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Vegetal I.D. is a team of living infrastructure experts dedicated to the development and manufacture of living technologies that perform well over time, while keeping the installation and maintenance simple. Since 1993 we have worked to refine our plant mix, growing medium, and invented technologies to solve stormwater management issues. In 2000 we invented the first green roof tray, HYDROPACK®. A product that is shipped pre-vegetated and ready to install. In 2011 we launched STOCK & FLOW®, a revolutionary combination of green and blue roof technology to increase water retention and control the release of rainwater from the roof.

Our Nursery is located in Batavia, New York between Buffalo and Rochester, only a few miles from the Canadian border.

Vegetal I.D. is driven by an imperative to provide extraordinary customer service. Our experts provide technical support for every installation. We offer assistance to the building owner to organize a green roof maintenance plan.
At Vegetal i.D., we believe that high quality living infrastructure begins with the plants, and this is the foundation of our success. Our company has been forged around the perspective of our founder, who is before anything else a farmer. It is from this perspective that all Vegetal i.D. green roof technologies are grown under our care to ensure that we provide clients with resilient high quality green products.

We recognize that not everyone is a gardener. That is why we believe it is our responsibility to adapt to the building industry, rather than the other way around. Our products are easy to install by people who specialize in building, not plants. Our systems are easy to maintain, and we provide tools to support building owners in long-term maintenance in order to create long lasting healthy green roofs.

We are at the forefront of our industry in the development of next generation green roofs that are easy to implement and easy to maintain with proven long-term performance.
**HORTICULTURAL SPECIALIST**

**STRATEGY OF INNOVATION**

**ALL-ROUND EXPERTISE**

<table>
<thead>
<tr>
<th><strong>KEY DATES</strong></th>
<th></th>
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<tbody>
<tr>
<td><strong>1991</strong> First semi-intensive green roof projects</td>
<td></td>
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<tr>
<td><strong>1993</strong> Sedum mat production launched</td>
<td></td>
</tr>
<tr>
<td><strong>1997</strong> Development of a complete system featuring drainage solutions, a growing medium and vegetation</td>
<td></td>
</tr>
<tr>
<td><strong>2000</strong> Invention, design and patenting of the first pre-grown module system: HYDROPACK®</td>
<td></td>
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<tr>
<td><strong>2003</strong> Development of living wall solutions</td>
<td></td>
</tr>
<tr>
<td><strong>2009</strong> Large-scale green roof projects in international markets</td>
<td></td>
</tr>
<tr>
<td><strong>2011</strong> Creation of a North American subsidiary</td>
<td></td>
</tr>
<tr>
<td><strong>2013</strong> Launch of STOCK &amp; FLOW®, the innovative rooftop stormwater retention solution</td>
<td></td>
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</table>
THE NEW GREEN ROOF
STORMWATER MANAGEMENT SOLUTION

STOCK & FLOW

- Controlled runoff flow with site-specific rate
- 2.3” of additional water retention year round
- Invisible & autonomous irrigation system
- Healthy plants with increased drought resistance
- All-in-one solution, flexible for any design

THE FIRST BLUE ROOF – GREEN ROOF COMBINATION
HIGH PERFORMANCE LIVING INFRASTRUCTURES
1. HYDROPACK green roof tray

2. Rain fills up the growing media

3. Rain fills up the water reserve of HYDROPACK.

4. Rain fills up the HYDROSTOCK water reservoir in STOCK & FLOW

5. Our FLOW CONTROL controls the release rate of water contained in STOCK & FLOW

6. IRRIG’UP passively waters the plants by wicking up water from STOCK & FLOW’s reservoir.

THINK OUTSIDE THE BOX FOR STORMWATER REGULATION COMPLIANCE.
USE SOLUTIONS THAT ARE BEAUTIFUL WITHOUT SACRIFICING PERFORMANCE.
**YOU ASKED FOR RUNOFF FLOW CONTROL**

You can adjust the flow rate to the specifications of your site, as low as 0.15 cubic feet per second.

The flow rate is constant while STOCK & FLOW is releasing its water reserve.

**YOU ASKED FOR BEAUTY**

STOCK & FLOW is combined with HYDROPACK green roof system, a green paver fully vegetated with a diverse selection of sedums, chives, and thymes to ensure year round vegetation cover. The plants flower from white, to pink and yellow.

**YOU ASKED FOR PREDICTABLE STORAGE PERFORMANCE**

Even when the green roof HYDROPACK is fully saturated with water, STOCK & FLOW placed underneath, captures and retains an additional 2.3” of rainfall reliably and predictably

**YOU ASKED FOR A SUSTAINABLE AND ATTRACTIVE IRRIGATION SYSTEM**

Irrigation systems are expensive and defeat the purpose of stormwater management on the roof. This is why STOCK & FLOW is designed to use its storage capacity to passively water the plants above using our innovative wicking system IRRIG’UP. The plants have more water availability throughout the year and do not require additional irrigation in most climates. During periods of extreme drought you can still save your green roof system by filling the water reserve beneath the green roof without using an expensive irrigation system or sprinklers. The trays are interconnected so water put in one STOCK & FLOW tray distributes to the entire roof.

**YOU ASKED FOR MORE VALUE FOR THE BUILDING OWNER**

More and more, regulations and building codes require you to store water runoff onsite. While many options are available to you, they are mostly solutions using ground space, which limits your development capability. STOCK & FLOW enables you to utilize all the space you have available and build more per site by storing the water on the roof. Have you thought about building one more apartment building instead of a pond? Now you can if you store the water on the roof. With an additional roof-load capacity of 31 lbs per sq. ft., you can retain up to 3.4” of rainfall on the roof.

---

**Stormwater Runoff (volume)**

<table>
<thead>
<tr>
<th>Rainfall</th>
<th>Green Roof</th>
<th>STOCK &amp; FLOW + HYDROPACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Vegetal i.D.**

www.vegetalid.us
Vegetal i.D. is solving the stormwater management problem directly on the roof using the world-leading green roof paver, HYDROPACK combined with the blue roof technology STOCK & FLOW. Our solution creates a reliable and predictable system to fulfill on-site stormwater management requirements.

When a green roof is dry, it acts like a sponge and retains a lot of water. However, if it is saturated from recent rainfall the green roof, like a sponge, it will absorb very little water.

STOCK & FLOW complements HYDROPACK to enable reliable stormwater retention and runoff control year round. During wet seasons when the green roof layer is often saturated, STOCK & FLOW (placed beneath HYROPACK) acts as a water reserve that can retain an additional 2.3" inches of rainfall. The water captured in STOCK & FLOW is used to irrigate the plants above, while slowly being released from the roof to prepare for the next rain event. With the improved performance of STOCK & FLOW, it is possible to address on site stormwater management needs on the rooftop instead of using land dependent solutions on the ground.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>HYDROSTOCK® 50</th>
<th>HYDROPACK®</th>
<th>STOCK &amp; FLOW® + HYDROPACK®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>100% Recycled HDPE</td>
<td>100% Recycled HDPE</td>
<td>100% Recycled HDPE</td>
</tr>
<tr>
<td>Tray dimension</td>
<td>23.54” x 15.67”</td>
<td>23.622” x 15.75”</td>
<td>23.622” x 15.75”</td>
</tr>
<tr>
<td><strong>Total max. water storage capacity</strong></td>
<td>1 1/4 gal/sq. ft.</td>
<td>3/5 gal/sq. ft.</td>
<td>1.85 gal/sq. ft.</td>
</tr>
<tr>
<td>Max. rainfall retention</td>
<td>2.3”</td>
<td>1.1”</td>
<td>3.4”</td>
</tr>
<tr>
<td>Max. Weight at full saturation</td>
<td>13 lbs/sq. ft.</td>
<td>18 lbs/sq. ft.</td>
<td>31 lbs/sq.ft</td>
</tr>
<tr>
<td>Height of the system</td>
<td>3.15”</td>
<td>3.6”</td>
<td>6.75”</td>
</tr>
</tbody>
</table>

More Stock & Flow depth options to come.
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS

B. GREEN ROOF SOLUTIONS

C. BENEFITS OF GREEN ROOFS

D. LEED CREDITS

E. GREEN ROOF DESIGN

VEGETAL i.D. TECHNICAL SOLUTIONS

F. HYDROPACK® GREEN ROOF SYSTEM

G. VEGETATION OPTIONS

H. SLOPE APPLICATION

I. PROJECT SHOW CASE

J. INSTALLATION

K. MAINTENANCE

L. IRRIGATION

M. WARRANTY

N. CAD DRAWINGS
Green roofs enhance urban areas by creating additional green spaces. Unlike roof gardens, which are both expensive to install and require intensive maintenance, extensive green roofs are easily installed at a significantly lower cost, and require minimal maintenance. The success of a green roof project depends on four key factors:

**Project study:** Vegetal I.D. completes thorough a project study of every installation to determine the most appropriate type of vegetation, the area to be planted, the installation process, and the subsequent maintenance requirements.

**Installation Process:** A closely coordinated installation is important to a successful green roof. That is why Vegetal I.D.’s logistics department dispatch all activities for maximum efficiency, optimum delivery times and lower costs.

**The green roof system:** Vegetal I.D. carefully controls its production process to ensure consistent product quality and a high-performing green roof system.

**Maintenance:** Extensive green roofs require little maintenance, but certain tasks are essential for the vegetation’s long-term survival. Vegetal I.D. provides long-term follow-up services for its projects, via a maintenance agreement tailored to each project’s specific features.
PROJECT STUDY

The green roof system for each project must be designed with careful consideration for a number of important factors:

- climate
- decking
- desired vegetation type and aesthetic appearance
- safe working load
- roof pitch
- roof location and exposure
- rooftop accessibility
- building standards

There may be other additional constraints such as reflective walls that run alongside the green roof, or runoff that spills onto the green roof from adjacent roofs. All of these factors are taken into consideration by Vegetal I.D.’s engineers and technicians as they apply their expertise to identify the most appropriate design for each project.

Vegetal I.D. employs a well-balanced team of technical experts with unrivaled experience in the building and design of green roofs. This enables our expert team to offer valuable insight on even the most technically complex projects.

THE GREEN ROOF SYSTEM

A green roof system consists of four successive layers: a drainage layer, a filter layer, a growing medium layer (substrate), and a vegetation layer. Successfully managing this composite structure is the key to creating a green roof system that performs well over the long-term.

Vegetal I.D. has been growing perennials for over 20 years and operates one of North America’s largest nurseries specializing in the production of green roof and living wall systems. The plants are drought tolerant, healthy and selected to stay beautiful in the long-run.

In North America, green roofs are subject to several standards and guidelines:

- ASTM E 2397: applicable when determining dead loads and live loads associated with a green roof system.
- ANSI /SPRI RP-14: applicable when factoring wind forces into the green roof design.
- The green roof design guide produced by Toronto City Council (TGRCS).

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A. GREEN ROOF SUCCESS FACTORS

INSTALLATION PROCESS

Installing a green roof requires special working arrangements, due to the weight of the green roof system, waterproofing requirements, and provisions for maintenance access. With several thousand successful projects worth of experience, Vegetal i.D.’s teams have the expertise to advise on all aspects of the installation and guide customers though any project specific constraints.

MAINTENANCE

Extensive green roofs require very little maintenance, but certain tasks are essential for the long-term survival of the plant cover. The type of maintenance activity depends on the type of vegetation and the customer’s requirements in terms of aesthetic appearance.

We strongly recommend formalizing these maintenance tasks using a maintenance agreement with a specialist contractor.

Vegetal i.D. offers maintenance agreements suitable for all types of projects, covering both planted and vegetation-free zones. The roofing assembly system will also require periodic maintenance by a specialist contractor.

VEGETAL I.D. WILL LEAD YOU TO A SUCCESSFUL PROJECT
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS

B. GREEN ROOF SOLUTIONS

C. BENEFITS OF GREEN ROOFS

D. LEED CREDITS

E. GREEN ROOF DESIGN

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K. MAINTENANCE

L. IRRIGATION

M. WARRANTY

N. CAD DRAWINGS
B. GREEN ROOF SOLUTIONS

Three basic vegetation solutions exist for green roofs: extensive, semi-intensive and intensive. Lightweight, low-maintenance extensive or semi-intensive roof solutions can be used to install a long-lasting green roof on all types of roof (including steep-pitched roofs).

**Properties of the main types of green roofs**

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>Extensive Green Roof</th>
<th>Semi-intensive</th>
<th>Intensive (roof garden)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roof frame</td>
<td>concrete wood steel</td>
<td>concrete</td>
<td>concrete Max. pitch: 5%</td>
</tr>
<tr>
<td>Plant mix</td>
<td>Sedums, moss, perennials</td>
<td>Perennials, small shrubs, lawn</td>
<td>Shrubs, trees, lawn</td>
</tr>
<tr>
<td>Substrate thickness</td>
<td>2” to 6” (4 to 15 cm)</td>
<td>5” to 12” (12 to 30 cm)</td>
<td>12” (30 cm) or more</td>
</tr>
<tr>
<td>Weight of complete system</td>
<td>15 to 37 lbs/ sq. ft. (75 to 180 kg/sq. m.)</td>
<td>41 to 102 lbs/ sq. ft. (200 to 500 kg/sq. m.)</td>
<td>102 to 410 lbs/ sq. ft. (500 to 2000 kg/sq. m.)</td>
</tr>
<tr>
<td>Watering</td>
<td>no*</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Maintenance</td>
<td>🌱</td>
<td>🌱🌱</td>
<td>🌱🌱🌱</td>
</tr>
<tr>
<td>Roof cost</td>
<td>$</td>
<td>$$$$</td>
<td>$$$$</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Often inaccessible</td>
<td>Limited</td>
<td>Highly accessible</td>
</tr>
</tbody>
</table>

*Except in very dry areas and for sloping roofs

**Green roof assembly**

- **The roof assembly requires** standard insulation and a waterproofing system in which the waterproofing membrane is either resistant to penetration by roots, or is reinforced with a root barrier layer. Thermal insulation, generally installed underneath the membrane, completes the roof’s technical structure.

- **A green roof system** consisting of four layers, each with a specific purpose:
  1. The drainage layer enables excess water to drain away, preventing root asphyxiation.
  2. The filter layer traps fine particles from the substrate to prevent the drainage layer from becoming clogged.
  3. The substrate layer serves as an anchor for roots and supplies water and minerals to the plants.
  4. The vegetation layer, consisting of species suitable for rooftop conditions, reintroduces nature to our urban landscapes.
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C. BENEFITS OF GREEN ROOFS: COST SAVINGS FOR THE OWNER

Green roofs afford a wide variety of both cost-saving and environmental benefits. While there are many similarities among green roofs, each installation is unique. As a result the technical and performance characteristics will vary by region, climate, building and green roof type and design.

BUILDING ENVELOPE PROTECTION

Applying a green roof to your roof surface protects the waterproofing membrane from UV radiation and minimizes daily temperature fluctuations. Compared to a conventional roof, a green roof can decrease daily temperature fluctuations by up to 40%. Green Roofs extend the life of your waterproofing membrane two to three times its average life (40 to 60 year lifespan).

THERMAL AND SOUND INSULATION

Green roofs provide shade and remove heat from the air through plant evapotranspiration, reducing temperatures of the roof surface and the surrounding air. Green roofs absorb heat and act as insulation for buildings, reducing energy needed to provide cooling and heating. Environment Canada found that a typical one story building with an extensive green roof (<4”) would result in a 25% reduction in summer cooling needs. The same is true in the winter but to a lesser degree. An extensive green roof can reduce sound by as much as 40 decibels. The substrate tends to block lower sound frequencies and the plants block higher frequencies.

PROPERTY VALUE & AESTHETICS

Green roofs provide aesthetic appeal, increasing the value of the property and the marketability of the building as a whole, particularly for accessible or highly visible green roofs. For example, American and British studies show that “good tree cover” adds between 6 to 15% to the value of a home. Green roofs transform rooftop eyesores into assets. The sound deadening capacity of green roofs can can raise the value of a home or commercial property even more around highways and airports.

MARKETING OPPORTUNITIES

Potential for local, regional, and national market exposure, depending on the uniqueness of the project. Our pitched roof installations, can maximize visibility and exposure of potential customers to your business.

COST REDUCTION FOR SITE DEVELOPMENT

Potential to: reduce the size of HVAC equipment; reduce the amount of insulation used; reduce community resistance to new developments; faster approval process for new projects; reduced stormwater/wastewater charges from your municipality or utility; meet regulatory requirements for stormwater management for a minimal cost, reduces the size of stormwater management practices on the ground to maximize the development space of a property; satisfying minimum parkland / green space set aside, requirements.

LEED CREDITS AND ENERGY EFFICIENCY INCENTIVES

Potential for grants related to energy efficiency and/or green roofs. Our green roof system can score more than 40 credits under the US and Canadian Green Building Council LEED certification system.

LOW MAINTENANCE

Extensive Green Roofs are very low maintenance systems that require minimum care and often require no permanent irrigation. Maintenance is limited but still very important. We recommend a minimum of 2-4 visits per year.
ENVIRONMENTAL SAVINGS

STORMWATER MANAGEMENT

Green Roofs absorb anywhere from 20 to 100% of the precipitation that falls on the roof, depending on the season, previous rainfall, etc... In general, in the summer green roofs retain between 70% and 100% of rainfall events and in the winter less than 30%. Green roofs help reduce the volume of storm water flowing into streams and drainage systems. The Green Roof plants and growing media system filter pollutants and heavy metals from runoff water. In addition, runoff is delayed and the flow-rate is reduced. It is inexact to use runoff coefficient for green roofs as this coefficient varies all the time (depending on the saturation of the system).

STOCK & FLOW® is a revolution in stormwater management with living infrastructure. Combined with HYDROPACK® it adds up to an additional 2.3” of water retention. Not only STOCK & FLOW® is the only system to control the release of stormwater to meet specific stormwater management needs, it also passively irrigates the green roof to create an even more resilient system.

URBAN HEAT ISLAND REDUCTION

Through the daily dew and evaporation cycle, plants are able to cool cities during the summer. In the process of evapotranspiration, plants use heat energy when evaporating water. This process cools the air to reduce the ‘Urban Heat Island Effect’ in the summer, which is mainly due to the expanse of hard and reflective surfaces, such as roofs, which absorb solar radiation and re-radiate it as heat. Green roofs are more effective than cool roofs because cool roofs reflects sunlight onto neighboring buildings and heating their wall surfaces.

AIR QUALITY

Like all plants, green roof plants sequester carbon dioxide from the air and release oxygen. Additionally, they remove other contaminants in the air. Installation of a green roof can mitigate a significant amount of CO₂ emissions. A 10,000 square foot extensive system will capture over 800 pounds of CO₂ annually.

WILDLIFE AND BIODIVERSITY

Although green roofs cannot replace a habitat destroyed by development, thoughtful plant selection can enable green roofs to create new wildlife habitats for pollinators, birds, insects, and even small animals. Drought tolerant plants selected for green roofs provide a wide variety of vegetation and biodiversity. Even though the selection for ground cover is composed of primarily sedums, there are hundreds of sedum varieties, and a sedum-mix can be very diverse.

OTHERS

SOLAR PANEL PRODUCTIVITY

By reducing surface temperature, green roofs dramatically increase Solar Panels efficiency.
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D. LEED CREDITS

There are six major categories under the LEED rating systems and HYDROPACK® green roof system can help you achieve credits under 5 of them with a potential of 41 credits total!

**SUSTAINABLE SITES** (Potential credit of 6 out of 14 points)

**SS Credit 5.1 & 5.2:** Protect or restore habitat and maximize open space: (2 points)

The Green Roof may include Native or adapted plants, provide habitat, and promote biodiversity. This design requires minimal or no irrigation and low maintenance.

**SS Credit 6.1 & 6.2:** Storm water design (quantity & quality): (2 points)

HYDROPACK® reduces storm water runoff by more than 60% depending on the previous rain events. HYDROPACK® may also be considered as storm water treatment through its ability to remove suspended solids and other pollutants. The USGBC specifies that green roofs as can meet this objective, when the installation covers at least 50% of the roof surface.

**SS Credit 7.1 & 7.2:** Heat island effect (2 points)

HYDROPACK® can reduce roof temperatures from summertime highs of up to 170°F to less than 90°F, especially in cities. The USGBC specifies green roofs as a way to meet this objective, when the green roof installation covers at least 50% of the roof surface.

**WATER EFFICIENCY** (Potential credit of 4 points)

**WE Credit 1.1:** Water efficiency used in landscaping reduced by 50% (2 points)

When this credit is pursued, the design may not include permanent irrigation. HYDROPACK® is often designed so that irrigation is not required as we select drought-resistant plants.

**MATERIALS AND RESOURCES** (Potential of 6 out of 11 points)

**MR Credit 2.2:** Construction waste management (2 points)

**MR Credit 4.1 & 4.2** Recycled content (2 points)

HYDROPACK® is made of 100% recycled HDPE and the compost contained in the growth media are both pre-consumer and post-consumer materials. Contributes towards having 10-20% of the total value of the project materials originating from recycled material (measured by weight x cost).

**MR Credit 5.1 & 5.2:** Regional materials (2 points)

More than half of the population of Canada and the United States is within a 500-mile radius of Vegetal i.D. nursery. 10% to 20% may be manufactured and assembled within 500 miles.

**ENERGY AND ATMOSPHERE** (Potential up to 19 points)

**EA Credit 1.1** to **EA 1.19**

After establishing the minimum level of energy efficiency for the proposed building, demonstrate a percentage improvement that the green roof can help you with. Because of its heat absorption properties, HYDROPACK® has been shown to reduce energy demand by more than 25% annually in certain types of structures, geography and configurations. Reduced demand and increased efficiency may also lead to smaller cooling systems and lower capital costs.

**INNOVATION AND DESIGN PROCESS** (Potential credit of 5 points)

Vegetal i.D. offers a number of ways to integrate innovation in your design process. With ACROROPACK® any pitched roof can become a decorative, and useful green roof. STOCK & FLOW® offers a new and innovative way to manage stormwater reliably in places where open ground space is limited.
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Vegetal I.D. ’s expert team is dedicated to the success of its green roofs and is always available to help the architect or landscape architect in the design process. To create a green roof, it is important to take into consideration two types of factors:

THE ENVIRONMENT OF THE PROJECT:

- **The location** will specify the hardiness zone that the project is in and this will guide the plant selection. Contact an expert at Vegetal I.D. to discuss the best plants available for your region.
- **The building configuration** will be taken into account to design the vegetation free zones and select the appropriate plants according to sun exposure.
- **The wind load** requirements will be an important factor to select the best method to attach the system. It will also be a factor in determining the appropriate width of the vegetation zone and the design of the parapets.
- **The design intent** of the client is always essential. Does the client want a natural look or a sophisticated design? Is the roof accessible to the public or highly visible? These factors will help us guide you to create a low maintenance green roof, a high-end landscape design, or a roof focused on stormwater management to fit the needs of the client.

THE CHARACTERISTICS OF THE ROOF ITSELF:

- **The waterproofing membrane** assembly must be compatible with the green roof system.
- **The slope** of the roof will determine the type of attachment system.
- **The maximum load capacity** of the structure will guide your choice of green roof systems.
- **Designing access to irrigation** is essential, even if a permanent irrigation system is not planned. During periods of extreme heat and drought, it is better to be able to water the plants, rather than replace them.

QUICK DESIGN TIPS:

- **Adjacent windows or walls** are known to reflect sunlight onto the roof and, in some situations, kill vegetation. Design wider vegetation-free zones in these areas.
- **In shade** environments, use shade tolerant plants
- **Do not place vegetation underneath runoff discharges from adjacent roofs**
- **Avoid installing a green roof underneath trees**
- **Always design water access** to the roof

<table>
<thead>
<tr>
<th>DESIGN INTENTS</th>
<th>Vegetal I.D. Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITY CODE</td>
<td>HYDROPACK® Standard</td>
</tr>
<tr>
<td>LEED</td>
<td>HYDROPACK® Accent Natives</td>
</tr>
<tr>
<td>STORMWATER MANAGEMENT</td>
<td>HYDROPACK® Standard and STOCK &amp; FLOW®</td>
</tr>
<tr>
<td>HEAT ISLAND REDUCTION</td>
<td>HYDROPACK® Accent Grasses</td>
</tr>
<tr>
<td>LANDSCAPE DESIGNS</td>
<td>HYDROPACK® Custom</td>
</tr>
<tr>
<td>ACCESSIBLE GREEN ROOF</td>
<td>HYDROPACK® Custom</td>
</tr>
<tr>
<td>BIODIVERSITY</td>
<td>HYDROPACK® any solution</td>
</tr>
</tbody>
</table>

www.vegetalid.us
VEGETATION FREE ZONES

The vegetation-free zone is a band that extends around the roof and any structures protruding from the roof that is 20-36 inches wide. (Note that there is no need to install dividers between planted areas and vegetation free zones when installing HYDROPACK® modules).

The goal of designing vegetation free zone is to:
- Facilitate inspection of flashing and runoff drainage
- Enable water to flow easily to the runoff drains

The vegetation-free zone may be protected with:
- Stone ballast 1-1/2” diameter stone ballast (38 mm)
- Precast slabs laid on the drainage layer or on studs
- Prefabricated timber decking laid on studs
- Self-protected waterproofing membrane (suitable for all roof pitches) if permitted by the technical specifications.
- The same root barrier should be used in the vegetation free zone as in the planted area.

Vegetation free zones are not considered to be accessible areas and should not be used as pathways by rooftop equipment maintenance personnel.

CONCEPT DIAGRAMS

PARAPETS AND WIND PROTECTION

A parapet is often built to decrease the roof’s exposure to wind. For guidance, use ANSI-SPRI RP-14, HYDROPACK® is considered to be a #4 ballast.

<table>
<thead>
<tr>
<th>Building height</th>
<th>Parapet height (Above growing media)</th>
<th>Vegetation free zone width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 150’ (46 m)</td>
<td>6” (150 mm)</td>
<td>20” (0.5 m)</td>
</tr>
<tr>
<td>More than 150’ (46 m)</td>
<td>30” (750 mm)</td>
<td>36” (0.9 m)</td>
</tr>
</tbody>
</table>

In order to decrease wind exposure on the green roof, a 4” high metal edge along the perimeter of the green roof is recommended to protect the modules.
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
B. GREEN ROOF SOLUTIONS
C. BENEFITS OF GREEN ROOFS
D. LEED CREDITS
E. GREEN ROOF DESIGN

VEGETAL i.D. TECHNICAL SOLUTIONS

F. HYDROPACK® GREEN ROOF SYSTEM

G. VEGETATION OPTIONS
H. SLOPE APPLICATION
I. PROJECT SHOW CASE
J. INSTALLATION
K. MAINTENANCE
L. IRRIGATION
M. WARRANTY
N. CAD DRAWINGS
**PRESENTATION**

The HYDROPACK® module pre-grown at Vegetal i.D.’s dedicated nursery are the fruit of 20 years’ experience in the area of green roofs.

**THE ALL-IN-ONE PRODUCT WITH A BUILT-IN WATER RESERVE**

- HYDROPACK® contains all of the components of a multilayer vegetation system, i.e. drainage, filter and substrate layers (specifically designed for rooftop conditions) as well as the pre-vegetated plant cover!

- HYDROPACK® includes a permanent water reserve that manages rainfall on the roof by absorbing and retaining water, making it ideal for both wet and dry climates. When full, our modules drain excess water efficiently while the system continues to smooth rainfall runoff peaks.

**AVAILABLE WITH A RANGE OF PLANT MIXES**

- Our plant mixes always come pre-vegetated with coverage of at least 95% from the date of the installation. 3 plant mix options are available; a standard low-maintenance plant mix, an accented blend, or a fully customized option.

**DESIGNED FOR FLAT AND PITCHED ROOFS**

HYDROPACK® is a very easy-to-use solution; the natural partitioning between modules makes it suitable for use on very steeply-sloping roofs (up to 200% gradient).

**OPTION 1: STANDARD PLANT MIX**

Comprising several varieties of sedums and aromatic, herbaceous and perennial plants. Requires minimal day-to-day maintenance and only a 10-day lead time to order.

**OPTION 2: ACCENT PLANT MIX**

Same base plants as the STANDARD MIX but with 1 or 2 plugs of accent plants in each module, effortlessly enhancing aesthetic appeal.

**OPTION 3: CUSTOM PLANT MIX**

Featuring a flexible selection of species, planted to order and subject to a minimum delivery time of three months.
WORKING WITH VEGETAL I.D. IS THE INSURANCE OF WORKING WITH PEOPLE THAT CARE FOR YOUR PROJECT, AND YOUR SUCCESS.
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Module dimensions</th>
<th>23.622” x 15.75” x 3.6” (60 cm x 40 cm x 9 cm) (100% recycled HDPE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter</td>
<td></td>
<td>Non-woven polyester, 3 oz/sq. ft (100 g/sq. m)</td>
</tr>
<tr>
<td>Vegetation</td>
<td></td>
<td>3 plant mixes: Standard, Accent or Custom Plant Mix.</td>
</tr>
<tr>
<td>Max. Water Retention Capacity*</td>
<td>Permanent water reserve in module base</td>
<td>1/5 gal. per sq. ft (8 l / m²)</td>
</tr>
<tr>
<td></td>
<td>Water retention by substrate</td>
<td>2/5 gal. per sq. ft (20 l / m²)</td>
</tr>
<tr>
<td></td>
<td>Maximum water retention capacity: 1 inch of rainfall</td>
<td>3/5 gal. per sq. ft (28 l / m²)</td>
</tr>
<tr>
<td>Drainage</td>
<td>Number of holes at surface</td>
<td>47 holes per sq. ft</td>
</tr>
<tr>
<td></td>
<td>Total drainage area</td>
<td>4.6 sq. in. per sq. ft</td>
</tr>
<tr>
<td></td>
<td>Water reservoir depth</td>
<td>1.2” (30 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>Dry module</td>
<td>11.5 lbs per sq. ft (56 kg / m² or 13 kg / module)</td>
</tr>
<tr>
<td></td>
<td>Water-saturated module</td>
<td>18 lbs per sq. ft (88 kg / m² or 21 kg / module)</td>
</tr>
</tbody>
</table>

*varies depending on the growing media batch

**HYDROPACK®, THE “ALL-IN-ONE” MODULE WITH A BUILT-IN WATER RESERVE**

- **Vegetation:** fully grown the day of installation with drought tolerant plants adapted to the local environment.
- **Growing medium:** FLL compliant, adapted to the North American climate. Our growing medium retains a substantial amount of water and is designed to be long lasting.
- **Filter fabric:** retains the growing media within the tray and prevents soil erosion while the roots grow through
- **Mineral drainage:** placed in the water reserves, provides anchoring and aeration to the plants roots
- **Water reserve:** increases water retention and drought tolerance of the plants, while limiting runoff
- **Drainage holes:** placed at a clearance of 1.2” (30 mm) above the membrane to provide good drainage of excess water
- **Hooking system:** mitigates wind uplift and enables water and nutrients to flow between trays

**HYDROPACK®, A PROVEN AND TESTED MODULE DESIGN**
## WHY HYDROPACK IS THE BEST MODULE OUT OF ALL?

<table>
<thead>
<tr>
<th>HYDROPACK®</th>
<th>OTHER GREEN ROOF TRAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experience</strong></td>
<td>First green roof tray invented, patented in 2000 and used on over 5 Million sq. ft</td>
</tr>
<tr>
<td><strong>Installation</strong></td>
<td>The tray is handled by one person and has an interlocking system to place the tray securely on the roof</td>
</tr>
<tr>
<td><strong>Removable</strong></td>
<td>At any time HYDROPACK® can be removed to have access to the waterproofing membrane</td>
</tr>
<tr>
<td><strong>Slope Applications</strong></td>
<td>Any slope, from flat to vertical</td>
</tr>
<tr>
<td><strong>Transportation cost</strong></td>
<td>HYDROPACK® can be shipped for as little as 40 cents per sq. ft. because our product is packaged on standard skids. 3,120 sq. ft. can fit in one truck load, which is about 40% more sq. footage than the competition</td>
</tr>
<tr>
<td><strong>Vegetation free zone</strong></td>
<td>HYDROPACK® is designed with an integrated edge and filter cloth to separate the vegetation free zone, aluminum edging is not required</td>
</tr>
<tr>
<td><strong>Supplier</strong></td>
<td>Vegetal i.D. has 20 years of experience in developing innovative green roof systems. We grow all of our products at our nursery to insure high quality</td>
</tr>
</tbody>
</table>

*Vegetal i.D. Projects*
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
B. GREEN ROOF SOLUTIONS
C. BENEFITS OF GREEN ROOFS
D. LEED CREDITS
E. GREEN ROOF DESIGN

VEGETAL i.D. TECHNICAL SOLUTIONS

F. HYDROPACK® GREEN ROOF SYSTEM
G. VEGETATION OPTIONS
H. SLOPE APPLICATION
I. PROJECT SHOW CASE
J. INSTALLATION
K. MAINTENANCE
L. IRRIGATION
M. WARRANTY
N. CAD DRAWINGS
G. VEGETATION OPTIONS

Standard Plant Mix
Assorted perennials

All-sedum plant cover
An ideal lightweight vegetation solution for inaccessible roofs

PLANT VARIETIES

Sedums are the «Go-to» choice for extensive green roof vegetation

Living conditions can be very demanding on rooftops. Plants are subject to extreme temperatures, wind and extended droughts. It is crucial to choose particularly hardy species for extensive green roofs. Sedum, chive, carnations and thyme are succulent plants highly resistant to the multiple sources of stress associated with rooftop living conditions. These plants are able to establish themselves and create long-lasting plant cover. They are capable of withstanding extended dry periods and then resuming their growth.

These plant varieties, which vary in height, are blended to obtain plant cover that remains attractive and uniform over time.

Standard plant mix – plant cover with a vibrant appearance

Plant cover based on the standard plant mix is low-lying and uniform, but wild. It features colors that change with the seasons and the intensity of the stresses to which the plants are subject. The overall appearance can vary from green, during periods of active growth (spring and fall) to bronze or even reddish-brown when plants are exposed to water shortages or frost.

The flowering season is generally May/June, during the summer or in September, depending on the species planted. Flowers tend to be white, yellow or pink. The location and exposure of the project, as well as the degree of maintenance also have a significant impact on the condition of the plants and therefore the general appearance of the roof. These variations in appearance can be enhanced by maintenance.

Example showing the appearance in January
... in May
... in June and July

SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>☀️☀️</td>
<td>18 lbs /sq. ft (88 kg/sq. m)</td>
<td>3.6” (9 cm)</td>
<td>2/3” to 6” (2 to 15 cm)</td>
<td>2 - 4 per year</td>
<td>**</td>
<td>min 0,8</td>
<td>3-5 gal/sq. ft (28 l/sq. m)*</td>
</tr>
</tbody>
</table>

** Depends on the project’s geographical location, exposure and pitch. Refer to the «Irrigation» section. www.vegetalid.us
Plant cover appearance 95% cover on the date of installation
Minimal-maintenance, lightweight vegetation solution

**VEGETAL I.D. PROJECTS FEATURING THE STANDARD PLANT MIX**

*August (marine west coastal)*  
*March (marine west coastal)*  
*June (marine west coastal)*

*October (humid continental)*  
*April (humid continental)*  
*July (humid continental)*

*October (mediterranean)*  
*September (mediterranean)*  
*July (mediterranean)*

**MAINTENANCE**

Plant cover using the STANDARD PLANT MIX requires minimal maintenance: the main upkeep operations (described in the “Maintenance” section) can be carried out with only 2 to 4 maintenance sessions per year. To provide an active growth and blooming, we recommend visiting the roof more often.

# Properties of the Main Plants in the Standard Plant Mix

<table>
<thead>
<tr>
<th>Latin name</th>
<th>Plant height</th>
<th>Appearance</th>
<th>Flowering season and color</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Allium Schoenoprasum</em></td>
<td>10” (24 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Allium Senescens ssp. Montanum</em></td>
<td>6” (15 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Armeria Maritima</em></td>
<td>6” (15 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Campanula rotundifolia</em></td>
<td>11” (28 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Dianthus arenarius</em></td>
<td>16” (40 cm)</td>
<td>Accent</td>
<td>J F M A M J J J A S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Dianthus Deltoides</em></td>
<td>2”-6” (5-15 cm)</td>
<td>Accent</td>
<td>J F M A M J J J A S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Hieracium aurantiarium and pilosella</em></td>
<td>8” (20 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Petrorhagia saxifraga</em></td>
<td>4” (10 cm)</td>
<td>Accent</td>
<td>J F M A M J J S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Saxifraga</em></td>
<td>10” (25 cm)</td>
<td>Accent</td>
<td>J F M A M J J S O N D</td>
<td></td>
</tr>
<tr>
<td><em>Sedum Angelina</em></td>
<td>5” (12 cm)</td>
<td>Ground cover</td>
<td>J F M A M J J S O N D</td>
<td></td>
</tr>
</tbody>
</table>
### Non-exhaustive list. Varieties may vary between batches

<table>
<thead>
<tr>
<th>Latin name</th>
<th>Plant height</th>
<th>Appearance</th>
<th>Flowering season and color</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedum Album</td>
<td>4”-6” (10-15 cm)</td>
<td>Ground cover</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Sedum Sexangulare</td>
<td>2” (5 cm)</td>
<td>Ground cover</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Thymus</td>
<td>4” (9 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Sedum Spurium Elizabeth</td>
<td>4” (10 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Sedum Floriferum Kamtschaticum</td>
<td>4” (10 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Sedum Rupestre</td>
<td>2”-6” (5-15 cm)</td>
<td>Accent</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Sedum Hispanicum</td>
<td>2”-3” (5-7 cm)</td>
<td>Ground cover</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Sedum Oreganum</td>
<td>2” (5 cm)</td>
<td>Ground cover</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Sedum Acre</td>
<td>1”-6” (3-15 cm)</td>
<td>Ground cover</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
<tr>
<td>Sedum spurium John Creek</td>
<td>5” (12 cm)</td>
<td>Ground cover</td>
<td>J F M A M J J A S O N D</td>
<td>🌽</td>
</tr>
</tbody>
</table>
G. VEGETATION OPTIONS

Accent Plant Mix
Standard Plant Mix with additional plugs

Diversified, flowering plant cover
For easy landscaped solutions

PLANT VARIETIES

The ACCENT PLANT MIX plant cover solution is based on the STANDARD PLANT MIX to which small plugs are added to form landscaped roofs featuring a variety of shapes and colors. Native varieties, herbs and medicinal plants can be included in the mix. The «accent» plugs are added at a density of one to two plants per module, i.e. 0.4 to 0.8 plants per sq. ft.

Plants are generally selected to form groups with varied colors that change over the course of the seasons.

PLACEMENT

- Plant accent plugs in the HYDROPACK® modules in accordance with the design chosen by the landscape architect.
- Insert at an angle of 45 degrees when planting.
- Water copiously.

Examples of plants used in the ACCENT PLANT MIX

ALL DECKING
ALL WATERPROOFING
ASSEMBLIES
ANY PITCH

EXPOSURE ☀️

✅ Diversified plant cover
✅ Landscaped vegetation

www.vegetalid.us
Custom Plant Mix

Personalized plant selections

**Custom plant cover**
For landscaped solutions

**PLANT VARIETIES**

CUSTOM PLANT MIX offers the most flexible solution; the customer compiles a personalized list of plants for their project and submits their order at least three months in advance. Vegetal I.D.’s team of horticulturists are on hand to offer advice on compiling a suitable list of plants.

**Maintenance**

Depends upon particular plant mix.

---

Examples of plants used in the ACCENT PLANT MIX

www.vegetalid.us
HYDROPACK® on a pitched application
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
B. GREEN ROOF SOLUTIONS
C. BENEFITS OF GREEN ROOFS
D. LEED CREDITS
E. GREEN ROOF DESIGN

VEGETAL i.D. TECHNICAL SOLUTIONS

F. HYDROPACK® GREEN ROOF SYSTEM
G. VEGETATION OPTIONS
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I. PROJECT SHOW CASE
J. INSTALLATION
K. MAINTENANCE
L. IRRIGATION
M. WARRANTY
N. CAD DRAWINGS
H. SLOPED GREEN ROOF MADE EASY (> 2\(^{1/2}:12\))

Pitched roofs are now made possible thanks to HYDROPACK® green roof system.

With Vegetal i.D. let your inspiration cross boundaries and build amazing signature green roof projects that are highly visible and long lasting.

Vegetal i.D. solutions offer a fully secure fastening system for any slope.

PITCH RELATED TECHNICAL CONSTRAINTS

Vegetating a steep roof implies specific constraints that should be considered during the design phase.

PLANT erosion
During the plant’s establishment period, erosion can be significant on highly sloped roofs. For this reason, cuttings or plugs should be avoided in these applications.

GROWING MEDIA erosion
Growing media should be protected from eroding in case of a strong rain event. To prevent erosion, the HYDROPACK® system drains well while retaining the growing media within the tray, thanks to its integrated edge.

WATER availability
HYDROPACK® modules are designed with a water reserve to increase the water retention of the system and water pathways help the irrigation to be efficient. On a pitched roof, water availability is considerably decreased. We recommend installing an irrigation system with sprinkler or drip regardless of the geographic location. On a pitched roof, water availability is considerably decreased.

MAINTENANCE
Maintenance is important as these roofs are often highly visible. A maintenance program must be scheduled for a minimum of 6 times a year. You can contract Vegetal i.D.’s expert team to do the maintenance of your project.
THE HYDROPACK ADVANTAGES

Thanks to its “All-In-One” design and easy to install system, HYDROPACK® is the best solution on pitched roof applications. The modules are pre-grown at our nursery and sent fully vegetated with all the necessary material to fix the trays onto the slope. Installing HYDROPACK® over a pitched roof limits erosion risks.

HYDROPACK® module enables application on very steep roofs, up to 200% pitch.
PRESENTATION

ACROPACK® Ω retaining system is made of aluminum rails to prevent HYDROPACK® from sliding. The rails imbricate perfectly under the HYDROPACK® tray. This retaining system is invisible and easy to place. Depending on the project, ACROPACK® Ω is either attached on the waterproofing membrane or supported by stainless steel cables (Ø 0.2”) attached to the ridge of the roof to transfer the load upward. ACROPACK® Ω is a flexible system that is ideal for any slope application up to 200%.

TECHNICAL SPECIFICATIONS

The rail length of the ACROPACK® Ω is 78”. The rails are spaced according to the constraints of the green roof such as snow load, pitch, and wind.

The distance between rails is usually between 1 and 10 HYDROPACK® trays (16” to 160”).

The spacing that is used will be determined by Vegetal i.D.’s project study and then validated by an engineer.

TECHNICAL DATA

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail 120</td>
<td>aluminum</td>
<td>4.7</td>
<td>1.1</td>
<td>20/10”</td>
<td>1.16</td>
<td>134</td>
<td>fixed on the waterproofing membrane</td>
</tr>
</tbody>
</table>

ADDITIONAL MATERIAL TO SECURE THE TRAYS

- Screws to attach each tray to the ACROPACK® Ω (1 screw per tray, supplied with the shipment)
- UV protected zip ties to attach trays with others, (1 per tray, supplied with the shipment)
- Protection net with a 2” mesh, used only above 12:12 slope and in areas with high wind.
IMPLEMENTATION

The ACROPACK® Ω retaining system is put in place before installing the HYDROPACK® trays. Depending on the installation schedule, delivery can be planned in steps so that HYDROPACK® arrives the day it is to be installed.

In order to fasten ACROPACK® Ω to the carrying element, it may be necessary to introduce additional equipment underneath the sealing layer, to compensate the forces (accessories integrated to the insulation layer).

Assembly steps:

- Cut the bracket rails according to the dimensions of the roof
- Position the brackets on the roof. Pay special attention to the bracket spacing that is specified in the layout. Use empty HYDROPACK® trays (supplied) to ensure proper spacing (fig. 1).
- Seal the brackets onto the waterproofing membrane and then install the HYDROPACK®, starting from the bottom up keeping the male hooks of the tray facing down (fig. 2).

USING THE STAINLESS STEEL CABLES TO NOT PIERCE THE MEMBRANE

- Position the brackets on the roof. Pay special attention to the bracket spacing that is specified in the layout. Use empty HYDROPACK® trays (supplied) to ensure proper spacing. When installing the HYDROPACK®, start from the bottom up keeping the male hooks of the tray facing down.

- Install the ridge support and attach the cables.

The implementation of this solution involves important overload at the ridge of the roof. A structural engineer or architect needs to verify the application.

PACKAGING

<table>
<thead>
<tr>
<th>ACROPACK® Ω</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rails Ω</td>
<td>500 / pallet</td>
</tr>
<tr>
<td>Cables</td>
<td>32 / box</td>
</tr>
<tr>
<td>Screws</td>
<td>200 / box</td>
</tr>
</tbody>
</table>

www.vegetalid.us
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
B. GREEN ROOF SOLUTIONS
C. BENEFITS OF GREEN ROOFS
D. LEED CREDITS
E. GREEN ROOF DESIGN

VEGETAL i.D. TECHNICAL SOLUTIONS

F. HYDROPACK® GREEN ROOF SYSTEM
G. VEGETATION OPTIONS
H. SLOPE APPLICATION
I. PROJECT SHOW CASE
J. INSTALLATION
K. MAINTENANCE
L. IRRIGATION
M. WARRANTY
N. CAD DRAWINGS
PROJECT OVERVIEW

The aim of this project was to create a multi-faceted living screen over the settling tanks at a sewage works, in order to make the plan to build the facility near a residential area more acceptable.

**PROJECT**

<table>
<thead>
<tr>
<th>AREA</th>
<th>60,000 sq. ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECKING</td>
<td>Ribbed steel plate insulated with 2” (5 cm) of rock wool</td>
</tr>
<tr>
<td>MEMBRANE</td>
<td>Two-layer bituminous assembly</td>
</tr>
<tr>
<td>PITCH</td>
<td>0 to 65%, including 29,000 sq. foot with a pitch steeper than 20%</td>
</tr>
<tr>
<td>RETAINING SYSTEM</td>
<td>ACROPACK® Ω</td>
</tr>
<tr>
<td>VEGETATION</td>
<td>HYDROPACK® with STANDARD PLANT MIX</td>
</tr>
<tr>
<td>IRRIGATION</td>
<td>Vegetal I.D. drip watering solution covering all areas with a pitch steeper than 15% (south-facing areas) or 20% (all other areas)</td>
</tr>
</tbody>
</table>
I. PROJECT SHOW CASE

HYDROPACK® with STANDARD MIX July 2012

Work in progress, April 2012

Fitting the ACROPACK® RETAINING SYSTEM

Installing the drip irrigation system

Finished project (north-east side), October 2012

Finished project (west side), October 2012

www.vegetalid.us
Installing the ACROPACK® Ω retaining system over the waterproofing membrane

Lifting the HYDROPACK® MODULES

Cutting HYDROPACK® modules to size

Fitting the HYDROPACK® modules over the ACROPACK® Ω retaining system

Installing the HYDROPACK® modules

Installing the HYDROPACK® modules
SIDE VIEW

ACROPACK® SLOPE SYSTEM WITH HYDROPACK®

HYDROPACK® green roof tray

Attachment ACROPACK® Ω

ILLUSTRATIONS ARE TO CONCEPTUALLY ASSIST PROFESSIONALS IN DESIGNING HYDROPACK® INSTALLATIONS. VEGETAL I.D. INC. IS NOT RESPONSIBLE FOR ENGINEERING. A QUALIFIED ROOFING SPECIALIST SHOULD BE CONSULTED TO DETERMINE APPROPRIATE WATERPROOFING AND ROOF DECK MATERIALS.

VEGETAL I.D. INC
7939 BANK ST. ROAD,
BATAVIA, NY 14020
WWW.VEGETALID.US
SALES@VEGETALID.COM

NOT TO SCALE
STM, MONTREAL, CANADA

Name of the project: STM rue STINSON
Location: MONTREAL, Canada
Surface area: 70,200 sq. ft.
Installer: Toits Vertige
Waterproofing membrane: Soprema
Year: 2013

Fall
VEGETATION STANDARD PLANT MIX

Full sun exposure
- Sedum Album
- Sedum Sexangulare
- Sedum Kantachicum
- Shives (Allium Schoenoprasum)
- Sedum Spurium Elizabeth
- Sedum Rupestre
- Sedum spurium John Creek
- Sedum Angelina
- Carnation (Dianthus Deltoides)
- Petrorhagia saxifraga
- Shives (Allium Senescens ssp. Montanum)
- Thyme (Thymus serpyllum)
Name of the project: Daniel’s residence  
Location: TORONTO, Canada  
Surface area: 2,338 sq. ft.  
Installer: Ginkgo  
Waterproofing membrane:  
Year: 2013

TORONTO, CANADA
Vegetation Standard Plant Mix

Full sun exposure

- Sedum Album
- Sedum Sexangulare
- Sedum Kantachicum
- Shives (Allium Schoenoprasmum)
- Sedum Spurium Elizabeth
- Sedum Rupestre
- Sedum spurium John Creek
- Sedum Angelina
- Carnation (Dianthus Deltoides)
- Petrorhagia saxifraga
- Shives (Allium Senescens ssp. Montanum)
- Thyme (Thymus serpyllum)
WINCHESTER, VA

Name of the project: Shenandoah University
Location: WINCHESTER, VA
Surface area: 1,266 sq. ft.
Installer: Anderson Roofing
Waterproofing membrane: TPO from Carlisle Syntec
Year: 2011
Vegetation Standard Plant Mix

**Full sun exposure**

- Sedum Album
- Sedum Sexangulare
- Sedum Kantachicum
- Shives (Allium Schoenoprasum)
- Sedum Spurium Elizabeth
- Sedum Rupestre
- Sedum spurium John Creek
- Sedum Angelina
- Carnation (Dianthus Deltoides)
- Petrorhagia saxifraga
- Shives (Allium Senescens ssp. Montanum)
- Thyme (Thymus serpyllum)
Name of the project: Mc Grath Acura Car Dealership
Location: CHICAGO, IL
Surface area: 4,469 sq. ft.
Installer: Olson Roofing Company Inc.
Waterproofing membrane: TPO from Carlisle Syntec
Year: 2012

Installation at the end of the winter, early April

End of the winter
I. PROJECT SHOW CASE

Vegetation standard plant mix

Full sun exposure
- Sedum Album
- Sedum Sexangularare
- Sedum Kantachicum
- Shives (Allium Schoenoprasum)
- Sedum Spurium Elizabeth
- Sedum Rupestre
- Sedum spurium John Creek
- Sedum Angelina
- Carnation (Dianthus Deltoides)
- Petrorhagia saxifraga
- Shives (Allium Senescens ssp. Montanum)
- Thyme (Thymus serpyllum)
FREDERICTON, NB

Name of the project: Saint Thomas University
Location: FREDERICTON, NB CANADA
Surface area: 1,300 sq. ft.
Installer: Atlantic Roofers Limited
Waterproofing membrane: TPO from Carlisle Syntec
Year: 2011

End of the winter
**Vegetation Standard Plant Mix**

**Full sun exposure**

- Sedum Album
- Sedum Sexangulare
- Sedum Kantachicum
- Shives (Allium Schoenoprasum)
- Sedum Spurium Elizabeth
- Sedum Rupestre
- Sedum spurium John Creek
- Sedum Angelina
- Carnation (Dianthus Deltoides)
- Petrorhagia saxifraga
- Shives (Allium Senescens ssp. Montanum)
- Thyme (Thymus serpyllum)
“We installed Vegetal I.D.’s Hydropack roof tray at DeVry University over a TPO roofing system. Short lead times and the availability of a full system warranty, with overburden coverage made Hydropack an easy choice. The trays arrived to the site palletized on conventional skids so unloading was not dependent on installation. Vegetal I.D. was great to work with and a representative was on site for the duration of the installation to help ensure the project was a success.”

David Wehrle
Anderson & Shah Roofing
Chicago, IL
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
B. GREEN ROOF SOLUTIONS
C. BENEFITS OF GREEN ROOFS
D. LEED CREDITS
E. GREEN ROOF DESIGN

VEGETAL i.D. TECHNICAL SOLUTIONS

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L. IRRIGATION
M. WARRANTY
N. CAD DRAWINGS
J. HYDROPACK® INSTALLATION

This section is an easy-to-follow instruction guide to install HYDROPACK®. Please read it carefully before you schedule and organize the installation and fax the certification back to Vegetal i.D. 585-343-6401.

Disclaimer:
The contractor is responsible for the quality of every HYDROPACK® installation. Care should be taken to avoid damaging the waterproofing membrane and the plants, both before and during the installation.

HYDROPACK, A CONSTRUCTION PRODUCT MADE FOR ROOFERS

- Stock of fully vegetated ready to ship modules
- Shipped on flat bed
- Packaged on skids
- Free installation support from our team

HYDROPACK FEATURES THAT YOU LIKE

- Clipping system to secure the modules together
- Efficient drainage of excess water to avoid ponding on the waterproofing membrane
- Strong tray edges make metal edging unnecessary
- HYDROPACK® modules are always removable, even after many years, if access to the membrane is needed
- The plants are fully established the day of installation, the plants will not fail before closing the project
- All-in-one module contains all the layers of a green roof
- Water reserves that decrease irrigation needs in summer months
- Easy to cut trays, make HYDROPACK® flexible to fit unique designs
**ACTIONS**

- Vegetal i.D. will contact you to set up the shipment. If you need to postpone the shipment, contact our logistics specialist at least 10 days before the shipment. If delayed for more than 2 months, there may be a surcharge for plant maintenance.
- Read and follow carefully the architect’s specifications and the waterproofing membrane manufacturer’s requirements. Find out which protection fabric, root barrier and vegetation free zone are required by membrane manufacturers to obtain the TSW (removal warranty).
- Before installing the modules, inspect the waterproofing surface to ensure that it is watertight. This will require a flood test (the controlled flooding of the entire roof with no less than 2 inches of standing water).
- The surface of the waterproofing membrane should be swept and washed.
- While the protective fabric is being put into place, no other activity should be carried out on the roof.

The Vegetal i.D. team can provide you with support for your green roof design, including CAD drawings, plant selection, installation, and maintenance. Don’t hesitate to give us a call if you have any questions. Tel: 585-343-6400.

Is this your first HYDROPACK® installation? Call us to ask a representative to come on site.

**INFORMATION WE NEED**

- Desired date and time of delivery
- Contact onsite: name, phone, email
- Type of truck (dry van, flat bed, etc.)

The HYDROPACK® trays are stacked on top of each other on a standard pallet. Per truckload, we can transport about 3,200 sq. ft. per truckload 1,200-1,280 trays (288-308 m²)

One pallet is 2,200 lbs; 156-166 sq. ft., 60-64 trays (14.4- 15.4 m²)

We use flat bed trucks, dry vans, and temperature controlled reefer trucks – simply let us know which is most convenient for you.
TOOLS NEEDED

- Pallet jack
- Forklift/bobcat with forks, or a crane (if shipped on a flat bed)
- Lifting device for raising the pallets to the roof

ACTIONS

- Unload the pallets and place them in the shade to protect the vegetation from direct sunlight.
- Be ready to install HYDROPACK® on the day of delivery.
- Each pallet weighs about 2,200 lbs.
- Lift the HYDROPACK® pallet to the roof without putting it down. If you’re using a crane, protect the roof before lowering the pallet, and make sure that the roof is strong enough to take the weight.
- Lift the pallets as close as possible to the place where they are going to be installed.

HYDROPACK® is packaged on pallets rather than racks. This enables trucks to leave as soon as they have been unloaded, and simplifies site management.

Shipments may be delayed, but no later than 10 days before the merchandise leaves the nursery.
If the trays cannot be installed the same day, contact VEGETAL I.D. for instructions.
TOOLS NEEDED

- Gloves for each crew member
- 3 Knives or 3 pairs of scissors
- 1 Wheelbarrow (if gravels in the vegetation free zone)
- 1 Chalk Line
- 1 Circular saw or reciprocating saw
- 1 Shovel

ACTIONS

- Roll out the Root Barrier and/or protection fabric over the waterproofing membrane (consult the waterproofing manufacturer’s recommendations)
- Overlap the sheets by a minimum of 2 inches.
- Take 2 empty HYDROPACK® trays and place them at one corner of the roof. This will enable you to visualize the sequence you will follow when arranging the rest of the trays. The order should always be from left to right.
- Remember: for most specifications you will need to create a Vegetation-free Zone along the perimeter of the roof and around any rooftop equipment. Measure the width of the vegetation-free zone and draw a straight chalk line to mark the edges from which you will begin installing the trays. The lines have to form a perfect 90 degree angle.
- In some cases you may find it necessary to cut HYDROPACK®. If so, empty the tray using the filter fabric to lift the soil. Cut the tray with a circular saw/knife or reciprocating saw. Position the tray with the remaining edges facing outward. Cut the soil and plants with a knife and replace them in the tray (see page 67).
- When all the trays are installed, fill the space around the perimeter with gravel ballast. Use the wheelbarrow to move the gravel around the roof, and use the shovel to spread it.

HYDROPACK® saves you money because it enables you to create vegetation-free zones without the need for aluminum edges. And because HYDROPACK®’s All-in-One system already includes drainage, water reservoirs, and filter cloth, so you save time on installation as well.
TOOLS NEEDED

- Gloves

ACTIONS

- Hold the HYDROPACK® tray with the female hooks facing you.
- Position the tray next to the trays already in place.
- Holding the tray by the top right hand and bottom left hand corners; lift them ½”.
- Slide the male hooks down into the female hooks.
- If the hooks don’t slide in all the way use your foot to press them into place.

HYDROPACK® is the only tray with an interlocking system designed to enable water and nutrients to circulate. The strong interlocking system also protects the trays from being uplifted by the wind.
TOOLS NEEDED

- 1 Circular saw or reciprocating saw

ACTIONS

In some cases you may find it necessary to cut HYDROPACK®. If so, empty the tray using the filter fabric to lift the soil. Cut the plastic tray with a circular saw/ knife or reciprocating saw. Position the tray with the remaining edges facing outward. Cut the soil, filter and plants with a knife and place them back into the tray.

HYDROPACK® can be cut easily to fit odd dimensions and angles.
TOOLS NEEDED

- Broom

ACTIONS

- Remove all equipment, debris and pallets from the roof.
- Use leftover growing media and plants to fill in bare spots, if any.
- Sweep the vegetation-free zone if you have installed pavers.
- Take steps to ensure that there is no work on the roof after installation. The vegetation will die off if there is too much foot traffic.

After the plants have been installed, do not enable any construction traffic on the roof. If post-installation construction activity is unavoidable, please consult us prior to installation.
**TOOLS NEEDED**

- Irrigation supply: hose, tripod sprinklers
- Irrigation timer

**ACTIONS**

- Position hoses and overhead sprinklers so that they provide optimum coverage of the vegetated area.
- Program the irrigation for 30 minutes.
- Check the HYDROPACK® reservoirs in different places to make sure they are full of water, if they are not, water for a little longer. To check the water level in the reservoirs, lift the filter cloth in the tray.
- For the first year, the vegetation will need to adapt to its new environment. We recommend that you water during the summer (July-August), once a week for 30 minutes.
- After the first year, water only during periods of drought: > 90 °F (32 °C) with less than 0.6” rainfall (15 mm) for 20 consecutive days.

**FOR THE FIRST MONTH, THE VEGETATION MUST BE CHECKED REGULARLY, AT LEAST ON A WEEKLY BASIS TO ENSURE THAT THE PLANTS ARE ADAPTING WELL. AFTER ONE MONTH, THE PLANTS CAN BE CHECKED QUATERLY.**

**IF YOU NOTICE A PROBLEM CALL VEGETAL I.D. IMMEDIATELY.**
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
B. GREEN ROOF SOLUTIONS
C. BENEFITS OF GREEN ROOFS
D. LEED CREDITS
E. GREEN ROOF DESIGN

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L. IRRIGATION
M. WARRANTY
N. CAD DRAWINGS
K. HYDROPACK® MAINTENANCE

HYDROPACK® can be purchased with a limited plant warranty. To qualify for this warranty, the building owner and/or its agents must contract a maintenance program following the requirements of this maintenance guide. The building owner or its agents, including but not limited to the installer, and the maintenance contractor must follow the maintenance guide closely and provide to Vegetal i.D. photographs and reports when visiting the green roof, following vegetal i.D.’s requirements.

HYDROPACK® needs little maintenance; however, maintenance is very important, and the success of your green roof will depend on it.

TOOLS NEEDED

- Bucket
- Knife, gloves, small shovel
- Hand spreader (we recommend the 3100 Professional Hand Crank Spreader from Earthway)
- Slow release fertilizer – organic or inorganic.
- Irrigation supply

The first visits should occur weekly during the first month after the installation to verify that the vegetation is establishing properly. Watering may be necessary during this period.

Minimum maintenance for Standard Plant Mix is 4 times per year. For other mixes, consult our team.

During extended periods of drought plants may suffer. Drought is considered any period of 20 days or more with less than 0.6” of cumulative rainfall and temperatures above 90°F. During this period, use a temporary irrigation system to water for 30 minutes once a week until the weather improves.

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<thead>
<tr>
<th>ACTIONS</th>
<th>JAN</th>
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<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
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<td>Weeding</td>
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<td>Plant health</td>
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<td>Drain inspection</td>
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<td>Garbage removal</td>
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</table>

HYDROPACK® is very easy to maintain because it is delivered to the roof with the vegetation already fully established.
**ACTIONs**

**WEEDING**

Weed before the plants go to seed (for most weeds this means mid-spring to summer, depending on weather conditions). You can walk on the vegetation, but gently and not often. Pull out the weeds from the base. Pull out the entire root and put them in a plastic bag to prevent the seeds from spreading.

Fill in any bare patches with sedum cuttings from surrounding trays.

Remember that watering your green roof will increase weed pressure. If you water your roof frequently, you’ll need to weed more often (once a month). Too much irrigation will promote high weed pressure, so manage your irrigation with care.

Don’t use any chemical weed control products without first consulting Vegetal i.D.

**PLANT HEALTH INSPECTION**

For each visit, answer the following questions:

- How many different types of plants do you see?
- How many different types of weeds?
- What is the estimated plant cover?
- Do you see any insects or wildlife?

**PHOTOS REQUIREMENTS**

- Identify each photo with the quote number initially provided
- Each photo must depict a digital timestamp reflecting the time and date that the photograph was taken.
Valid for zones 3-8. Outside these zones contact the Vegetal I.D. team for advice.

ACTIONS

FERTILIZING

To ensure prolific blooming on a highly visible roof, apply fertilizer each spring; otherwise, every 2 years, during spring.

Use a hand spreader. We recommend the 3100 Professional Hand Crank Spreader from Earthway. Be sure to wear a mask, gloves and eye protection.

Follow the fertilizer manufacturer’s instructions. We usually recommend a slow (9-month) fertilizer (18,6,12), but it really depends on the needs of the plants and the climate conditions. Please consult us for a detailed fertilization program. Water for 30 minutes after each application.

You’ll begin to see the effect on the plants after about three weeks.

WATERING

With the exception of some circumstances, such as pitched roofs, we do not recommend the installation of a permanent irrigation system.

Watering is important after installation and throughout the first summer. A temporary irrigation system is sufficient, using tripod stand sprinklers.

In long periods of drought you should water the roof until the reservoirs are full. It usually takes about 30 minutes with a water pressure of 35 psi. We define drought as a long period of 20 consecutive days with less than 0.6” of cumulative rainfall and temperatures above 90°F. Under these specified conditions, water for 30 minutes once a week.

If you have bare spots on your roof, spread cuttings and water them every week until the plants grow back.

For irrigation supplies and advice please contact Vegetal I.D.

If you plan to install permanent irrigation, contact Vegetal I.D. for approval of the layout and the system itself. We provide lay out, ready-to-install kits that include weather stations, controller, connections, sprinklers and pipes.

CLEANING THE DRAINS

Remove roots, vegetation, and any signs of moss appearing in the roof drains.

REMOVE TRASH AND LEAVES

Pick up any leaves and trash that have fallen onto the vegetation.
# MAINTENANCE FIELD NOTES

**QUOTE NUMBER**

**DATE OF INSTALLATION**

<table>
<thead>
<tr>
<th>DATE</th>
<th>NAME</th>
<th>COMPANY</th>
<th>ADDRESS</th>
<th>PHONE/EMAIL</th>
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</table>

<table>
<thead>
<tr>
<th>MAINTENANCE</th>
<th>CHECK</th>
<th>OBSERVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant health inspection</td>
<td></td>
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<tr>
<td>Weeding</td>
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<tr>
<td>Vegetation replacement</td>
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<td>Fertilization [type, rate]</td>
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<tr>
<td>Drain inspection and cleaning</td>
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<td>Garbage removal</td>
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<td>Watering</td>
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<tr>
<td>Plant coverage [Percent]</td>
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<td>Number of plant varieties</td>
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<td>Number and name of different weeds</td>
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<td>Insect or wildlife</td>
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</table>

**COMMENTS:**
## CHECK LIST FOR THE BUILDING OWNER AND ITS AGENTS

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>CHECK</th>
<th>DATE</th>
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<tbody>
<tr>
<td>Read the Installation and Maintenance Guide</td>
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<tr>
<td>Contact the waterproofing membrane rep. to know the warranty requirements if any (TSW)</td>
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<tr>
<td>Verify that all work has been done on the roof and that nobody will need to come after the installation work on the roof and walk on the plants</td>
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<tr>
<td>Test the waterproofing membrane for leaks</td>
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<tr>
<td>Schedule the Green Roof Delivery and unloading equipment</td>
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<tr>
<td>Print a copy of the Installation Guide to have with you during the installation</td>
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<tr>
<td>Call 585-343-6400 if you have any question on the process</td>
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<tr>
<td><strong>Sign the packing list and fax it to us within 24 hours</strong></td>
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<tr>
<td>If you cannot install all the trays the same day, call our team for further instructions on how to store the plants</td>
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<tr>
<td>Lock the trays together and verify at the end of the installation that no space remains between them</td>
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<tr>
<td>Take photos during and after the installation and during the irrigation when a limited plant warranty is pursued (minimum 6, 3 overall and 3 close up).</td>
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<tr>
<td>Water the entire Green Roof for 30 minutes minimum</td>
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<td>Send the pictures to our team the following day</td>
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<tr>
<td>Check the vegetation weekly for the first month, watering if necessary</td>
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<tr>
<td>Visit the green roof quarterly, providing reports and photos to Vegetal i.D.</td>
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</tr>
</tbody>
</table>
CONTRACTOR’S CERTIFICATION

Fax this page to Vegetal i.D. before the shipment date: 585-343-6401

I ________________________, manager/installer of the products provided by Vegetal i.D. Inc. on (date)________________, for (project's name) ____________________________ located at (project's address)__________________________________________________________, acknowledge, agree with, and certify to the following:

1. I have read, and agree with the terms of installation and maintenance, attached hereto as Guide and Instructions to Installation and maintenance.
2. I agree to contact and notify Vegetal i.D. Inc. within 24 hours of the delivery of Hydropack, of any problems, or issues that may impact installation, or anything related thereto.
3. I understand that if I do not contact and notify Vegetal i.D. Inc. within 24 hours of the delivery of the plants or Hydropack, of any problems, or issues that may impact installation, or anything related thereto, that Vegetal i.D. Inc. will deem the products as accepted.
4. I understand and agree to the following before installation begins:
   i. That all required preparations including the following have been completed: confirmation that the roof is ready for installation of the product (please refer to the checklist in the Guide and Instructions to Installation for the roof being ready), examination of product for defect, completion of the proper approvals including but not limited to architect's and other professionals’ of suitability of the site for the application of the product, proper water proofing, and testing of the same.
   ii. Coordinate delivery, and installation to ensure healthy viable plants, and proper installation.
5. I agree to install the product, following the step by step instructions as set forth in the Guide and Instructions to Installation and maintenance.
6. I agree to contact and notify Vegetal i.D. Inc. of any issues or potential problems that may arise during installation, and not to proceed further, without appropriate instructions from Vegetal i.D. Inc.
7. I agree to notify Vegetal i.D. Inc. of the completion of the project, within 24 hours of such completion.

I certify to all of the foregoing,

Name:

Title:

Date:

Phone:
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
B. GREEN ROOF SOLUTIONS
C. BENEFITS OF GREEN ROOFS
D. LEED CREDITS
E. GREEN ROOF DESIGN

VEGETAL i.D. TECHNICAL SOLUTIONS

F. HYDROPACK® GREEN ROOF SYSTEM
G. VEGETATION OPTIONS
H. SLOPE APPLICATION
I. PROJECT SHOW CASE
J. INSTALLATION
K. MAINTENANCE
L. IRRIGATION
M. WARRANTY
N. CAD DRAWINGS
L. GREEN ROOF IRRIGATION

Extensive green roof systems establish plant cover that will (after a consolidation period of variable duration) maintain itself somewhat autonomously with little or no need for artificial watering. The main plants used in our systems are succulent plants from the crassulaceae family (especially sedum), which require little water. However, in certain conditions (determined by factors such as the project location and the presence of semi-intensive vegetation and/or pitched roofs) it may be necessary to supplement the natural rainfall with a rooftop watering system.

WHEN SHOULD A WATERING SYSTEM BE INSTALLED

SEDUMS – VERY HARDY PLANTS

Sedums develop best in a sunny location, and are considered to be plants that require little water. They require an estimated three times less water than a lawn in a comparable location. Sedums are succulent plants with two physiological adaptations that make them remarkably resistant to drought: they store water in their leaf tissue, and their crassulacean metabolism reduces water losses by closing their stomata during the day. Sedum plants expand horizontally to form a mat and have excellent regenerative capabilities. Coverage ratios may vary according to the season. The sedum mat may regress during extended dry periods but the regenerative capabilities of these plants are such that the original volume of vegetation is quickly restored after even a severe drought.

In this context, the rainfall profile – and in particular the local rainfall frequency – is a key factor in the decision whether or not to install an automatic watering system. In many regions, plant cover with the STANDARD PLANT MIX will not require additional watering except in the event of an extended drought or sustained high temperatures.

KEY FACTORS WHEN DECIDING WHETHER TO INSTALL A WATERING SOLUTION

The main factors in the decision whether to install an irrigation system are as follows:

- Esthetic requirements: The importance attached to the plant cover’s appearance will influence the decision whether or not to install a watering system. Artificial watering supplements the natural rainfall at the site, minimizing the water stress experienced by the plants. As a result, the vegetation grows strongly and has a flourishing appearance. The customer’s willingness to tolerate reduced coverage during periods of harsh weather may be a factor in their final decision: even if not essential for the vegetation’s survival, a watering solution may be desirable if the rooftop is very visible and subject to particular requirements in terms of its appearance.
- The local climate (rainfall frequency and intensity, summertime temperatures, wind, etc.) and the green roof system’s compatibility in terms of water retention capacity. HYDROPACK® is designed for optimum water retention. This design helps to enable plants to survive between rainy periods in many regions.
In certain circumstances (e.g. projects located in hot regions, steeply pitched roofs, etc.) watering is essential in order for plants to survive between rainy periods.

**Technical constraints**: factors such as the roof’s exposure, pitch or height above ground may call for a built-in watering system.

### Technical constraints

The design intent of the green roof and the related environmental constraints vary between projects. Consequently, we recommend installing an automatic watering system (regardless of geographical location) in the following cases:

- The roof pitch is steeper than 15%
- The roof is highly exposed to the sun, particularly if it is also pitched
- The roof is known to be exposed to strong winds or wind corridors. Depending on the roof height, winds may be much stronger at roof level than on the ground. The likelihood of strong winds may also affect the choice of watering system, as a sprinkler-type system might be an inconvenience to neighbors in particularly windy areas
- Precipitation is partially or totally prevented from falling onto the roof (by a canopy or roof overhang, for example)

### Vegetal i.D. Watering Solutions

An irrigation network has three main parts:

**A hydraulic part**: drip or sprinkler-based distribution system.

This part determines whether water is distributed via drip irrigation pipes, nozzles or sprinkler heads. These components are interconnected and water is distributed to them through a system of pipes with fittings of various sizes and purposes.

The **drip irrigation** technique provides localized watering directly into the growing medium. It concentrates water at the base of the plants. Drip systems use a low flow-rate and are able to operate at very low pressures.

The **sprinkling** approach sprays water onto the leaves and the whole planted area.

**Vegetation type** (extensive or semi-intensive): the customer’s choice of plants may include species that require significant quantities of water. In such cases, the composition of the plant cover makes an automatic water system essential.

**Hydraulic module**: generally located in valve inspection chambers. This part of the system consists of manual and electrically-operated valves, filters and pressure regulators that automate the system and ensure that it is able to operate reliably over the long term. They are sized to suit the water pressure and flow-rate available on the roof.

**Control module**: essential if watering is to be programmed and automated. AC or battery-powered programmers are essential components of this system, setting watering frequencies, durations and periods, etc. Some programmers have more advanced functions than others. Depending on the model, programmers may control either a single electrically-operated valve or multiple valves.

![Vegetation type](image-url)
The choice between a sprinkler-based or a drip solution for distributing water will depend on the nature of the project. The table below shows a few factors that can guide this choice. For more information, contact your local sales manager for advice.

<table>
<thead>
<tr>
<th>Watering system</th>
<th>Flow rate</th>
<th>Watering duration</th>
<th>Aesthetic result</th>
<th>Area</th>
<th>Maintenance</th>
<th>Appearance</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Slow-acting effect</td>
<td>All</td>
<td></td>
<td>Barely visibly after the growth</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fast-acting effect</td>
<td>Large</td>
<td></td>
<td>Very discreet from the beginning</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note: Contrary to popular belief, the drip solution does not consume less water.**

**WHEN DO YOU REALLY WATER A GREEN ROOF?**

The watering system, whether manual or automatic, is mainly used:

- During the initial period after planting, until the plants’ root networks have been fully established (when a non pre-grown vegetation system consisting of fragments or small plugs). This consolidation period is eliminated with the HYDROPAC® solution.
- For routine maintenance, during extended droughts or throughout the summer, depending on the project constraints.

**MAINTAINING THE IRRIGATION SYSTEM**

Whichever watering solution you choose, it is essential to inspect your system at least two to four times a year. The most frequent maintenance operations include:

- Reprogramming the irrigation frequencies and doses
- Winterizing and draining the system in the fall, and filling it in the spring
SIZING ROOFTOP WATER SUPPLIES

A water supply to the roof is essential, even if no watering system is installed.

The water supply capacity, flow-rates, water pressure and the number of faucets required depend on the surface area to be watered.

We recommend that the green roof site be provided one or more supply points of suitable capacity for the planted area (pressure >36 PSI). The water supply should be available at roof level at the time of the installation and remain in operational condition throughout the roof’s service life. No point on the roof should be more than 90 feet from the nearest faucet.

The table below serves as a rough guide for sizing the rooftop water supply for your project. These figures are for guidance only, subject to confirmation on a case-by-case basis by Vegetal I.D. engineers.

<table>
<thead>
<tr>
<th>WATERED AREA</th>
<th>SUPPLY PIPE DIAMETER</th>
<th>MINIMUM FLOW RATE</th>
<th>MINIMUM PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 1,000 sq. ft</td>
<td>1</td>
<td>6.6</td>
<td>36.3</td>
</tr>
<tr>
<td>1,000 to 4,000 sq. ft</td>
<td>1 1/4</td>
<td>11</td>
<td>36.3</td>
</tr>
<tr>
<td>4,000 to 10,000 sq. ft</td>
<td>1 1/2</td>
<td>20</td>
<td>43.5</td>
</tr>
<tr>
<td>greater than 10,000 sq. ft</td>
<td>1 1/2 or 2</td>
<td>20</td>
<td>50.8 - 58</td>
</tr>
</tbody>
</table>

With Vegetal I.D., an in-depth technical study is carried out for every green roof project to determine the irrigation requirements. Our engineers will recommend the most suitable watering solution and specify all system components to suit your project’s technical requirements and esthetic considerations.

Vegetal I.D. watering solutions are designed and sized specifically for green roof applications. (This approach covers the watering system equipment and accessories, as well as the sizing and programming aspects). At Vegetal I.D., we harness our experience with plants and their needs to ensure that your vegetation looks great by installing a built-in irrigation system that is as effective and discreet as possible.
SERIOUS ABOUT SUSTAINABLE WATER MANAGEMENT

**VEGETAL i.D. extensive green roof solutions** optimize your water management strategy:

- **Hydropack®** modules are able to absorb large quantities of rainwater (1.1”) and distribute it to the plants from their built-in water reserves.

- **Hydropack®** can be combined with our **Stock & Flow®** solution to collect even more water (2.3”). The stored water can be used to passively irrigate the plants using the **Irric’up®** component of **Stock & Flow®** which passively waters the plants above.

COMBINING HYDROPACK WITH AN IRRIGATION SYSTEM

The built-in water reserve saves water

A permanent water reserve (1/5 gal./sq. ft) that fills while it rains and then releases water to the plant cover by wicking

Excess rain or irrigation water is distributed between the interconnecting modules (via the water reservoirs) when the substrate is saturated with water

Combining our solutions:

- Reduces the need for externally-supplied water by making maximum use of natural rainfall and minimizing water consumption
- Optimizes distribution of rain/irrigation water across the roof surface, even on steeply-pitched roofs
- Enables the **Vegetal i.D. irrigation system to be sized correctly** for all projects

A truly environmentally-friendly solution for extensive green roofs that require occasional watering
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
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M. WARRANTY
N. CAD DRAWINGS
M. WARRANTIES

Working with Vegetal i.D.’s products is the insurance of working with proven, long lasting and reliable products. With over 20 years of experience, your green roof experts can help you from the design to the maintenance of your projects.

In order to secure your investment, we are offering a wide variety of warranties.

- Plant warranty, guarantying a minimum plant coverage of 80%
- 20 year product warranty for the plastic tray
- Single warranty and product removal warranty from our waterproofing membrane manufacturer partners

Contact us to receive the full details on the single warranty provided by our partners.
LIMITED PLANT WARRANTY

The following are the terms and conditions of the vegetation of Vegetal I.D. Inc. HYDROPACK® Systems:

This Limited Warranty is effective when:

1. all the invoices including those for materials, installation, and services have been paid in full, and there is no outstanding balance;
2. Vegetal I.D. Inc. has inspected the completed installation or seeing pictures and has satisfied that installation was in accordance with required and or recommended methods by Vegetal I.D.. (the Maintenance Guide (APPENDIX A) is sent by Vegetal I.D. before the installation.
3. This warranty applies to zone 8-10 of the AHS Heat zone map, provided that Vegetal I.D. has studied the area of installation, and approved the applicability of the warranty in this zone.
4. Vegetal I.D. Inc. has approved the green roof drawings, design and specifications. (A project study sheet (APPENDIX B) is provided by Vegetal I.D. Inc. and has to be completed) and returned for approval from Vegetal I.D. Inc.
5. Vegetal I.D. Inc. has inspected the green roof after full completion or seeing pictures; (i) has approved the installation; (ii) controlled that the vegetated material was installed the same day of receipt; (iii) and the watering after completion was properly completed the same day. (Dated digital images must be uploaded on the website UPLOAD NOW as proof of installation on the day the product arrives).
6. Owner executes the maintenance program for ...... years with a Vegetal I.D. Inc. approved contractor that follows precisely the maintenance guide provided by Vegetal i.D. This guide includes but is not limited to 4 inspections per year, weeding, appropriate care, watering and fertilization during the warranty period. (The Maintenance Guide (APPENDIX C) is sent to the contractor before the installation.

Roof is installation ready at requested arrival time of the truck with Vegetal I.D.’s products.
7. HYDROPACK is installed and watered the day of arrival, as required.
8. Initial irrigation is properly completed i.e. 30 minutes soaking with conventional overhead sprinklers (3/4" hose) just after the installation and covering the entire vegetated surface area.
9. During the first year, the product is watered until full saturation of the water reservoir if it does not rain for twenty (20) consecutive days. WATERING IS THE RESPONSIBILITY OF THE OWNER.
10. Owner must confirm any vegetation damage or defect in writing or email (sales@vegetalid.com ) to Vegetal I.D. Inc. at their main office at 7939 Bank St. Road, Batavia, NY 14020, no later than three (3) business days of discovery.
11. This Limited Warranty applies only to the plants of the HYDROPACK System.
12. During the period of the warranty, Vegetal I.D. Inc., its agent and employees, shall have free access to inspect the roof during regular business hours.
13. The roof has to be designed with permanent protections to secure the maintenance crew during their work on the roof.
14. Vegetal I.D. Inc. does not warrant performances of the waterproofing system, drainage layer, growing media or any other components. (A separate warranty must be provided by the waterproofing applicator and/or waterproofing manufacturer.).
15. Leaks in the waterproofing system will not be regarded as the responsibility or liability of Vegetal I.D. Inc.
16. This Limited Warranty does not apply to plant damage caused by lighting gale, hurricane, tornado, earthquake or any act of God or other unusual action of the elements.
17. This Limited Warranty does not apply to plant damage caused by any construction subsequent to the installation of the HYDROPACK that has not been authorized in writing by Vegetal I.D. Inc. including, but not limited to the installation of decks, planters, irrigation systems, air conditioner condensers, pavers, sky lights or any other work that will require stepping on the plants frequently or storing material on the plants.
18. This Limited Warranty applies only when regular maintenance has been performed following the Maintenance Guide and providing accurate and precise reports of each visit, using the field note sheet Doc 8 (APPENDIX B). Additionally, the appearance of the Green Roof System should be expected to change over the years and over the seasons. A process of natural succession will result in the botanical evolution of the vegetated cover; consequently, the future distribution of plants species cannot be accurately predicted.
19. This warranty is extended solely and exclusively to the owner of the building at the time the Green Roof System is installed. It does not extend, nor is it otherwise assignable or transferable to any other party unless approved in advance and in writing by Vegetal I.D. Inc. and the costs to process the transfer and to inspect the vegetation of the Green Roof System, if necessary, are paid for by the original owner.

20. Any controversy or claim arising out of or relating to this warranty shall be settled by arbitration in the State of New York, by the American Arbitration Association in accordance with the Construction Industry Arbitration Rules, and judgment upon the arbitration award may be entered in any court having jurisdiction thereof.

21. The owner must comply with every term and condition stated herein.

Periodic Photo confirmation required:

- At installation (3 pictures showing the entire green roofs with different views; 2 showing the plants being watered after the installation and 4 close up to show the attachment of the trays between each other's)
- At week 4 (6 pictures of the vegetation, 3 close up and 3 general views)
- At week 12 (6 pictures of the vegetation, 3 close up and 3 general views)
- At week 26 (6 pictures of the vegetation, 3 close up and 3 general views)
- Pre-winter and beginning of following spring (6 pictures of the vegetation, 3 close up and 3 general views)
- 4 times a year, according to the calendar provided in the Maintenance Guide

Provided that all of the above terms and conditions have been met, Vegetal I.D. Inc. will replace the plant material, provided the plant death originated from the following activities under the purview of Vegetal I.D. Inc. unsuitable plant species. In such cases, Vegetal I.D. Inc. shall be limited to replace damaged plants of the Green Roof System and to restoration of the Green Roof System vegetation. The decision of Vegetal I.D. Inc. with respect to replacements shall be final and binding.

For projects where a Landscape Architect or Architect specifies specific plants and Vegetal i.D. has no control on the plant mix, Vegetal i.D. cannot be liable, provided the plant death originated from unsuitable species.

Subject to the terms, conditions and limitations stated in this …. year plant warranty, this …. plant year warranty guaranties a minimum foliage coverage rate of 80 percent the first day of installation and remaining for the duration of this warranty. If the cover rate is determined to be less than 80 percent, Vegetal I.D. Inc. will add vegetated material until the cover requirement is achieved. Cover rates shall be estimated only during spring time when the vegetation is active and shall be estimated for each 200 square foot grid of the Green Roof System.

In the event of a failure of the vegetation coverage as described above, the sole responsibility of Vegetal I.D. Inc. shall be limited to the initial cost of the vegetated material, excluding installation, maintenance and design.

This document has to be completed and returned to Vegetal i.D. Inc. with a copy of the maintenance contract, complying with this limited warranty requirements and its duration.

The maintenance contractor agrees to follow precisely the Maintenance Guide from Vegetal i.D. and to contact Vegetal i.D. as soon as problems occur.

Raphael Lamé, President of Vegetal I.D. Inc.

Green Roof Owner:

Name:
Address:
Email:
Phone:
Signature:
Date:

Maintenance contractor:

Name:
Address:
Email:
Phone:
Signature:
Date:

www.vegetalid.us
20 YEAR WARRANTY ON MODULES

This Limited Warranty consists of TWO parts: 1. Limited Warranty Registration, and 2. Terms and Conditions of the limited Warranty.

Part 1. Limited Warranty Registration

Important: For this limited warranty to be effective, Vegetal i.D. must receive the fully completed form below within Sixty ("60") days from the date of installation. The completed form may be sent by facsimile to: 585-343-6401 or sent via certified mail delivery to: Vegetal i.D. Inc., 7939 Bank St. Road, Batavia, NY 14020.

Building/Project
Name:
Address:
Date Installation Completed:
Square footage of the vegetated area:

Green roof Installer Company
Name: ..............................................................
Address: ..............................................................
Contact Name: ......................................................
Contact tel. No.: ......................................................
Contact email address: ..............................................

Building Owner/Agent of Building Owner
Name: ..............................................................
Address: ..............................................................
Contact Name: ......................................................
Contact tel. No.: ......................................................
Contact email address: ..............................................

Roofing Contractor Company
Name: ..............................................................
Address: ..............................................................
Contact Name: ......................................................
Contact tel. No.: ......................................................
Contact email address: ..............................................

Maintenance Contractor Company
Name: ..............................................................
Address: ..............................................................
Contact Name: ......................................................
Contact tel. No.: ......................................................
Contact email address: ..............................................

General Contractor Company
Name: ..............................................................
Address: ..............................................................
Contact Name: ......................................................
Contact tel. No.: ......................................................
Contact email address: ..............................................

Warranty Registration completed by:
Name: ..............................................................
Date: .................................
Signature:

For office use only:
Date of reception: .................................
Limited Warranty reference: .................................
Part 2. Terms and Conditions of Vegetal i.D.’s Limited Warranty

1. Limited Warranty. Vegetal i.D.’s tray module (“Tray” or “System”) is warranted against material defects and photodegradation for twenty ("20") years from the date of installation, provided the System is surrounded by stone ballast, edging or pavers.

2. Exclusions to Warranty. The warranty will not apply:
   • Where Vegetal i.D. determines that the System was not installed properly, or not in accordance with Vegetal i.D’s required or recommended procedures; (Improper or faulty installation may be covered by the installer’s installation warranty, if any).
   • Where Vegetal i.D. determines that the client or its agent(s) in charge of proper, consistent, and systematic maintenance of the System failed to maintain the system, or failed to follow proper procedures of maintenance required or recommended by Vegetal i.D.
   • To waterproofing systems e.g. membranes, or to bonding agents and or methods. (It is highly recommended that previous to the selection of the System, the client obtain the pre-approval of the manufacturer of the waterproofing system e.g. membrane, and the bonding agent and or method to ensure their suitability with the System. Generally manufacturers’ warranties on waterproofing systems e.g. membranes will remain in effect where the client has obtained the prior approval of the manufacturer with the manufacturer’s approved slip sheet/root barrier.)
   • Where the client failed to notify, in writing to Vegetal i.D., immediately upon discovery of the suspected problem, or in no event no more than 5 business days upon the discovery of the suspected problem.
   • Where the client or its agent(s) intends to or makes any repairs or alters the Tray(s), without the prior written authorization of Vegetal i.D.
   • Where the client or its agent(s) intends to remove or removed the Trays, without the prior written authorization of Vegetal i.D.
   • Where invoices submitted by Vegetal i.D. have not been paid, and there are outstanding balances beyond the enableable period to pay.
   • To inadequate Vegetation coverage of 90% or less.

3. Sole and Exclusive Warranty, And Limitation of Liability. THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER GUARANTEE OR WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATIONS OR LIABILITY OF VEGETAL I.D., WHETHER ANY CLAIM AGAINST IT IS BASED UPON STRICT LIABILITY, NEGLIGENCE, BREACH OF WARRANTY OR ANY OTHER THEORY. IN NO EVENT SHALL VEGETAL I.D. BE LIABLE FOR INDIRECT, PUNITIVE, CONSEQUENTIAL, INCIDENTAL, OR SPECIAL DAMAGES OF ANY KIND, UNDER ANY CIRCUMSTANCES WHATSOEVER.

4. Remedies. Where the System has been proven to be materially defective, the exclusive remedy, at Vegetal i.D.’s option, will be to: (i) refund the purchase price of the affected Tray(s) (exclusive of soil and plant material); or (ii) timely repair or replace such Tray(s) (exclusive of soil, plants or installation).

5. Client responsibility. It is the responsibility of the client to consult with properly licensed professionals e.g. architects and engineers to determine the suitability of the System for a particular application including but not limited to applicable weight bearing capabilities, drainage, roof slope.

6. Venue, Choice of Law. Any claim or action arising out of this limited warranty must be brought in the State and Federal courts of the State of New York, located in Monroe County. New York law shall be applied regardless of principles of conflicts of law.

7. Force Majeure, voluntary destruction, accidental damage, improper performance. This Limited Warranty is not applicable to the partial or whole destruction, damage, state of disrepair, or non-functionality of the System resulting directly or indirectly from: acts of God; natural disasters including but not limited to earthquakes, hurricanes, and or floods; acts by governments including but not limited to wars; acts of terrorism; riots, labor strikes, or labor disputes that may adversely affect the System; voluntary destruction and or damage of any kind; or performance failures of parties outside the control of Vegetal iD including but not limited to unintended damage or destruction to the System caused by accidental damage or destruction.

Vegetal i.D. Inc.
By Name: …………………………………… Title: ………………………………………
Signature: …………………………………… Date: ………………………………………
GREEN ROOF 101

A. GREEN ROOF SUCCESS FACTORS
B. GREEN ROOF SOLUTIONS
C. BENEFITS OF GREEN ROOFS
D. LEED CREDITS
E. GREEN ROOF DESIGN

VEGETAL i.D. TECHNICAL SOLUTIONS

F. HYDROPACK® GREEN ROOF SYSTEM
G. VEGETATION OPTIONS
H. SLOPE APPLICATION
I. PROJECT SHOW CASE
J. INSTALLATION
K. MAINTENANCE
L. IRRIGATION
M. WARRANTY
N. CAD DRAWINGS
SIDE VIEW

HYDROPACK "ALL-IN-ONE"
GREEN ROOF TRAY

Plant Mix. (95% minimum coverage at installation)
HYDROPACK® engineered growing media
HYDROPACK® filter fabric
HYDROPACK® water reserves
HYDROPACK® green roof tray
HYDROPACK® interlocking system
HYDROPACK® drainage holes

TOP VIEW

HYDROPACK® drainage holes Ø3/8"
Handles
Interlocking system

HYDROPACK® saturated weight is 18 lbs per sq. ft.

Download the dwg from the website: www.vegetalid.us

ILLUSTRATIONS ARE TO CONCEPTUALLY ASSIST PROFESSIONALS IN DESIGNING HYDROPACK® INSTALLATIONS. VEGETAL I.D. INC. IS NOT RESPONSIBLE FOR ENGINEERING. A QUALIFIED ROOFING SPECIALIST SHOULD BE CONSULTED TO DETERMINE APPROPRIATE WATERPROOFING AND ROOF DECK MATERIALS.
SIDE VIEW

PITCHED GREEN ROOF WITH VEGETATION FREE ZONES (f)

f is the vegetation free zone between 20" and 36" wide

TOP VIEW

FLAT OR PITCHED GREEN ROOF WITH VEGETATION FREE ZONES

20-36"

VEGETATION FREE ZONE

ROOF DRAINS

Download the dwg from the website: www.vegetalid.us

ILLUSTRATIONS ARE TO CONCEPTUALLY ASSIST PROFESSIONALS IN DESIGNING HYDROPACK® INSTALLATIONS. VEGETAL I.D. INC. IS NOT RESPONSIBLE FOR ENGINEERING. A QUALIFIED ROOFING SPECIALIST SHOULD BE CONSULTED TO DETERMINE APPROPRIATE WATERPROOFING AND ROOF DECK MATERIALS.

VEGETAL I.D. INC
7939 BANK ST. ROAD.
BATAVIA, NY 14020

WWW.VEGETALID.US
SALES@VEGETALID.COM

NOT TO SCALE
Download the dwg from the website: www.vegetalid.us

SIDE VIEW

HYDROPACK GREEN ROOF TRAY
WITH VEGETATION FREE ZONES
AND PARAPET

- Stone ballast 10-15 lbs per sq. ft.
- 1-1/2" (38 mm) diameter stone ballast
- Vegetation free zone 20" to 36"
- Protection fabric
  (follow membrane manufacturer recommendations)
- HYDROPACK® green roof tray

Illustrations are to conceptually assist professionals in designing HYDROPACK® installations. VEGETAL I.D. INC. IS NOT RESPONSIBLE FOR ENGINEERING. A QUALIFIED ROOFING SPECIALIST SHOULD BE CONSULTED TO DETERMINE APPROPRIATE WATERPROOFING AND ROOF DECK MATERIALS.

VEGETAL I.D. INC
7939 BANK ST. ROAD
BATAVIA, NY 14020

VEGETAL ID INC HYDROPACK® green roof "All-In-One" tray

WWW.VEGETALID.US
SALES@VEGETALID.COM

NOT TO SCALE
Download the dwg from the website: www.vegetalid.us

SIDE VIEW

HYDROPACK GREEN ROOF TRAY
ON A CONVENTIONAL ROOFING ASSEMBLY

Plant Mix.
(95% minimum coverage at installation)
HYDROPACK®
engineered growing media
HYDROPACK® filter fabric
HYDROPACK® water reserves

Protection fabric
Waterproofing membrane
(PVC, TPO, EPDM, etc...)
Bonding adhesive
Insulation
Vapor barrier
Roof deck

Provided by others

ILLUSTRATIONS ARE TO CONCEPTUALLY ASSIST PROFESSIONALS IN DESIGNING HYDROPACK® INSTALLATIONS. VEGETAL I.D. INC. IS NOT RESPONSIBLE FOR ENGINEERING. A QUALIFIED ROOFING SPECIALIST SHOULD BE CONSULTED TO DETERMINE APPROPRIATE WATERPROOFING AND ROOF DECK MATERIALS.

VEGETAL I.D. INC
7939 BANK ST. ROAD
BATAVIA, NY 14020

WWW.VEGETALID.US
SALES@VEGETALID.COM

NOT TO SCALE
Download the dwg from the website: www.vegetalid.us

SIDE VIEW

HYDROPACK® ON PMR ROOFING ASSEMBLY

Plant Mix. (95% minimum coverage at installation)
HYDROPACK® engineered growing media
HYDROPACK® filter fabric
HYDROPACK® water reserves

HYDROPACK® green roof tray

Root barrier
Insulation
Waterproofing membrane
Deck

Provided by others

Not to scale

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SIDE VIEW

ACROPACK® SLOPE SYSTEM WITH HYDROPACK®

Attachment ACROPACK® L

HYDROPACK® green roof tray

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SIDE VIEW

ACROPACK® SLOPE SYSTEM
WITH HYDROPACK®

HYDROPACK®
green roof tray

Attachment
ACROPACK® Ω

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Vegetal i.D. team,

I would like to take a minute to thank you guys for making our first installation a successful installation!

The product came to the site on time and the vegetation was in excellent condition, with your help and hard work by the team we were able to cut the “trays” and form perfect triangle formations which came out looking great and my client was really impressed and very happy with the way it looked!

We all look forward to seeing it grow and bloom in the next few weeks! I like it so much that I would like to use at my home which has a high deck!

Thank you again and now I want mine!

Roger Grieco, Project Manager
DHI Construction Services, Inc.
Woodside, N.Y.