



red sky thinking

**BAL External Tiling
Solutions**

Providing seamless solutions through innovative design; our systems provide the future for external tiling.

Intuitively designed to protect tiles from even the harshest conditions, Gutjahr System Technology from BAL represents innovative drainage systems for terraces, balconies and external ground floors, ensuring a safe and stylish transition from internal to external areas.

We know tiling inside + out.

GUTJAHR  SYSTEM TECHNOLOGY
exclusively from **BAL**

YOU +  BAL

bal-adhesives.com



@BALtiling



BALtiling



Take the inside out with BAL's new external tiling systems

Gutjahr System Technology provides innovative solutions for problem-free construction – a vision shared by BAL.

For more than 25 years, Gutjahr have developed practical solutions to guarantee simple installation and long-lasting trouble-free coverings even on problem substrates throughout Europe.

Gutjahr are the inventor of the passive capillary surface drainage system. Complete with edge profiles, drain grates and guttering, the patented system is simple to install and protects coverings of ceramic and porcelain tiles, natural stone tiles and pavers from even the harshest of conditions. It has even become standard in Germany since 2002, being incorporated into the standards for external floor coverings of the German Construction Industry Association (ZDB).

BAL are proud to incorporate sister company Gutjahr's product range exclusively within the BAL portfolio as a further development of a full system service from the UK market-leader for tiling.

Gutjahr System Technology from BAL offers designers and contractors innovative drainage, ventilating and uncoupling systems for cantilevered balconies, roof terraces, and ground-floor terraces.

As well as protecting against frost damage, staining and water damage, the system can also reduce the weight loading on a balcony by utilising thinner assemblies, lighter materials and limiting water absorption and retention, which in turn reduces water loading.

With a collective 80 years of commercial tiling experience across the BAL and Gutjahr range, the BAL portfolio ensures a guaranteed, full-system solution for inside-outside installations from the UK market-leader for tiling.

The technical drawings and recommendations in this guide have been developed in accordance with the DIN requirements and British Standards, and in accordance with practical and theoretical knowledge of the BAL Technical Advisory and Specification Service. Please observe the relevant BAL Technical Data Sheets.



GUTJAHR  SYSTEM TECHNOLOGY
exclusively from **BAL**



Specification support you can rely on

In BAL you can call on a company in its fifth decade of specification support. We understand the challenges and pressures faced by specifiers and architects when designing tiling projects, which is why we provide a full range of support services to solve your specification queries including:

- Free M40/M20 specification writing service
- RIBA-accredited CPDs
- Bespoke system training and masterclasses
- BIM objects in NBS National BIM Library
- Fast Track Project enquiry and market-leading Technical Advisory Service
- Sample testing service
- Free online specification builder Powerspec – www.powerspeconline.com
- National Specification Support Team for advice or on-site consultancy
- Innovative range of products for full tiling systems
- Leading product guarantee

Contact our specification support team for straight-forward advice and specification support, whatever stage you're at, or get straightforward answers from our dedicated BAL Technical Advisory and Specification Service (TAS):

0845 600 1222

info@bal-adhesives.com

On-site support

As further assistance at all stages of the project BAL's specialist Product Support Technicians provide UK-wide coverage and are on hand to give practical, experienced-based consultations and support on-site.

On the web

Log-in today for:

- Products details, download literature including Technical Data Sheets, Materials Safety Data Sheets
- Free project specification
- CPDs
- Case studies and gallery of images
- Gutjahr demos
- FAQs and technical advice

www.bal-adhesives.com

Key components overview

Drainage Mats

AquaDrain® EK	4
AquaDrain® T+	5

Drain Grates and Accessories

AquaDrain® FLEX	6
AquaDrain® TM	7

Profiles/Edge Finishes and Guttering

ProFin® V22/V55	8
ProFin® DP11/21/30	9
ProFin® BL24/49	10
ProRin® BR	11

Sealing Tapes

DiProtec® AB-KV	12
AquaDrain® SK	13
AquaDrain® Edge	13

Mortars and Sealants

MorTec® DRAIN	14
MorTec® SOFT	14
BAL Adhesives and Grouts	15

Long-lasting balconies and terraces for full year enjoyment.

With so many usable areas externally where tiles and stone are installed, there is a necessity to protect and ensure longevity so that they continue to promote the benefits of their use. These important extensions of our usable living areas should be well constructed, functional and remain as usable as the internal spaces that we occupy frequently. To have these available to us all year round requires that the tiled coverings used are durable, hard wearing and all weather.

Drainage Mats – AquaDrain® EK

The capillary passive drainage system for concrete pavers, tiles and natural stone in external areas

High-performance, capillary passive surface drainage system for porcelain tiles and natural stone on balconies, patios and roof terraces when used as a system on a BAL recommended drainage mortar/screed.

Product Properties and Benefits

- A complete support, drainage and protection systems in one for external areas.
- Quickly drains off seepage water and provides 3-dimensional water management.
- Compensates for the insufficient drainage capacity of single sized aggregate based mortars in the plane.
- Prevents the development of puddles within the drainage mats if the substrates/seals are uneven.
- Inhibits trapped moisture rising thereby avoiding discolouration of the surface of moisture-sensitive natural stone, ceramic and concrete coverings. Also helps reduce the risk of efflorescence.
- Guarantees the fastest possible drying out of the covering and the bedding layer (drainage mortar).

Rain, frost and heat – coverings on balconies and terraces have to endure the harshest of conditions. However the main enemy is water, which penetrates the joints in the floor coverings and if not drained properly can cause irreversible damage to the substrate.

Whether ceramic, porcelain, natural stone or concrete paviours, the penetrating surface water can lead to frost damage, efflorescence, damp stains in stone/concrete pavers or weed infestation in between coverings if it is not drained away fast enough. AquaDrain® capillary-breaking drainage mat systems ensure the immediate and rapid drainage of surface water, which is expelled from the structure via ProFin® edge profiles and guttering systems.

- Tiles can be fixed immediately once the drainage mortar has been laid.
- Ensures proper drainage for barrier-free/low door connections in a system using AquaDrain® drain grates.
- Reduces footfall noise to 30 dB when used as part of a total construction, test report BL 01-07515; Construction Acoustics Laboratory, University of Rhein-Main dated 05.04.2015
- Can be used with both thick drainage screed and thin, lightweight epoxy drain screed for reduced height constructions.

Suitable Coverings

Natural stone and concrete paviours, extruded and dry pressed porcelain ceramic tiles. For laying coverings open to the weather, only those materials that have been tested and are classed as frost resistant and slip resistant and suitable for external use.

Key Technical Data

Composition:

AquaDrain® EK drainage rolls and sheets consist of non-rotting Polypropylene (PP) plastic membranes with channel-like profiles lengthwise and across, on the upper and lower side, pressure resistant, in 8mm and 16mm thickness. A fine mesh glass fibre weave is laminated onto the upper side.

Colour:

Blue

Pack sizes:

10m rolls, 10m² packs of 1x2m sheets

Sheet Width:

1m plus 5mm overlapping

Sheet Thickness:

8mm and 16mm (8mm only for sheets)

Roll Weight:

Approx. 9 kg

Additional Information:

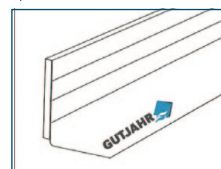
- Static pressure tolerance: 2,000 kg/m²
- Contact area: approx. 66%
- Height of structure including tiles from 68mm with 50mm cement-based mortars, and 43 mm with MorTec® DRAIN single grain mortar from 25mm thickness including tiles.

Other components:

AquaDrain® SK
sealing tape



AquaDrain® RD
edge insulation tape



Drainage Mats – AquaDrain® T+

Combined load-bearing, drainage, filter and protection system for indirect laying of outdoor coverings

High-performance, capillary passive surface drainage system for thin, break-proof coverings in outdoor areas when used as a system with the recommended BAL preparation, adhesive, grouting and finishing products.

Product Properties and Benefits

- A complete support, drainage and protection systems in one.
- Quickly drains off seepage water and provides 3-dimensional water management.
- Prevents the development of puddles within the drainage mats if the substrates/seals are uneven.
- Inhibits rising trapped moisture thereby avoiding discolouration of the surface of moisture-sensitive natural stone, ceramic and concrete coverings. Also helps reduce risk of efflorescence.
- Guarantees the fastest possible drying out of the covering and the bedding layer.
- Ensures proper drainage for barrier-free/low door connections in a system using AquaDrain® TM drain grates.
- Reduces footfall noise to 33 dB when used as part of a total construction, test report BL 01-07515; Construction Acoustics Laboratory, University of Rhein-Main dated 05.04.2015.
- Use with direct point fixing method, where no screed is needed.

Suitable Coverings

- Natural stone tiles min. 400mm x 400mm x 30mm
- Concrete slabs min. 400mm x 400mm x 30mm
- Ceramic tiles (extruded) min. 400mm x 400mm x 35mm
- Porcelain tiles min. 600 mm x 600 mm x 20 mm
- Natural stone/concrete paving min. 200 mm x 100 mm x 60mm

Key Technical Data

Composition:

AquaDrain® T+ drainage rolls consist of non-rotting Polypropylene (PP) with channel-like profiles lengthwise and across, on the upper and lower side, pressure resistant, in 8mm and 16mm thickness.

Colour:

Green

Pack sizes:

10m rolls

Sheet Width:

1m plus 5mm overlapping.

Sheet Thickness:

8mm and 16mm.

Roll Weight:

Approx. 9kg.

Additional Information:

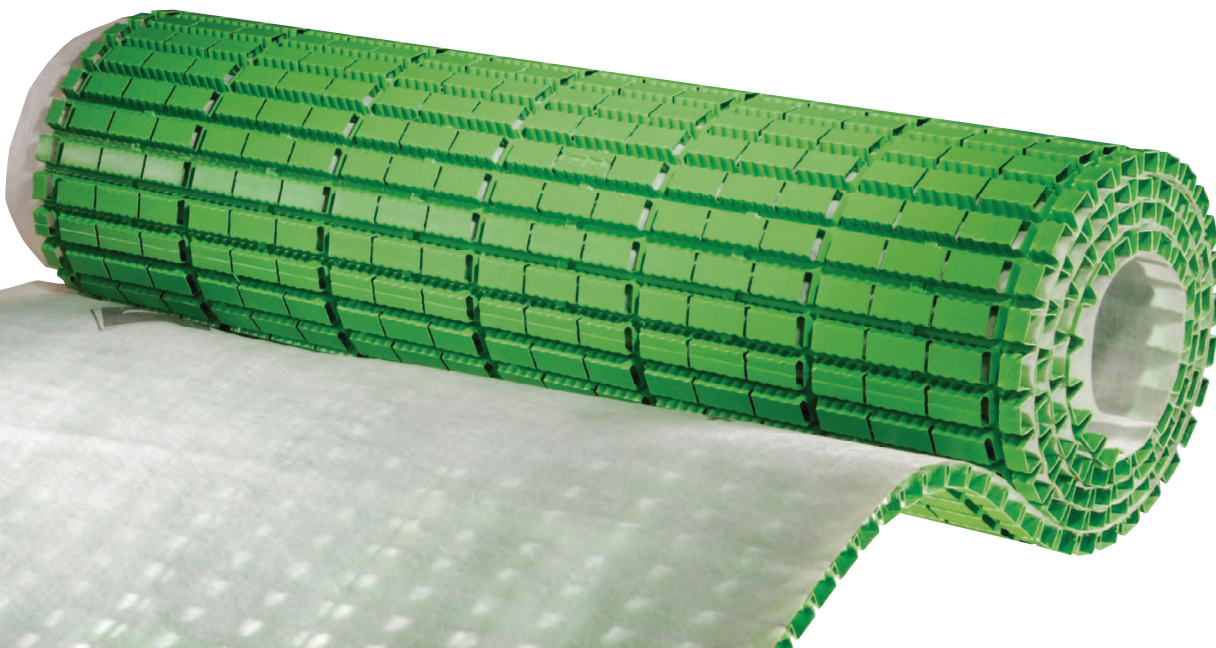
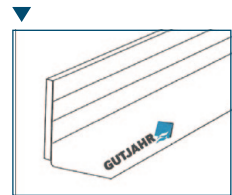
- Static pressure tolerance: 2,000kg/m²
- Contact area: approx. 66 %
- Height of structure: depending on type of construction

Other components:

AquaDrain® SK
sealing tape



AquaDrain® RD
edge insulation tape



Drain Grates – AquaDrain® FLEX

Height adjustable drain grates for standard-compliant door connections for Gutjahr external tiling system

AquaDrain® FLEX drain grate guides surface water directly into the attached drainage matting. This helps solve connection problems even at low door/wall connections and prevents internal water seepage.

Product Properties and Benefits

- Use in front of doors, floor-level window elements or in-line drainage.
- Adjustable sliding feet mean AquaDrain® FLEX drain grates can be cut to the required individual length on site.
- Provide quick and unimpeded guidance of surface and façade water into the attached surface drainage system.
- Can be used with AquaDrain® EK drainage matting.
- Integral dirt traps protect against fouling and prevents build up.
- Simple, precise height adjustment to the covering by screw feet that can be adjusted from above.
- Maximum drainage performance.

- Height adjustable, allows for practical and standard-compliant reduction of door threshold heights from 50mm to 175mm.
- Wheelchair accessible.

Suitable Coverings

Natural stone and concrete pavements, extruded and dry pressed porcelain ceramic tiles. For laying coverings open to the weather, only those materials that have been tested and are classed as frost resistant and slip resistant and suitable for external use.

Key Technical Data

Composition:

Galvanised steel.

Other components:

- AquaDrain® Lochwinkel perforated plastic screed angle
- AquaDrain® FLEX stainless steel end-cap

Easy to assemble on site and fully height adjustable, AquaDrain® drain grates ensure a safe and smooth transition from a balcony or terrace to the interior. The incorporation of drain grates offers security for both designers and contractors, especially for low door connection heights or barrier-free installations.

The incorporation of drain grates are especially important to combat backwater penetrating interior installations. AquaDrain® drain grates provide an effective drainage solution as part of BAL's external tiling systems for balconies, roof terraces and ground terraces

GUTJAHR  SYSTEM TECHNOLOGY
exclusively from **BAL**



Drain Grates – AquaDrain® TM

Height adjustable, ultra-flat drain grate for thin covering external tiling from 31mm

The AquaDrain® TM drain grate, with its extremely shallow frame, is suitable for thin-layer, lightweight BAL recommended epoxy mortar/screeds, when fixing on the AquaDrain® EK surface drainage matting and when fixing using direct point adhesive method on to AquaDrain® T+.

Product Properties and Benefits

- Use before doors, floor level windows components or in line drainage.
- Allows safe drainage of outdoor surfaces and door joints at only 31mm construction height.
- Variable cut to length.
- Integral dirt trap protects against fouling, guaranteeing permanent drainage performance.
- Easy height adjustable thanks to six continuously adjustable screw feet.
- Maximum drainage performance combined with AquaDrain® EK and AquaDrain® T+ surface drainage systems for external tiling.
- Wheelchair accessible.

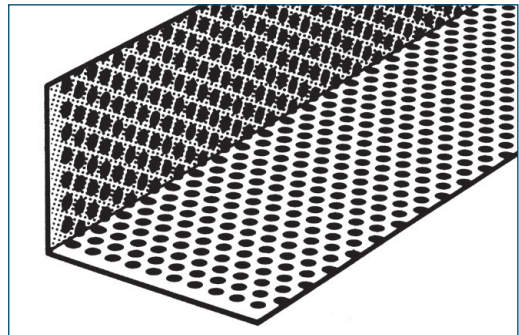
Key Technical Data

Composition:

Galvanised or stainless steel.

Other components:

AquaDrain® Lochwinkel perforated powder coated steel screed angle (when using AquaDrain EK and MorTec DRAIN thin epoxy screed).



Profiles/Edge Finishings and Guttering – ProFin® V22/55

The intelligent design system for edge drainage

Drainage profiles, corner units and connectors for AquaDrain® surface drainage systems.

Aluminium powder-coated drip/drain end profile and corner unit for use with Gutjahr external tiling systems from BAL. Available in heights of 22mm and 55mm, these edge profiles shed surface water from AquaDrain® surface drainage mats and provide a long lasting and decorative finish. The projecting profile directs surface water away and keeps drainage channels free.

Product Properties and Benefits

- Surface and seepage water is drained away without leaving dirt trails on balconies and facades and without danger of blocking.
 - Decorative edging and screed support in one. Raised edge profile provides a facing for unglazed edge of tiles.
 - Protects screed from water damage.
 - Rapid and simple installation. Profiles can be linked with profile connectors supplied.
 - Prefabricated with seal-tight welded corners for easy assembly.
- Use ProFin® V22 in combination with the direct point adhesion method with BAL Stone and Tile PTB (on AquaDrain® T+ surface drainage mats) for covering thickness from 22mm.
 - Use ProFin® V55 in combination with AquaDrain® EK drainage mats.
 - Use if seal is already present on site.
 - For upstand heights of 22 or 55mm.
 - Corner Units available

Key Technical Data

Composition:

ProFin® V22/55 profiles, Corner 90°units and connectors are constructed from power-coated aluminium.

Colour:

Alumetallic. Other colours available on request.

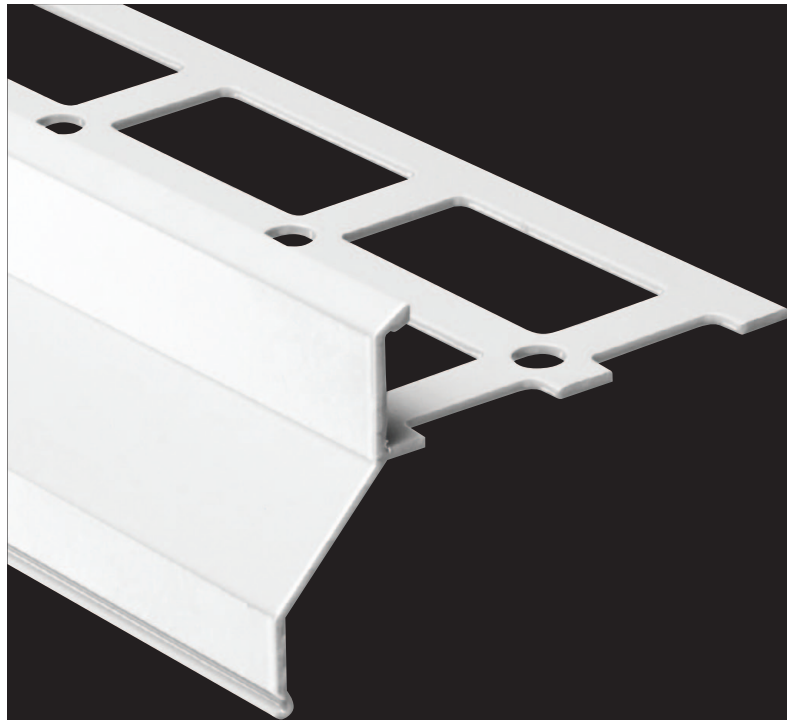
Size:

1 bar = 300mm. 1 corner unit = 185mm x 185mm

ProFin® edge profile systems are intelligently designed for simple and safe installation. Every component is designed to fit together perfectly, for clean and snug joints. Profile connectors and mounting kits are included in the package for easy assembly.

By combining with the ProRin® guttering system, BAL offers a full solution from a single provider.

GUTJAHR  **SYSTEM TECHNOLOGY**
exclusively from BAL



▲
ProFin V range

Profiles/Edge Finishings and Guttering – ProFin® DP11/21/30

The intelligent design system for edge drainage

Flexible drainage profiles in heights of 11mm, 21mm or 30mm 90°/135° corner profiles and connectors for balconies, patios and terraces

High-performance aluminium powder-coated drip/drain end profiles and corner units are easily inter use with Gutjahr external tiling systems from BAL. Combine with ProFin® BL push-on facing plates for build-up up to 79mm high (when using ProFin® DP30 and ProFin® BL49).

Product Properties and Benefits

- Combined drainage and uncoupling profile in single product.
 - New generation of edge profile with unpunched leg for safe, simple waterproof attachment of seals in combination with DiProtec® AB-KV sealing tape technology.
 - Drainage slits for shedding surface and seepage water.
 - With supports for hanging ProRin® balcony gutters.
 - Use in combination with ProFin® BL push-on fascias for added height build-ups up to 79 mm.
- Use under cement-based waterproof coating such as BAL Tank-it.
 - Use as edging with combined AquaDrain® T+ or AquaDrain® EK drainage mats systems and accessories
 - Easy to install with connectors provided.

Key Technical Data

Composition:

ProFin® DP profiles, Corners 90°/135° and connectors are constructed from power-coated aluminium.

Colour:

Alumetallic. Other colours available on request.

Height of structure:

Depending on type of construction and covering.



▲
ProFin DP30



▲
ProFin DP & BL range

Profiles/Edge Finishings and Guttering – ProFin® BL 24/49

The intelligent design system for edge drainage

ProFin® BL 24/49 – Push-on facing plates 24mm and 49mm high with associated corners 90° and connectors for modular Gutjahr balcony system

Aluminium powder-coated push-on facing plates are used in combination with the ProFin® DP drainage profiles to add additional construction height for installations with large format natural stone and slabs.

Product Properties and Benefits

- Push-on facing plates in combination with ProFin® DP base profiles for covering constructions up to 79mm high.
- Seepage water is concealed and drained behind the facing plate.
- Uncoupling the facing plate from the base profile = greatest possible reduction of shear stress on the seal.
- Can be used with all Gutjahr surface drainage system and DiProtec® sealing tape technology.
- Easy to install with connectors provided.

Key Technical Data

Composition:

ProFin® BL profile, Corner 90° and connectors are constructed from powder-coated aluminium.

Colour:

Alumetallic. Other colours available on request.

Height of structure:

Depending on type of construction and covering.



▲
ProFin® DP and BL2 range



▲
ProFin® DP

Profiles/Edge Finishings and Guttering – ProFin® ProRin® BR

The intelligent design system for edge drainage

ProRin® BR – Aluminium balcony gutter and associated connectors for modular drainage system

The aluminium powder coated gutter system is easily fixed to the ProFin® drain edge profile to provided thanks to its unique interlocking system and connecting clips. The compact channel design allows installation even with narrow railings.

Product Properties and Benefits

- Easy to install by simply fitting into the profile support of the ProFin® DP profiles.
- No soldering, no gluing, no welding thanks to intelligent connection technology.
- Compact system for narrow railings.
- Full system of elbow and down pipes.
- Durable and damage-free, as the gutter connections serve as expansion joint zones.

Key Technical Data

Composition:

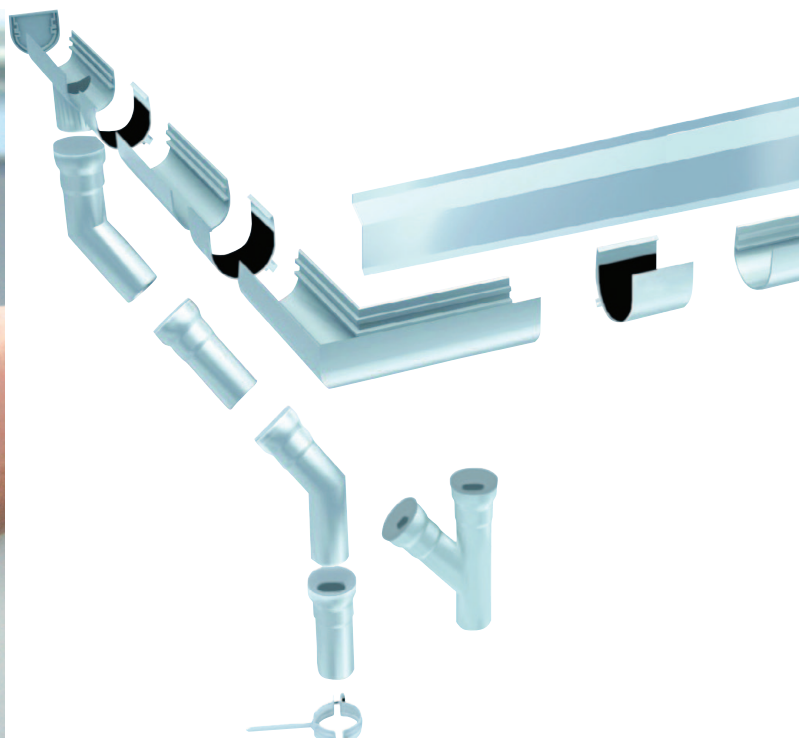
ProRin® BR and connectors are constructed from power-coated aluminium.

Colour:

Alumetallic. Other colours available on request.



▲ ProRin® BR gutter installation



▲ The complete ProRin® BR AL system

Tapes – DiProtec® AB-KV

DiProtec® AB-KV – Tear-resistant waterproofing plastic self-adhesive tape

Self-adhesive half plastic, half fleece, the DiProtec® AB-KV tape easily and quickly connects mineral seals with ProFin® edge profiles to ensure seamless waterproofing.

Product Properties and Benefits

- Easy to apply, pre-fabricated sealing tape for Gutjahr external tiling systems.
- No priming needed.
- Use for easy connection of BAL Tank-it waterproof membrane to ProFin® DP drainage profiles.
- Self-adhesive. Plastic side connects with profiles; fleece side to connect membrane.

Key Technical Data

Composition:

Underside butyl (self-adhesive). Top 75mm plastic / 75mm fleece.

Colour:

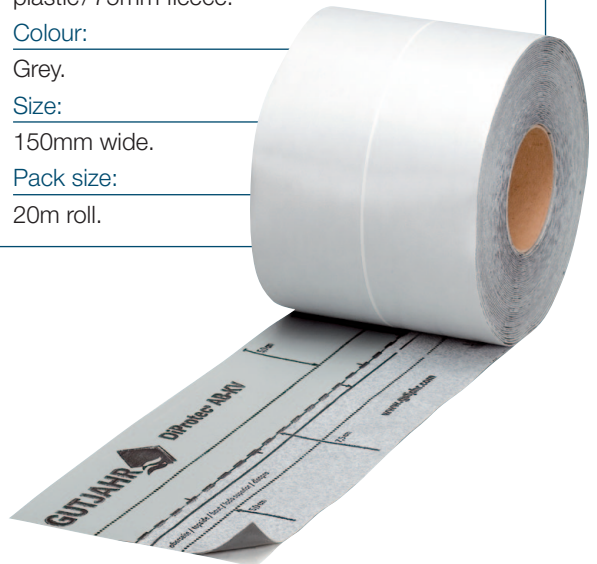
Grey.

Size:

150mm wide.

Pack size:

20m roll.



Sealing Tapes

The innovative generation of DiProtec® sealing tapes easily connect seals such as BAL Tank-it to Gutjahr edge profiles.

Mortars and Sealants

The MorTec® DRAIN is a thin-layer epoxy drainage mortar system for use in combination with the AquaDrain® EK surface drainage mat system for thinner, lightweight installations on balconies and roof terraces. MorTec® SOFT joint is a special silicone sealant with a fine grain surface for external installations.

GUTJAHR  SYSTEM TECHNOLOGY
exclusively from **BAL**



Sealing Tapes – AquaDrain SK & AquaDrain Edge

AquaDrain® SK – Self-adhesive tape

Use to bridge roll-end or sheets- of AquaDrain® EK or AquaDrain® T+ drainage mats.

Product Properties and Benefits

- Easy to apply, pre-fabricated sealing tape.
- Self-adhesive.
- Only use in combination with AquaDrain® drainage mats.

Key Technical Data

Composition:

Non-woven with self-adhesive butyl.

Colour:

White.

Size:

90mm wide.

Pack size:

10m roll.



AquaDrain® Edge

Edge insulation tape for thick screed perimeter joints.

Product Properties and Benefits

- Edge isolating strip with self-adhesive foot.
- Use for perimeter joints or rising parts at all Gutjahr drain systems or ProFin® DP drain end profiles.
- Easily cut to required height.

Key Technical Data

Composition:

Compressive foam with self-adhesive butyl foot.

Size:

80 x 40 x 8mm.

Pack size:

20m roll.



Mortars and Sealants – MorTec® DRAIN & MorTec® SOFT

MorTec® DRAIN – Two-part thin-layer epoxy resin drainage mortar

MorTec® DRAIN is a thin-layer, two-part epoxy resin drainage mortar for use in combination with AquaDrain® EK surface drainage system for solid bed fixing of natural stone and ceramic coverings on balconies and roof terraces.

Product Properties and Benefits

- MorTec® DRAIN reduces the required height construction by at least 25mm compared to cement-based drainage mortar systems. This makes it ideal for renovation work or if necessary construction height it lacking.
- Assists rapid-drainage and speeds of drying of natural stone avoiding water or frost damage.
- Lime-free meaning no efflorescence.
- For lightweight constructions and low door height connections less than 50mm with AquaDrain® EK 8mm sheets and AquaDrain® TM drain grates.
- Tiles can be fixed once the MorTec® DRAIN been laid (wet on wet system).

Minimum thickness of covering:

- Natural Stone: For sizes 600mm x 300mm or 400mm x 400mm (min 15mm).
- For larger format ceramics (min 20mm).

Key Technical Data

Composition:

MorTec® DRAIN-EP epoxy resin binder and MorTec® DRAIN-DK 2-3mm kiln-dried and pre-mixed special filter quartz aggregate according to EN 12904.

Suitable substrates:

Ground-contact patios, roof terraces, loggias, unsupported cantilevered balconies, outdoor steps. Old ceramic tile coverings / old coatings.

System Profiles:

ProFin® DP11/21/30, BL24/49 and ProFin® DP V22/55

Accepts foot traffic after:

12 hours.



MorTec® SOFT joint sealant – Neutral, solvent-free silicone sealant for external tiling

MorTec® SOFT is a special joint filler with a cement-like appearance for elastic joints in large-format outdoor coverings. Neutral, and solvent-free, it is suitable for use with natural stone, ceramics and porcelain and when using AquaDrain® T+ surface drainage system.

Product Properties and Benefits

- Solvent-free, neutral curing, fungicide containing silicone sealant.
- Absorbs movement from thermal changes and reduces tension.
- Can be used for tile joints, movement joints and connection joints.
- Suitable for ceramic, natural stone and porcelain coverings.
- Can be used internally and externally. External use only with selected AquaDrain® external tiling systems.

Key Technical Data

Composition:

Ready to use, solvent-free silicone sealant.

Colours:

Grey, Anthracite, Dark Brown.

Size:

150mm wide.

Pack size:

310 ml cartridge.



Mortars and Sealants – BAL Adhesives and Grouts

Recommended BAL adhesives, grouts, sealants and ancillary products:

For a fully guaranteed solution the Gutjahr system technology should be installed with BAL products as a complete system. As part of your specification the BAL team can advise the correct system components required, but core BAL technologies may include:

BAL Quickset Cement

Fast-setting low-shrinkage cement for use with aggregate to create thick drainage screed. Sets in 4 hours, foot traffic after 3 hours. Water and frost resistant.

BAL Rapidset Flexible Fibre

Highly flexible, rapid-setting tile adhesives with extended open and working times. Use with thick drainage screed, and lightweight epoxy screed assemblies. Grout after 3 hours.

BAL Stone and Tile PTB

Rapid-setting, flexible and pourable tile adhesive for most tile types, including porcelain and natural stone. Use with thick drainage screed, lightweight epoxy screed assemblies and direct point adhesion assembly. Grout after 3 hours.

BAL Micromax2

Highly flexible and efflorescent-free tile grout for use internally or externally. Available in 10 colours – white, ebony, manilla, smoke, jasmine, chocolate, gunmetal, cocoa, pebble and anthracite. For most tile types, sets in 3 hours. Do not use with direct point adhesion assembly.

BAL Micromax Sealant

Anti-mould silicone sealant, colour-matched with BAL Micromax2 grout. Use for sealing movement and perimeter joints. Dries in 24 hours. Not recommended with natural stone tiles.



Note: The customer must verify the suitability of any information, opinion, recommendation or advice ("Information") provided by the Company for the particular application for which any goods are intended to be used and the Company accepts no liability (whether in contract, tort or otherwise) whatsoever for any loss, damage or expense arising from the misuse of any Information it supplies nor for the use of any Information in or for applications which are unsuitable or inappropriate. Building Adhesives Limited operates a continuous research and development programme and reserves the right to alter or to update Information from time to time.
© Copyright Building Adhesives Limited 2016

BUILDING ADHESIVES LTD
Longton Road, Trentham, Stoke-on-Trent, ST4 8JB, England
www.bal-adhesives.com

Our free specifier support includes:

- M40/M20 specification writing service
- RIBA-accredited CPD's
- Bespoke system training and masterclasses
- BIM objects in NBS National BIM Library
- Fast track project enquiry and market-leading Technical Advisory Service
- Sample testing service
- Free online specification builder; Powerspec
- National Specification Support Team for advice or on-site consultancy
- Innovative range of products for full tiling systems
- Leading product guarantee

GUTJAHR  **SYSTEM TECHNOLOGY**
exclusively from BAL

YOU +  BAL

bal-adhesives.com



@BALtiling



BALtiling

