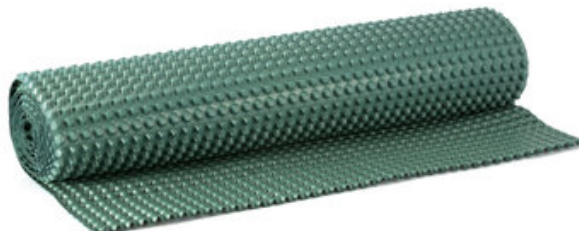


### DANODREN R-20

HDPE Nodular reservoir and drainage layer.



BBA 14/5118 (1)

Danodren R-20 is a nodular membrane made of high density polyethylene (HDPE) in green colour, with 20mm deep nodules and overflows.

#### Presentation

- Length (cm): 2000
- Width (cm): 200
- Colour: Green
- Thickness (mm): 20
- Surface (m<sup>2</sup>): 38
- Product code: 314051

#### Technical Data

Concept	Value	Standard
Compression strength (kPa)	>150	UNE EN ISO 604
Horizontal flow drain (L/s.m)	10	-
Water retention (l/m <sup>2</sup> )	5	-
Temperature resistance max. (°C)	80	-

#### Additional Technical Data

Concept	Value	Standard
Number of nodules (nodules/m <sup>2</sup> )	400	-

## Standards and Certification

- In accordance with the UNE 104-402/96 standard
- GA-6 membrane.

## Scope

- Drainage, protection and water retention of extensive green roofs on all types of buildings.

## Advantages & Benefits

- Easy and quick to install.
- Large water reserve capacity.
- Rot-proof.
- Chemically unchanged when in contact with chemical agents present in the soil (sulphates, chlorides, etc).
- Allows for the transformation of traditionally concrete or asphalt surfaces into green spaces that positively influence the urban microclimate.
- Provides permanent drainage.
- Resistant to breakage, impact and does not deform.

## Instruction for Use

Preparation of the substrate:

- The surface of the base substrate must be resistant, uniform, smooth, clean, dry and free of foreign bodies.
- The singular points must also be prepared before starting the laying of the membrane: chamfers or chamfers at junctions with vertical faces, reinforcements, joints and other singular points.
- In this case the substrate is a waterproofing membrane. All measures must be taken to avoid puncturing the waterproofing membrane during the laying of DANODREN R-20. As it is a product used in the drainage of garden roofs, the last sheet of the waterproofing system will be Esterdan Plus 50 GP Jardín, a sheet with an anti-root treatment.

Laying the drainage sheet

Once the waterproofing has been completed, we will proceed with the installation of the green roof:

1. Laying out the technical corridors: laying out the roof to place the technical corridors (formed by DANOSA FILTERING TILE), surrounding the drains, skylights and other singular points. These will be passed over during the execution of the project, as well as during subsequent visits or inspections.
2. DANODREN R-20 Retainer: the product shall be deposited with the nodules against the waterproofing, covering the entire surface. It is important not to walk over the nodular sheet if it is not covered by the substrate layer, making use of the technical corridors intended for this purpose.
3. Geotextile: spread the DANOFELT PY 200 geotextile, overlapping the pieces and assembling them on top of the filtering slab for a length of about 25 cm so that it can be cut at the end of the execution of the roof.
4. Substrate: ECOTER SUBSTRATE: on the geotextile, manually spread the substrate layer (minimum 6 cm). This layer contains materials rich in nutrients, capable of providing the necessary food for the plants. On top of the lower layer of ECOTER SUBSTRATE, we will spread the upper layer of VOLCANIC ROCKS (min.

3 cm). This is a highly porous material, capable of absorbing and retaining the water used by the plants. They are sufficiently inert to largely avoid the spontaneous generation of plants that could damage the functioning of the cover.

5. Sedum Plastas: they shall be placed in the substrate layer in an amount of at least 15-20 units/m<sup>2</sup>. It is recommended that the roof is watered after completion to allow the DANODREN R-20 to retain water for the first time. Its moisture retention level will be maintained with subsequent rainfall.

## Indications and Important Recommendations

- Store in a dry place, protected from rain, sun, high and low temperatures.
- The product is not toxic or flammable.
- Can't be used as waterproofing.

## Handling, storage and preservation

- The product must be stored in a dry place protected from rain, sun, heat and low temperatures.
- The product must be stored in an upright position.
- The product will be used on a first-come, first-served basis.
- This product is not toxic.
- Waterproofing work must not be carried out when weather conditions may be detrimental, in particular when it is snowing or there is snow or ice on the roof, when it is raining or the roof is wet, surface dampness >8% according to NTE QAT, or when a strong wind is blowing.
- No welding work should be carried out when the ambient temperature is lower than -5°C for hot air welding, nor lower than + 5°C for welding with THF or with Adhesives.
- Danosa recommends consulting the safety data sheet for this product, which is permanently available at [danosa.com](http://danosa.com), Knowledge Portal, or it can be requested from our Technical Department.
- In all cases, the Occupational Safety and Hygiene standards, as well as the standards of good construction practice, must be taken into account.
- For further information, please contact our Technical Department.

## Notice

- The information contained in this document and any other advice provided, are given in good faith, based on DANOSA's current knowledge and experience when products are properly stored, handled and applied, in normal situations and in accordance with the recommendations of DANOSA. The information applies only to the application (s) and the product (s) to which reference is expressly made. In case of changes in the parameters of the application, or in case of a different application, consult the DANOSA Technical Service before using the DANOSA products. The information contained herein does not exonerate the responsibility of the building agents to test the products for the application and intended use, as well as their correct application in accordance with current legal regulations. The product images used in our communications are indicative and may differ slightly in color and aesthetic appearance in relation to the final product. Orders are accepted in accordance with the terms of our current General Sales Conditions. DANOSA reserves the right to modify, without prior notice, the data reflected in this documentation. Website: **[www.danosa.com](http://www.danosa.com)** E-mail: **[info@danosa.com](mailto:info@danosa.com)** Telephone: **+34 949 88 82 10**