings made of tiles and boards
DIN 18183	Installation walls made of gypsum plasterboards
DIN 4103	Internal non-load bearing partition walls

Selection of rules to be observed

Mastic asphalt	
DIN EN 12004	Mortars and adhesives for tiles and boards – Definitions and specifications
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 18157	Execution of ceramic coverings using the thin-bed method
DIN 18560	Floor screeds in building construction
DIN 18354	Asphalt surface work
ZDB data sheet	Movement joints in cladding and coverings made of tiles and boards
BEB data sheet	Assessment and preparation of substrates
DIN EN 13813	Screed mortars, screed materials, floor screeds, properties and requirements

Critical and cracked substrates	
DIN EN 12004	Mortars and adhesives for tiles and boards – Definitions and specifications
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 18157	Execution of ceramic coverings using the thin-bed method
ZDB data sheet	Movement joints in cladding and coverings made of tiles and boards
DIN 4102	Building construction standard

Laboratory – Conductive coverings	
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN 18157	Execution of ceramic coverings using the thin-bed method
AGI	Worksheets p. 10–40
DIN EN 1081	Conductive

Metal, wood, plastic and polyester	
DIN EN 12004	Mortars and adhesives for tiles and boards – Definitions and specifications
DIN 18202	Tolerances in building construction
DIN 55928	Parts 4 and 6 protection of steel structures against corrosion
DIN 18352	Tiling and board-laying work
DIN 18157	Execution of ceramic coverings using the thin-bed method

Swimming pool and canteen kitchen	
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN 18157	Execution of ceramic coverings using the thin-bed method
DIN 18534	Waterproofing interior areas
DIN 18535	Waterproofing of tanks and pools
ZDB data sheet	Movement joints in cladding and coverings made of tiles and boards
DIBt Construction Products Lists	Parts A – C
ZDB data sheet	Bonded waterproof system

Terraces and balconies	
DIN EN 12004	Mortars and adhesives for tiles and boards – Definitions and specifications
DIN 18202	Tolerances in building construction
DIN 18352	Tiling and board-laying work
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN 18157	Execution of ceramic coverings using the thin-bed method
DIN 18531	Waterproofing of roofs as well as balconies, loggias and arcades
ZDB data sheet	Movement joints in cladding and coverings made of tiles and boards
ZDB data sheet	Bonded waterproof system
ZDB data sheet	Exterior coverings
DIBt Construction Products Lists	Parts A – C

Substrate levelling	
DIN 18352	Tiling and board-laying work
DIN 18157	Execution of ceramic coverings using the thin-bed method
DIN 55928	Parts 4 and 6 protection of steel structures against corrosion
DIN 1045	Concrete, reinforced and pre-stressed concrete structures
DIN EN 13813	Screed mortars, screed materials, floor screeds, properties and requirements
DIN EN 998	Specifications for mortar and masonry construction
DIN 18202	Tolerances in building construction

Unplastered masonry work	
DIN 18352	Tiling and board-laying work
DIN 18202	Tolerances in building construction
DIN 18157	Execution of ceramic coverings using the thin-bed method
DIN EN 12004	Mortars and adhesives for tiles and boards – Definitions and specifications

Glossary

Connecting joints
Connecting joints may be required between the coverings and adjacent building components, including fixed installations. These are usually carried out in the thickness of the covering material; if necessary, also up to the contact or laying surface.

Readiness to receive finishes
If hard finishing materials such as ceramic tiles or natural stone are to be installed on 'green' load spreading layers that are laid floating, there is a high risk of damage due to shrinkage and deformation. For this reason, the excess water in a floating screed must have diffused out as far as possible before installation is carried out with hard finishes. Assessing the readiness of a load spreading layer is carried out with the aid of the carbide (CM) method. The values necessary to determine the readiness to tile depends on the type of binder in the load spreading layer and the intended finish.

Movement joints
External influences such as stresses and the varying behaviour of materials during temperature fluctuations cause strain between the building products used. This strain can be reduced to a damage free level by suitably incorporating movement joints.

Buttering-Floating method
A method to guarantee, as far as possible, a void free installation. The bedding mortar is applied to the substrate as well as to the rear of the board.

Calcium sulphate screed (anhydrite screed)
Screeds of this type are produced with calcium sulphate (anhydrite) as the binder, water and other aggregates if necessary and are very sensitive to moisture.

CM device
CM measurements (calcium carbide method) serve to determine the water content (moisture content) of a substrate and are based on the reaction between the water in the sample and calcium carbide.

For the test, a sample is taken from the screed, finely ground, weighed and placed in the pressure vessel (CM device) and reacted with the calcium carbide. Upon completion of the reaction, the water content by percent in weight can be read off the device's own manometer using the conversion tables.

Thick-bed method
The dampened tiles are laid on to a thick layer of cement-based mortar, whereby the mortar compensates for irregularities in the substrate. The mortar thickness is from 15 – 50 mm.

Thin-bed method
Here the tiles are laid in a maximum of 5 mm of adhesive. The adhesive can be a hydraulic thin-bed mortar, a dispersion-based adhesive or an epoxy resin-based adhesive. The method certainly requires a flat substrate, as the thin bed only allows for light levelling. The bed is combed through with a notched trowel with the size of the notch depending on the size of the tile.

Dispersion-based adhesive
As a rule, ready to use and highly deformable adhesives, which are mostly used with the thin-bed method in the interior of buildings.

Ettringite
Applying cement-based adhesives on gypsum in the presence of moisture penetration promotes the formation of the mineral ettringite. The resultant considerable increase in volume leads to a loss of adhesion at the bond interface.

Bay sizing joints
Expansion joints in finishes, which are to be positioned as bay sizing joints, are joints to be formed through to the load supporting substrate or waterproof membrane.

Joint width
An important criterion when choosing joint width is the nature and the dimensional accuracy of the ceramic covering material.

Structural movement joints
Building joints are continuous through all load supporting and non-load supporting building components and must be formed in the same location in the tiled finish and to a width as defined in the building design plans.

Classification of adhesives according to DIN EN 12004;
Definitions:
C = Cement-based mortar
D = Dispersion-based adhesive
R = Reaction resin-based adhesive
1 = Adhesive/mortar for normal requirements
2 = Adhesive/mortar with enhanced specification
F = Rapid hardening adhesive/mortar (Fast)
T = Adhesive/mortar with reduced slip (Thixotropy)
E = Adhesive/mortar with extended open time (Extended)
S1 = Ductile thin-bed mortar S1 deformation 2.5 mm < t < 5 mm
S2 = Highly ductile thin-bed mortar S2 deformation t > 5 mm

Open time
The time in which the tile must be laid into the adhesive bed, after spreading, in order to guarantee optimum bonding. Called adhesive open time or bedding time.

Crystalline binding of the mixing water
Bedding mortars with crystalline binding of the mixing water are characterised by a high setting speed. The water is bound in a crystalline form and therefore offers protection against curling and discolouration with natural stone.

Medium-bed method
This method still permits small irregularities of the substrate to be levelled during the tiles and boards to be installed in comparison to the thin-bed method (1–5 mm). Using the medium-bed method, the adhesive layer thickness is between 5–15 mm. In comparison to traditional thick-bed techniques

(15–50 mm), considerable weight is saved.

Test certificates
Test certificates serve as proof for the warranted material properties via the manufacturer and compiled by official material testing institutes to valid standards and test guidelines. Advice on available test certificates can be found in the technical data sheets for the products.

Perimeter joints
At wall transitions as well as with building components, which intersect the tiled finish, perimeter joints are necessary. These are formed in the same way as bay sizing joints.

Moisture content
Be it screed, tile adhesive or joint mortar, all hydraulically setting materials contain a certain amount of water even after their installation: i.e. the so-called moisture content.
A cement-based screed on a separating layer or insulation is, for example, only ready for a tiled finish when there is still 2% or less moisture content measured. The remaining water evaporates slowly over many years up to a small amount (household moisture). The associated loss in volume is noticeable in the form of shrinkage and dimensional change.

Reaction resin-based adhesives and grouts
These mostly two-component systems are used where there are particularly high requirements for chemical resistance or there is a heavy duty mechanical load as required for applications in industry, commerce and swimming pools.

Sound bridge
Direct contact between building sections (wall, ceiling, floor, etc.) can promote the spread of sound. In order to avoid such occurrences, characterised as sound bridges, sound generating building sections are separated by insulation. For example, edging strips are incorporated between a screed and the wall at the junction to prevent the transmission of impact sound.

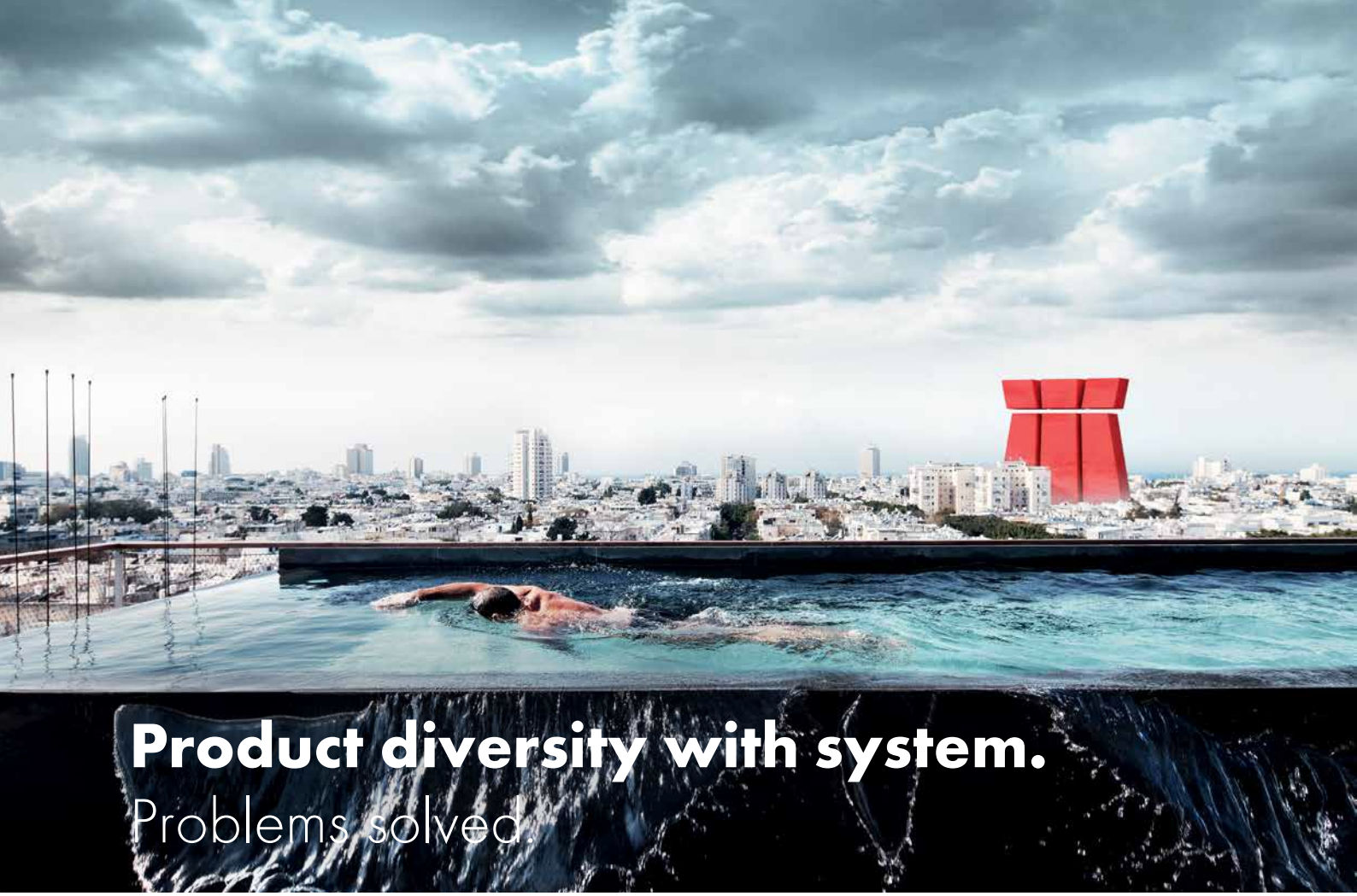
Crack control joints
Arranged separating joints at a predetermined crack point in the freshly installed screed serve to alleviate shrinkage in the fresh screed resulting from the construction materials. As a rule, these produced joints are cut into the screed to a maximum depth of half the screed thickness and filled with an injection resin following the end of the shrinkage process. These joints don't need to be considered when producing the floor finish.

Rapid set adhesive
These adhesives have a rapid setting behaviour. The adjustability time is generally shorter as a rule but the binding of the mixing water is quick. This is above all advantageous with natural stone types with a tendency to discolour or where there are time constraints.

Shrinkage
Shrinkage is understood to mean the shortening of a building material during its hardening/drying phases.

Pot life
Pot life indicates the maximum application duration of the mixed material.

Dry screed board/dry screed flooring
Following the modular design principle, a dry screed is produced from pre-finished boards that are glued or screwed together along grooves. The elements consist mostly of two or three layers. The advantages of this simple subfloor construction are that no moisture is brought into the house (compare household damp) and they are immediately for foot traffic.
In gypsum-based systems, due to their sensitivity to moisture, take into account that their use in wet areas is restricted (only with a bonded waterproof membrane) and prohibits their use in the exterior area.



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