

## Information on the installation and maintenance of green roof products



This document provides information on the installation and maintenance of green roof products. For other Kerabit roofing product installation instructions, please visit [www.kerabit.fi/en](http://www.kerabit.fi/en) > Instructions > Installation instructions and videos. The designer is always responsible for ensuring the applicability of the construction to the site.

Make sure beforehand that the structures withstand the load from the green roof.

**In installation work, weather conditions must be taken into account, for example, to allow safe lifting of the materials and keep the lighter materials from being caught by the wind. Safety at work must be observed at all times when working on roofs.**

### Kerabit Root Prevention Membrane

As the name suggests, Root Prevention Membrane is used as a protection against roots. Root Prevention Membrane is installed on top of other waterproofing layers by torch application all around. To prevent damage during the installation of other materials, Root Prevention Membrane must be protected against mechanical stresses for the duration of the work.



The side seams of the membranes must be overlapped by 100 mm, and the end seams by 150 mm. The overlapping must always be in the same direction with the fall of the roof. Consecutive membranes must be installed directionally with no coinciding overlaps in seams. The extension joints of consecutive membranes must be staggered by at least 500 mm. Upturns and edges should always be made of separate pieces.

For example, in upturns and other visible details that remain exposed to UV radiation from the sun, the root prevention membrane with a granulated finish must be used.

### Membrane bonding by torching

1. After opening the roll and aligning the membrane in place, roll back part of the membrane and start bonding the membrane to the decking.
2. Use a liquefied gas torch to heat the torch-on bitumen on the underside of the membrane. You do not have to remove the protective plastic. To ensure proper bonding to the decking, make sure that the torch-on bitumen melts evenly throughout the width of the membrane.
3. Do not overheat the membrane as this can damage the carrier layer!
4. The torch-on bitumen should spread outside the seam by approximately 10 mm.
5. Note: secure the end seams by heating the end of the membrane and pressing the granules into the bitumen using, for example, a trowel (see the adjacent figure).



Torching is hot work that requires a valid hot work licence.



## Green roof eaves flashing

The green roof eaves flashing is made of acid-resistant steel. The flashings are two metres long. Fastening with c/c spacing of 100 mm in a zigzag pattern using stainless steel screws of the appropriate type, e.g. ones with wide and flat heads. Refer to the separate Installation instructions of Kerabit eaves flashings.

## Green roof edge trim, perforated

The perforated edge trim used on the green roof lower eaves is made of 0.7 mm thick acid-resistant steel. Between the eaves flashing and the perforated edge trim, there must be a membrane strip torch-applied into both flashings, for example a 300–500 mm wide strip of Kerabit 4000 UT torch-on membrane.

The edge trim flanges are installed on the slope using mechanical fastening with c/c spacing of 100 mm in a zigzag pattern. Fixing is performed using stainless steel screws of the appropriate type, for example ones with wide and flat heads. The flange is perforated. A gap of 2–3 mm is left between the ends of the trims for thermal expansion, and an extension piece is fixed on the joint with screws. Root Prevention Membrane is torch-applied on top of the flange. Note: when installing membranes, be careful not to overheat the visible parts of flashings, for example, using a separate installation cover! Acid-resistant steel is susceptible to discolouration caused by heating.

On low-slope roofs, edge trims can be used to provide a vegetation barrier also in other places than eaves. In this case, the trim is installed on top of the drainage layer, making sure that the weight of the structures on top of it will keep it in place. Do not fix the trims mechanically as this can damage the waterproofing layer.



## Green roof verge trim



The green roof verge trim is used for green roof verges and top eaves. Like the green roof edge trim, it is installed onto the Kerabit 4000 UT torch-on membrane strip, but the extension piece is inserted inside the double part of the

trim. Note that the extension piece must be installed before installing the next trim! Mechanical fastening if necessary.

At corners, the corners of the trims are cut so that two trims will not overlap, and finally, a corner piece is fixed on the inside of each corner with stainless steel screws. Corner piece is installed after installation of Root Prevention Membrane.

If desired, you can have a coloured covering trim made and installed on top of the flashing.

## Green Roof Drain Frame

The Green Roof Drain Frame is made of acid-resistant steel and intended to be used as a vegetation barrier around the roof drain, protecting the green roof drain against blockages. The drainage outlets on the frame allow water to flow through the drainage layer further to the drain. The product is particularly suitable for green roofs with a thin substrate, such as sedum roofs.

The drain frame consists of four identical pieces assembled together on-site. The corners feature installation holes for the included screws used to attach the pieces together.

The drain frame is installed on top of the green roof's drainage layer, such as Platon DE 25 sheets or Kerabit QDrain. The filter fabric, substrate and vegetation come on top of the frame's flange.

The filter fabric can be turned up to the top edge of the frame. If desired, the inner part of the drain frame can be filled with pebbles – which act as an additional filtering layer and finish the appearance of the roof – or left empty, leaving the membrane (grey Kerabit Root Prevention Membrane) visible.



## Kerabit GreenDrain 25 and 40 sheets for water drainage and storage

The sheets are suitable for roofs with an inclination of 1:10 or less.

The sheets are installed with one overlapping row of chambers so that the bottoms of the studs face down. A filter fabric, such as N2/KL2, is installed on top of the sheet as a separation and filtering layer.

The sheets and filter fabric should be covered with substrate and vegetation immediately after installation to prevent wind from blowing the materials, for example. The sheets do not withstand long-term exposure to UV radiation.

## Kerabit QDrain 3D-GEOTEX drainage layer

Kerabit QDrain 3D-GEOTEX can be used as a drainage layer on green roof constructions, and it is also suitable for use with inverted constructions. QDrain is installed on top of Root Prevention Membrane or, in the case of inverted constructions, between Root Prevention Membrane and the thermal insulation. On one edge of the QDrain, the filter fabric extends over the core structure by 100 mm. The adjacent layer is installed between the filter fabrics.

The drainage layer should be covered with the designed top structures as soon as possible to provide protection against the sun and wind.

The product provides excellent water-carrying capacity also under load.

## Substrate

If necessary, green roofs should be installed with an appropriate substrate. The type and thickness of the substrate are selected based on the vegetation, construction and service conditions. A rake, for example, is used to level the substrate.

## Granular surface strips

It is recommended to have a 500 mm wide granular (pebble) strip on the roof edges and around any penetration, overlaid on top of the vegetation layer by approximately 250 mm. Pebble is used to protect the green construction and vegetation against wind erosion and, on low-slope roofs, wind suction loads. Pebble may also be used for fire safety reasons if so determined by the designer. If necessary, approximately 10–15 kg/m<sup>2</sup> of pebble can be applied on the sedum blankets to prevent wind damage and to slow down drying.



GreenDrain 25

Product picture coming

GreenDrain 40

Product picture coming

QDrain 3D-GEOTEX



## Care and maintenance of sedum roofs

During the first few weeks after the installation, the substrate should be monitored and kept moist at all times. The watering is then reduced gradually to allow the green roof to be accustomed to the natural environment. Once accustomed, the vegetation needs watering only during long spells of drought.

In order to remain beautiful, green roofs require periodical maintenance. They need to be checked and serviced at least twice a year. The maintenance includes, for example, ensuring the well-being of the vegetation and functioning of the technical roof systems, such as water removal.



Any unwanted plants, tree seedlings and extra material such as leaves and needles are removed from the roof. A thick layer of leaves or needles on a sedum roof may cause severe damage to the sedum.

Inspect critical parts of the roof, such as upturns and penetrations, with particular care. Remove debris and substrate material from the water removal system, and ensure unobstructed water drainage. Any plants growing in the pebble strips around the roof drains must be removed. Any water standing on the roof can drown and kill vegetation.

If necessary, green roofs are fertilised with appropriate fertiliser. The fertiliser should be sprinkled evenly and then watered lightly.

Any damaged spots in the sedum blanket can be patched with sedum plants or cuttings from elsewhere on the roof or by planting new seeds. The patches are watered until the plants/cuttings have rooted. Finally, the patches are fertilised.



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