

Forestry & Landscaping



www.tubex.com



TUBEX
Advancing growth



Our story so far

Tubex has been at the forefront of shelter development since the first research into treeshelters came into fruition in the early 1980's. Since then, Tubex has worked hard to build the strong global brand that it is today.

Acorn start manufacturing the original 'Gro-Cone' using co extruded mesh and film.

1983

In the USA the application of treeshelters in riparian planting zones is proven to accelerate the beneficial effects of planting trees to reduce nitrate run-off and subsequent algae bloom in water ways. Sales increase rapidly as a result.

2007

Tubex creates the manufacturing process enabling commercialisation of the first tubular polypropylene treeshelter.

1985

Boddingtons Group purchase Acorn and, by improved efficiencies and energetic sales activity, almost double turnover within the space of two seasons.

2009

Tubex refine shelter specification reducing life-span from 15 years to 5-7 years and introduce the laserline splitting technology, reflecting customer requirements.

1990-1995

In January Boddingtons Group are purchased by Fiberweb Geosynthetics, who in May also purchase Tubex, bringing together the two most popular shelter technologies currently manufactured.

2011

Tubex expand into Europe and further afield, taking treeshelter technology into a number of countries, most notably Spain, Germany and USA.

1990-1995

In November Fiberweb PLC was acquired by Polymer Group Incorporated (PGI).

2013

Acorn drop the Gro-Cone range in favour of Treeguard and Shelterguard offering unique, dual-degradation technology.

1995-2000

Tubex comprises of the most comprehensive and wide ranging plant protection portfolio currently available anywhere in the world and continues to be market leader through innovation.

TODAY

Tubex start work on the 'next generation of treeshelter', allocating resources in the quest to find alternative manufacturing materials and improved control over degradation, setting up trial sites both in the UK and Germany.

2006

Overview of shelters

Tubex shelters have been specially designed to provide the right solution for your planting needs. Over the years we have developed unique features that all contribute to the effective establishment of trees.

Features of shelters:



Laserline, designed to split avoiding strangulation as plant grows



Nested for ease of transport and storage, whilst maintaining original shape



Flared rim to minimise stem abrasion



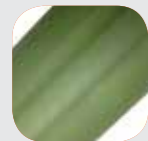
Pre fitted thumb releasable ties for quick, easy installation and maintenance



Twin wall construction for rigidity and best strength to weight ratio



UV stabilised polypropylene to provide minimum 5 year protection



Laserline, designed to split avoiding strangulation as plant grows



Optional extras include punched holes for ventilation



Degradable Material

Features of mesh range:



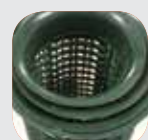
Pre fitted thumb releasable ties for quick, easy installation and maintenance



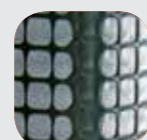
UV stabilised and made from recycled plastic to provide minimum 7 year protection



Flared rim to minimise stem abrasion



Nested for ease of transport and storage, whilst maintaining original shape



Weld line and flared rim splits avoiding strangulation as plant grows

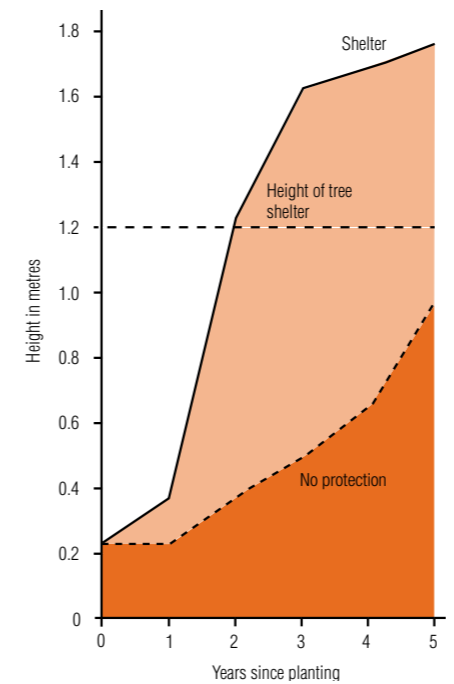


Available in oxo-degradable

In 1978 the first treeshelters were installed by Graham Tuley and the Forestry Commission, UK. Since then, Tubex have been researching into the benefits of using treeshelters with independent trial sites set up in many different countries and research institutions.

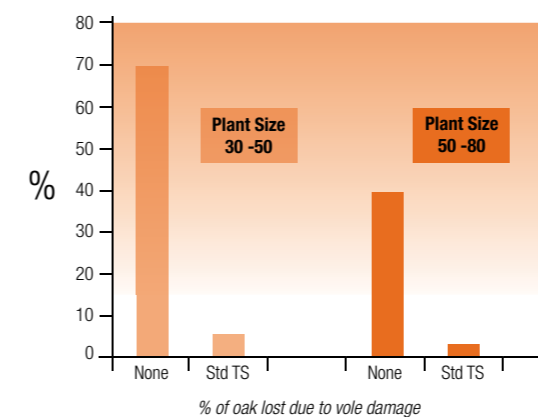
Benefits of using Shelters

Faster establishment - this was first researched with the Forestry Commission in 1991, and can be attributed to the microclimate that is created inside treeshelters.



Height growth curves of sessile oak transplants

Better survival rates - individual tree protection allows the tree to establish whilst reducing stress on the tree. Many studies have been done on tree survival; the graph below shows % of oak trees lost due to mouse damage in research lead by B. Leder and U. Hancke, Germany.



Protection against animals and herbicides

- individual protection allows flexibility in site maintenance. Treeshelters permit animal grazing and use of herbicides.



Healthy root growth - a healthy root system is essential to the establishment of trees. Studies are being undertaken in France and Germany on the development of root systems in treeshelters. Initial conclusions of preliminary study show that healthy roots have been established in trees planted with treeshelters.

Cost savings - the largest cost when planting a tree is the reduced return on investment from badly formed crop, or the total loss of investment due to crop failure. Planting with Tubex shelters increases survival rates, giving you confidence to plant smaller cheaper trees. Smaller trees are easier to transport and also may be planted at lower stocking densities. Tubex shelters improve the form of the tree, and encourage healthy faster establishment, increasing the value in timber and improving the return on investment.

**For more details on cost savings, please visit www.tubex.com*

Visual benefits - these benefits have never been studied but have been identified from users of treeshelters; **Fewer side shoots** as the microclimate encourages vertical growth, **easy tree identification** in a dense woodland, and visual impact as the mesh range blend subtly into the natural environment.

Innovation at Tubex



The TUBEX brand is recognised worldwide as one of quality of product and service. The objective at TUBEX is to add value to our customers by understanding their needs and providing a solution to their problems. Innovation is key to finding those solutions, and that is why TUBEX focus resource into developing new technologies, remaining the global market leader in treeshelters.

'The next generation of treeshelters'

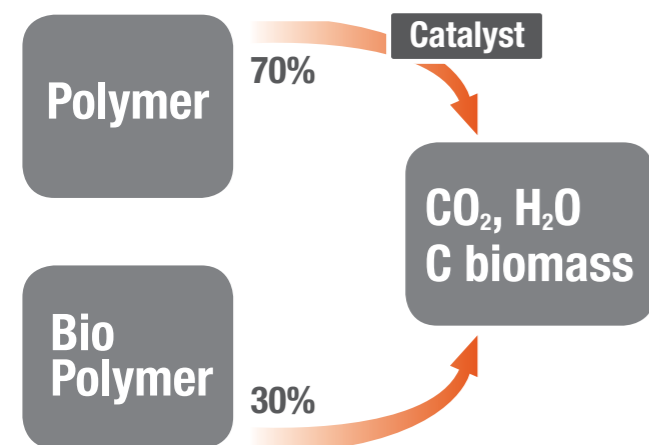
Since 2006 TUBEX have embarked on finding a solution to the problem faced with treeshelters not degrading within the timeframe required by our customers. TUBEX 12D is our answer to this problem;

TUBEX 12D is a new material technology combining biopolymer and an oxo-biodegradable polypropylene.

Whilst our traditional treeshelters are made from polypropylene, photodegrading from UV radiation; our new TUBEX 12D material contains a biopolymer and a catalyst which accelerates degradation and reduces the reliance on UV degrading the material.

The name 12D demonstrates customers receive all the benefits of a traditional shelter with the added benefit of degradation.

Our customers will still enjoy the same ease of installation of TUBEX, their trees will receive the same high level of protection and support and 12D gives the added value of completely degrading.



- 1 – Install a sapling
- 2 – Establish a tree
- D – Treeshelter degrades**

Service Life

We have designed products to suit different applications;

- 3Y** – designed to degrade after 3 years of service life
- 5Y** – designed to degrade after 5 years of service life

Degradation time frame

The time frame in which the product will degrade will always be dependent on the environment it is in. Many factors contribute to this process, with the important ones being sunlight and bacteria. Sunlight is needed to break up the polymer chains whilst bacteria is needed to digest these small chains.

We expect with a 5Y product, around 5 years of service life, with around a further 5 years of degradation.

- Please note that this material is only applied to our 'solid' shelters. Our Mesh range is available in Oxo-biodegradable technology only.
- Products available in this new technology will be marked by:-



Dark patches shows the starch based biopolymer, biodegrading

Technical Advisory Panel (TAP)

Tubex is proud to have a Technical Advisory Panel (TAP) providing independent, scientific and technological expert advice towards our product development.

If you have a question for members on the TAP panel please email OliverT@pginw.com



Standard Range



The world's best known and best selling treeshelter. Tubex Standard incorporates all the tried and tested Tubex features to provide enhanced growth and reliable plant protection.

Tubex Standard is designed to last a minimum of 5 years*, boosting the chances of survival and healthy growth through the early stages of the tree's life. Tubex Standards are quick and easy to install, provide a microclimate which aids strong root and stem growth, allowing planting of smaller, cheaper trees.

For bigger planting jobs, Tubex Standard Plus in a wider diameter than the normal standard, gives more space for larger species to grow. For more exposed site conditions, consider Tubex Combitube.

*shelter longevity is dependent on site and weather conditions but is typically 5-7 years



PRODUCTS	STANDARD	STANDARD PLUS
Heights (m)	0.6, 0.75, 1.2	1.2, 1.5, 1.8
Diameter (mm)	73 - 105	80 - 120
Nest	5	5
Bundles	100	60
Colour	Green	Light Green
Ties	1 x 9" (0.6m) 2 x 10" (0.75m+)	2 x 10"
Support	Stake	Stake



Ventex



With a patented design, the Tubex Ventex is the most popular shelter in Europe balancing the benefits of enhanced growth and reliable plant protection.

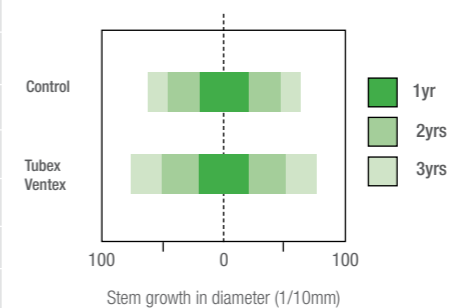
Tubex Ventex is designed to last a minimum of 5 years*, boosting the chances of survival and healthy growth through the early stages of the tree's life. Tubex Ventex improves growing conditions for trees by modifying the traditional treeshelter balance of CO₂, air humidity and light resulting in the perfect 'equilibrium'. These modified conditions are produced through specifically sized and positioned ventilation holes as well as a light green colour to enhance light transmission. This shelter provides plant protection, however is better suited to an environment where herbicide spraying is not used.

*shelter longevity is dependent on site and weather conditions but is typically 5-7 years



PRODUCT	VENTEX
Heights (m)	0.9, 1.2, 1.5, 1.8
Diameter (mm)	80 - 120
Nest	5
Bundles	60
Colour	Light Green
Ties	2 x 10"
Support	Stake

Studies done in the early 90's showed how ventilation in the shelter increases the stem diameter.



Combitube

Shelterguard



Designed for more exposed sites, the Tubex Combitube combines the benefits of a solid base for improved establishment and reliable protection, with a ventilated upper section, allowing the tree to acclimatise before emerging from the shelter.

Tubex Combitube is designed to last a minimum of 5 years*, boosting the chances of survival and healthy growth through the early stages of the tree's life. Ventilation is provided by a number of 4mm laser-generated perforations in a set of 100mm deep bands at the top of the shelter, allowing for 'wind rock' to strengthen both root and stem as well as hardening the bark of the tree. 45cm of solid base allows chemical spraying and creates the microclimate, whilst the perforations ventilate the tree and are small enough for the branches not to grow through.

Tubex Combitube is also available in wider diameters for the larger species of trees.

*shelter longevity is dependent on site and weather conditions but is typically 5-7 years



PRODUCTS	STANDARD COMBI	STANDARD PLUS COMBI
Heights (m)	0.75, 1.2	1.2, 1.5, 1.8
Diameter (mm)	73 - 105	80 - 120
Nest	5	5
Bundles	100	60
Colour	Green	Green
Ties	2 x 10"	2 x 10"
Support	Stake	Stake



TUBEX
12D

TUBEX Data sheets, Installation & Case studies can be downloaded freely from www.tubex.com



Our most popular mesh shelter, the Tubex Shelterguard provides reliable plant protection, enhances growth as well as being designed to blend subtly into the natural environment.

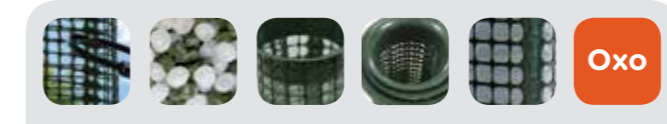
Tubex Shelterguard is designed to last a minimum of 7 years*, boosting the chances of survival and healthy growth through the early stages of the tree's life. Tubex Shelterguard is unique as it is designed to gain the benefits of enhanced growth through the microclimate of a treeshelter, but also allows the tree to acclimatise to the outside environment through its two-staged degradation process.

Welded to the 12mm square mesh is a very fine polythene film which starts to degrade after approx. 3 growing seasons, gradually exposing the tree to the outside environment allowing 'wind rock' to strengthen both root and stem as well as hardening the bark of the tree.

*shelter longevity is dependent on site and weather conditions but is typically 5-7 years



PRODUCTS	SHELTERGUARD	
Heights (m)	0.45, 0.6, 0.75, 0.9	1.2, 1.5, 1.8
Diameter (mm)	80 - 110	80 - 110
Nest	4	4
Bundles	100	60
Colour	Olive Green	Olive Green
Ties	1 x 9" 0.45m & 0.6mm 2 x 9" & 0.75m	2 x 9" 0.75m & 0.9m
Support	Stake	Stake



Oxo



TUBEX Data sheets, Installation & Case studies can be downloaded freely from www.tubex.com



Treeguard



Tubex Treeguard offers reliable plant protection without the microclimate for enhanced growth.

Tubex Treeguard is designed to last a minimum of 7 years*, boosting the chances of survival and healthy growth through the early stages of the tree's life. Often used for conifers or species that require plenty of air movement, as Treeguard has no polyethylene film- it's just a pure net. Most suited to windy site conditions where herbicides are not used, users can benefit from Treeguard being designed to blend subtly into the natural environment.

*shelter longevity is dependent on site and weather conditions but is typically 7+ years



PRODUCTS	TREEGUARD	
Heights (m)	0.45, 0.6, 0.75, 0.9	1.2, 1.5, 1.8
Diameter (mm)	80 - 110	80 - 110
Nest	4	4
Bundles	100	60
Colour	Olive Green	Olive Green
Ties	1 x 9" 0.45m & 0.6mm 2 x 9" & 0.75m	2 x 9" 0.75m & 0.9m
Support	Stake	Stake



TUBEX Data sheets, Installation & Case studies can be downloaded freely from www.tubex.com



Ecostart



Tubex Ecostart, our economic solution to reliable plant protection and enhanced growth, where the main focus is the initial establishment period.

Tubex Ecostart is designed to last a minimum of 3 years*, boosting the chances of survival and healthy growth through the first initial stages of the tree's life. Lower UV stabiliser and smaller diameters allows the shelter to breakdown earlier, making it suitable for small slender plants used in hedging and small scale landscaping.

*shelter longevity is dependent on site and weather conditions but is typically 3+ years



PRODUCTS	ECOSTART
Heights (m)	0.6, 0.75
Diameter (mm)	57 - 73
Nest	3
Bundles	150
Colour	Green
Ties	1 x 8" 0.6m 2 x 8" 0.75m
Support	Stake



TUBEX Data sheets, Installation & Case studies can be downloaded freely from www.tubex.com



Shrubshelter range



Tubex Shrubshelter range is a wider diameter shelter, which provides enhanced growth and reliable plant protection to larger bushier plants.

Tubex Shrubshelter range is designed to last a minimum of 5 years*, boosting the chances of survival and healthy growth through the early stages of the plant's life. Tubex Shrubshelters are ideally suited to landscaping projects with mixed planting stock. Shrubshelters are quick and easy to install and remove, also coming in a wider diameter Shrubshelter Plus.

*shelter longevity is dependent on site and weather conditions but is typically 5-7 years



PRODUCTS	SHRUBSHELTER	SHRUBSHELTER PLUS
Heights (m)	0.6, 0.75	0.6
Diameter (mm)	130 - 160	144 - 200
Nest	4	5
Bundles	28	35
Colour	Green	Green
Ties	2 x 10"	2 x 10"
Support	Stake	Stake

Mesh range for shrubs



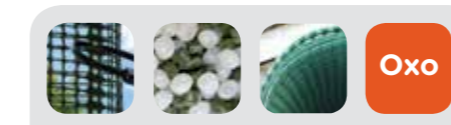
Tubex Mesh range for shrubs are a wider diameter guard often used for larger bushier plants, where the guard is required to blend subtly into the natural environment.

Tubex Mesh range for shrubs are available in two forms. Shelterguard for shrubs incorporates all the benefits of the shelterguard technology where the shrub can benefit from enhanced growth for the first initial period, then acclimatise to the outside environment through the two stage degradation process. Treeguard for shrubs are suitable on sites where herbicides are not used, and shrubs need plant protection. Both options provide reliable protection, blend into the natural environment and are manufactured with a thicker reinforced top edge to reduce stem abrasion. Tubex Mesh range for shrubs is designed to last a minimum of 7 years*, boosting the chances of survival and healthy growth through the early stages of the plant's life.

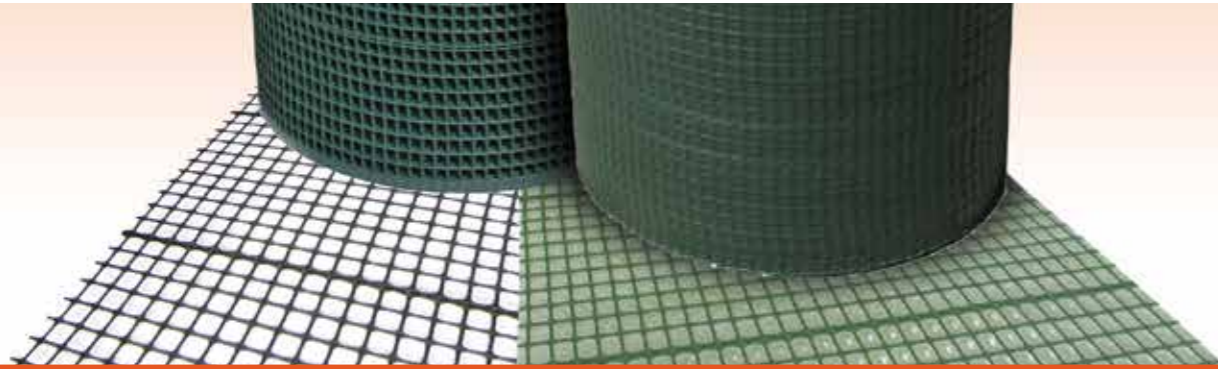
*shelter longevity is dependent on site and weather conditions but is typically 7+ years



PRODUCTS	SHRUBSHELTER MESH RANGE	
Heights (m)	0.6	0.6
Diameter (mm)	130 - 160	144 - 200
Nest	4	5
Bundles	60	35
Colour	Olive Green Brown, Black	Olive Green Brown, Black
Ties	2 x 10"	2 x 10"
Support	Stake	Stake



Rolls, Cut pieces and Layflat



Tubex rolls, cutpieces and layflat are suitable alternatives to the mesh guards giving flexibility for the plant species and site conditions.

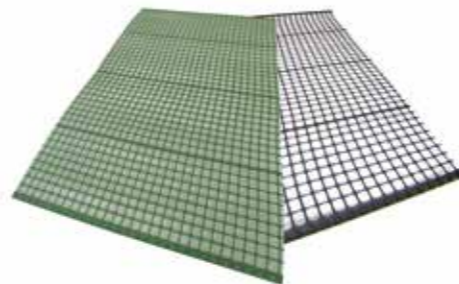
Tubex rolls are available in the Treeguard and Shelterguard options, allowing you to cut to size on site. Once sheets are cut, use a stake, staple gun or ties to install.

PRODUCT	MESH SIZE (mm)	COLOUR	HEIGHT (m)	Length (m)	SUPPORT
Treeguard	12 x 12	Green, Brown, Black	0.3, 0.45, 0.60, 1.2	50	Stake
Shelterguard	12 x 12	Green, Brown, Black	0.3, 0.45, 0.60, 1.2	50	Stake
Sentree 1	37 x 23	Black	0.45	50	Stake
Sentree 3	45 x 25	Black	1	50	Stake



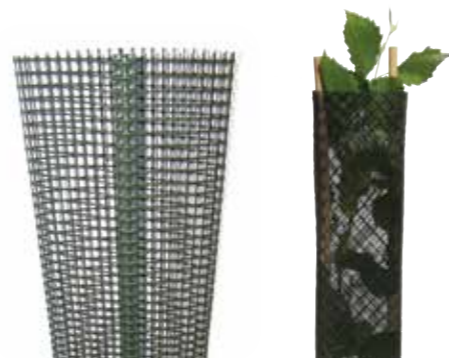
Tubex cut pieces are available in the Treeguard and Shelterguard options, eliminating the hassle of cutting the sheets onsite. Use a stake, staple gun or ties to install.

PRODUCT	HEIGHT (m)	DIAMETER (cm)	COLOUR	SUPPORT
Shelterguard & Treeguard cut pieces	0.6	9	Green	Stake
	0.6	14	Green	Stake
	0.6	20	Green	Stake
	1.2	20	Green	Stake



Tubex layflat mesh is available in a fine mesh, standard mesh and shelterguard can be stored flat and formed into a tube shape before installation. Layflat is to be secured using two forms of support.

PRODUCT	HEIGHT (m)	DIAMETER (cm)	COLOUR	SUPPORT
Standard Mesh	0.6, 1.2	15, 20	Green	2 x canes or stake & cane
Fine Mesh	0.6	8	Black	2 x cane
Shelterguard	1.2, 1.5, 1.8	20, 30	Green	2 x stakes



Wraps



EASYWRAPS

Tubex Easywrap is a great alternative to the spiral that provides reliable plant protection as well as enhanced growth through a microclimate. Easywrap is slipped over small whips and will expand as the plant grows, retaining its shape and making it easier to remove. New to this season is the 20cm Easywrap 'heavy', an alternative to the brown voleguard.

PRODUCT	HEIGHT (m)	DIAMETER (mm)	NEST	BUNDLE	COLOUR	SUPPORT
easywrap	0.6	50 - 65	2	150	Light Green	Cane
	0.75	50 - 65	2	150	Light Green	Cane



VOLE/STRIMMER GUARDS

Vole/Strimmer guards are for basic protection for those trees that would normally die from vole attacks or careless use of a strimmer. Single wall for rigidity and wrapped to allow the guard to expand as the tree grows, the voleguard is an economic solution for protection against these hazards.

Strimmer guards can also be used to deflect strimmers and come flat packed, to be assembled on site.

PRODUCT	HEIGHT (m)	DIAMETER (cm)	NEST	BUNDLE	COLOUR
Voleguard	20	4	3	288	Brown
Strimmer Guards	20	9.5*	Flat	80	Black

*diameter when assembled – please note: the tree guard is modular so the diameter can be increased by adding more 'sections'.



Mulching



Weed control around newly planted trees and shrubs is vital to reduce moisture stress and competition. Although herbicides can provide weed-free conditions, mulching with sheet materials also promotes both survival and growth by restricting water loss and increasing soil temperature.

SQUARES, TREESPATS AND ROLLS

We offer mulching in 3 different forms; squares of material with slits cut in the middle enabling them to be placed over the top of small plants. Treespats are a patented design with a sewn overlapped section running from the middle to one edge, making them easier to fit. Rolls gives you flexibility and are ideal for laying as a sheet along hedgerows, around new planting, in horticultural settings, under gravel paths etc.

* For full mulch range availability, please go to www.tubex.com



PHOTODEGRADABLE MATERIAL

Polythene - Non permeable, low cost mulching, 3 year lifespan.

Spun-bonded Polypropylene - permeable, with non fraying edges, 5 year life span.

Woven Polypropylene - best photodegradable mulch we have. Stronger, easier to peg and permeable. Lasts 7 years.

BIODEGRADABLE MATERIAL

Jute Hessian - mix of recycled jute and cashmere hair, needled onto a hessian backing. Permeable and lasts 2 - 3 seasons.

Hybrid Jute - mixture of recycled jute and cashmere hair, needled onto a polythene backing. Permeable and lasts 3 seasons.

PLA, non woven - mixture of biofibres (polylactic acid) and hemp. Permeable and lasts 4 years.

* Mulching should be installed using anchoring pegs

Ancillary products



STAKES & STAKE DRIVERS

Stakes are available in a wide range of sizes. All stakes are four way pointed, and are sourced from well managed UK, European and Baltic forests. Our stakes are treated to BS8417.2011 and are available to buy with FSC accreditations.

It is important to install stakes properly to ensure minimal damage and longevity of the stake. We recommend using a stake driver where possible. Where ground conditions are difficult create a pilot hole using a steel pole.

*Please contact Tubex for the full size range of stakes available.



CANES

Bamboo canes are stocked in large quantities of varying sizes, all harvested from well managed, naturally regenerating forests in China. Canes are graded by the traditional weight system (number of pounds weight per hundred canes).

*Please contact Tubex for the size and weight range available.



CABLE TIES

Cable ties are available for those shelters that do not come already pre-fitted with them. Tie sets are available for the mesh rolls and cut pieces as well as releasable and non-releasable ties if you require some extras.

Sizes range in both releasable and non releasable, however the main sizes are 8, 9 and 10 inches.



Ancillary products



STAPLE & STAPLE GUN

Ideal for attaching mesh to timber stakes.
 Staple gun = Arrow T – 2025
 Staples (5000 per box) 11mm



ANCHORING PEGS

Anchoring pegs are used to peg down mulching and are available in different materials. The steel peg is ideal for hard, stony ground and the plastic barbed peg is popular in all other conditions as it offers better grip. We also offer wooden pegs.

The number of anchoring pegs needed per mat depends on the size of the mulch mat and the exposure of the site. If anchoring pegs are the only means of anchoring, we recommend four for the standard square, five for the standard treespat, eight for the large square and nine for the large treespat. We would recommend using a peg every 1/2 metre on mulching sheets.



Ancillary products



TREE TIES

Buckle ties and spacers are manufactured out of a soft, flexible recycled plastic. They are sold complete with one spacer and are easily adjusted and will stretch with growth.

Supersoft ties are moulded from soft plastic and form into a figure of eight. They will stretch as the tree grows.

Interlock ties are small ties which form a figure of eight and thread back through themselves.



PRODUCT	LENGTH (cm)	WIDTH (cm)	COLOUR	MATERIAL
Buckle ties	38, 45, 60	2.5	Black	Recycled, flexible PVC
Supersoft ties	38, 45, 60	2.5	Black	Flexible PVC
Interlock ties	20	2.5	Black	HDPE

TREE STRAPPING

Buckle strapping is made from soft, flexible recycled plastic. Buying on the roll offers the convenience of cutting to any size.

Nail-on strap is the same as buckle strapping, but with pre-punched holes, reducing the chance of splitting when the material is nailed to a stake (this is most likely to occur in cold weather)



ANCORFIX

Tubex Ancorfix is a rubber tie for staking or securing. It is suitable for many applications as it is strong, has high elasticity allowing the tie to expand, and lasts up to 4 years. Ancorfix is easy to install by simply wrapping the product around the surface area and pulling it through itself and around the 'anchor' part of the product.

We recommend using Ancorfix around a Tubex easywrap to prevent the wrap from being forced open in windy conditions.



Size Guide



1.8m Red Deer

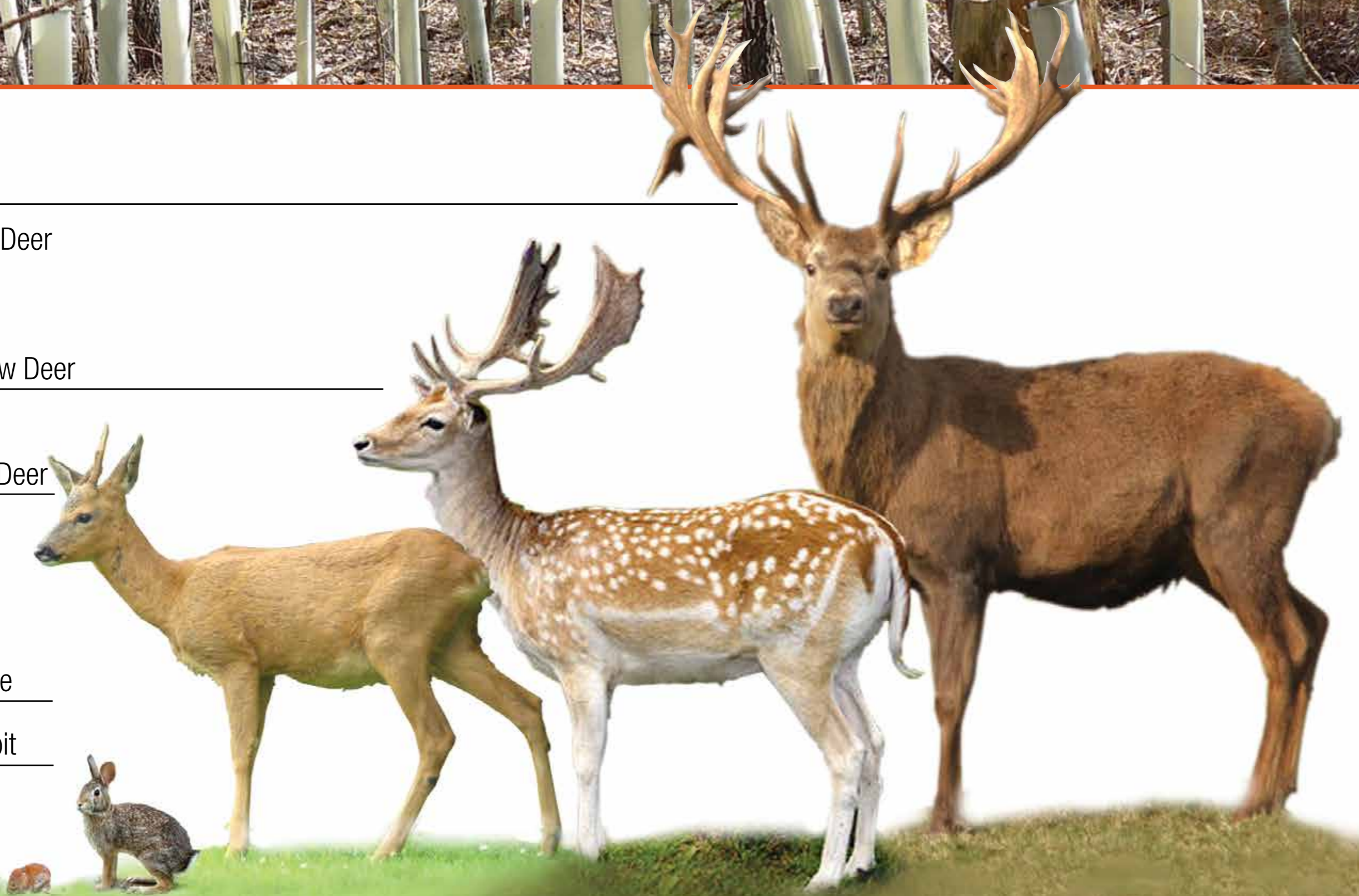
1.5m Fallow Deer

1.2m Roe Deer

0.75m Hare

0.6m Rabbit

0.2m Voe



Further market specific literature available:

- Fruit & Viticulture

Application specific literature, product data sheets, case studies and installation guides are available on request or can be freely downloaded from www.tubex.com

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PGI excels in the innovative application of technology to create versatile, high-performance materials which are unique, cost-efficient and deliver significant added value.

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