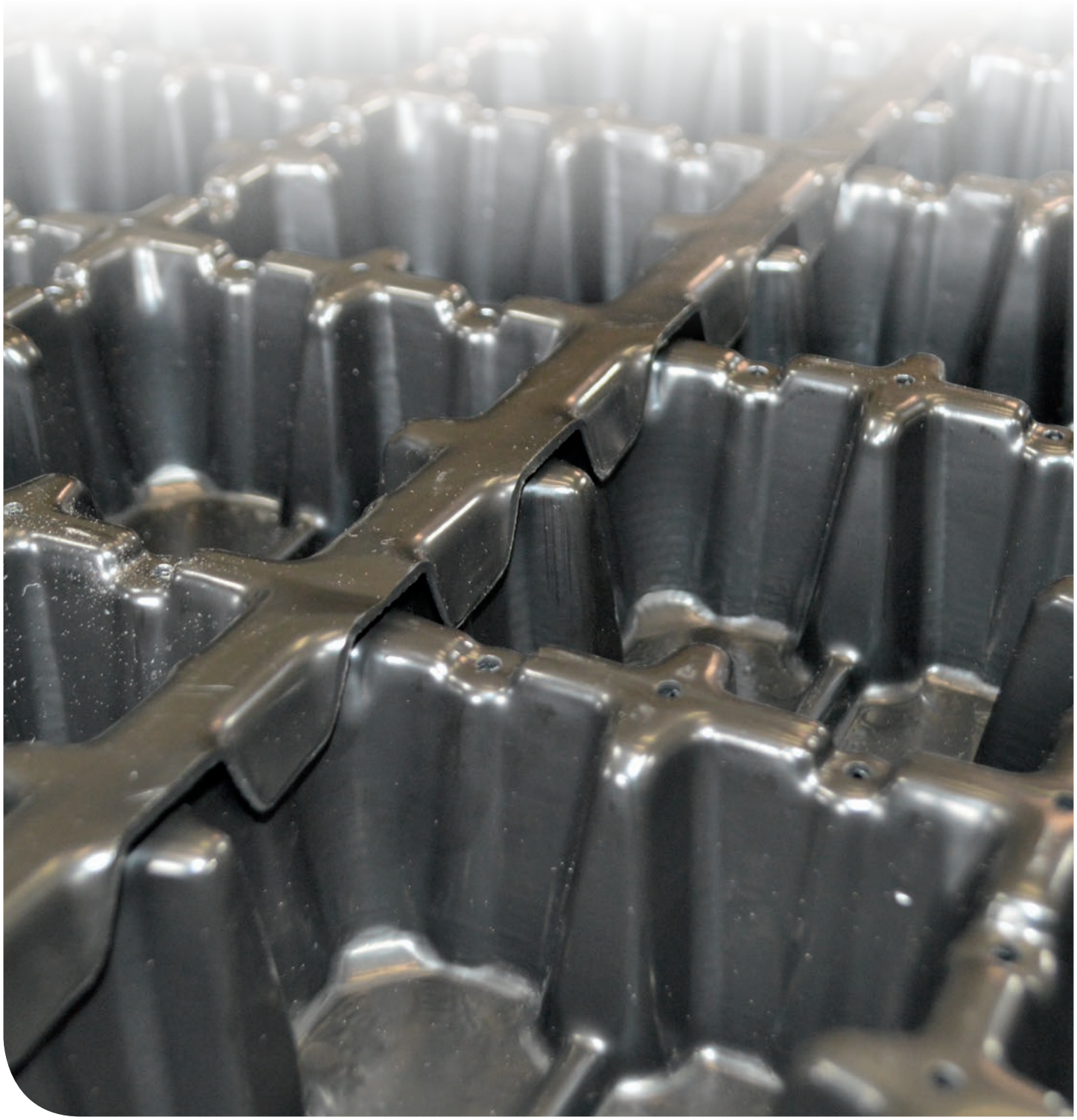
OPTIGRÜN®

ASSEMBLY AND LAYING INSTRUCTIONS

OPTIGRÜN FKD 60BO
Drainage and Storage Board

OPTIGRÜN FKD 60BU
Protection and Drainage Board



ASSEMBLY AND LAYING INSTRUCTIONS

OPTIGRÜN FKD 60BO
Drainage and Storage Board

OPTIGRÜN FKD 60BU
Protection and Drainage Board

Before installing and using the Drainage and Storage Board FKD 60BO or the Protection and Drainage Board FKD 60BU, it is necessary for you to have read and understood the assembly and laying instructions. Only in this way is proper operation possible. It also prevents damage to the product that is being used as well as injuries.

Provide these instructions to the personnel responsible for installation and use, and ensure that the designated persons are aware of the information.

If you have any further questions, please contact Optigrün international AG.

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Please note:
The information in this document is based on our current knowledge and experience. They do not represent an assurance in a legal sense. During use, the particular conditions of the application are to be taken into account, especially with regard to building physics, building technology and building regulations.

Assembly and laying instructions Optigrün FKD 60BO and FKD 60BU – Subject to technical change without notice. Errors and omissions excepted – Revised 08/2022

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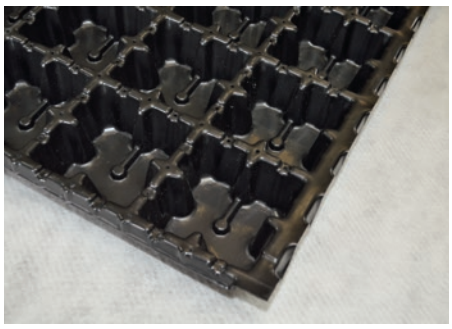
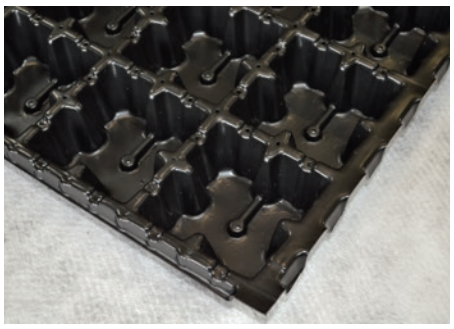
1.1 Variants	OPTIGRÜN FKD 60BO	OPTIGRÜN FKD 60BU
1.2 Brief description	Drainage and Storage Board made of recycled HDPE with a high water reservoir. Highly resilient with channel system on the underside and diffusion and drainage holes on the top side. 	Protection and Drainage Board made of recycled HDPE without water reservoir. Highly resilient with channel system on the underside and drainage holes on the underside. 
1.3 Area of use	■ Under intensive roof greening in multi-layer construction filled with Drainage Material Perl 8/16 ■ Under temporarily drivable gravel lawn without gravel base layer filled with Drainage Material Perl 8/16	■ Under public roofs with and without roof pitch, filled with Drainage Material Perl 8/16 or chippings 2/5
1.4 Special features	■ Unfilled installation under intensive roof greening is possible with a substrate height of up to 400 mm (it is not possible for vehicles of any kind to drive over the unfilled Optigrün Drainage and Storage Board FKD 60BO)	■ In filled condition usable under public roofs of the use categorys N1 (walkable) to N3 (use by cars and occasional traffic by trucks up to 20 t) in the Optigrün system structure
	■ Suitable for non-pitch roofs ■ Rapid draining of excess water ■ Vapour permeable - suitable for inverted roofs ■ Lightweight super structure with high drainage capacity ■ Surrounding edge overlaps ■ Filling without risk of shifting apart ■ Cross and T-joints possible - minimal offcuts	

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2.1 Delivery

Panels on disposable pallets

- Panel measurements: 2.34 x 1.004 m, ca. 2.30 m²
- Pallet with 180 panels
- Disposable pallet: 2.36 x 1.06 x 1.09 m
- Weight per pallet: approx. 980 kg/disposable pallet

2.2 Unloading

CAUTION!

Warning of falling pallets or elements!

Always check pallets are stable. Never try to support a falling pallet!

WARNiNG!

Warning of suspended loads!

There is a risk of injury due to suspended loads.
Do not go underneath suspended loads! Wear a safety helmet!

2.3 Storage of the package units

Store in a horizontal and dry position.
Avoid sun-exposed storage areas and protect from UV radiation during longer storage.

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3.1 General information on installation

During planning and execution, observe the requirements of the FLL Green Roof Guidelines, the FLL Guidelines for traffic areas on buildings and other relevant technology and safety regulations.

Tools required for assembly:

- Angle grinder
- Hand soldering iron
- Scissors

3.2 Installation

WARNING!

Warning of danger of falling!

There is a risk of falling when working on unsecured roof surfaces!

Use personal protective equipment!

3.3 Step-by-Step instructions

Work step 1: Prepare the roof area

Figure 1: Cleaning the roof area

Ensure roof area is in a clean and tidy condition and check that it is level *Fig. 1* .

Figure 2: Laying the protection fleece with sufficient overlap

To protect the waterproofing, lay a suitable protective layer over the entire surface in accordance to the FLL Green Roof Guidelines.

Ensure that the protection fleeces overlap by at least 100 mm *Fig. 2* .

System Solution **Garden Roof:**
Optigrün Protection and Storage Fleece RMS 500

System Solution **Landscape Roof:**
Optigrün Protection and Storage Fleece RMS 900

System Solution **Public Roof:**
Optigrün Separation and Slip Layer TGF 0.2 mm and Optigün Protection, Separation and Slip Layer SGL 500

Figure 3: Laying the protection fleece on elevated components

Apply protective layer to elevated components and roof penetrations and raise the protection fleece at least so far, that the planned structure height of the finished green roof is reached *Fig. 3* .

If separately cut fleece strips are used for this purpose, provide a 300 mm overlap into the horizontal roof surface.

Note for use on inverted roofs
On inverted roofs do not place a protection fleece.
Installation on a separation layer intended for the insulating material.

Note for use on public roofs
Place slip layers (e.g. Optigrün Separation and Slip Layer TGF 0.2 mm and Optigün Protection, Separation and Slip Layer SGL 500) on the waterproofing.

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Work step 2: Laying of Drainage Boards

Please note

The drainage elements can only be laid in the sequence described in the following instructions due to the intended overlaps.
The alignment of all panels in the composite is identical.

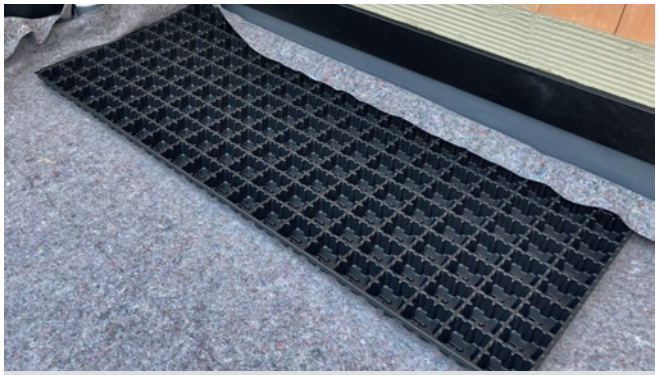

Figure 4: Laying the first panel in correct alignment

Start the laying at a corner of the roof. The serrated edge overlaps on the long and short sides point towards the roof edge.
The smooth edge overlaps point towards the laying surface *Fig. 4* .

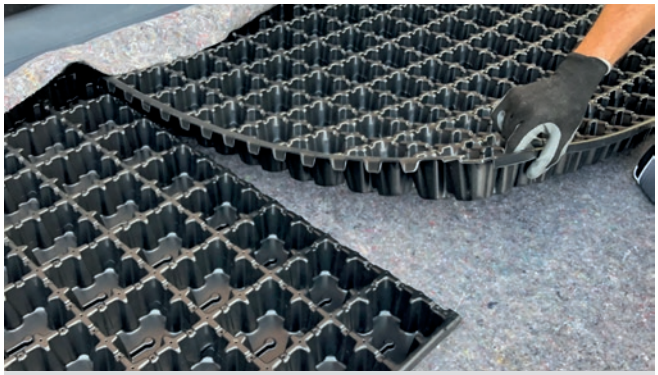

Figure 5: Laying the second panel

Place the following panel on the short side of the first panel. Ensure that the panels are aligned identically.

Hook the serrated edge overlap of the second panel into the first panel *Fig. 5* .

Complete the first row in this pattern.

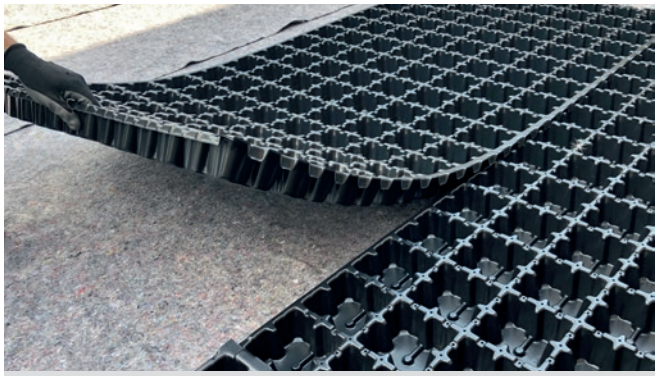

Figure 6: Laying further rows

Start the second row on the long side of the first panel.

Hook the serrated edge overlap into the previous row *Fig. 6* .

Continue laying as shown in *Fig. 5* . Repeat the overlap on the long and short sides of the panels.

Observe the installation patterns in *Fig. 11* and *Fig. 12* .

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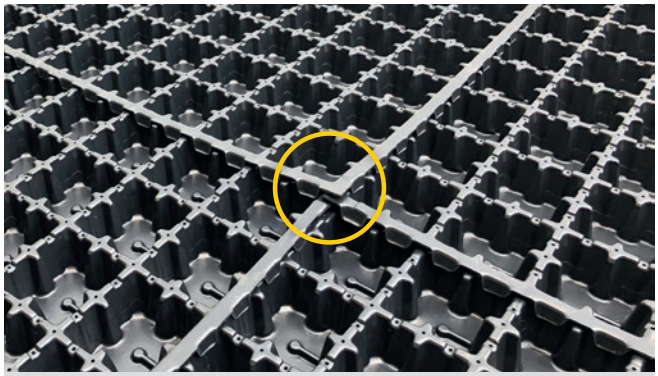

Figure 7: Laying with cross joints

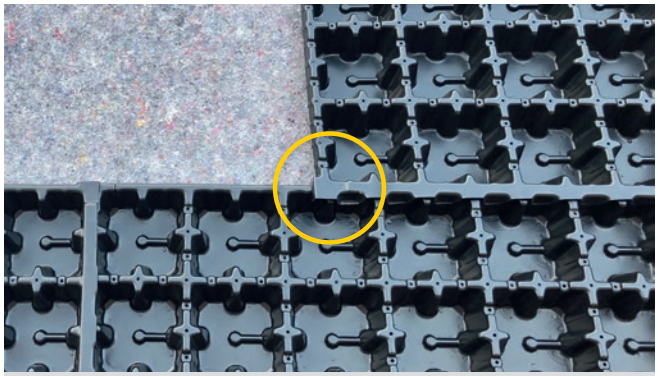

Figure 8: Laying with T-joints

The panels can be laid with cross joints *Fig. 7* , as well as with T-joints *Fig. 8* .

Angle grinder safety notice

Warning of injuries!

- Wear safety googles and hearing and respiratory protection.
- Wear close-fitting protective clothing.
- Remove fire-sensitive materials.
- Before using the angle grinder, read the instruction manual.

Figure 9: Cutting the drainage element

Figure 10: Filled intermediate space

If necessary, cut drainage elements to size using an angle grinder *Fig. 9* and *Fig. 10* . At roof drains, cut out the inside dimension of the inspection chamber used in order to ensure optimum water discharge from the channel system on the underside of the panels into the roof drain.

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Summary of work step 2: Laying of Drainage Boards

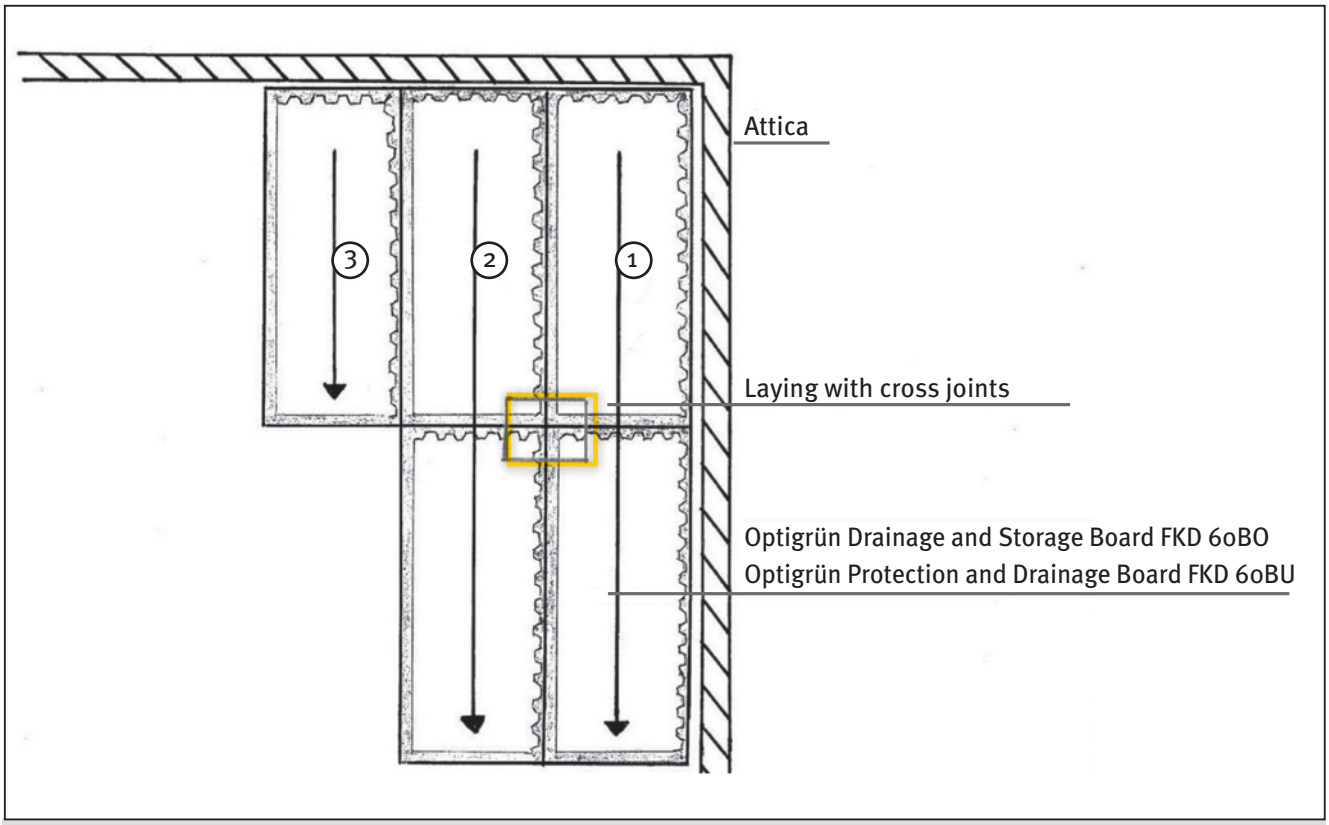

Figure 11: Installation pattern with cross joints

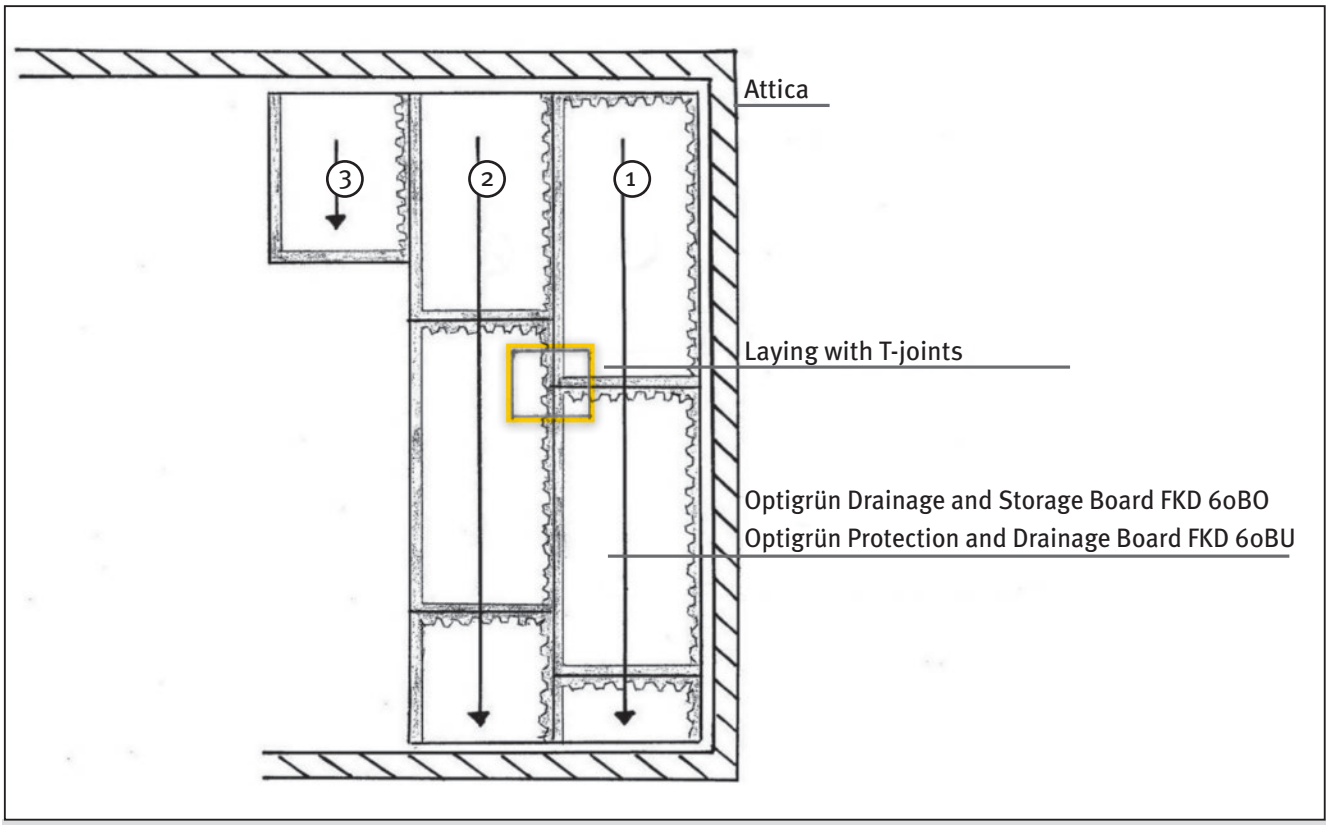

Figure 12: Installation pattern with T-joints

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Work step 3: Filling the Drainage Boards

Please note!
Immediately after installation, fill the panels with drainage material or temporarily weigh them down to protect against wind uplift. The FKD 60BO can also be filled with water, which counteracts unwanted expansion of the panel when exposed to high temperatures.

Variant 1:
Filled laying
- Under public roofs
- Under intensive roof greening with a substrate height over 40 cm

Figure 13: Filling with drainage material

Fill with drainage material without zero components (Optigrün Perl 8/16, chippings 2/5) level with the upper edge of the panel.
Do not drive over unfilled drainage boards. For the installation of bulk materials with construction vehicles in a pre-headed procedure, create straight transport paths with at least 100 mm overfill to drive over the drainage boards. Avoid strong steering manoeuvres.

Variant 2:
Unfilled laying (Substrate height up to 400 mm)
Special features:
- Under intensive roof greening with a substrate height of up to 400 mm (Optigrün Drainage and Storage Board FKD 60BO)

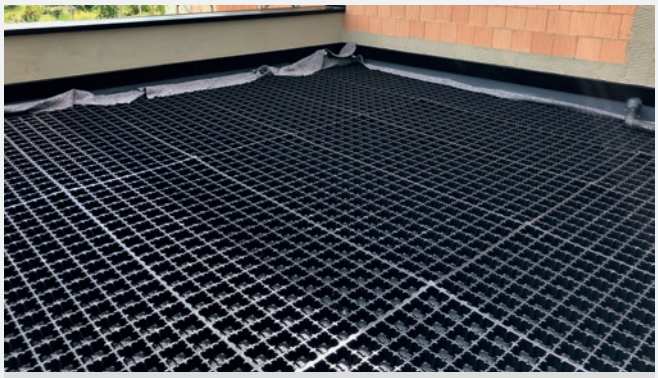

Figure 14: Unfilled laying of Drainage and Storage Board FKD 60BO

Please note!
It is not possible for vehicles of any kind to drive over the unfilled Optigrün Drainage and Storage Board FKD 60BO!
Accordingly, it is not possible to install bulk materials with construction vehicles in a pre-headed procedure.

Work step 4: Laying of Filter Fleece

Figure 15: Laying of Filter Fleece

Lay Filter Fleece with an overlap of at least 100 mm *Fig. 15* .
Use Optigrün Filter Fleece FIL 105 under intensive roof greening, Optigrün Filter Fleece FIL 300 under public roofs.

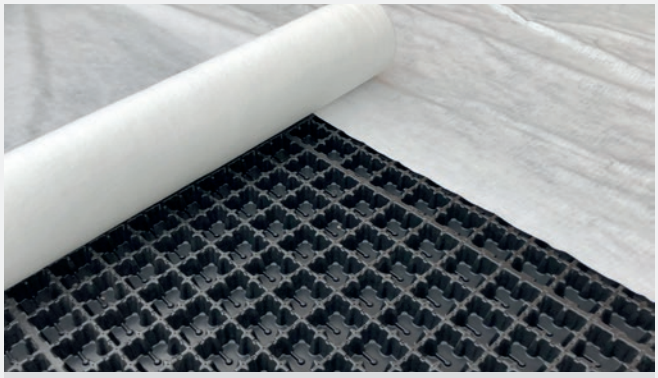

Figure 16: Unfilled laying with Optigrün Filter Fleece FIL 300

Please note!
If the Drainage and Storage Board is laid unfilled, lay Optigrün Filter Fleece FIL 300 with an overlap of at least 100 mm *Fig. 16* .

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Work step 5: Further layers according to planning

Figure 18: Applying substrate

Install further layers according to planning *Fig. 18* .

Example of application:
Intensive roof greening with Optigrün Lawn Substrate R, delivery in Big Bag 1.0 m³

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