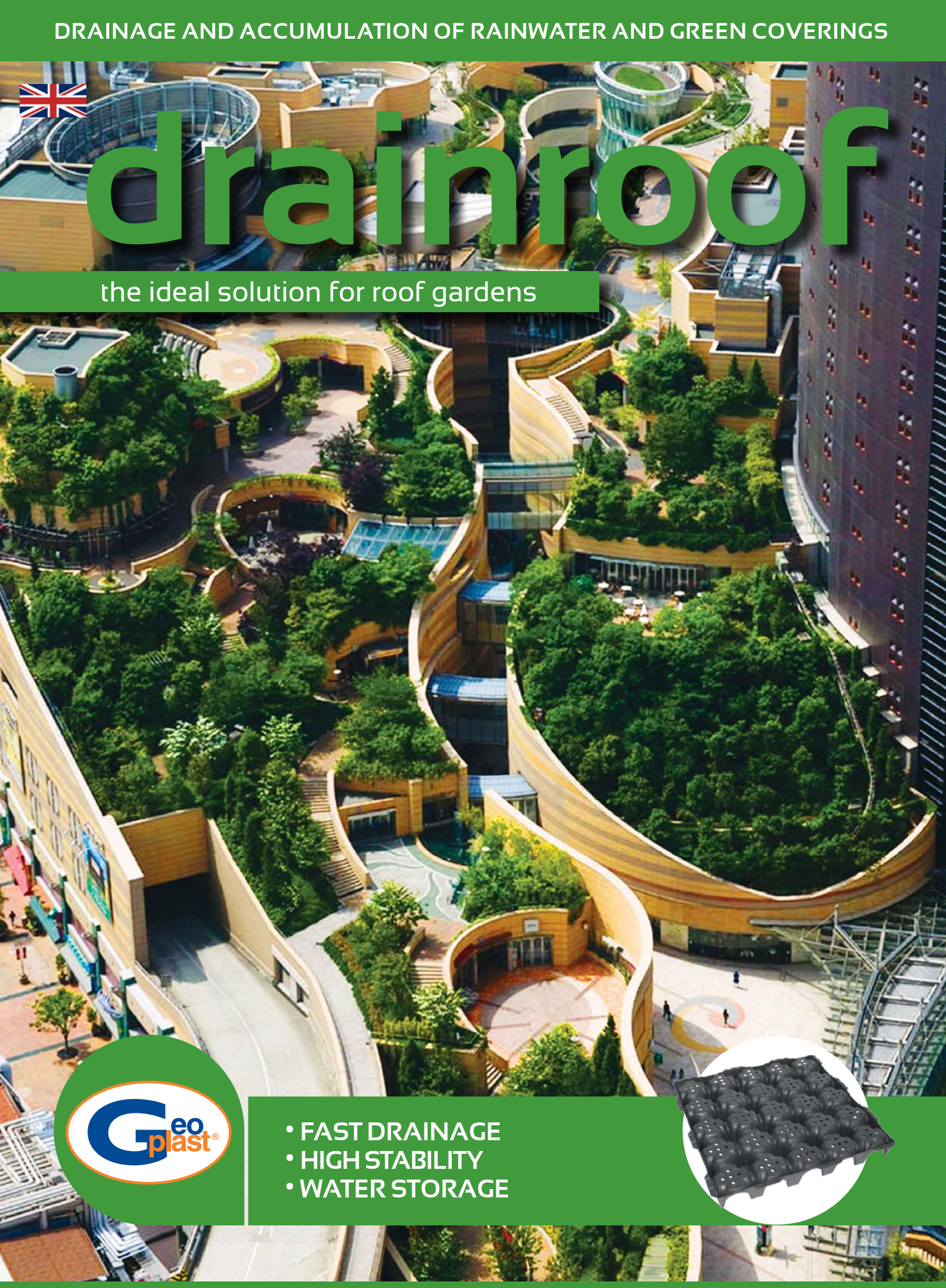
DRAINAGE AND ACCUMULATION OF RAINWATER AND GREEN COVERINGS

drainroof

the ideal solution for roof gardens



- FAST DRAINAGE
- HIGH STABILITY
- WATER STORAGE

www.geoplast.it

DRAINROOF VISION

It is not just beautiful to see, but it is also healthy!

It is the space where we live that allows us to reconnect with Nature. Nature has always characterized the lives of the human beings donating comfort and peace.
The place is the one that allows us to recreate the bound we have always had with plants.
It protects our home, our family and us and it improves the quality of our lives.

We have worked to let green roof gardens in our life.

The green roof garden is regulated by the Uni norm number 11235: Directives on Design, Execution, Control and Manteinance of the green covering, which gives all the information about the garden and its components, in order to mantain the agronomy capability, the ventilation, the drainage, the water accumulation and the resistance to biological attacks.

The legislation of the 10 of February 2013 and the resolution of the Ministry of Environment and Economic Development of the 14 of April 2014 confirmed the importance of a roof garden in order to acommodate the energy saving. Furthermore it reserves tax incentives for new buildings and restorations.

Geoplast S.p.A. in Green Building Council Italy,
The Network for Eco-friendly construction

DRAINROOF APPLICATION RANGE

DRAINROOF is the drainage and accumulation element for the creation of roof gardens on slabs and plates made of concrete. It was specifically designed for green roofs because it offers an high rainwater disposal capability, avoiding stagnation and protecting the waterproofing layer. DRAINROOF high load capacity allows the creation of any type of garden, extensive light gardens and more usable intensive gardens. The panel two different heights, 6 and 2.5 cm, allows the ventilated crawl space to grow and they also help to limit the coverage thickness.

- ROOF GARDENS
- GREEN TERRACES
- SET OF GREEN ISOLATING PACKAGES
- COVERING OF UNDERGROUND GARAGES

DRAINROOF ADVANTAGES

the solution for water drainage and accumulation on roof gardens

drainage

DRAINROOF, allows a fast disposal of rainwater thanks to its channels and perforated surface

ventilation

Thanks to its dome strutcture, **DRAINROOF** guarantees a separation between the vegetable set and the slab, in order to make it ventilated and eliminate any possible water stagnation

resistance

DRAINROOF load capacity of more than 3.000 kg/m^2 allows the realization of any stratigraphy and the use of mechanical means

storage

DRAINROOF accumulates the water for the irrigation of the surface plants in the supporting feet

design

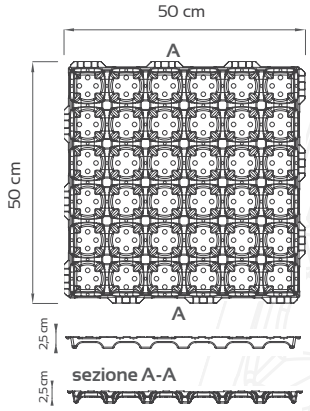
DRAINROOF was designed to be installed on coverages; the dry laying is fast and easy; and the coupling facilitates the surface stability

material

DRAINROOF is made of regenerated Polyproplylene, that is a plastic material resistant to chemical attacks and other alkaline and alchoolic substances

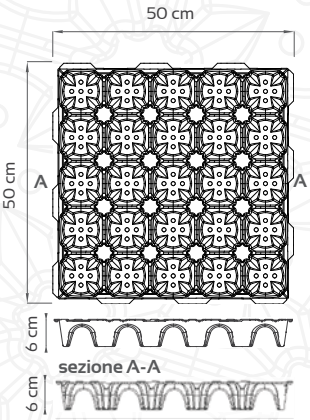
DRAINROOF

DRAINROOF H2,5



	DRAINROOF H2,5
REAL SIZE (cm)	50 x 50 x 2.5
Material	Regenerated polyproylene
Compression (kg/m²)	3.200
Weight mq (kg)	2.39
Weight per item (kg)	0,6
Drain surface(cm²/m²)	547
Water storage (l/m²)	1.32
Discharge Volume	17.2
Solubility	Resistance to organic and acidic, alkaline, alchoolic substances
Packaging dimension (cm)	100 x 120 x 230
Items per pallet	1.440
m² per pallet	360

DRAINROOF H6



	DRAINROOF H6
REAL SIZE (cm)	50 x 50 x 6
Material	Regenerated polyproylene
Compression (kg/m²)	6.000
Weight mq (kg)	4
Weight per item (kg)	1
Drain surface(cm²/m²)	318
Water storage (l/m²)	12
Discharge Volume	40
Solubility	Resistance to organic and acidic, alkaline, alchoolic substances
Packaging dimension (cm)	124x 103 x 240
Items per pallet	720
m² per pallet	180

ACCESSORIES
GEO-TEXTILES

	GEO- TEXTILE 200 g/m² Protection textile of the layer during the placing	GEO-TEXTILE 150 g/m² Textile separation from the underlayer
Weight (g/m²)	200	150
Thickness (mm)	1,20	0,90
Tensile strenght (kg/m) long.	1,8 transv. 2,3	11 transv. 11
Elongation and fracture (%) long.	80 transv. 80	55 transv. 55

DRAINROOF
EXTENSIVE ROOF GARDEN

The typical application of the extensive roof garden is the green roof, which is created with plants that does not require manteinance and irrigation as the sedum and other similar species. These plants need a limited thickness underlayer: the set is light and can be installed on any existent roof, both plane and inclined. The extensive set is easy to realize and mantain and guarantees all the advantages of the green roof gardens. It absorbs most of the rainfalls, protects the coverage and isolates the building thermally. Keeping a stable temperature, it can improve the yeld of the photovoltaic panels which are generally pulled alongside.

The extensive roof garden can be used with **DRAINROOF H6** or **DRAINROOF H2,5** cm depending on the project.

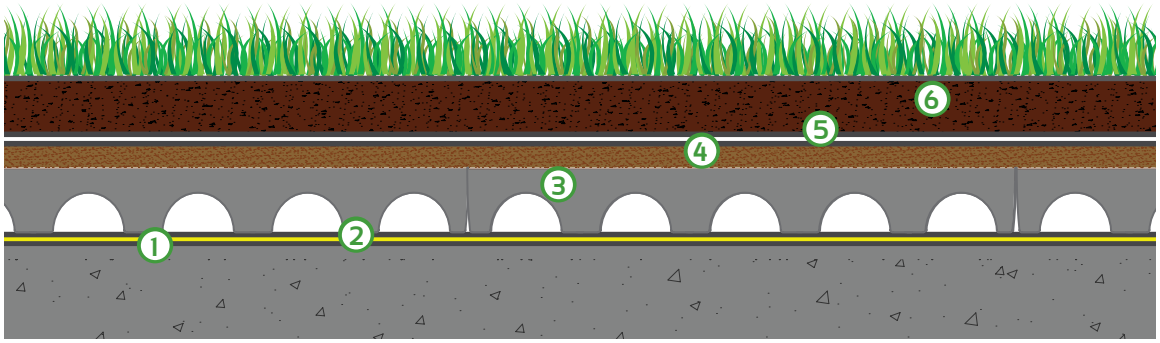
CHARACTERISTICS

- Cost-effective set
- Lower costs of mantainance and realisation
- Different biodiversity levels depending on the species

WEIGHT	70 - 250 Kg/m²			
SET THICKNESS	8 cm	15 cm	20 cm	
VEGETATION TYPE	Sedum - Perenial grass- Turfs			
WATER RETENTION	50 - 60%			
STORAGE VOLUME	min 20 l/m²			
ECOLOGICAL VALUE	■	■		
LAYING SAVINGS	■	■	■	■
MANTEINANCE SAVINGS	■	■	■	■

EXTENSIVE ROOF-GARDEN

1 UNDERLAYER
2 GEO-TEXTILE 150g/m²
3 DRAINROOF H6 or H2,5
4 VOLCANIC LAPILLUS
5 GEOTEXTILE 200g/m²
6 ROOT RESISTANCE SHEATH



THE VEGETATION can be realized with seeding, hydro-seeding or can be sod laid.

WATERPROOFING LAYER

The system shoul be provided with a waterproofing element which resists to the roots and to the mircroorganisms. These functions can be avoided using varoius layers (waterproofing sheath-anti-root membrane) or a single system

1

GEO-TEXTILE 200g/m²

In order to protect the waterproofing elements more, the installation of a Geo-textile TNT 200 g/m² is recommended- Roof gardens require also a concrete slab floor as a protection.

2

DRAINROOF H6 o H2,5

DRAINROOF panels can be used both for extensive and intensive roof gardens. The choice of the panel depends on the storage volume of the water, required form the need of limiting the thickness of the finished set.

3

VOLCANIC LAPILLUS

Filling of DRAINROOF H6 up to a thickness of i 2 cm over the edge of the element with pumice stone or volcanic lapillus, grain size 10-12 mm, high water absorption capacity (not required for DRAINROOF H2,5)

4

GEO-TEXTILE 150 g/m²

Place the TNT di 150 g/m² Geo-textile between the filling material and the sub-layer. The geo-textile works as a filter for the water of disolved particles

5

SUB-LAYER

The thickness varies from the the types of plants that are going to be planted on the surface. Thichness 8 and 20 cm

6

DRAINROOF
INTENSIVE ROOF GARDEN

The intensive roof garden can be used as a real garden. Therefore, it requires a stratigraphy capable of housing high-stem trees because the set thickness is large and the slab can easily sustain an heavy load. It is certainly a more expensive solution in terms of manteinance and realization, but at the same time it guarantees many performance benefits. An intensive roof garden is able to absorb an high quantity of rainwater in order to better manage the water in the housing and urban areas. It can be used as a isolating layer, lowering the peaks of heat during summer and as a thermal insulation coating in winter.

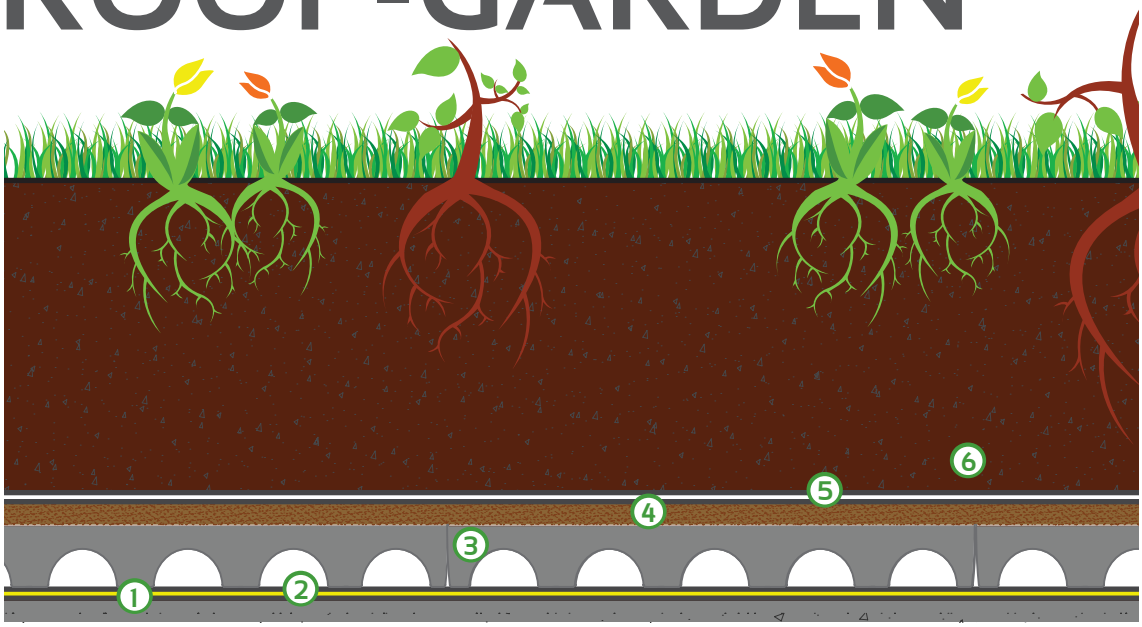
The intensive roof garden can be realized with DRAINROOF H6 or DRAINROOF H 2,5 cm depending on the project.

CHARACTERISTICS

- Completely usable space
- High energy efficient set
- High level of biodiversity
- An automatic irrigation system is required

WEIGHT	> 300 - 2000 kg/m²			
SET THICKNESS	30 cm	50 cm	80 cm	
VEGETATION TYPE	Turfs- Arbusti - Trees			
WATER RETENTION	70 - 95%			
STORAGE VOLUME	min 45 l/m²			
ECOLOGICAL VALUE	■	■	■	■
LAYING SAVINGS	■	■		
MANTEINANCE SAVINGS	■	■		

INTENSIVE ROOF-GARDEN



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4 VOLCANIC LAPILLUS
5 GEO-TEXTILE 200g/m²
6 ROOT RESISTANCE SHEATH

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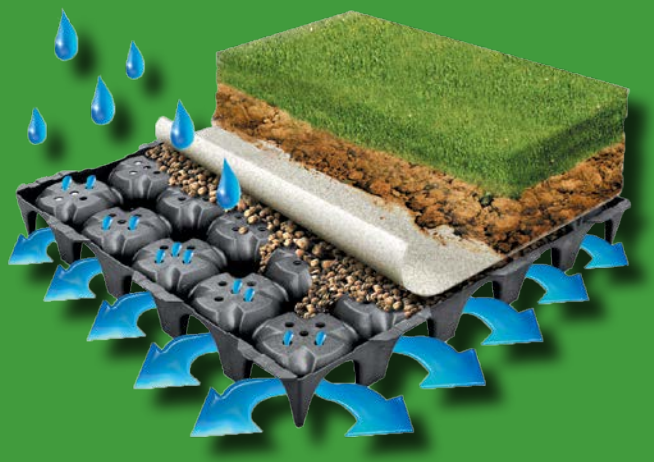
THE BENEFITS OF ROOF GARDENS

PROTECTION OF THE SHEATH
from the sudden temperature changes, from the UV rays and from the atmospehric agents. The coverage life grow of the 20%



LOWERING OF THE RUN-OFF PEAKS
A roof garden absorbs the 50% of rain-water, lowering the quantitiy to dispose in the urban sewer

MICROCLIMATE REGULATION
through the evaporation and evapotran-piration of the absorbed water, in order to refresh the environment

INCREASE OF THE PHOTOVOLTAIC PROFIT
thanks to the maintenance of a more stable temperature, within the range to obtain an high profit

INCREASE OF THE COMMERCIAL VALUE
The roof garden offers new usable spac-es and increases the the energy profit of building'coating

THERMAL AND ACOUSTIC INSULATION
The green set is used as an insulating layer: in winter it isolates thermally, while in summer it is used as a solar shield

SEDUM EXTENSIVE ROOF GARDEN

DRAINROOF
Sale Marasino
(BS) 600 m²

Resistant and safe **roof garden**

Fast to install
Rainwater disposal
Ventilation of the slab

DRAINROOF is the more efficient system for rainwater disposal. Its dome structure allows the realization of channels which can dispose the water even during heavy rainfalls. The water stagnation is eliminated thanks to the ventilated cavity. DRAINROOF it is also designed to make the place safe and easy and can be easily moulded according to the needs.

EXTENSIVE GARDEN WITH PHOTOVOLTAIC PANELS

DRAINROOF
Vercelli 1.300 m²

Extensive garden
higher efficiency

Saving
Minimal weight
Photovoltaic profit

It is scientifically proven that the roof garden allows the increase of the photovoltaic panels profit. In fact, the vegetation keeps the temperature stable, avoiding the peaks of heat during summer. The photovoltaic panels have the highest profit within a specific temperature range, so the installation is increasingly made on roof gardens.
DRAINROOF allows the realization of a light roof garden, ensuring a safe sealing layer in order to increase the duration of the coverage.

SLOPING ROOF EXTENSIVE GARDEN

DRAINROOF
Estonia 130 m²

Extensive garden
Acoustic and thermal insulation

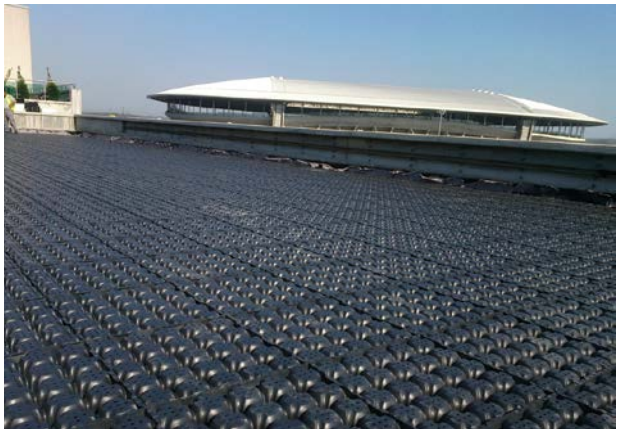
Vegetation variety
Water management
Thermal and acoustic insulation

DRAINROOF allows the creation of a real protection layer on the roof. The underlayer absorbs almost the 50% of rainwater, favouring the water management and giving back to the surface the initial portion of lawn. In this way, the biodiversity is safeguarded and the energy efficiency standard is reached. The stratigraphy of the roof garden is a real isolating for the coverage. It resists to the UV rays and lowers the temperature during summer, thanks to the evapotranspiration and it keeps the coverage isolated in winter.

ROOF GARDEN
INTENSIVE ROOF GARDEN

DRAINROOF
Turkey 1900 m²

Intensive roof garden
High resistance to loads



High resistance
Inerzia chimica del materiale
Set ventilation

DRAINROOF is characterized by high resistance and high load capability and allows the creation of any stratigraphy, housing high-stem trees too. Thanks to its resistance is it possible to use machanical means without damaging the waterproof sheath. Moreover, thanks to the ventilated separation that DRAINROOF creates, the water stagnation and the roots descendance until the covering layer is avoided.

SLOPING ROOF INTENSIVE GARDEN

DRAINROOF
U.S.A. 700 m²

Intensive garden
Specific design

Fast drainage
Easy to place
Specific coupling

DRAINROOF was specifically designed for coverings, and it's very easy to place. The coupling system links the panels with each other, avoiding liftings and moves; moreover the dome structure made of plastic avoids any flotation phenomenon. DRAINROOF can't get soaked in water and resists to chemical agents. In the case of sloping roofs is it possible to easily hook the panel to the structure.

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