

Cantilever Balconies

Part B: Installation Guide



Enjoy problem-free balcony 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 stones 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**

On-call, on-line and on-site support

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.

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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, experienced-based consultations and support on-site.

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For full design guidance see the accompanying document "Cantilever Balconies. Part A: Technical Design Guide."

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

Long-lasting balconies 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 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.

Cantilever Balcony 1 – Standard Drainage Screed Assembly

Installation Guidance

Ensure the bonded screed is clean, dry, sound and flat with a 1-2% fall prior to application of **AquaDrain® EK** and **ProFin® DP21** with **ProFin® BL49** or **ProFin® V55** finishes.

Minimum Example: 10mm Thick Porcelain tile + 50mm bed of Drainage Mortar Screed + 8mm **AquaDrain® EK** = 68mm bed + Adhesive Bed. (Use **ProFin® DP21/BL49** = 70mm total depth).

Edge Finishes

ProFin® V55 = 55mm

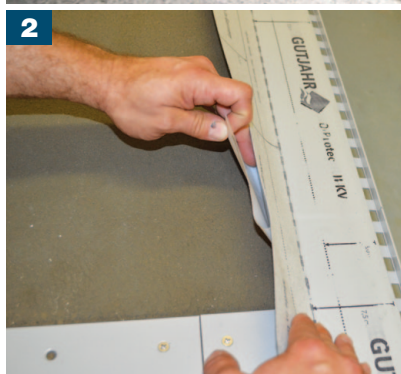
ProFin® DP21 with **ProFin® BL49** = 70mm

ProFin® DP30 with **ProFin® BL49** = 79mm



1 Prior to screw fixing the **ProFin® DP** and corner section, apply multi-purpose adhesive to the underside of the profile, minimum every 3 holes.

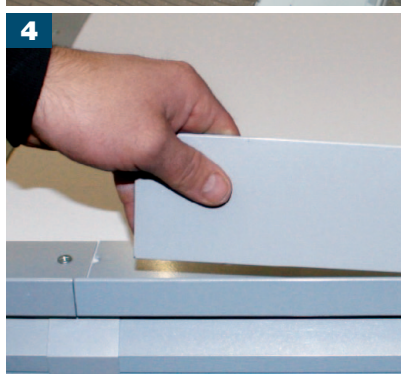
Screw fix **ProFin® DP21** edge profile into position onto the existing bonded screed (Corner 90° **ProFin® DP21** and profile connectors are available), using the stainless screws and rawplugs provided. Fix screws at either end of the profile and every 500mm.



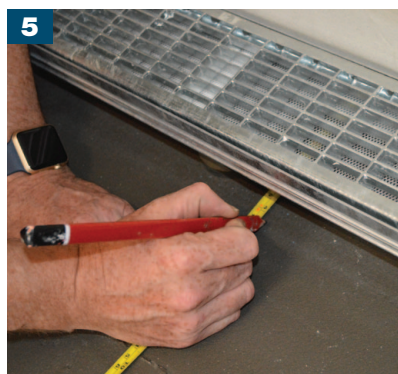
2 Following installation of the DP profile, use the self-adhesive **DiProtect® AB-KV** sealing tape as a seal between the profile and the substrate. Fix the plastic side to the edge profile (do not cover drainage holes) and the fleece side to the bonded screed and flatten down with a roller.



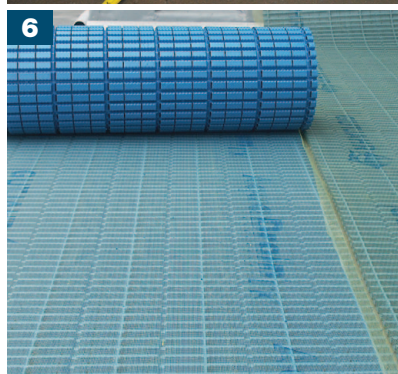
3 Apply **BAL TANK-IT** tape to the overlaps then apply two coats of **BAL TANK-IT** onto the bonded, sloped screed and up to the plastic side of the **DiProtect® AB-KV** sealing tape, covering the fleece. Please refer to **BAL TECHNICAL DATA SHEET** for application information. Allow 30mins drying time before applying a second coat.



4 Clip on the **BL49** corner section and facing plates to the DP profile, leaving 5mm gap. Clip on connectors to bridge the gap, use multi-purpose adhesive for extra purchase.



5 Loose lay the PE Foil or plastic sheet (minimum 0.2mm) onto the primary waterproofed layer, then measure and mark the width of the **AquaDrain® FLEX** drain grate before laying the PE Foil and rolling out the **AquaDrain® EK** drainage mat.

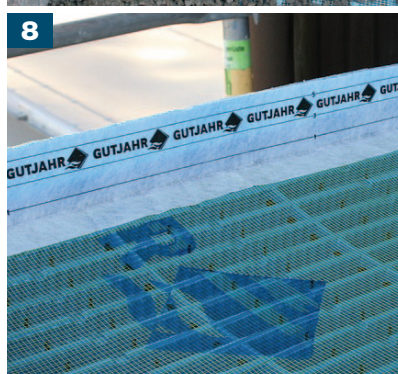


6 Roll out the **AquaDrain® EK** matting and cut to size using industrial scissors. Ensure that the waterproofing is not cut.

NOTE: For best results, roll out the mat with the drainage channels facing the direction of the fall. Always ensure that the overlapping mesh is facing outwards in order to connect with adjacent mat. (**NOTE:** Use **AquaDrain® SK** tape to join any roll ends)



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



8 Once the matting is laid, install the self-adhesive **AquaDrain® Edge** insulation strip around the edge of the floor to the **ProFin® BL49** (not included for **ProFin® V55**) movement joints, and Screed Angle (**AquaDrain® Lochwinkel**). This allows movement between different materials i.e. profiles and drainage mortar. Ensure a 10mm gap around the perimeter. Cut down the Edge insulation strip to the height required. For drainage mortar **BAL QUICKSET CEMENT** or standard OPC cement and 3-6mm aggregate should be selected. Check **BAL QUICKSET CEMENT TECHNICAL DATA SHEET** for mixing instructions.

Important Points:

- Do not penetrate the waterproofing
- Fixing of balustrades through the primary waterproofing layer should be avoided
- Sloped screed must be SR1
- Screed should be suitably dry and protected during installation
- Movement Joints <3m intervals. Darker materials may require a reduction in tile field.

- Minimum tile thickness 10mm porcelain, 20mm natural stone/pavers
- Use stainless steel profiles in exposed coastal locations
- Consider structural movement joints which must continue through the assembly.



◀ 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. When used over 50mm, introduction of a reinforcing mesh should be considered.



◀ When not using **ProFin® DP21** and **ProFin® BL49**, 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**. **ProFin® V55** should be used where roof membrane and gutter system is pre-installed.



◀ Once the drainage mortar has been laid, mix the **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 and leave to dry before mixing a cement based grout such as **BAL MICROMAX2** grout. 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 joint, and where the tile/stone meets the **AquaDrain® Flex** and **ProFin® BL49/V55**. Refer to **BAL TECHNICAL DATA SHEETS** for further information.



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

Cantilever Balcony 2 – Thin, Lighter Weight Drainage Screed Assembly

Installation Guidance

Ensure the bonded screed is clean dry sound and flat with a 1-2% fall prior to installation of **AquaDrain® EK** drainage mat and **ProFin® DP11/DP21** with **ProFin® BL24/BL49** or **ProFin® V22/V55** finishes.

Edge Finish/Heights

ProFin® DP11 with **ProFin® BL24** = 35mm

ProFin® DP21 with **ProFin® BL24** = 45mm

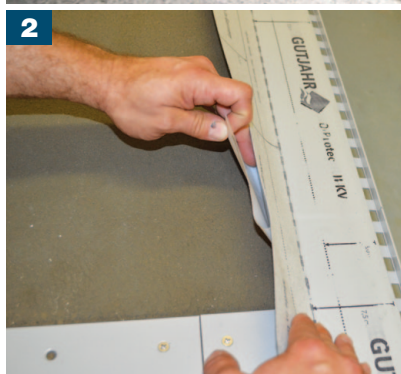
ProFin® DP11 with **ProFin® BL49** = 60mm

ProFin® DP21 with **ProFin® BL49** = 70mm

ProFin® V22 = 22mm



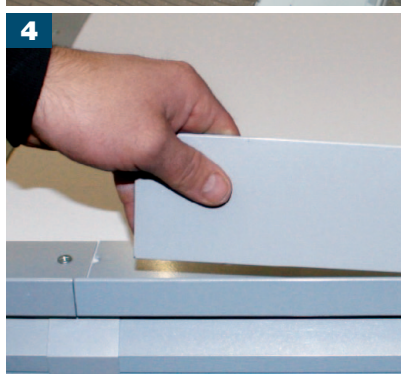
1 Prior to screw fixing the **ProFin® DP** and corner section, apply multi-purpose adhesive to the underside of the profile, minimum every 3 holes. Screw fix **ProFin® DP11** or **ProFin® DP21** edge profile into position on to the existing base. External corners (90°) **ProFin® DP11** or **ProFin® DP21** are available. Profile connectors are available for where profile edges abut. Use the stainless steel screws and rawlplugs provided and fix screws at either end of profile and every 500mm.



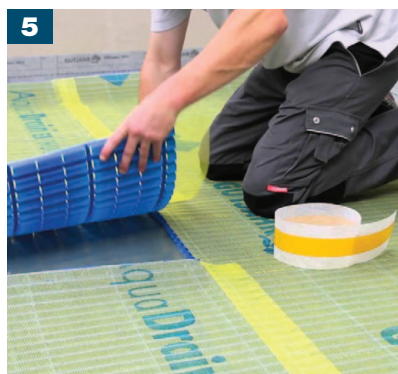
2 Following installation of the DP profile, use the self-adhesive **DiProtec® AB-KV** sealing tape as a seal between the profile and the substrate. Fix the plastic side to the edge profile (do not cover drainage holes) and the fleece side to the bonded screed and flatten down with a roller.



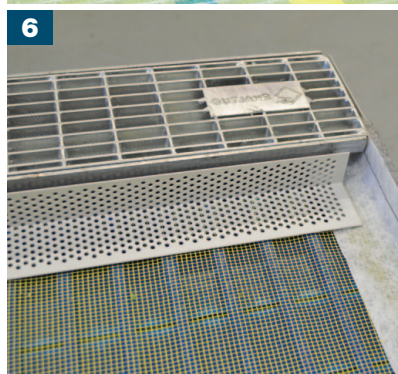
3 Apply **BAL TANK-IT** tape to the overlaps then apply two coats of **BAL TANK-IT** onto the bonded, sloped screed and up to the plastic side of the **DiProtec® AB-KV** sealing tape, covering the fleece. Please refer to **BAL TECHNICAL DATA SHEET** for application information. Allow 30mins drying time before applying a second coat.



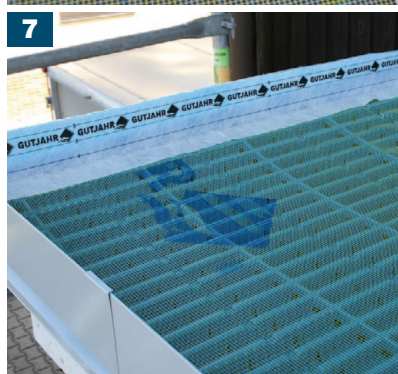
4 Clip on the **BL49** corner section and facing plates to the DP profile, leaving 5mm gap. Clip on connectors to bridge the gap, use multi-purpose adhesive for extra purchase. Loose lay PE Foil or plastic sheeting (0.2mm thick).



5 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 mat run to abut neatly. (**NOTE:** Use **AquaDrain® SK** to join any sheet ends)



6 Place the powder coated steel **AquaDrain® Lochwinkel** Screed Angle profile 30/40 where the **AquaDrain® TM** will meet the drainage mortar.



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



8 Once the sheets are laid and all profiles are installed the **MorTec® DRAIN** epoxy drainage screed, can be mixed and used to screed at a minimum thickness of 25mm. Refer to **BAL TECHNICAL DATA SHEET** for mixing instructions.

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 should be incorporated at <3m intervals.
- Minimum tile thickness 10mm porcelain, 20mm natural stone/pavers.
- Use stainless steel profiles in exposed coastal locations.
- Consider structural movement joints which must continue through the assembly.



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



◀ When not using **ProFin® BL24/BL49**, place the **ProFin® V22** within the drainage screed to the height required to allow for a flush finish once the tile/stone is bedded using a **BAL Flexible Tile Adhesive**. **ProFin® V22** should be used on an installation with a pre-existing roofing membrane and guttering system.



◀ Once the **MorTec® DRAIN** drainage screed has been laid, mix up **BAL RAPIDSET FLEXIBLE FIBRE**. Refer to **BAL TECHNICAL DATE 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 **MorTec® DRAIN** 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 DATE 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** or **ProFin® V22** and at intermediate movement joints at 3m intervals maximum. 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.

Cantilever Balcony 3 – Thin Drainage Assembly

Installation Guidance

Ensure the bonded screed is clean dry sound and flat with a 1-2% fall prior to installation of **AquaDrain® T+** and **ProFin® BL24** or **ProFin® DP11/DP30** finishes. Other finishes and construction heights are available, please speak to BAL TAS for guidance.

Minimum Example: 20mm Thick Porcelain tile + 6mm bed of Adhesive + 8mm **AquaDrain® T+** = 34mm bed.

Edge Finishes/Heights

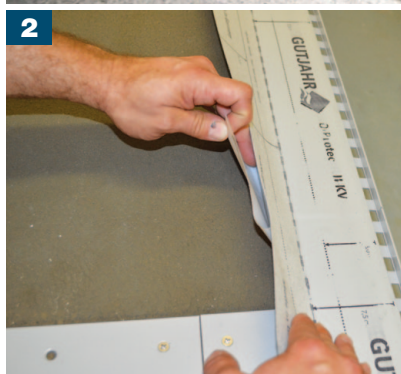
ProFin® DP11 with ProFin® BL24 = 35mm

ProFin® DP11 = 11mm

ProFin® DP30 = 30mm



1 Prior to screw fixing the **ProFin® DP** and corner section, apply multi-purpose adhesive to the underside of the profile, minimum every 3 holes. Screw fix **ProFin® DP11** or **ProFin® DP30** edge profile into position onto the existing base. External corners (90°) **ProFin® DP11/ProFin® DP21** or **ProFin® DP30** and profile connectors are available. Use the screws and rawlplugs provided and fix screws at either end of profile and every 500mm.



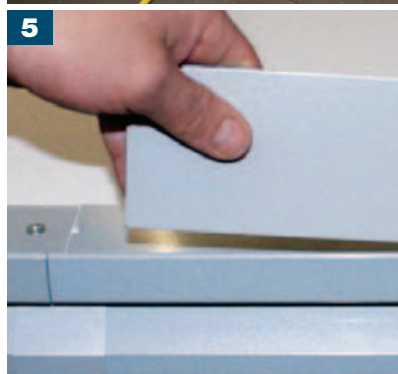
2 Following installation of the DP profile, use the self-adhesive **DiProtec® AB-KV** sealing tape as a seal between the profile and the substrate. Fix the plastic side to the edge profile (do not cover drainage holes) and the fleece side to the bonded screed and flatten down with a roller.



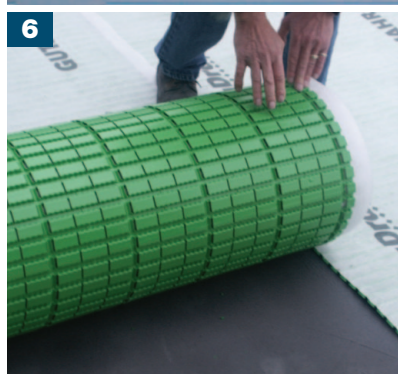
3 Apply **BAL TANK-IT** tape to the overlaps then apply two coats of **BAL TANK-IT** onto the bonded, sloped screed and up to the plastic side of the **DiProtec® AB-KV** sealing tape, covering the fleece. Please refer to **BAL TECHNICAL DATA SHEET** for application information. Allow 30mins drying time before applying a second coat.



4 It's always good practice to measure and mark the depth of the **AquaDrain® TM** drain before laying the PE Foil and rolling out the **AquaDrain® T+** drainage mat.



5 **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.



6 Loose lay PE Foil or plastic sheeting (0.2mm thick) on to floor to give extra protection. Roll out the **AquaDrain® T+** matting and cut to size using industrial scissors or utility knife. 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).

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 thickness – 20mm porcelain, 30mm natural stone, ceramic – depending on breaking point
- Minimum tile dimensions 300mm x 300mm
- Use stainless steel profiles in areas in exposed coastal locations



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



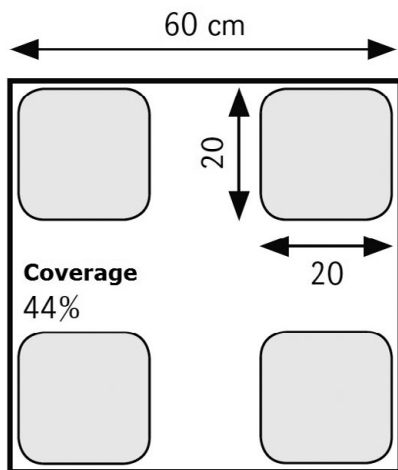
8 Before laying the 20mm porcelain tiles or the 30mm natural stone. Apply pads of adhesive (minimum 4mm thick) at a distance not exceeding 200mm, ensuring all four corners of the tiles are fully supported.
Minimum tile dimensions 300mm x 300mm.



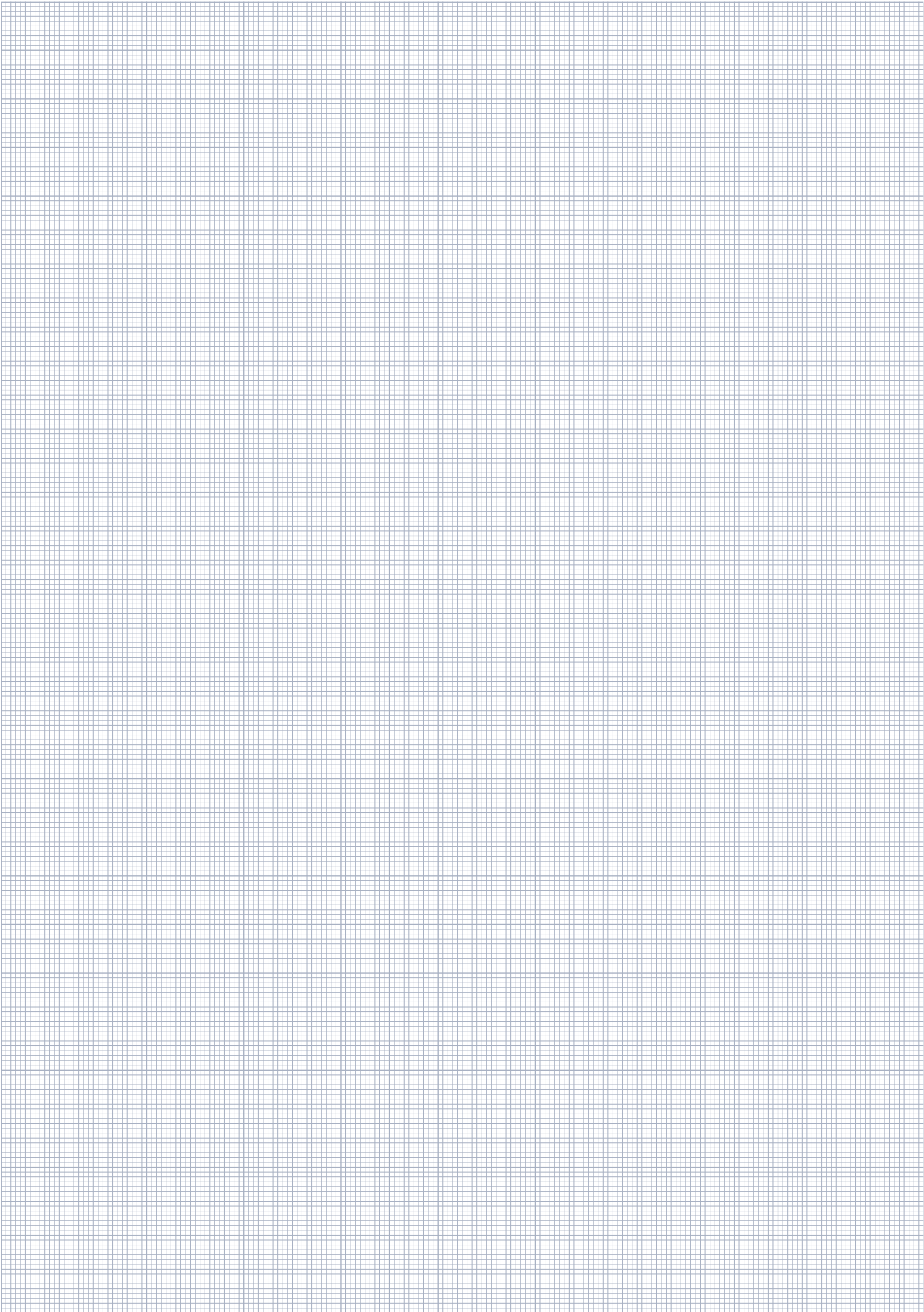
9 Once the adhesive is set, gun apply **MorTec® SOFT sealant** to the open joints of the tiles, around the perimeter edge, on intermediate movement joints and where the tile/stone meets the **AquaDrain® TM** drain grate and edge profiles i.e. **ProFin® BL24 DP11** and **ProFin® DP30**. Refer to **BAL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



10 Once completed attach **ProRin® BR** drainage guttering to **ProFin® DP11/DP21** or **ProFin® 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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