



### TECHNICAL DATASHEET

Reference Date:  
Version 1 Sept. 2023

## PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Pro-Living® Blue Boxx 85mm/125mm/165mm

**PRODUCT TYPE:** Attenuation layer

**PRODUCT/SKU CODE:** GRABB085/GRABB125/GRABB165

**PRODUCT DATASHEET REFERENCE:** TDS\_GRABB085\_GRABB125\_GRABB165\_Pro-Living Blue Boxx 85mm-125mm-165mm\_V1\_190923

**COMPANY:** Proteus Waterproofing Ltd, 21a Sirdar Road, Brook Road Industrial Estate, Rayleigh, Essex SS6 7XF, United Kingdom

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## PRODUCT DESCRIPTION

Pro-Living® Blue Boxx 85mm/125mm/165mm is a shallow, high-strength, height variable storage void, that can be used with the Pro-Living® BlueBloxx 12mm/30mm structural drainage layer and blue roof flow restrictor to give a complete blue roof attenuation system.

This can be combined with Proteus roof outlets, downpipes and surface water drainage systems to give a wider building drainage and SuDS solution. Pro-Living® Blue Boxx 85mm/125mm/165mm is an interlocking geocellular drainage system ranging in depth 85mm – 165+mm. It has been designed for shallow, high-strength roof attenuation systems and is also ideal for intensive green roof designs. Pro-Living® Blue Boxx 85mm/125mm/165mm modularity and high-void structure makes it an ideal system to be incorporated into complex on-structure landscapes.

## APPLICATION & USE

- Blue and Green roofs
- Podium decks
- Planter boxes
- Paved areas and roadways

The blue roof storage unit is Pro-Living® Blue Boxx 85mm/125mm/165mm by Proteus Waterproofing Ltd measuring 500 x 500 x 85/125/165 mm (as appropriate) with an ultimate vertical compressive strength of not less than 800 kN/m<sup>2</sup> with a 90% void ratio. The Pro-Living® Blue Boxx 85mm/125mm/165mm system shall be laid on Pro-Living® Aqua Wrap membrane, Pro-Living® Blue Boxx HD350 Geotextile, and Pro-Living® 12mm/30mm Blue Boxx, and overlaid with Pro-Living® Blue Boxx 125 Geotextile. All laps should be a minimum of 300 mm.

## MATERIAL

Polypropylene

## WEIGHT

**Pro-Living® Blue Boxx 85mm:** 2.2kg

**Pro-Living® Blue Boxx 125mm:** 3.3kg

**Pro-Living® Blue Boxx 165mm:** 4.4kg

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### FINISH & COLOUR

Black

### PACKAGING

Not applicable.

### PACK SIZE/UNIT OF MEASURE

Each

### CHEMICAL PROPERTIES

Not applicable.

### SIZE & DIMENSIONS

Please refer to the Technical Information section.

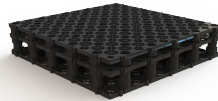
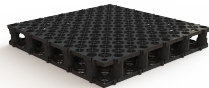
### SHELF LIFE

Not applicable.

### HANDLING

Products are supplied in packaging designed to protect from damage during handling, storage, and degradation as a result of UV exposure. The product should be kept in its original packaging until it is required for installation.

### TECHNICAL INFORMATION



Model	Pro-Living® Blue Boxx 85mm	Pro-Living® Blue Boxx 125mm	Pro-Living® Blue Boxx 165mm
Product Code	GRABB085	GRABB125	GRABB165
Size (mm)	500 x 500 x 85	500 x 500 x 125	500 x 500 x 165
Material	Polypropylene	Polypropylene	Polypropylene
Colour	Black	Black	Black
Top surface void area Porosity	~53%	~53%	~53%
Gross volume	~90%	~90%	~90%
Net water volume	~0.021m <sup>3</sup>	~0.031m <sup>3</sup>	~0.041m <sup>3</sup>
Unit weight	~0.019m <sup>3</sup>	~0.028m <sup>3</sup>	~0.037m <sup>3</sup>
Compressive strength Max.	~2.2kg 800kN/m <sup>2</sup> Max.	~3.3kg 800kN/m <sup>2</sup> Max.	~4.4kg 800kN/m <sup>2</sup>
Discharge Capacity			
• @0% Gradient:	6.4l/m/s	12.2l/m/s	16.9l/m/s
• @1% Gradient:	7.5l/m/s	13.4l/m/s	17.9l/m/s
• @2% Gradient:	8.5l/m/s	14.1l/m/s	18.8l/m/s
Biological chemical resistance:	Unaffected by moulds and algae, soil borne chemicals, bacteria and bitumen		

## ADDITIONAL INFORMATION

### KEY FEATURES:

- Design flexibility
- Easy installation
- Lightweight and high strength
- Efficient
- Sustainable and environmentally friendly

## CODES OF PRACTICE & STANDARDS

1. It is the responsibility of the Contractor to thoroughly familiarise themselves with all relevant Codes of Practice and Building Regulations to the works or referred in the specification. Proteus Waterproofing take no responsibility for misinterpretation or lack of knowledge for third parties.

2. The works shall be carried out in accordance with the requirements of;

- BS 6229:2018 - Flat roofs with continuously supported flexible waterproof coverings -Code of practice.
- BS 8217:2005 - Reinforced bitumen membranes for roofing Code of practice.
- BS 8000-0:2014 - Workmanship on construction sites - Introduction and general principles.
- BS 8000-4:1989 - Workmanship on building sites - Code of practice for waterproofing.
- GRO Green Roof Code of Best Practice - Latest Edition.
- LRWA Design Guide for Specifiers - Latest Issue.
- LRWA Hot Melt Code of Practice - Latest Edition.

- Please refer to Proteus Waterproofing's Technical department for project specifications.

## OPERATION

For professional use only.

## SAFETY GUIDANCE

Use as per Proteus Waterproofing installation instructions/guidance.

## LIMITATIONS OF USE

Not applicable.

## MAINTENANCE FOR GREEN ROOFS

All green roofs will require maintenance;

it is important that access is considered at the design stage. Maintenance, should be conducted by qualified personnel This will help ensure the initial establishment and continued health of the green roof system. It is strongly recommended that the installing contractor remains responsible for the maintenance of the green roof during this establishment stage (between 12 - 15 months) and prior to the assignation of maintenance duties to the building owner's representative. Maintenance contractors, with specialist training in green roof care from organisations such as GRO, should be used where possible.

When designing a green roof, it is important that the green roof system is specified accounting for any budgetary constraints. The costs of roof maintenance should therefore form part of the life cycle cost analysis for the building, allowing the most appropriate green roof specification to be realised.

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### GENERAL MAINTENANCE ACTIONS

All maintenance actions carried out at roof level must be in full compliance with the appropriate health and safety regulations, and particularly those specifically dealing with working at height. BS 4428:1989 - Code of practice for general landscape operations (excluding hard surfaces) and BS7370-4:1993 Grounds maintenance - Part 4: Recommendations for maintenance of soft landscape (other than amenity turf) provide guidelines for maintenance actions.

### IRRIGATION & WATERING

Irrigation is typically required for the initial establishment of the green roof for a period of 6 - 8 weeks depending on natural rainfall during this time. However, once vegetation cover is achieved, irrigation can be reduced. All green roofs will need watering in periods of extended drought i.e. more than 6 weeks without any rain. Care should be taken not to overwater green roofs, as this may harm the plants or overload the roof.

### FERTILISING

GRO does not recommend regular or high use of fertiliser on the low-nutrient growing mediums used on green roofs as they can encourage invasive weeds and grasses and may leach into the watercourse. Each green roof should be assessed prior to any addition of fertiliser.

Note: Fertiliser should be slow and long release, and only be applied if downpipes are isolated from mains sewage system.

Intensive and simple intensive roofs are based on a more fertile growing medium and the planting installed will require regular fertilisation.

### GENERAL VEGETATION MAINTENANCE

- Always remove species with large growth habits or aggressive root systems.
- Any wind-blown seeds or cuttings should be removed before they have the opportunity to take root.
- Many grass species can be invasive and should be removed from extensive green roofs, unless designed into the planting scheme.
- The ecological and aesthetic requirements of the site should guide the management of dominant species and habitat over time.
- Cut back taller flowering species to approx. 150mm above substrate surface in autumn/winter after seeding.
- Excess dead plant matter should be removed to avoid encouraging fungal disease. However, for maximum wildlife support, care should be taken not to remove all vegetation straight after flowering as many insects overwinter in hollow plant stems. For this reason, rotational cutting (where not all vegetation is cut simultaneously) and removal is advised.

### GENERAL CLEARANCE/REMOVAL

Generally, the removal of dead material is desirable as it allows plants the space to develop a greater coverage, improving the finished appearance of the roof, whilst also reducing the risk of fungal disease forming and spreading. However, in some biodiverse applications, removing plant debris could be counter-productive in creating habitat.

## GREEN ROOF MAINTENANCE ACTIONS BY ROOF TYPES

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### EXTENSIVE ROOF MAINTENANCE - < 100MM LOW NUTRITION SUBSTRATE

**Irrigation:** Post-establishment, irrigation is not generally required for extensive green roofs. However, the facility to water should be in place, if possible.

**Fertilisation:** Extensive green roofs typically have low nutrient requirements. If required, they can be fertilised on an annual basis, each spring, using a slow-release fertiliser.

**Plant management:** Removal of undesirable plant species and fallen leaves should take place twice each year. General: Drainage outlets (including inspection chambers) and shingle/gravel perimeters to be cleared of vegetation, twice yearly.

### BIODIVERSE ROOF MAINTENANCE – 80MM – 150+MM VERY LOW TO LOW NUTRITION SUBSTRATE

**Irrigation:** Typically, not required.

**Fertilisation:** Generally not required, particularly where indigenous species are being encouraged to replicate native habitats. Whilst a low vegetative density is common, zero vegetation is generally undesirable.

**Plant management:** A maintenance programme should be drawn up to follow the intended biodiversity objectives

**General:** Drainage outlets (with inspection chambers) and gravel/shingle perimeters should be inspected twice yearly and cleared of any living or dead vegetation.

Maintenance should take account of the intended wildlife support, in addition to standard green roof maintenance procedures. Care should be taken not to remove all vegetation after flowering as many insects over-winter in hollow plant stems.

### DEEPER SUBSTRATE EXTENSIVE ROOF MAINTENANCE - 100MM TO 200MM LOW TO MEDIUM NUTRITION SUBSTRATE

**Irrigation:** Periodic irrigation/watering is expected, depending upon the plant specification and the climatic and microclimatic conditions prevailing at roof level.

**Fertilisation:** With a wider range of planting, using a more fertile growing medium, more regular fertilisation maybe required.

**Plant management:** Removal of undesirable vegetation on the greened area twice yearly.

**General:** Drainage outlets (including inspection chambers) and shingle/gravel perimeters to be cleared of vegetation, twice yearly.

### INTENSIVE ROOF MAINTENANCE - 200MM + MEDIUM NUTRITION SUBSTRATES AND TOP SOILS

**Irrigation:** Regular irrigation is often required, subject to the plant specification and the climatic and microclimatic conditions prevailing at roof level.

**Fertilisation:** With a wider range of planting, using a more fertile growing medium, more regular fertilisation maybe required.

**Plant management:** The intensive maintenance of lawns, hedges, borders etc is required on a regular basis, so as to maintain the roof aesthetics. Undesirable vegetation should be removed from the green areas at least twice yearly. Failed plants should be replaced.

**General:** Drainage outlets (including inspection chambers) and shingle/gravel perimeters to be cleared of vegetation, twice yearly. Where excessive substrate settlement has occurred, this should be replenished.

## MAINTENANCE FOR BLUE ROOFS

**Inspection:** Restrictor chambers; orifices & roof outlets.

**Filtration:** Particle filter cleaning/replacement as required.

**General:** Observation or general roof condition and report of any remedial works required.

	Task	Frequency
1	Observe water level in attenuation zone, checking for outlet blockage.	Monthly
2	Check flow control/outlet for any blockage or calcification or corrosion.	Quarterly
3	Inspect for damage and clean all flow control filters.	Quarterly
4	Check for any evidence of tampering with the flow controls. Repair/report as necessary.	Quarterly
5	Remove any weeds and debris across the roofscape.	Quarterly
6	Monitor the leaf and debris fall at each season and identify potential issues.	Quarterly
7	Check for any works or damage that have created pathways for unintentional unfiltered water into attenuation zones.	Quarterly
8	Generally, note and report any roof issues such as degradation of waterproofing, vermin infestation or damage.	Six Monthly
9	Ensure surface finishes and permeable surfaces serving the blue roof are clean and clear.	Six Monthly
10	Has there been any change of use of roof areas? If so, these should be reported, and any impact assessed.	Six Monthly
11	Assess and record any siltation levels in the attenuation zone.	Annually
12	Has there been any change of use of roof areas? If so, these should be reported, and any impacts assessed.	Annually

## ADDITIONAL MAINTENANCE REQUIREMENTS

No additional requirements. See information above.

## GUARANTEES

Proteus guarantees are available, subject to the current terms and conditions which are available separately on request.

## DISPOSAL

- Non Hazardous
- Recycle where possible, or otherwise dispose of safely