













Roofs



"Embracing Trees"



Biodegradable Tree Guards, Shrub Shelters, Vole Guards and Hedge/Vine Sleeves



Eco-Haven™ *Original*, and **Eco-Haven™** *Sleeve*, are a novel new range of biodegradable, but highly durable, protective tree guards, shrub shelters, vole guards and hedge/vine sleeves.

Made from a plant based biopolymer, which is fully soil biodegradable, both grades offer the highest environmental credentials and the most sustainable solutions, with a significantly lower carbon footprint than competing products.

Furthermore, the unique, copyright protected, stacking, and tear-off, modular designs are extremely versatile, practical and easy to use.





Carbon Negative/Climate Positive

🥟 Fully Soil Biodegradable

🧬 Highly Durable and Robust

Aesthetically Pleasing

Enhanced Growing Environment

🧦 Improved Ventilation

🧬 Low Abrasion

🧽 Easy to Handle, Assemble and Use

Versatile Stacking & Tear-Off Systems





Application Categories: Horticulture, Agriculture and Equestrian, Tree Protection

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Roofs



hectares of land

PRODUCES



tonnes of sugarcane

PRODUCES



bio-ethanol

PRODUCES



tonnes of Eco-Haven™ biopolymer

*Based on Wembley pitch at 105 x 68m



Carbon Negative Climate Positive



From field to your store every 1 tonne of Eco-Haven™ guards remove over 2 tonnes of CO₂1

¹Approx 2.1 tonnes of CO₂ is removed from the atmosphere per tonne of Eco-Haven made and transported to end user this has been calculated from the LCA Study from cradle to gate conducted by ACV Brazil 2017, and independently verified by the Carbon Trust, with subsequent transport and conversion based on European Chemical Transportation Association and British Plastics Federation guidelines.

² Tested to:

ASTM D5988-18 Aerobic Biodegradation of Plastic Materials in Soil - for in-situ field conditions

ASTM D5511-18 Anaerobic Biodegradation of Plastic Materials Under High-Solids Anaerobic-Digestion Conditions - for landfill conditions



🧬 Plant Based Biopolymer

Eco-Haven™ *Original* and new **Eco-Haven™** *Sleeve* grades have been specifically developed to offer the highest environmental credentials, and are made from a special plant based biopolymer, derived from sugarcane, which is biodegradable and non-toxic.



🧬 Sustainable Solution

The sugarcane used is GM free and a renewable and sustainable crop that is responsibly grown on degraded land, with a robust code of practice to protect the environment and workers.

At each stage of the manufacturing process emphasis is placed on minimising the impact on the environment with waste by-products such as pulp, ash and plant liquids being reused as fertiliser and to create renewable energy.

Eco-Haven™ *Sleeve* also contains 30% recycled polymer to help reduce landfill waste, conserve natural materials and improve manufacturing energy efficiency.



Carbon Negative/Climate Positive

Sugarcane actively captures CO₂ from the atmosphere through photosynthesis, while at the same time releasing oxygen, making this material not just green, but proactively green.

With their efficient design, both grades go beyond being carbon neutral, removing more carbon dioxide from the atmosphere than is emitted from production to delivery to end user.

From field to your door every 1 tonne of all grades of **Eco-Haven™** remove over 2 tonnes of CO₂¹, and for an area of land equivalent to Wembley pitch (105 x 68m) nearly 2 tonnes of the biopolymer is produced from each sugarcane harvest.



Fully Soil Biodegradable

Left in contact with the soil our shelters slowly decompose biologically² through the combined action of micro organisms (bacteria and fungi), temperature and humidity, breaking down into nutrient rich compost to leave no future "micro plastic" hazards for wildlife and maintenance, without the need to remove and commercially compost them.

Beware some products that claim to be "biodegradable" are only biodegradable based on industrial composting standards, which do not reflect natural conditions. The biopolymer used in all grades of Eco-Haven™ has been tested to ASTM D5988, which simulates field conditions, and ASTM D5511, which simulates landfill conditions, for more realistic results.

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🧬 Highly Durable and Robust

Both **Eco-Haven™** *Original*, and **Eco-Haven™** *Sleeve*, are made from a unique tough biopolymer which is also resistant to herbicides and pesticides.

Eco-Haven™ *Original* is made from a 500 micron thick sheet with a UV and biodegradable life expectancy of 5 to 7 years. The tough solid sheets resist abrasion against posts, protect against accidental strimmer damage and the tubular form is more crush resistant than square shelters.

Eco-Haven™ *Sleeve* is made from a 250 micron thick tube and has a UV and biodegradable life expectancy of up to 3 years. They have been specifically designed to keep costs as low as possible without compromising critical performance.



🥐 Aesthetically Pleasing

The subtle matt brown colours used in both grades have been chosen to blend well with the surrounding landscape.



Enhanced Growing Environment

The unique modular enclosures insulate vulnerable saplings from temperature extremes and increases air moisture retention, resulting in less water stress and better drought tolerance.

The shelters also help protect against damage caused by air blown sand and herbicide treatments.

The brown tint finish is not only pleasing to the eye but provides shade from intense sunlight and enhances growth.

Visible light consists of a spectrum of colours. Green leaves absorb light from the red and blue fraction to drive photosynthesis. The shiny interior and brown colour helps reflect and focus the red and blue fractions, concentrating this photosynthetic energy to enhance plant growth.



Improved Ventilation

Carefully spaced ventilation flaps can be adjusted to increase air flow and control the climate, helping acclimatise young trees before they emerge from the shelter.

The vents are designed to circulate airflow while still protecting against grazing and minimising the risk of accidental herbicide penetration.

Sustainable **Solutions**



Low Abrasion

The top edge of **Eco-Haven™** *Original* incorporate flare folds, and the pliable structure of **Eco-Haven™** *Sleeve*, reduce the risk of abrasion damage to the emerging saplings.

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Roofs





Post/Cane Size Guide:

Eco-Haven™ Tube Height	Minimum Hardwood Post Size					
60cm	90cm x 22mm					
90cm	120cm x 22mm					
120 and 150cm	180cm x 25mm					
180cm	210cm x 25mm					
Eco-Haven™ <i>Sleeve</i> Tube Height	Minimum Bamboo Cane Size					
30, 45, 60, 75, 90, and 120cm	10-12mm diameter in 60, 90 120, and 150cm lengths					
150 and 180cm	12-14mm diameter in 180 and 210cm lengths					

In general use a post/cane 30cm longer than the height of the tube, while for sandy, light soils and exposed sites it is advisable to use a taller fixing

The smooth surfaces of both also minimise the risk of leading shoots snagging and bending as they develop, and discourage the shelters from being used as rubbing posts by wildlife.



Easy to Handle, Assemble and Use

Eco-Haven™ *Original* is supplied as flat sheets that are significantly more compact and easier to handle than pre-formed tubes, with a clever design that ensures planting and maintenance is simple and swift.

The novel design is quick and easy to assemble with the versatility to either wrap the shelter around delicate saplings before fastening, or you can pre-assemble the tube and slide over the young tree. While the interlocking tab system and integrated post ties avoid the need for undesirable nylon or metal ties.

The tubes can also be quickly re-opened at any time making it easy to remove them for inspection and to replace loses, or to relocate them.

Eco-Haven™ *Sleeve* comes in a very compact roll format with tear-off perforations for easy application on mass plantings; providing contractors with an economical way to protect new hedges and vines which is easy to install and only requires one or two bamboo canes.



🥐 Versatile Stacking & Tear-Off Systems

Eco-Haven™ *Original* has an innovative, interlocking, stacking construction which provides the freedom to create 60, 90, 120, 150 and 180cm high tubes, from just two module heights with an inventive interlocking system to link the tubes and avoid displacement and breaches.

Eco-Haven™ *Sleeve* is a novel tear-off tube design, which provides the freedom to create any guard height with perforations every 30cm.

Both modular designs can therefore protect against browsing, fraying and bark stripping from a wide variety of animals such as voles, rabbits, deer and livestock.

Recommended Accessories

Posts and Canes To provide the most environmentally friendly solutions, we advocate the use of chemical free hardwood stakes (rather than treated softwood posts) and bamboo canes.

For the, heavy-duty, **Eco-Haven™** *Original* tubes we can supply extremely durable robinia (acacia) and chestnut sawn stakes.

While the new lighter **Eco-Haven™** *Sleeve* can be simply placed over the saplings/whips and pinned to the ground, or anchored and supported with 1 or 2 bamboo canes per tube.

Tree Mats Our fully biodegradable **Ecotex™ 100** tree mats and hedge strips are used to suppress competitive weed growth and perfectly compliment the entire **Eco-Haven™** range, offering similar high environmental credentials.

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1. CO2 metabolised to produce sucrose

- Renewable and sustainable GM free crop
- Responsibly grown on degraded land
- Robust code to practice to protect environment and labour

2. Juice fermented to make bio ethanol

• Waste used to generate renewable energy and compost

3. Bio ethanol dehydrated and polymerised to produce biopolymer

Liquid waste recycled as fertiliser

4. Biopolymer extruded and cut to produce Eco-Haven™

- Efficient conversion
- Off cuts recycled

5. Flat pack design reduces space

- 3 ½ times less storage volume than conventional 60cm tubes
- Minimal packaging

6. Carbon Negative = Climate Positive

• From field to your store every 1 tonne of Eco-Haven[™] remove over 2 tonnes of CO₂

7. Versatile modular design

- Reduces number of sizes to store
- Easy to handle and install
- Reusable

8. Protecting the environment

- Left in-situ will biodegrade to enrich the soil
- If disposed of in landfill it will also fully biodegrade

Application Categories: Horticulture, Agriculture and Equestrian, Tree Protection

7. Tree Protection

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Protecting the Environment Since 1991















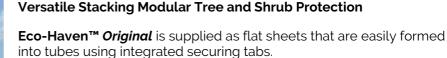






Living Walls & Roofs





Supplied in two widths, to form 10cm diameter tree guards and 15cm shrub shelters, and two heights, 60 and 90cm.

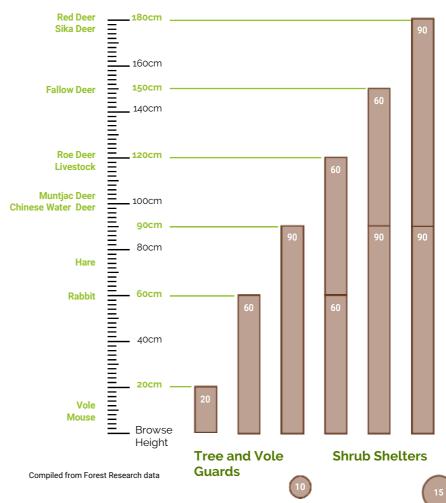
The innovative, interlocking, modular construction provides the freedom to also create 120, 150 and 180cm high tubes, from just these two tube heights, without the risk of displacement and breaches.

Vole Guard

A smaller 20cm x 10cm diameter version is also available to form vole guards.



Protection Height Eco-Haven™ *Original* Module Recommended **Height Combinations**



Custom sizes and designs also available

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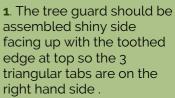
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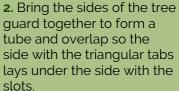
Eco-Haven™ Original Tree and Shrub Tube Assembly

















3. Push the tabs through the adjacent slots, pull them fully through so the notches lock them in place to form the finished tube.

Eco-Haven™ Original Tree and Shrub Tube Stacked Tube Assembly







The stacking design allows you to create 60, 90, 120, 150 and 180cm high tubes from just 2 tube heights.

- 1. For guards taller than 90cm attach a combination of 60 and/or 90cm tree guards together.
- 2. Start by placing the sheets matt side facing up and slightly overlap the upper sheet over the lower
- 3. Push the 2 triangular tabs on the top toothed edge of the lower sheet up through the bottom slots of the upper sheet.
- 4. Assemble the pair of tree guards as per tube assembly guidelines above.

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Eco-Haven™ Original Tree and Shrub Tube Post Attachment







- 1. Once the tree guard is assembled, detach the cable ties from the edge of the tube (1 pair for the 60cm and 2 pairs for the 90cm tubes)
- 2. Thread the cable ties through the top and bottom tab slots for the 60cm tube and all three tabs for the 90cm tubes
- 3. Secure the tie around the support post by sliding the pointed end through the slotted end of the cable tie and tighten.







Eco-Haven™ Original Tree and Shrub Tube Ventilation Adjustment





1. As an option, to allow more light and air to reach the sapling, bend the middle row of cut triangles outwards.



Assembly Guidelines

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Eco-Haven™ Original Vole Guard Assembly







- **1.** Begin with the shiny side facing up
- 2. Curve material round to form a tube, so the matte surface is on the outside
- **3.** Push the tab through its corresponding slot from the inside
- 4. Pull through and slot in place so that it is secured
- 5. Repeat step 3 and 4 on second tab
- **6.** Both tabs should be fixed in place and visible from the outside of the tube
- **7**. Assembled Vole Guard, base features talons to aid firming into ground















NEW

Eco-Haven™ Original Coppice Guard

Until now protecting coppiced trees from grazing animals has been challenging and expensive as existing tree guards do not accommodate the larger diameter tree stools and using wire fences is expensive. Eco-Haven™ *Original* coppice guard has therefore been designed with interlocking sections to form guards in multiples of 1.80m girth.





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Vole Guards and Hedge/Vine Sleeves









Protecting the Environment Since 1991





















"We're on a roll"

Ecc-Hayen Sleeve

Tube Diameters:







Hedges & Vines (stock size)

63mm tube diameter 100mm (4") flat width 4.17kg/90m reel

Trees (minimum order)

97mm tube diameter 150mm (6") flat width 6.25kg/90m reel

Shrubs (minimum order)

145mm tube diameter 228mm (9") flat width 9.50kg/90m reel

Shelter Heights:

Sleeve Height: 180	1	50	1	20	9	0 7	5 6	0 4	5 3	0 cm	
Sleeves per Reel: 50	(60	7	75	1	00 1	20 1	50 2	00 3	00 ave	erage
J	J	J	J	J	J	J	J	J	J	J	J
<	7	1	5			۵	6		\ %		

Tear-off perforations every 30cm segment to easily create 30, 60, 90, 120, 150 and 180cm

Alternatively cut every 11/2 segments for 45cm, and 2½ segments for 75cm heights

Cane/Post and Ventilation Holes:

Slot every 15cm both sides to accommodate support canes/posts up to 22mm wide, and provide ventilation.

Manufacturing tolerances: Dimensions: +/- 5%, Thickness: +/- 10%

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