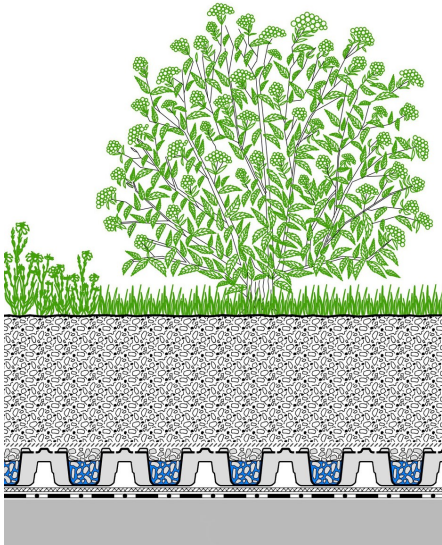


# Installation Instructions

## System Build-up "Roof Garden" with Floradrain® FD 60 neo

### Preliminary Remarks



- The following installation instructions describe the essential steps of applying this system build-up. Please note, however, the relevant standards and guidelines.
- Please be aware of this being a multi-layer build-up.
- This build-up is feasible on roofs with an inclination of up to 8°.
- On roofs without inclination a dam up irrigation with a storage height of up to 40 mm is possible.
- When working on roofs, which also includes the installation and maintenance of a green roof, applicable accident prevention regulations must be observed. Required fall protection devices need to be used according to site conditions.
- Prior to starting installation works the roof surface needs to be cleaned and checked for any kind of damages or leakages (visual inspection, possibly testing the waterproofing seams with a scribe ...). Any damage or leaks must be repaired immediately.
- During the construction works any damage to the roofing, as by falling objects, structural overload by material storage, walking, etc. is to be avoided. Appropriate safety devices are to be provided and to be taken into account.
- If material is to be stored on the roof, make sure that the roof surface is not structurally overloaded at any point.
- Please also note that the green roof materials are very light (except for the system substrate) and thus installation at risk of storm is not recommendable.
- If the roof is already equipped with a root resistant waterproofing, point 1 (Root Barrier WSB 100-PO) can be skipped and you can go straight to point 2 (Protection Mat ISM 50).

### Examples



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Life on Roofs

# Installation Instructions

## System Build-up "Roof Garden" with Floradrain® FD 60 neo

### 1. Root Barrier WSB 100-PO

In case of a waterproofing which is not root resistant the Root Barrier WSB 100-PO (Order No. 1084) is to be applied over the entire roof surface.

On any vertical building components, the Unsupported Flashing (Order No. 1195) can be used. It is to be fixed at its upper end using the Clamping Profile AP 60 (Order No. 7625) or the Clamping and Protection Profile AP 150 (Order No. 7640). It is recommendable for the Unsupported Flashing to be installed by a roofer along with the waterproofing works. The prefabricated corners (Order No. 1192) can be used both as internal and external corners.

#### Laying:

The WSB 100-PO is to be laid with an overlap of ca. 75 mm. In case of automatic welding the seams need to be at least 38 mm wide whereas for manual welding a width of at least 50 mm is necessary. The root barrier is to be hot air welded homogeneously either manually or automatically.

#### Cutting:

The Root Barrier WSB 100-PO can be cut using a cutter (with a hard blade) or a pair of stable utility scissors. When cutting, make sure not to damage the waterproofing under any circumstances!

However, in case of any damage, this must be reported and repaired immediately.

A circular piece of the root barrier needs to be cut out around roof outlets, approx. 10 mm larger than the outlet itself (a simple cross cut is not enough!).

*Should you require comprehensive instructions on how to weld the Root Barrier WSB 100-PO, please contact the ZinCo Technical Department.*



### 2. Protection Mat ISM 50

#### Laying:

The Protection Mat ISM 50 (Order No. 2050) is to be installed loosely with 100 mm of overlap. At roof edgings and other vertical building components it is to be taken up at least to the finished surface.

To protect the mat from UV-radiation or from being blown away it is to be

covered immediately after installation. Short-term protection against wind uplift can also be accomplished by moistening the mat.

#### Cutting:

It is recommended to cut the mat with a pair of stable utility scissors. When cutting, make sure not to damage the

waterproofing under any circumstances! However, in case of any damage, this must be reported and repaired immediately.

A circular piece of the protection mat needs to be cut out around roof outlets, approx. 10 mm larger than the outlet itself (a simple cross cut is not enough!).



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# Installation Instructions

## System Build-up "Roof Garden" with Floradrain® FD 60 neo

### 3. Floradrain® FD 60 neo

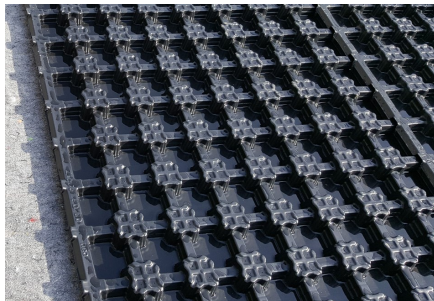
#### Laying:

The Floradrain® FD 60 neo Elements (Order No. 3062) are to be laid following a grid pattern with their diffusion openings facing upwards over the ISM 50 Protection Mat. The FD 60 neo elements are equipped with connecting folds all around their edges. The elements should be laid in such a way that in each case the larger fold covers the smaller one. This results in a certain direction of laying (see arrows on the edges of the boards), which must be maintained throughout the installation.

If the Floradrain® boards are applied in vegetated areas they are always to be filled with a loose material, preferably Zincolit® Plus. In case of paving slabs the Floradrain® boards need to be filled with stone chippings (granulation  $\leq 8$  mm). To protect the FD 60 neo from UV-radiation it is to be covered immediately after installation. Furthermore a protection against wind uplift is necessary. If the further build-up is not to be applied right afterwards the elements can be weighed down temporarily by filling them with water.

#### Cutting:

The drainage elements can be cut using a conventional angle grinder, an electric cutter or a hot wire. When cutting, make sure not to damage any of the previously installed layers under any circumstances! However, in case of any damage, this must be reported and repaired immediately. A hole which matches the aperture of the inspection chamber in size is to be cut into the drainage board at every roof outlet.



### 4. Filter Sheet SF

#### Laying:

The filter sheet is laid loosely over the drainage element Floradrain® FD 60 neo with some 200 mm of overlap. Along walls and other rising building components the Filter Sheet SF (Order No. 2100/2102) can be taken up. To protect the filter sheet from UV-radiation or from wind uplift it is to be covered immediately after installation.

#### Cutting:

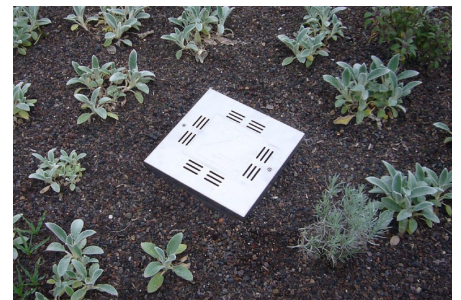
The filter sheet can be cut using a cutter (with a hard blade) or a pair of stable utility scissors. When cutting, make sure not to damage any of the previously installed layers under any circumstances! However, in case of any damage, this must be reported and repaired immediately. Around roof outlets a circular piece of the filter sheet needs to be cut out, approx. 10 mm larger than the outlet itself (a

simple cross cut is not enough!).

#### Installation Inspection Chamber:

An Inspection Chamber is placed directly on the protection mat above every roof outlet.

Any layers applied before are to be cut out in the size of the roof outlet. A simple cross cut is not sufficient. The drainage element is to be cut in a way it encloses the inspection chamber; the PE-collar is applied over the chamber and the filter sheet is laid around the chamber.



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# Installation Instructions

## System Build-up "Roof Garden" with Floradrain® FD 60 neo

### 5. Application of the System Substrate "Lawn" / "Roof Garden"

Depending on the size, accessibility and load bearing capacity of a roof one of the methods of substrate application listed below is particularly suitable.

*Regardless of the method, make sure that the roof is not structurally overloaded at any point (for example, by substrate mounts)!*

*Slabs or Big Bags can only be placed on sufficiently stable ground.*

#### Big Bag:

Big Bags are suitable for middle size and larger roof areas if a crane is available. They are hung with their four loops on the crane and are emptied directly on the roof surface - without being placed

on the roof – by opening the outlet valve on their lower side. By swinging the crane boom a rough distribution can already be achieved. The levelling is then carried out with a rake.



#### Bulk Material:

Bulk material is suitable wherever material can be applied with a chute. By

swinging the crane boom the substrate can already be distributed roughly.



### 6. Plant Application

#### Preliminary Note:

The system substrate "Roof Garden" is a component of the system build-up "Roof Garden". This is a multifunctional green roof build-up meant for demanding

perennials, with deeper substrate layers also for shrubs and trees.

The system substrate "Lawn" is especially suitable for the realization of lawns or in

deeper substrate layers also shrubs, herbaceous and tree plantings. For installation heights > 350–400 mm the mineral substrate Zincolit® Plus is to be applied additionally in both cases.

# Installation Instructions

## System Build-up "Roof Garden" with Floradrain® FD 60 neo

### 6. Plant Application

#### Plant Application:

Prior to planting the plug plants need to be watered. Then they are to be distributed evenly on the surface to be greened and to be taken out of their pots. If desired for reasons of design, single species can be planted in lines or larger groups. Once all the plants are laid out professional planting can begin. The root balls are to be buried in a depth so that they are covered with a thin layer of substrate. Then the surface needs to be irrigated thoroughly. Make sure that the area doesn't get too dry until the plants have taken root (first 4–6 weeks).

#### Realisation of Lawn:

The installation of turf respectively the application of lawn seeds can take place immediately after grading and compacting the substrate. Make sure that the substrate was not segregated superficially by rain before applying turf or seeds.

#### Planting Period:

Generally the green roof build-up can be applied throughout the year as long as there is no frost. The application of plants is more or less seasonally determined depending on the kind of application. Planting is possible from spring to autumn, while plantings in May / June will provide the best results. Late plantings could result in damage by frost, especially if the plants are insufficiently rooted in the substrate.

#### Requirements:

The number of plug plants per m<sup>2</sup> depends on the plant species and the pot size. For perennials in pots of 90 mm of diameter about 6-10 pcs per m<sup>2</sup> are recommended. If faster ground coverage is desired, the plant density needs to be increased accordingly. Shrubs and trees are planted at greater distances according to the species.

#### Maintenance:

According to the FLL Green Roof Guideline object-based maintenance goals are to be defined, tailored to the application type, the type of vegetation, and the development status and development direction. A general goal for the green roof type "Roof Garden" is to achieve and maintain an appealing greening. This does not necessarily include a high effort - but it requires knowledge of plants and intervention at the right time. In case of drought irrigation may be necessary.

