

Roof Terraces

Part B: Installation Guide



Enjoy problem-free roof terrace systems with Gutjahr System Technology from BAL – market leaders in full tiling solutions.

This step-by-step guide explains in detail how to install the innovative new system, ensuring the installation lasts the test of time.

GUTJAHR  SYSTEM TECHNOLOGY
exclusively from **BAL**

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Simple installation for trouble-free external tiling

For several years, large format ceramic and natural stone tiles on balconies and terraces have grown in popularity.

Thanks to modern colours, surfaces and almost limitless size formats, external areas radiate elegance and luxury.

However unlike inside tiling, external coverings on balconies, terraces or patios must resist rain, frost and heat. A major risk to the structural integrity of a balcony, terrace or patio is water penetrating the covering structure.

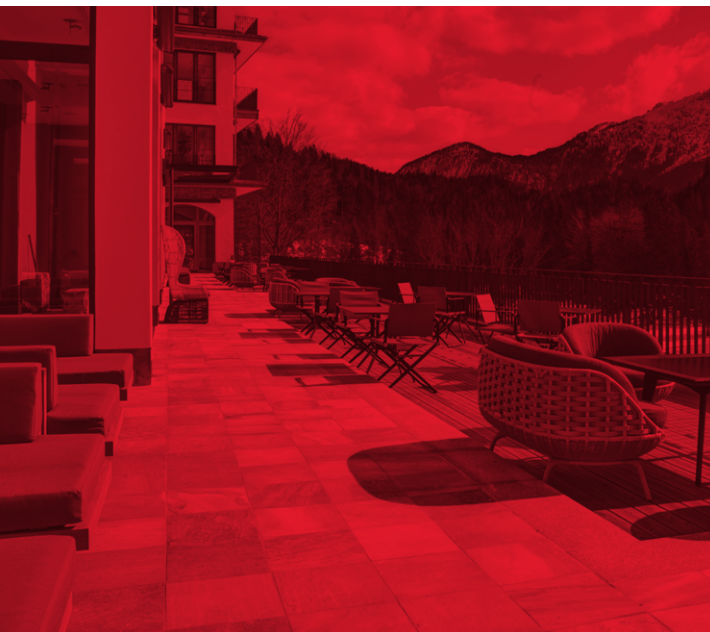
If surface water penetrates below external ceramic, porcelain or natural stone tiling and cannot drain away quickly enough, long-term problems such as frost damage, efflorescence, natural stone staining, warping or even weed-growth may occur.

Gutjahr System Technology from BAL is specifically designed to address these problems by providing rapid, permanent drainage of the covering structure.

Easy to install, and available as a part of a full system for tiling including waterproofing, uncoupling, drainage, adhesives, grouts and sealants, BAL external tiling systems provide simple, safe and strong solutions for new builds and renovations.

This installation guide has been produced according to DIN requirements, British Standards and in accordance with practical and theoretical knowledge of the BAL Technical Advisory and Specification Service (TAS).

Please note before application consider BS 5385-3: 2014 - 6.8.1.4 Balconies and roof terraces – *“Balconies and terraces should be checked for anticipated static/dynamic loading demands. All materials selected for use in balcony and terrace construction should be checked for suitability prior to their installation. The tile selected for installation should be sufficiently slip resistant and be suitable for the anticipated traffic. Consideration to the environmental surroundings of the balcony or terrace should be given and only suitable materials selected for construction based on the impact posed by the location i.e. marine environments.”*



GUTJAHR  **SYSTEM TECHNOLOGY**
exclusively from **BAL**

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The expertise behind the market-leaders in full tiling solutions is always on hand to support contractors and fixers whether on the phone, online or on the road.

The BAL Technical Advisory and Specification Service (TAS) provides FREE assistance, advice and specifications for all aspects of tiling.

In addition, BAL has a nationwide team of Product Support Technicians offering practical knowledge and on-site project advice and training.

Call:

0845 600 1222

Email:

info@bal-adhesives.com

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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, experience-based consultations and support on-site.

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For full installation guidance see the accompanying document "Roof Terraces. Part A: Technical Design Guide."

Please note this is an installation guide only, for a full method statement, please contact BAL TAS.

External living in all weathers

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 so 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.

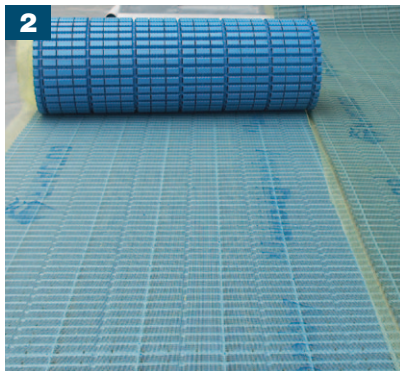
Roof Terraces 1 – Standard Drainage Screed Assembly

Installation Guidance

Ensure the concrete reinforced slab is clean dry sound and flat with a 1 – 2 % fall prior to applying the damp proof membrane and the insulation is >200k/Pa (if less then, thicker drainage mortar may be required). Ensure the insulation is the correct type and has high compressive strength. Ensure that the roofing grade primary waterproofing layer is fully adhered and all connections between the floor and the upstands are made watertight (see BAL TECHNICAL DATA SHEET for application).



1 Following the installation of the roofing grade membrane, loose lay PE Foil or plastic sheeting (0.2mm thick), then measure and mark the depth of the **AquaDrain® FLEX** drain grate.

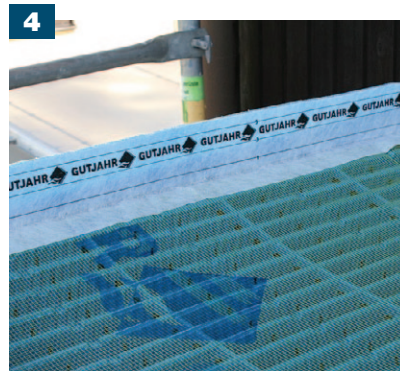


2 Roll out the **AquaDrain® EK** matting and cut to size using industrial scissors. Ensure that the waterproofing is not cut.

NOTE: For best results, roll out the mat with the drainage channels facing the direction of the fall. Always ensure that the self-adhesive tape on the mat is facing outwards to allow the next mat run to abut neatly. **(NOTE: Use AquaDrain® SK to join any roll ends)**



3 Place the plastic **AquaDrain® Lochwinkel** Screed Angle profile 70/50 where the **AquaDrain® FLEX** drain grate will meet the drainage mortar.



4 Once the matting is laid, install the self-adhesive **AquaDrain® Edge** insulation strip around the perimeter and where movement joints occur (do not place where **ProFin® V55** will be inserted into the screed) and plastic **Screed Angle (AquaDrain® Lochwinkel)**. This allows movement between different materials i.e. profiles and drainage mortar. Cut down to required height using a craft knife. For drainage mortar (**BAL QUICKSET CEMENT** and 3-6mm aggregate), refer to **BAL QUICKSET CEMENT TECHNICAL DATA SHEET** for mixing instructions.



5 Using 50mm thick timber batons/rules on the **AquaDrain® EK**, apply the mixed drainage mortar in between the batons. Flatten until you reach the height of the timber batons. Once flattened, using a screeding bar, rule off to remove any excess mortar to provide a flat (50mm) bed of drainage mortar. When used over 50mm, introduction of a reinforcing mesh should be considered.



6 Place the **ProFin® V55** within the drainage mortar to the height required to allow for a flush finish once the tile/stone is bedded using a **BAL Flexible Tile Adhesive**.

Edge Finishes/Heights

Existing roofing membrane and guttering system with ProFin® V55 = 55mm (height can be adjusted within the screed for depth)

NOTE: Heat/Torch applied membranes are not suitable for use with ProFin DP profiles.

Important Points:

- Do not penetrate the waterproofing.
- Fixing of balustrades through the primary waterproofing layer should be avoided.
- Sloped screed must be SR1.
- Movement Joints < 3m intervals.
- Minimum tile thickness – 10mm porcelain, 20mm natural stone and pavers.
- Consider structural movement joints which must continue through whole installation.



◀ Once the drainage mortar has been laid, mix up **BAL RAPIDSET FLEXIBLE FIBRE** as per the relevant **BAL TECHNICAL DATA SHEET**.



◀ Apply a thin layer of adhesive over the whole back of the tile/stone using an adhesive such as **BAL RAPIDSET FLEXIBLE FIBRE** adhesive. Apply a cone of adhesive using a 10mm notched trowel. A rubber mallet can be used to bed the tiles into the drainage mortar whilst still wet.



◀ Once the adhesive is dry after 3 hours, clean down the surface with a sponge and leave to dry before mixing a cement based grout such as **BAL MICROMAX2**. Refer to **BAL TECHNICAL DATA SHEET** for information on mixing and application.



◀ Apply the **BAL MICROMAX2** and compact into each of the joints.

NOTE: grouting must NOT be applied around the perimeter edge or where profiles or drainage systems meet. A silicone sealant must be used for any connections between different surfaces.



◀ Once the grout is dry after a minimum of 3 hours, **BAL MICROMAX SEALANT** or **MorTec® SOFT** can be used to apply a soft bead of sealant around the perimeter edge, movement joints, and where the tile/stone meets the **AquaDrain® FLEX** and **ProFin® V55**. Intermediate movement joints should be placed at a maximum of 3m intervals. Refer to **BAL TECHNICAL DATA SHEET** for further information.

Roof Terraces 2 – Thin, Lighter Weight Drainage Screed Assembly

Installation Guidance

Before installing, ensure that the insulation has a compressive strength of 200k/Pa minimum. Prior to the roofing grade membrane being applied, the **ProFin® DP11** or **ProFin® DP30** should be fixed into position onto the existing bonded screed using a multi-purpose adhesive at every 3rd hole. Fix screws at either end of the profile and at every 500mm. Screws and rawlplugs are provided. Note: Heat/torch applied membranes are not suitable for use with connecting onto aluminium profiles.

In this scenario an alternative profile should be used over the **DP11/DP30** and/or a different method of sealing at this junction should be used. Please note that **DiProTec® AB-KV** Sealing Tape is only suitable for cold-applied systems. After applying your water proofing layer, ensure it is fully adhered and all connections between the floor and the upstands are made watertight. For torch-applied membrane systems, use the **ProFin® V22** or **V55** edge profile and place onto the matting or insert into the epoxy drainage screed.

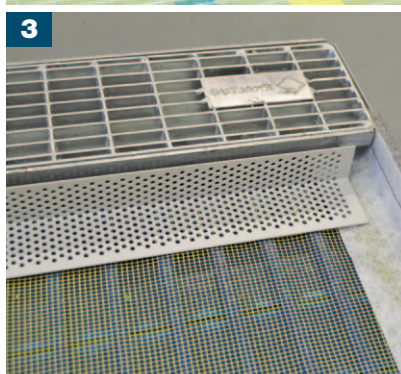


1 Following the installation of **ProFin® DP11/ DP21** and roofing grade membrane, loose lay PE Foil or plastic sheeting (0.2mm thick) onto the primary waterproofing layer. Measure and mark the depth of the **AquaDrain™ TM** drain before laying the PE Foil and the **AquaDrain® EK** drainage sheets.

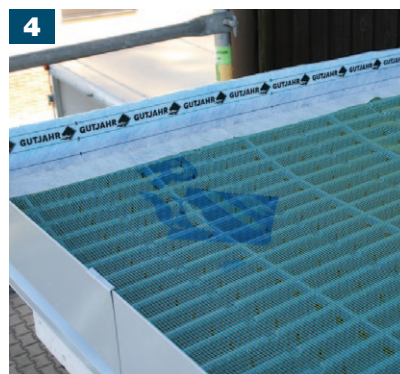


2 Place the **AquaDrain® EK** 8mm sheets down and cut to size using industrial scissors. Ensure that the waterproofing is not cut.

NOTE: For best results, place the sheets with the drainage channels facing the direction of the fall. Always ensure that the self-adhesive tape on the sheet is facing outwards to allow the next sheet run to be stuck to abut neatly. (Note: Use **AquaDrain® SK** to join any sheet ends)



3 Place the powder coated steel **AquaDrain® Lochwinkel** Screed Angle profile 30/40 where the **AquaDrain™ TM** drain grate will meet the **MorTec® DRAIN**.



4 Once the sheets are laid, install the self-adhesive **AquaDrain® Edge** insulation strip around the edge of the floor to the **ProFin® BL24/BL49** (not included for **ProFin® V22/V55**) and **Screed Angle (AquaDrain® Lochwinkel)** and movement joints. This allows movement between different materials i.e. profiles and **MorTec® DRAIN** epoxy drainage screed, refer to **TECHNICAL DATA SHEET** for mixing instructions. Once installed cut down to required height. Ensure a 10mm gap around the perimeter.



5 Once you have laid the matting onto the base depending on the size of the area, and the profiles are installed, mix up the **MorTec® DRAIN** epoxy drainage screed, this can be used at a minimum of 25mm bed. Refer to **BAL TECHNICAL DATA SHEET** for mixing instructions.



6 Using 25mm thick timber batton/rules placed on-top of the **AquaDrain® EK** sheets, apply the mixed **MorTec® DRAIN** epoxy drainage screed in between and flatten until you reach the height of the timber battons. Flatten, using a screeding bar, rule off to remove any excess mortar to provide a flat (25mm) bed of drainage screed.

Edge Finishes/Heights

ProFin® DP11 with ProFin® BL24 = 35mm

ProFin® DP21 with ProFin® BL24 = 45mm

ProFin® DP11 with ProFin® BL49 = 60mm

ProFin® V22 = 22mm

ProFin® V55 = 55mm

NOTE: Heat/Torch applied membranes are not suitable for use with **ProFin DP** profiles.

Important Points:

- Do not penetrate the waterproofing.
- Fixing of balustrades through the primary waterproofing layer should be avoided.
- Sloped screed must be SR1.
- Movement Joints < 3m intervals. Consider structural movement joints should continue through whole assembly including membrane and matting. For large format and/or dark tiles additional movement joint placement will be required.
- Minimum tile thickness – 10mm porcelain, 20mm natural stone, 20mm pavers.
- Use stainless steel profiles in areas in exposed coastal locations.



◀ Once the **MorTec® DRAIN** has been laid, mix up **BAL RAPIDSET FLEXIBLE FIBRE** tile adhesive. Refer to **BAL TECHNICAL DATA SHEET** on mixing.



◀ Apply a thin layer of adhesive over the whole back of the tile/stone using **BAL RAPIDSET FLEXIBLE FIBRE** adhesive. Apply a cone of adhesive using a 10mm notched trowel. A rubber mallet can be used to bed the tiles into the drainage screed, whilst still wet.



◀ Once the adhesive is dry after 3 hours, clean down the surface and leave to dry before mixing the cement based grout such as **BAL MICROMAX2** grout. Refer to **BAL TECHNICAL DATA SHEET** for information on mixing and application.



◀ Apply **BAL MICROMAX2** grout to the face of the tile and compact into each of the joints.

NOTE: grouting must NOT be applied around the perimeter edge or where profiles or drainage systems meet. A silicone sealant must be used.



◀ Once the grout is dry after a minimum of 3 hours, a silicone sealant such as **BAL MICROMAX SEALANT** or **MorTec® SOFT** can be used to apply a soft bead of sealant around the perimeter edge, movement joints, and where the tile/stone meets the **AquaDrain® TM** and edge profiles i.e. **ProFin® BL24/BL49**. Intermediate movement joints should be placed at a maximum of 3m intervals. Refer to **BAL TECHNICAL DATA SHEET** for further information.



◀ Once completed attach the **ProRin® BR** guttering system to **ProFin® DP11** or **ProFin® DP21** edge profile. See **ProRin® BR BAL TECHNICAL DATA SHEET** for full installation instructions.

Roof Terraces 3 – Thin Drainage Assembly

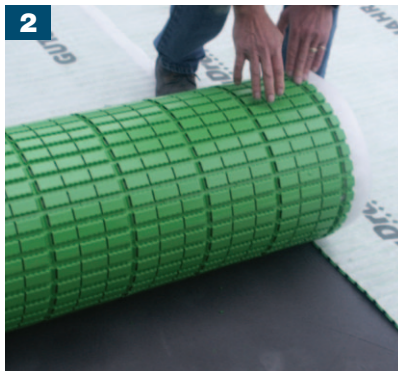
Installation Guidance

Before installing, ensure that the insulation has a compressive strength of 200k/Pa minimum. Prior to the roofing grade membrane being applied, the **ProFin® DP11** or **ProFin® DP30** should be fixed into position onto the existing bonded screed using a multi-purpose adhesive at every 3rd hole. Fix screws at either end of the profile and at every 500mm. Screws and rawlplugs are provided. Note: Heat/torch applied membranes are not suitable for use with connecting onto aluminium profiles.

In this scenario an alternative profile should be used over the **DP11/DP30** and/or a different method of sealing at this junction should be used. Please note that **DiProTec® AB-KV** Sealing Tape is only suitable for cold-applied systems. After applying your water proofing layer, ensure it is fully adhered and all connections between the floor and the upstands are made watertight.

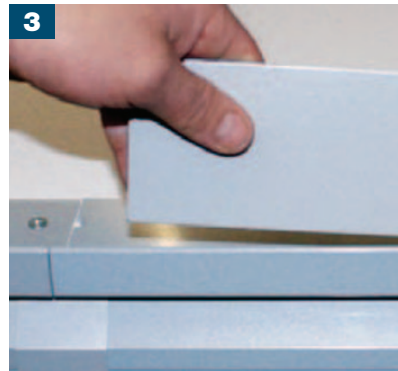


1 Following the installation of the waterproof membrane and **ProFin® DP11** or **DP30**, loose lay PE Foil or plastic sheeting (0.2mm thick) on to floor to give extra protection, measure and mark the depth of the **AquaDrain™ TM** drain grate before laying the PE Foil and rolling out the **AquaDrain® T+** drainage mat.



2 Roll out the **AquaDrain® T+** matting and cut to size using industrial scissors. Ensure that the waterproofing is not cut.

NOTE: For best results, roll out the mat with the drainage channels facing the direction of the fall. Always ensure that the self-adhesive tape on the mat is facing outwards to allow the next mat run to abut neatly. (**NOTE:** Use **AquaDrain® SK** to join any roll ends).



3 **DP30** and **DP11** can be used for installations using 20mm porcelain, for thicker tiles or natural stone, combine **BL24** with **DP** profiles suitable for higher constructions. Place **ProFin® V22** on top of the matting when a torch-applied roofing grade membrane is used, and bed down using the appropriate tile adhesive.



4 Mix up **BAL STONE & TILE PTB** tile adhesive. Refer to **BAL TECHNICAL DATA SHEET** on mixing.

Edge Finishes/Heights

ProFin® DP11 with ProFin® BL24 = 35mm

ProFin® DP11 = 11mm

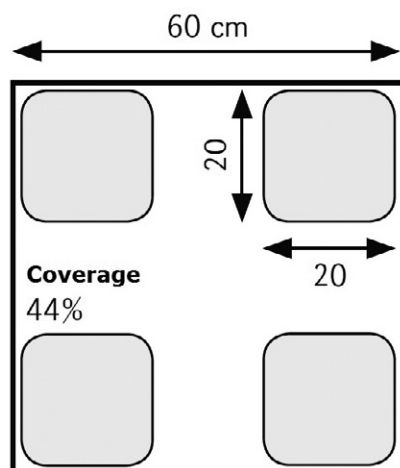
ProFin® DP30 = 30mm

ProFin® V22 = 22mm

NOTE: Heat/Torch applied membranes are not suitable for use with **ProFin DP** profiles.



◀ Before laying the 20mm porcelain tiles or the 30mm natural stone, Apply pads of adhesive (minimum 4mm thick) at a distance not exceeding 200mm, ensuring all four corners of the tiles are fully supported. Minimum tile dimensions 300mm x 300mm.



Important Points:

- Do not penetrate the waterproofing.
- Fixing of balustrades through the primary waterproofing layer should be avoided.
- Sloped screed must be SR1.
- Movement Joints are not required when using **MorTec® SOFT** as a grout with this system.
- Minimum tile dimensions 300mm x 300mm.
- Minimum tile thickness – 20mm porcelain, 30mm natural stone, ceramic – dependent on breaking load.
- Use stainless steel profiles in areas in exposed coastal locations.

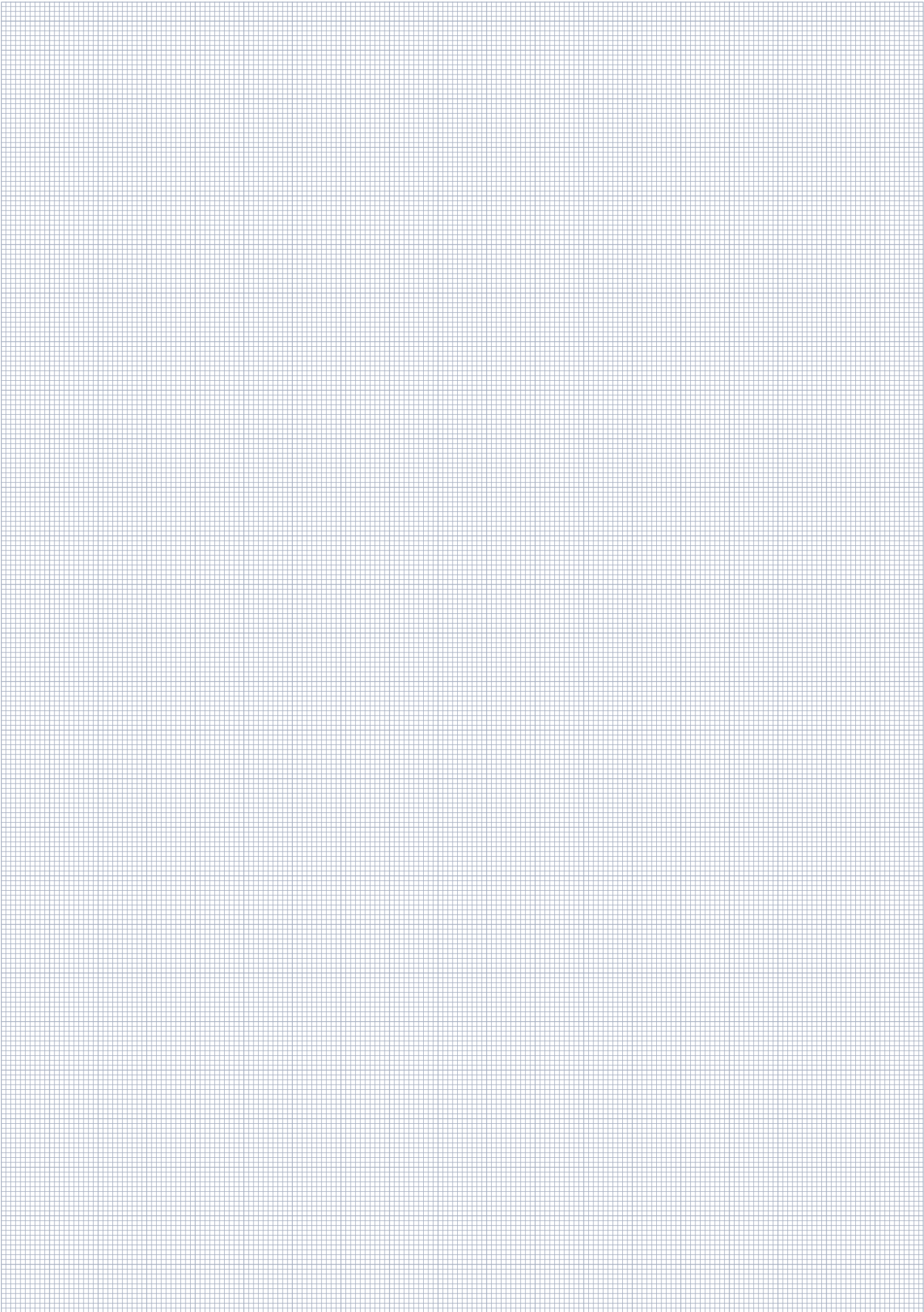


◀ Once the adhesive is set, gun apply **MorTec® SOFT** sealant to the open joints of the tiles, around the perimeter edge, on intermediate movement joints and where the tile/stone meets the **AquaDrain™** drain grate and edge profiles i.e. **ProFin® BL24 / DP11** and **ProFin® DP30** edge profiles. Refer to **BAL TECHNICAL DATA SHEET** on application.



◀ Once completed attach **ProRin® BR drainage guttering** to **ProFin® DP11 / DP30** if required. See **ProRin® BR BAL TECHNICAL DATA SHEET** for full installation instructions.

Notes



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.

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Longton Road, Trentham, Stoke-on-Trent, ST4 8JB, England
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