

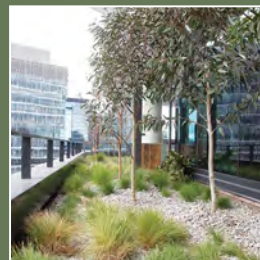
Fytogreen

Greening the Built Environment

www.fytogreen.com.au

EXTENSIVE, INTENSIVE

Roof Garden



General Specifications

Fytogreen Extensive Roof Garden Specification

The Extensive roof garden profile is 140mm - 200mm deep.

**NB: Water proofing and independent certification
of the water proof membrane is “work by others”**

TYPICAL SPECIFICATION:

1.1 LDPE layer at a minimum of 200 micron.

This layer is 200-300µ thick with a gsm of approximately 200gm. The function is a protection layer to the membrane at the initial installation stage, as well as a long term root protection layer for the membrane.

1.2 Drainage Cell: 20mm Atlantis Flo Cell 20

The drainage cell is HDPE with a crush strength of 200kPa and is fungus resistant. The thickness is 20mm with a weight of 1500gsm. Flo cell will hold 1.8lt/m² of water in the cusp's for re-absorption by roots when required.

1.3 Geofabric: Bidim A14

Bidim “A” is a non-woven, needle punched, continuous filament, polyester textile made in Australia from recycled polymer. The geofabric layer is 2mm thick and has a wet weight of 360gsm.

1.4 Ballast Band: 20-40mm Scoria, basalt or recycled concrete (Optional)

A ballast band of 200-400mm wide around the outer edge of the garden up to the parapet edge or the L-Profile edge of a mineral material with a minimum screened size of 20mm to ensure a clean free draining band.

1.5 Hydrocell 40 Extensive Media

Hydrocell 40 Extensive Media is a proprietary engineered combination of scoria in two size grades (other mineral material is used where scoria is not economically available), composted pine bark and hydrocell flakes. The thickness is specific to the weight allowance for the project, but as a guide 11kg/m²/10mm of depth as a saturated weight allowance.

The function is to provide a very lightweight, non hydrophobic low organic content media that is stable over time, has excellent capillary properties for sub surface irrigation, good shear strength due to particle shape for sloped surfaces and is suitable for a wide range of plant species.

1.7 Stone Mulch Layer: 20mm scoria, recycled concrete or basalt.

20mm material is used as a stone mulch in a range of locally available materials.

Functions are to reduce the opportunity for blow in weed species to readily establish as well as provide a stable ballast layer protecting the substrate layer during plant establishment from excessive wind.



1.8 Plants

A wide range of plant species can be selected subject to the site and climatic conditions at a range of densities to fit the client expectations. (Contact Fytogreen for a detailed design)

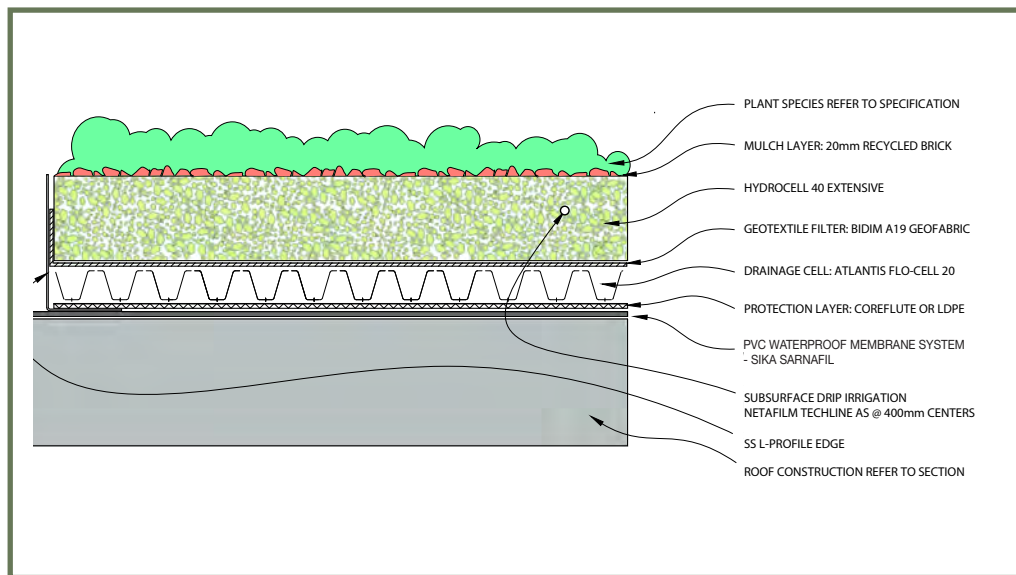
1.9 Optional Item: L-Profile Edge

1.2mm Stainless Steel edge profile to retain the garden from the box gutter.

The standard height is 150mm, with vertical slits for fast water penetration, folded along the top edge for improved rigidity.

The L-Profile has holes in the base, so it can be flashed welded into position on the underlying membrane, ensuring no penetrations through the membrane.

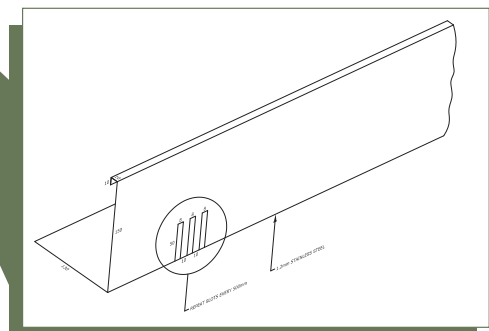
The parapet edge should ideally be a minimum of 20mm higher than the garden.



L-Profile System to be build up and used on existing roofs.

1.9 Saturated Weight Allowance Guide

- Extensive Weight Guide
140mm to 200mm (see page 4)



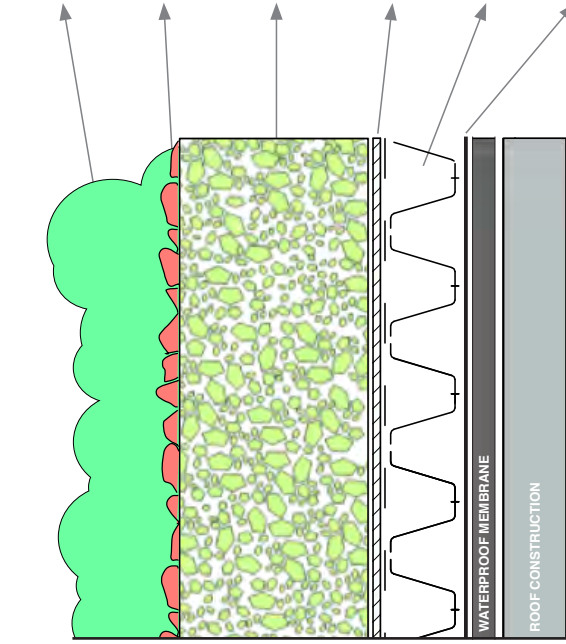
Phone Fytogreen for more details 1300 182 341.

Saturated Weight Guide - Extensive Roof Garden - 140mm to 250mm

(08.16)

Fytogreen Australia's lightweight extensive roof garden system works to the following depth options and saturated weight guidelines.

Saturated Bulk Density is 980kg/m³



The soil mix is:

- 40% Hydrocell Flakes
- 15% Composted Organic Matter
- 35% 10mm Scoria
- 10% <7mm Scoria by Volume.

PLEASE Soil mix layer includes
NOTE: 20% for particle integration.
 The parapet should be 20mm higher
 than the finished garden level.

PLANTS	Allow 25kg / m ² <i>Plant Species refer to Specifications</i>					
LAYER 5 Stone Mulch	20mm Scoria or Recycled Stone Mulch <i>NB: Outside Melbourne, recycled concrete or clinker ash are used to replace scoria, the weight is similar.</i>					
LAYER 4 Soil Mix	100mm depth 98kg psm	110mm depth 108kg psm	120mm depth 117kg psm	130mm depth 127kg psm	160mm depth 157kg psm	210mm depth 206kg psm
LAYER 3 Geo-textile Membrane	Various types such as Bidim A14 Thickness 2mm - Weight Negligible					
LAYER 2 Drainage Layer	Allow 20mm for Atlantis Flo-Cell 20					
LAYER 1 Vapour Layer	LDPE plastic is laid as extra protection above the waterproof roof Thickness 0.02mm - Weight Negligible					

Total Depth	140mm	150mm	160mm	170mm	200mm	250mm
Total Saturated Weight	139kg/m ²	149kg/m ²	158kg/m ²	168kg/m ²	198kg/m ²	247kg/m ²
Total Water at Field Capacity:	38 litres/m ²	41 litres/m ²	44 litres/m ²	48 litres/m ²	58 litres/m ²	74 litres/m ²

Disclaimer: This information is supplied in good faith and trials are recommended by the user to test the suitability of the procedure in their climatic region. No liability will be accepted by Fytogreen Australia or it's representatives as to the final performance based on this information.



Fytogreen Intensive Roof Garden, Podium and Planter Box Specifications

For intensive roof gardens, podiums and planter boxes.

NB: Water proofing and independent certification of the water proof membrane is “work by others”



TYPICAL SPECIFICATION:

1.1 LDPE layer at a minimum of 200 micron.

This layer is 200-300µ thick with a gsm of approximately 200gm. The function is a protection layer to the membrane at the initial installation stage, as well as a long term root protection layer for the membrane.

1.2 Drainage Cell: Atlantis Flocell 20 drainage cell

The drainage cell is HDPE with a crush strength of 200kPa and is fungus resistant. The thickness is 20mm with a weight of 1500gsm. Flo cell 20 will hold 1.8lt/m² of water in the cusp's for re-absorption by roots when required. Flow rate of 200lt/min at a 1% gradient.

1.3 Geofabric: Bidim A14

Bidim “A” is a non-woven, needle punched, continuous filament, polyester textile made in Australia from recycled polymer. The geofabric layer is 2mm thick and has a wet weight of 360gsm.

1.4 Hydrocell RG30 – Water Reservoir Layer

Hydrocell is a proprietary urea aldehyde resin based hardfoam that is either manufactured directly onto the roof or delivered in a pre-manufactured sheet composition, as either a 60mm or 100mm layer.

The dry weight is 4kg/m², which is complemented by it's ability to absorb water into the open cell structure to reach a field capacity weight of up to 55kg/m².

The functions of the layer are numerous:

- Water reservoir of up to 51lt/m² at field capacity.
- Fines filter, protecting the geofabric layer from blockage of media fines.
- Excellent growing media in it's own right, with a balanced air water ratio at field capacity.
- Non-hydrophobic, so can be easily re-wet if the situation arises.
- Excellent capillary properties enabling water to be moved upwards through the profile.

The Hydrocell RG30 layer is made up of interconnected small to medium cells or pore spaces, enabling the usable media volume to be approximately 99%.



1.5 Hydrocell 40 Lightweight Planter Media

Hydrocell 40 Lightweight Planter Media is a proprietary engineered combination of medium washed sand and scoria (other mineral material is used where scoria is not economically available), composted pine bark and hydrocell flakes. The thickness is specific to the weight allowance for the project, but as a guide 12kg/m²/10mm of depth as a saturated weight allowance.

The function is to provide a lightweight, non hydrophobic low organic content media that is stable over time, has excellent capillary properties for sub surface irrigation, good shear strength due to particle shape for sloped surfaces, high hydraulic conductivity and is suitable for a wide range of plant species.

1.6 Stone Mulch Layer: 20-40mm scoria, recycled concrete, bluestone or basalt.

20-40mm material is used as a stone mulch in a range of locally available materials.

Functions are to reduce the opportunity for blow in weed species to readily establish as well as provide a stable ballast layer protecting the substrate layer during plant establishment from excessive wind.

1.7 Plants

A wide range of plant species can be selected subject to the site and climatic conditions at a range of densities to fit the client expectations.

Controlled release fertiliser is selected to suit the plant species planted.

1.8 Sub-surface irrigation

Fytogreen in conjunction with Netafim Australia design and install irrigation systems to suit the site requirements.

1.9 Saturated Weight Allowance Guide

- Intensive Weight Guide
(inc. planter boxes and podiums)
245mm to 945mm (page 7)

Phone Fytogreen for more details 1300 182 341

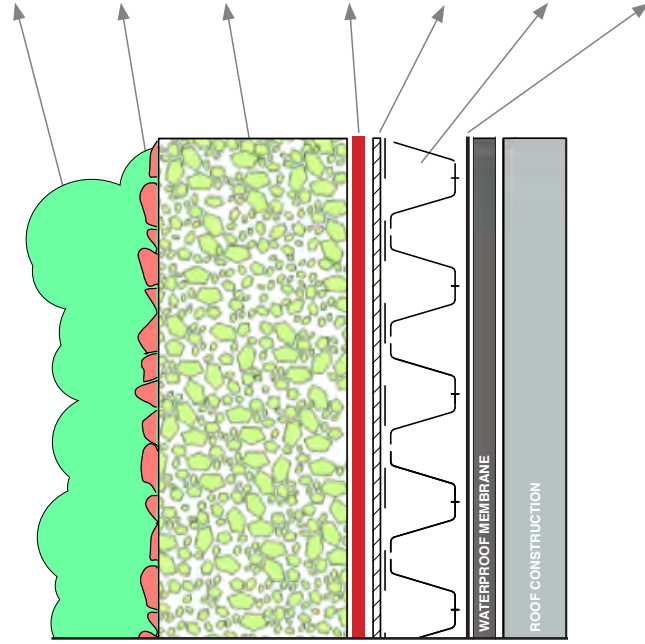
Saturated Weight Guide - Semi Extensive Roof Gardens- 195mm to 305mm

(07.15)

Fytogreen Australia's lightweight semi-extensive roof garden system works to the following depth options and saturated weight guidelines.

Saturated Bulk Density is 1080kg/m³

PLANTS	Allow 25kg / m ² <i>Plant Species refer to Specifications</i>		
LAYER 6 Stone Mulch	20-25mm Scoria or Recycled Stone Mulch <i>NB: Outside Melbourne, recycled concrete or clinker ash are used to replace scoria, the weight is similar.</i>		
LAYER 5 Soil Mix	120mm depth 130kg psm	170mm depth 184kg psm	200mm depth 216kg psm 230mm depth 249kg psm
LAYER 4 Hydrocell Hardfoam	RG-30 Sheet, 30mm thick. Saturated Weight Allowance of 18kg/m ² (of which 16kg is water).		
LAYER 3 Geo-textile Membrane	Various types such as Bidim A14G. Thickness 2mm - Weight Negligible		
LAYER 2 Drainage Layer	Allow 20mm for Atlantis Flo-Cell 20		
LAYER 1 Vapour Layer	LDPE plastic is laid as extra protection above the waterproof roof. Thickness 0.02mm - Weight Negligible.		



The soil mix is:

- 40% Hydrocell Flakes
- 15% Composted Organic Matter
- 35% 10mm Scoria
- 10% <7mm Scoria by Volume.

PLEASE Soil mix layer includes

NOTE: 15% for particle integration.
The parapet should be 20mm higher than the finished garden level.

Total Depth	195mm	245mm	275mm	305mm
Total Saturated Weight	198kg/m ²	251kg/m ²	279kg/m ²	313kg/m ²
Total Water at Field Capacity:	63 litres/m ²	78 litres/m ²	89 litres/m ²	98 litres/m ²

Disclaimer: This information is supplied in good faith and trials are recommended by the user to test the suitability of the procedure in their climatic region. No liability will be accepted by Fytogreen Australia or it's representatives as to the final performance based on this information.

FOR MORE INFORMATION CONTACT:

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