

CUPOLEX®

GREEN ROOF SYSTEMS



We've done more green roofs than anyone. Bigger green roofs than anyone. Customized to suit unique Canadian Climates.

- At your service: Soil engineers, Bi-scientists, Composite Material Consultants, Horticulturists, Local Growers, and an Experienced Roof Membrane Manufacturer.
- We feel extremely confident that our TEAM is the most cost efficient of the all-inclusive green roof assemblies, most professional and experienced, having the most available resources in today's garden roof market.
- Each rooftop is a unique microclimate, with varying factors such as region, height protection from other buildings, wind patterns, freeze/thaw cycle, weather extremes, etc., which is why our TEAM provides 'Made in Canada' solutions.



PONTAROLO ENGINEERING CUPOLEX WINDIDRAIN APPLICATIONS:

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Winner Second Place
Innovative Product
Technology Toronto
Construction Ass.

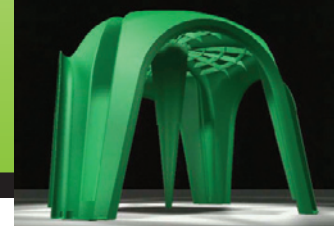
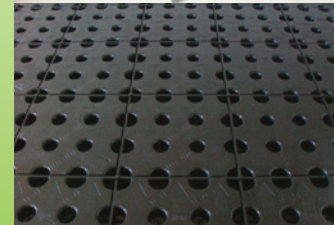
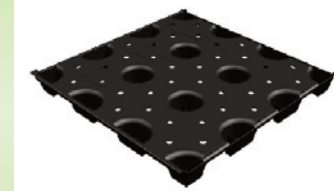


XII Trofeo Internacional
de la Construcción
2000, Spain



WINDIDRAIN

DRAINAGE/WATER STORAGE/AERATION



CUPOLEX®

GREEN ROOF SYSTEMS

ADVANCED, INNOVATIVE,
MODULAR, SUSTAINABLE,
ENERGY EFFICIENT

Green Roof Systems That Rise To The **TOP**

PATENTED



PONTAROLO® ENGINEERING



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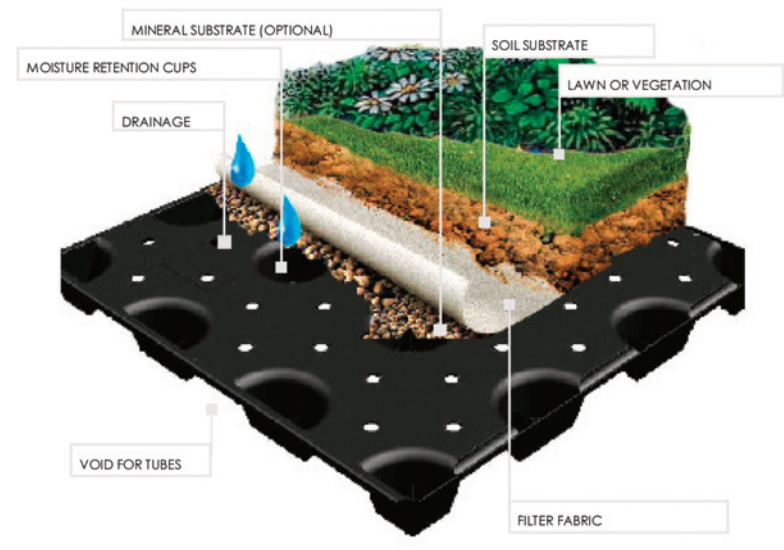
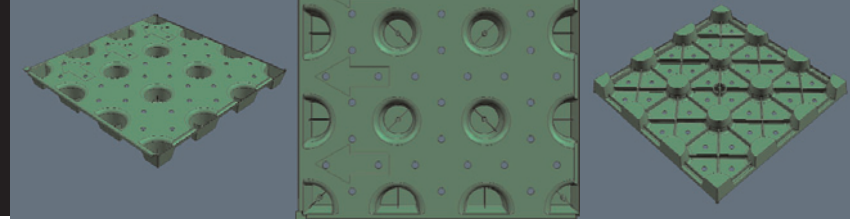
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PONTAROLO® ENGINEERING

Research/Know-How/Patents/Sustainable Building Technologies



THE ESSENTIAL ELEMENTS FOR GREEN ROOFS & ROOF GARDENS



CUPOLEX WINDIDRAIN®

ADVANTAGES, FEATURES AND BENEFITS

- Rounded feet allow elements to be applied directly on the waterproofing;
- Unlike other systems, WINDIDRAIN® creates a consistent cavity underneath in all directions for passing of irrigation systems, pipes or other services;
- Adaptable for both flat and sloped roofs thanks to its patented interlocking design; elements will not move once installed and loaded with substrates;
- Excellent component for Extensive and Intensive roof assemblies;
- Cost Competitive;
- High compressive strength of 6000 kg/m² (9.0 Psi), allowing for a variety of landscape surfaces, pavers, concrete slabs, pedestrian and vehicular traffic;
- Suitable for steep roofs, due to its patented interlocking system;

- Rounded feet allow elements to be applied directly on the waterproofing
- Unlike other systems, WINDIDRAIN creates a consistent cavity underneath in all directions for passing of irrigation systems, pipes or other services
- WINDIDRAIN elements may also be installed on sloped roofs thanks to its interlocking design.

- Superior drainage of excess water/flow rates;
- Ideal for use with lightweight engineered soils;
- Speed and simplicity of assembly are the primary benefits;
- Ventilation and aeration in all directions;
- Made of 100% recycled high density polyethylene plastic;

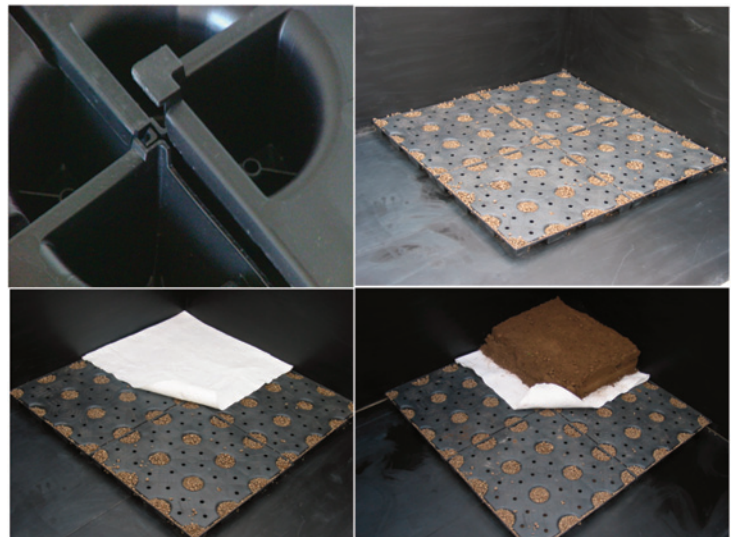
- Endless adaptability. Quick cutting using circular saw in unique situations.
- CUPOLEX WINDIDRAIN® is available in 50mm and 100mm heights and is a patented product.



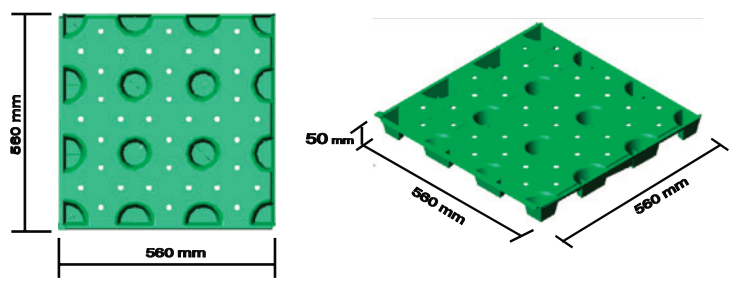
ASSEMBLY PROCEEDINGS:
Each unit has an installation arrow. Commence installation by starting from left to right in rows, then repeat checking joints on feet base

FAST ASSEMBLY WITH NO NEED OF SKILLED LABOUR

ON AVERAGE TWO LABOURERS INSTALL 150 M²/HR



MATERIAL PROPERTIES	100% RECYCLED POLYETHYLENE
DIMENSIONS	560 mm X 560 mm X 50 mm
COMPRESSIVE STRENGTH	6000 KG/M2 (9.0 Psi)\
APPLICATIONS	EXTENSIVE OR INTENSIVE
WATER RETENTION	10 L/M2
WEIGHT PER UNIT	1.0 Kg
PACKAGING	700 PIECES. (220 M2) PER PALLET



Drainage/Water Storage/Aeration

WINDIDRAIN® provides superior water drainage, water storage, and aeration to create a harmonious balance of air and water in the substrate soil.

The WINDIDRAIN® elements are specifically designed for extensive and intensive systems where substantial water retention is required for plant usage. They are light weight panels made of 100% recycled polypropylene, moulded specially and designed with retention cups and drainage. The unique design allows for the free drainage of excess water, achieving flow rates from 10 to 30 times higher than that of conventional drainage methods. At the same time, the system is engineered to promote irrigation through capillary action and evaporation into the soil/vegetation level. WINDIDRAIN® may easily be installed over waterproofing membranes or insulation. It is easily cut to fit around penetrations, perimeters, and drains. In applications where intensive systems are required, the retention cups may be filled with mineral substrates.

WINDIDRAIN® may also be installed to create green areas where it was not previously possible. Plants and flowers, now may easily be achieved on existing roofs, terraces and paved yards.

The WINDIDRAIN® system, has a wide range of utilizations: To change the terrace floor into a garden plot with shrubs and trees, is easy as laying the WINDIDRAIN® elements on an existing terrace or balcony, applying the required filter fabric, laying the soil and planting.

Your TEAM of Green Roof Systems Professionals

Pontarolo Engineering is associated with a **diversified** group that is capable to coordinate and provide **sustainable** and **durable** garden roofs with a 'TEAM' approach, from the roof assembly to the complete plantings. We believe strongly that our team is the most comprehensive in the green roof industry.

The **TEAM** provides:

- Available technical support with established green roof advisors
- Consultants knowledgeable in plants and bio-engineered growing mediums, able to assist the design professional and landscape architect
- Available technical literature, system samples, updated literature to meet the designer's requirements
- Recorded, proven track record of lightweight garden roofs in Canada.

Your **TEAM** of Green Roof Systems Professionals will ensure that the client will inherit an **UNMATCHED** garden roof in terms of overall performance, for years of enjoyment

