

Northern Polytunnels



Single Span Brochure



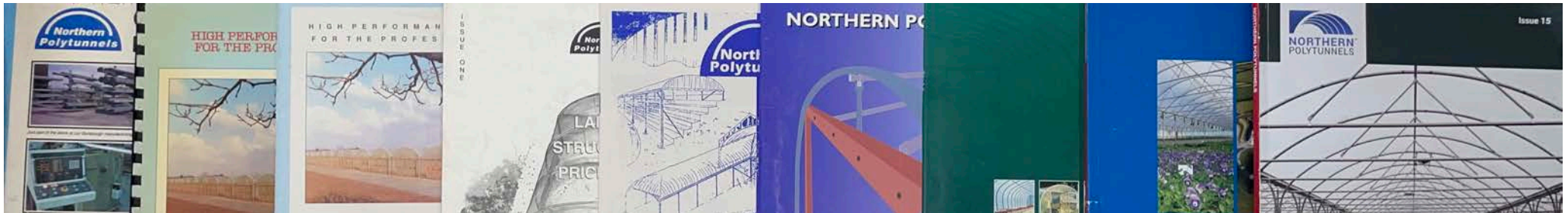
About Northern Polytunnels

The founder, Peter Wolfenden, established LBS in 1969 and started manufacturing polytunnels on the family farm in 1972 under the LBS name. In 1990 LBS took over Northern Polytunnels to extend its manufacturing capabilities into Multispan structures, Northern Polytunnels is now a 3rd generation family business.

Our emphasis has always been on the quality of products that we manufacture and the materials that we use. With the latest CAD and structural analysis software combined with the latest manufacturing technology, including laser cutting and robotic welding, we can guarantee the performance of our structures.

We have our own fleet of delivery vehicles and construction machinery as well as dedicated construction teams to deliver projects throughout the UK and abroad.

Under the brand of NP Structures we also offer PVC clad structures for storage and warehousing and are current includes the supply and construction of the world's largest vertical farm.



Made in Britain

We're pleased to say that we design, manufacture, and build all our products here in the U.K. before shipping them directly to you. That is why we have signed up to the Made In Britain organisation, joining a growing community of U.K. manufacturers that deliver a high standard of products.



Quick Comparison Guide

WIDTH OF POLYTUNNEL IN FT	Competitive Budget Range					Commercial Timber Range					Commercial Aluminium Range				
	18ft	21ft	24ft	27ft	30ft	18ft	21ft	24ft	27ft	30ft	18ft	21ft	24ft	27ft	30ft
Standard Height in Metres	3.12	3.3	3.33	3.5	3.61	3.12	3.3	3.33	3.5	3.61	3.12	3.3	3.33	3.5	3.61
High Sided Option Height in Metres	na	na	na	na	na	3.77	3.95	3.98	4.15	4.26	3.77	3.95	3.98	4.15	4.26
Foundation Tubes Wall Thickness in mm	1.5	1.5	1.5	1.5	1.5	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Hoop Diameter in mm (E370 Galv High Tensile)	50.8	50.8	50.8	60.3	60.3	na	na	na	na	na	na	na	na	na	na
Hoop Diameter in mm (Armourguard see note)	na	na	na	na	na	50.8	50.8	60.3	60.3	60.3	50.8	50.8	60.3	60.3	60.3
Number of Hoop Pieces	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Diagonal Braces per End	5	5	5	6	6	5	5	5	7	8	5	5	5	7	8
Strut/Stabiliser Diameter	35	35	35	35	35	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8
Cover Tensioning System	X	X	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ridge Bar Diameter in mm	35	35	35	35	35	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8
Main Crop Bar Diameter in mm	35	35	35	35	35	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8

BASE AND SIDE RAILS

Timber Base Rail Size in mm	75x50	75x50	75x50	75x50	75x50	100x50	100x50	100x50	100x50	100x50	na	na	na	na	na
Aluminium Box Profile Base Rail Size	na	na	na	na	na	na	na	na	na	na	79x53	79x53	79x53	79x53	79x53
Timber Side Rail Size	75x50	75x50	75x50	75x50	75x50	100x50	100x50	100x50	100x50	100x50	na	na	na	na	na

GABLE ENDS

Timber End Frames in mm	75x75	75x75	75x75	75x75	75x75	100x50	100x50	100x50	100x50	100x50	na	na	na	na	na
Aluminium Box Profile in mm	na	na	na	na	na	na	na	na	na	na	79x53	79x53	79x53	79x53	79x53

NOTES

Steel is high tensile Armourguard steel with a Zinc magnesium coating for an extended lifespan. Heavy duty galvanised foundation tubes with 2.5mm wall thickness to give increased strength and protection from corrosion.



Delivery



To improve the experience for our commercial customers, we have invested in a fleet of wagons. Our fleet ranges from 1 ton pick-ups to a 42 ton articulated lorry with a piggyback forklift, giving our commercial customers more options.

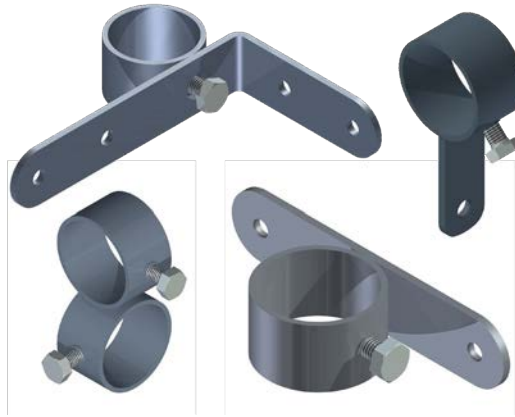
Delivery is generally 2-6 weeks from order on our own commercial wagon to ensure the products safety in transit but please check when placing your order for our latest time scale.

Our internal transport team will give you an exact date of arrival before they despatch the structure. Likewise, our driver will give you a call once he's on the road, to give you an exact time.

Our Single Span Polytunnel Features

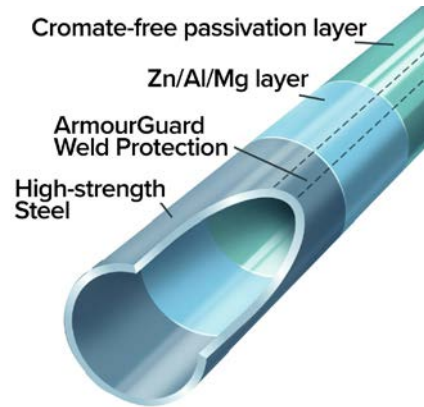
Superior Brackets & Fittings

The strength of our brackets and fittings have been proven for over 40 years and have been specially designed and manufactured in-house. Bespoke fittings are designed to simplify the construction process, thereby reducing the construction cost.



ArmourGuard® Steel

ArmourGuard® is NP Structure's newly developed high-endurance galvanising treatment, giving extraordinary levels of corrosion resistance. ArmourGuard® offers up to 20 times the corrosion resistance of traditional zinc galvanising due to the combination of zinc, aluminium and magnesium.



Configurable Options

Different crops and growing systems require different solutions, which is why we offer a range of options to suit your individual requirements and budget. Options include; doors & louvres - foundations - brace and crop bars - choice of polythene covers - ventilation systems and irrigation.



BPI Polythene

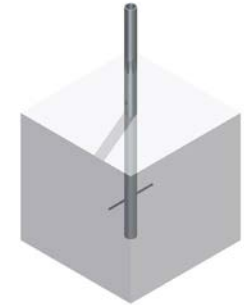
Visqueen's British made polythene allows UVB to enter the greenhouse unlike normal glasshouse films and glass. This has many benefits including enhancing the fragrance, taste, colour of crops with the added advantage of earlier harvesting and longer post-harvest shelf life. It also has a unique condensation reduction additive to further reduce light-loss. Our polythene is guaranteed for 7 years*



Foundations

Our ground tubes (Foundation Tubes) are 1m long, they are ArmourGuard galvanised treated with a 2.5mm wall thickness.

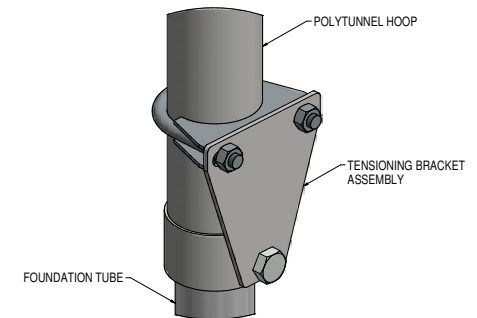
The image to the right shows a ground tube concreted in with a retaining bar to hold it securely



Cover Tensioning System

All of our foundation options incorporate our unique polythene cover tensioning system. The collar tensioning system enables quick and easy tensioning of the polytunnel cover.

The hoops sleeve over the foundation tubes allowing each hoop to be raised individually and locked into position after the polythene sheet has been attached. This stretches the polythene cover to create a drum-tight like cover finish. Unlike some competitors, our system allows easy tightening and slackening throughout the lifespan of the polytunnel.



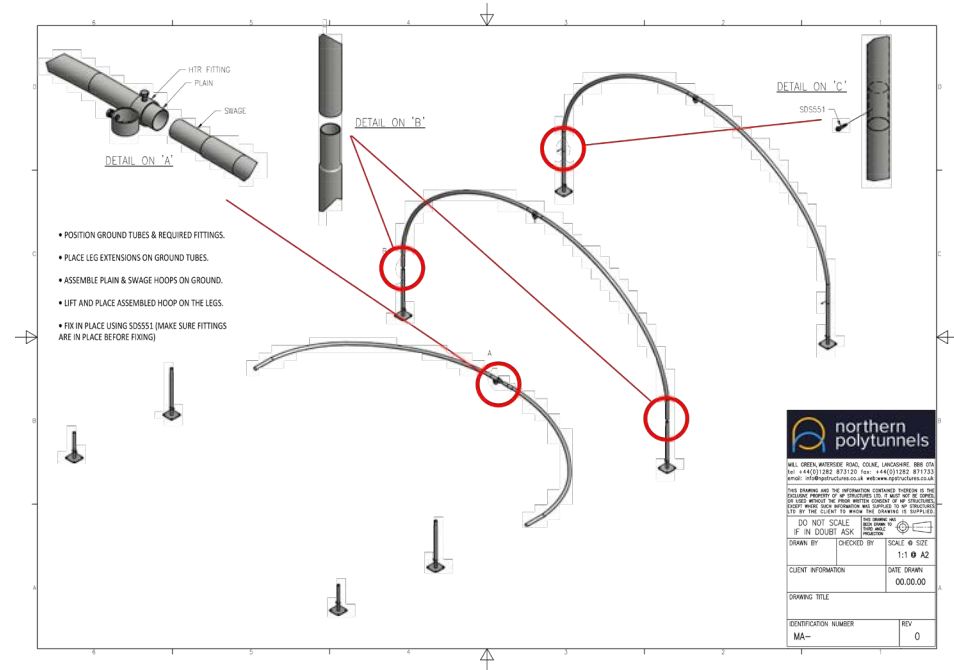
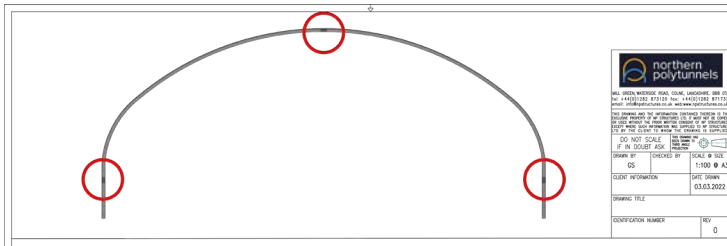
*incremental guarantee from invoice date

Our Single Span Polytunnel Features

Northern Polytunnel Hoop Design

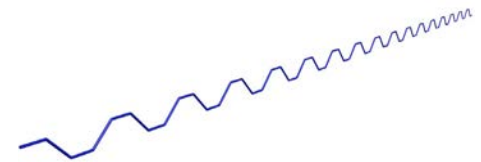
Our 4-piece hoop is made up of a 2-piece arch connected to a straight leg. The leg connection is located on a vertical plane meaning the hoops can withstand a heavier load. Manufacturing a hoop in this way also makes the hoop more customisable by giving the customer the ability to increase the height of the straight leg without compromising the stability of the single span.

Other manufacturers of Polytunnels often have their connections on the curve of the hoop which compromises strength and allows the hoop to 'snake'. To combat this, extra bracing brackets are used resulting in increased materials, labour and cost.



Wiggle Wire Aluminium Fixing Profiles

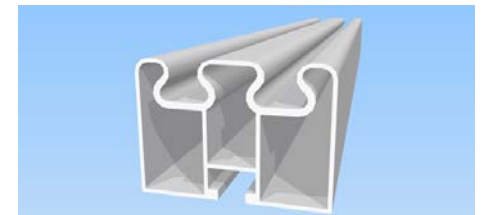
Aluminium is free from defects that wood has (knots, splits and bows) and will last a lifetime. All our aluminium profiles incorporate our unique 'W-Wire' polythene securing system. By simply weaving the 'W-Wire' into the open channel of the aluminium rails & frames the polythene is securely trapped in to place. 'W-Wire' is the easiest and quickest system on the market and doesn't require any specialist tools.



Aluminium Side Rail And Door Frames

After years of research and development we have designed a profile that has the strength of a box profile with all the features that you expect from a modern fixing system.

- T slot rear fixing for bolts
- Wiggle wire fixing of up to 3 different materials
- Keder slots for simple curtain replacement
- Strong purpose designed door frame fittings



Aluminium Base Rail

This is a smaller section size but still retains the strength of a box profile, with the simple wiggle fixing system.

- T slot rear fixing for bolts
- Wiggle wire fixing of up to 3 different materials



Greenhouse Wind and Snow load performance

Please note these snow and wind loadings do not apply to our Budget Competitor Range of structures

We strive to give our customers the best product. For this reason, we undertook the huge task of analysing the strength of our polytunnels. This is done creating a computer-generated model of the structure and applying loads from the relevant standards shown in the table opposite.

These loads are applied to the model of the greenhouse using our structural analysis software. The software helps us to locate potential weak spots so that we can optimise our design.

Check If The Polytunnel Suits Your Location

The table to the right shows the load numbers, the higher the number the stronger the greenhouse required.

Using the maps to the right, pinpoint where your structure is to be sited; note the colour and zone. Each zone relates to snow loading and wind speed throughout the country. Check the polytunnel wind and snow load performance table to make sure the polytunnel will perform in the area you have pinpointed.

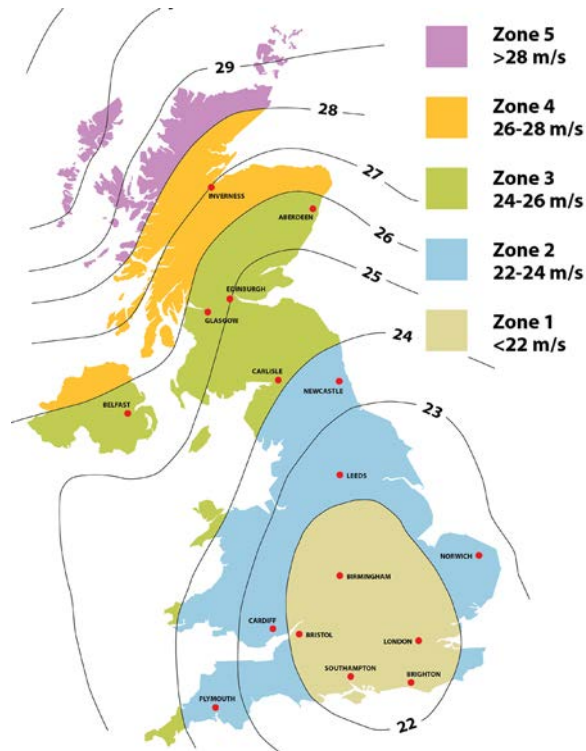
If you need further help with this, please don't hesitate to get in touch with our sales team.

These Calculation Are Based On The Following Standards

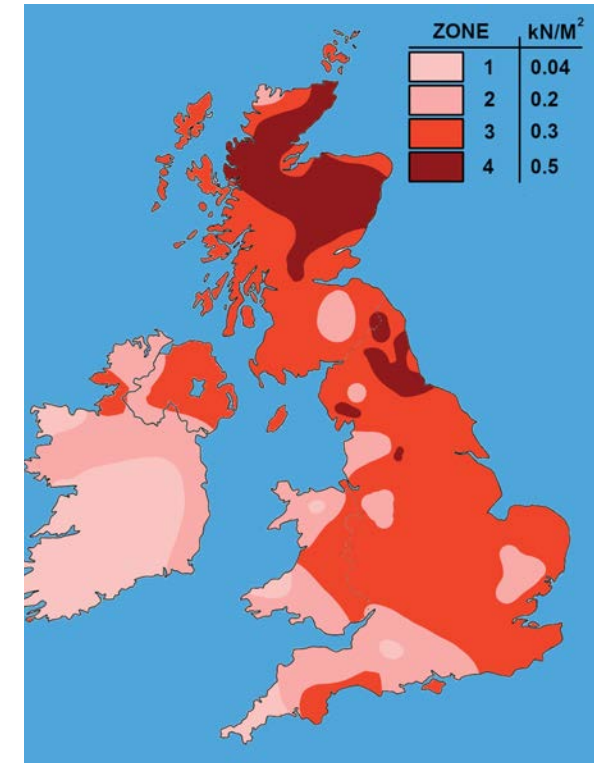
1	Drawings by N P Structures Ltd.
2	EN 1993-1-1:2005, General rules and rules for buildings
3	BS EN 1991-1-3:2003+A1:2015, UK NA General actions – Snow loads
4	BS EN 1991-1-4:2005+A1:2010, UK NA – General actions – Wind actions
5	EN 13031-1:2001, Commercial production greenhouses

Size	Spacings	Hoop diameter	Bracing diameter	BASIC Structure		V CROP BAR		W CROP BAR	
				WIND (m/s)	SNOW (kN/m ²)	WIND (m/s)	SNOW (kN/m ²)	WIND (m/s)	SNOW (kN/m ²)
SINGLE:									
18ft	2.4384m	50.8mm	50.8mm	24	0.4	28	0.73	28	0.75
21ft	2.4384m	50.8mm	50.8mm	24	0.3	29	0.6	29	0.56
24ft	2.1336m	60.3mm	50.8mm	24	0.43	30	0.7	30	0.87
27ft	2.1336m	60.3mm	50.8mm	22	0.35	25	0.62	25	0.93
30ft	1.8288m	60.3mm	50.8mm	22	0.15	24	0.47	24	0.48
27ft	1.8288m	60.3mm	50.8mm	23	0.34	27	0.55	27	0.66
30ft	1.524m	60.3mm	50.8mm	23	0.16	26	0.54	26	0.66

UK Wind Loads



UK Snow Loads





Here at Northern Polytunnels we will take care of everything throughout the build process. This starts from our first site visit where we establish the needs and requirements of the client and finishes with a final sign off when both parties are satisfied.

We have six of the country's best construction teams building our structures throughout the UK. We have invested heavily in specialist plant and equipment, combine this with our relationships to leading plant and concrete providers in the UK, we can ensure no job is too big. An excavator and dumper is the minimum requirement on all our builds. This facilitates the prompt marking out, digging and securing of the foundation tubes. If extra plant is required for larger structures, such as a telehandler, all terrain scissor lifts or cherry pickers, Northern Polytunnels will provide these to arrive on-site and on time making sure the construction process runs as smoothly as possible.

If required, site levelling of the structure both internally and externally can be taken care of by Northern Polytunnels. Investing in specialist tracked plant means that work can be undertaken all year round regardless of weather conditions. We make sure the site is level before construction and also offer a 'final floor finish levelling' once the structure is complete to ensure it's fit for purpose.

Customers are required to check whether there are any underground services, such as gas, water and electricity mains.

Full support and build management is available throughout the installation, constant communication with the customer is key for us here at NP. At the end of each job our after sales team do a full comprehensive on-site survey to make sure the job has been completed to your satisfaction. We also have a customer feedback form thus ensuring continued customer satisfaction.

All method statements and RAMS can be provided on request by Northern Polytunnels. All our teams are fully qualified on all plant and equipment and carry all the necessary certificates.



Our Budget Economy Range. New For 2022.

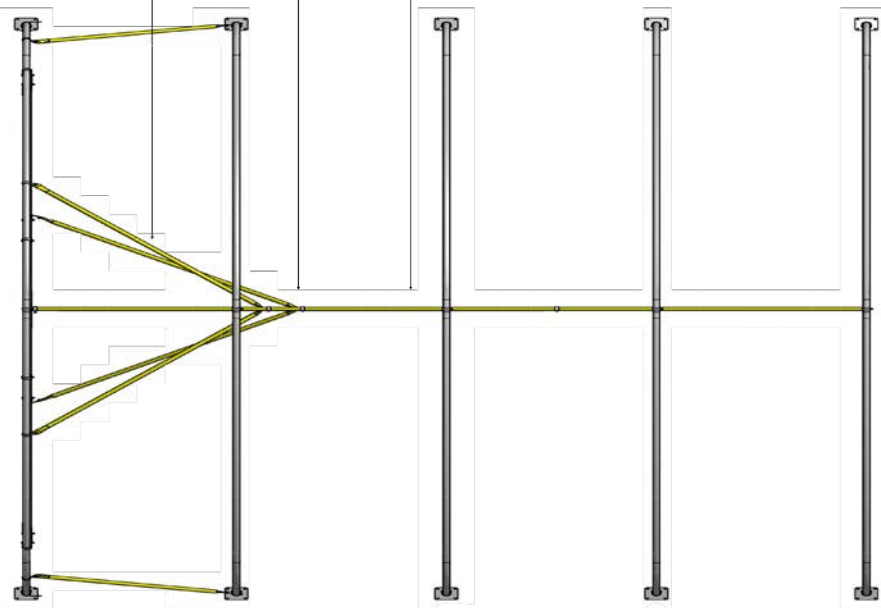
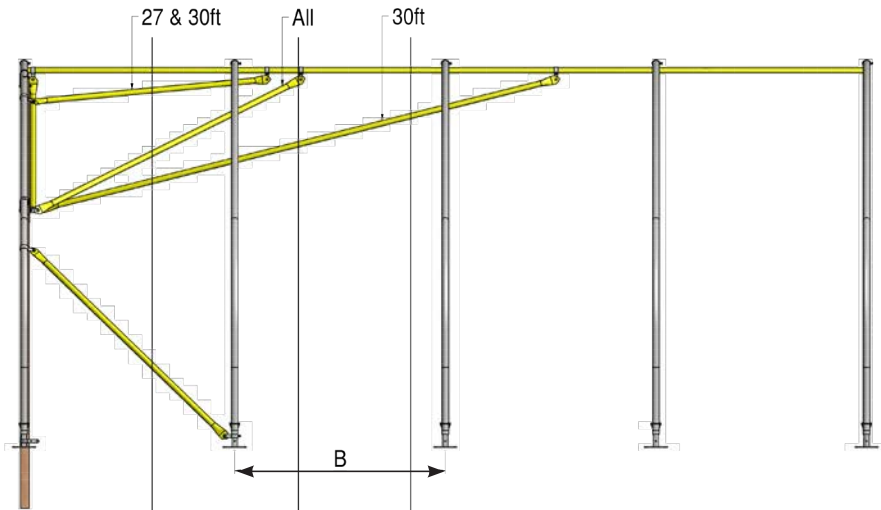
The economy range offers a great entry-level tunnel for the keen hobbyist. Whilst it is without some of the more sophisticated features of our commercial models (such as cover tensioning system), it is still a great option at a competitive price point. Designed with a 5-year design life for the budget-conscious individual. The economy range is constructed with a lightweight framework that does not come wind & snow loaded and thus will require wind protection and heating during winter snowfall. For business use we would always recommend a commercial model tunnel for peace of mind and consistent reliability.

To compare models, see the comparison table on page 3

- Lower Grade Steel No Armourguard Coating
- Fewer Strengthening Struts
- Lighter Duty Foundation Tubes
- No Sheet Tensioning System
- Reduced Timber Sizes For Base Rails
- Lighter Duty Ridge Bar, Support Struts & Crop Bars

Check out our comparison chart on the back page to compare the components that we use.

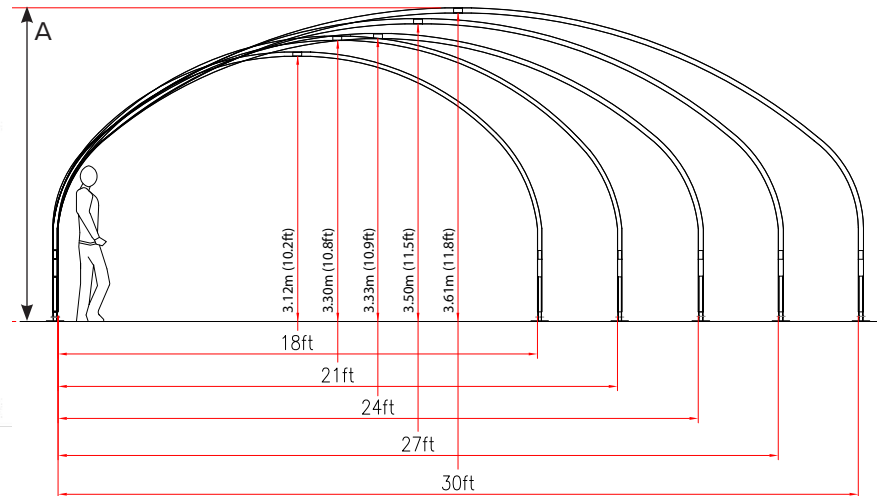
Side Elevation



Plan Elevation

FRAMEWORK	18FT	21FT	24FT	27FT	30FT
High sided option height	3.77m	3.95m	3.98m	4.15m	4.26m
Standard height (A)	3.12m	3.30m	3.33m	3.50m	3.61m
Standard hoop spacing (B)	6	7	6	7	6
Foundation tubes	1.5mm	1.5mm	1.5mm	1.5mm	1.5mm
Hoop diameter	50.8mm	50.8mm	60mm	60mm	60.3mm
Number of hoop pieces	4	4	4	4	4
Number of struts/stabilisers per end	5	5	5	7	8
Strut/stabiliser diameter	35mm	35mm	35mm <td 35mm	35mm	
Framework tension system	No	No	No	No	No
Ridge bar diameter	50.8mm	50.8mm	50.8mm	50.8mm	50.8mm
CROP BARS					
Main crop bar diameter	50.8mm	50.8mm	50.8mm	50.8mm	50.8mm
Number of crop bar hangers	2	2	2	2	2
Crop bar hanger diameter	32	32	32	32	32
TIMBER					
End Frames	100x47mm	100x47mm	100x47mm	75x75mm	75x75mm
Base rail section sizes	75x47mm	75x47mm	75x47mm	75x47mm	75x47mm
Doors					
POLYTUNNEL COVERINGS					
Polythene manufacturer	BPI UK	BPI UK	BPI UK	BPI UK	BPI UK

*Heavy duty galvanised foundation tubes with 3.5mm wall thickness to give increased protection from corrosion.
 **Our steel work is high tensile Armourguard. Material certificates are available on request.



northern polytunnels

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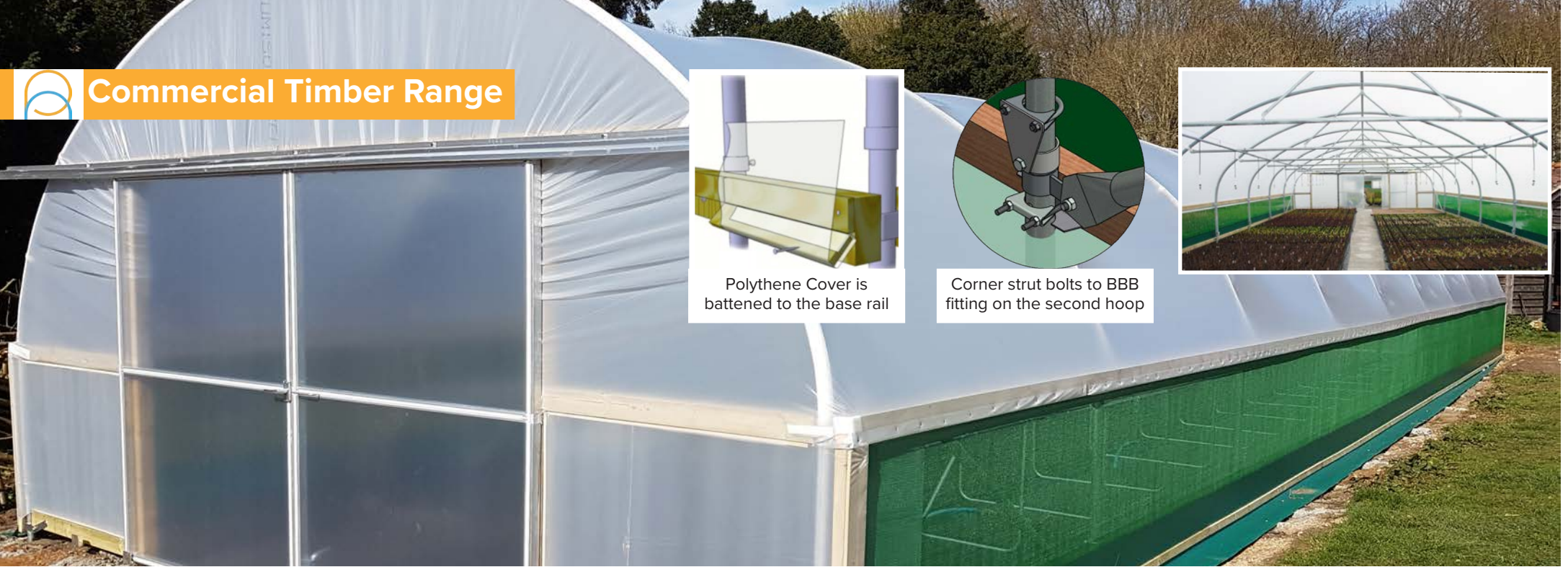
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Commercial Timber Range



Polythene Cover is battened to the base rail

Corner strut bolts to BBB fitting on the second hoop

Timber Base Rails & Door Frames

Our original Commercial Timber Range of polytunnels offer an economical option over the Commercial Aluminium Range. This is the traditional method of building polytunnels, with the polythene being fixed with timber battens nailed onto the timber door frames and side or base rails, it's simple and cost-effective.

Our commercial range of structures use the most suitable materials possible, our timber is graded using C16 and C24 grades and our steel is ArmourGuard zinc magnesium coated. We manufacture all our fittings in house which are strength tested and protective coated.

The foundation tubes use are a substantial 2.5mm wall thickness that pairs with a cover tensioning system that allows you to tension the cover after it's been fitted ensuring a drum-tight finish.

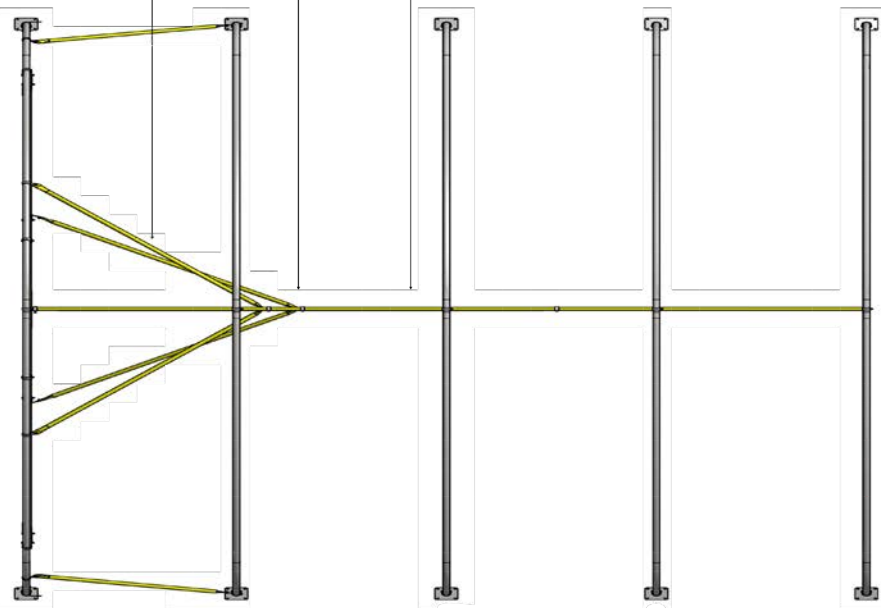
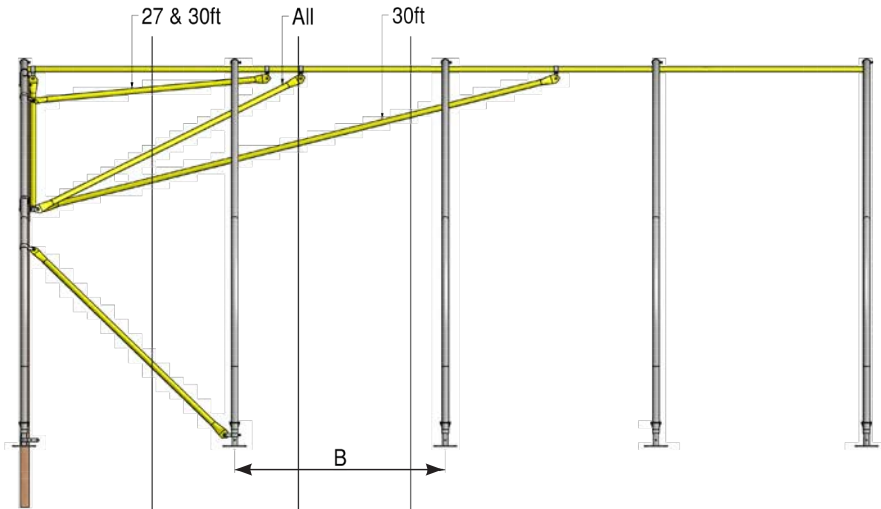
Our in-house engineers have calculated the wind and snow loads to ensure that every polytunnel we manufacture can withstand the weather at your location (see page 6 for more information).

Our commercial polytunnels are renowned for their strength which is why you can expect to see them in the most hostile environments, from the Shetlands to The Falklands.

- **ArmourGuard® Steel**
- **Superior Brackets & Fittings**
- **Cover Tensioning System**
- **2.5mm Wall ArmourGuard® Steel Foundations.**
- **Door Frames 75mm x 75mm (3" x 3") Tanalised timber**
- **Side and Base Rails 100mm x 50mm Tanalised timber**

Check out our comparison chart on the back page to compare the components that we use.

Side Elevation

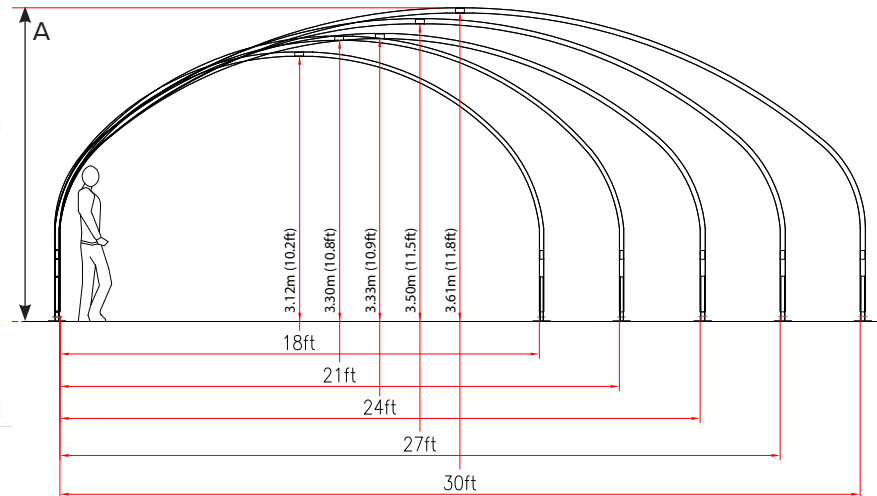


Plan Elevation

FRAMEWORK	18FT	21FT	24FT	27FT	30FT
High sided option height	3.77m	3.95m	3.98m	4.15m	4.26m
Standard height	3.12m	3.30m	3.33m	3.50m	3.61m
Standard hoop spacing	8	8	7	7	6
Foundation tubes	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm
Hoop diameter	50.8mm	50.8mm	60mm	60mm	60mm
Number of hoop pieces	4	4	4	4	4
Number of struts/stabilisers per end	5	5	5	7	8
Strut/stabiliser diameter	50.8mm	50.8mm	50.8mm	50.8mm	50.8mm
Framework tension system	Yes*	Yes*	Yes*	Yes*	Yes*
Ridge bar diameter	50.8mm	50.8mm	50.8mm	50.8mm	50.8mm
CROP BARS					
Main crop bar diameter	50.8mm	50.8mm	50.8mm	50.8mm	50.8mm
Number of crop bar hangers	2	2	2	2	2
Crop bar hanger diameter	32	32	32	32	32
TIMBER					
End Frames	75x75mm	75x75mm	75x75mm	75x75mm	75x75mm
Base rail section sizes	100x50mm	100x50mm	100x50mm	100x50mm	100x50mm
Side rail section sizes	100x50mm	100x50mm	100x50mm	100x50mm	100x50mm
POLYTUNNEL COVERINGS					
Polythene manufacturer	BPI UK	BPI UK	BPI UK	BPI UK	BPI UK

*Heavy duty galvanised foundation tubes with 3.5mm wall thickness to give increased protection from corrosion.

**Our steel work is high tensile Armourguard. Material certificates are available on request.



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Commercial Aluminium Range



Commercial Aluminium Range

this is our highest standard commercial single span which offers superior quality and lifespan. This model is free of any timber elements. Consequently, over time it works out better in terms of strength, value and longevity which is why it offers the best return on investment. This has been our best rated single-span polytunnel range and continues to be a firm favourite with our experienced commercial growers.

Our aluminium profiles have been extensively tested, each of which promises strength along with the ease of the W-wire fixing method which results in a clean and professional finish on the structure.

The foundation tubes are thicker at 2.5mm with a cover tensioning system that allows you to tension the cover after it's been fitted, ensuring a drum-skin tight finish.

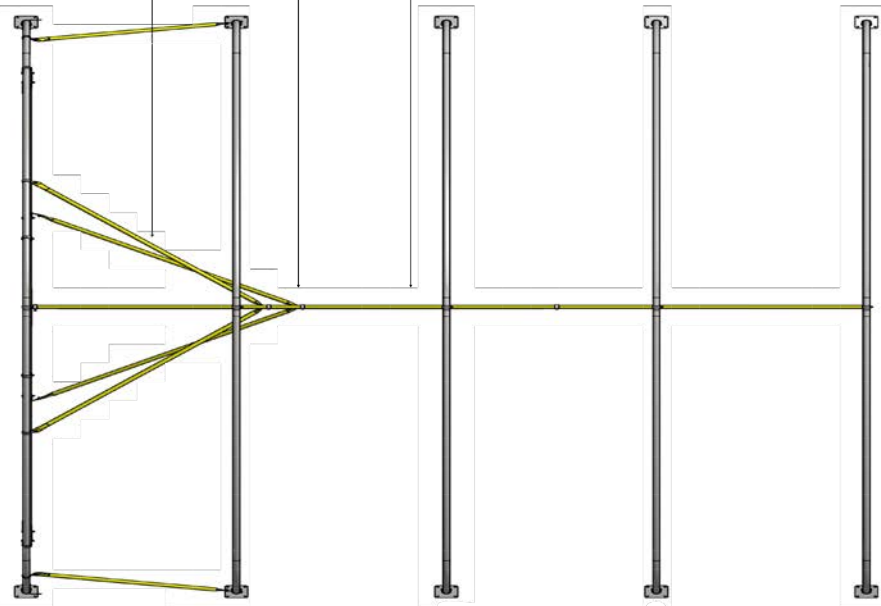
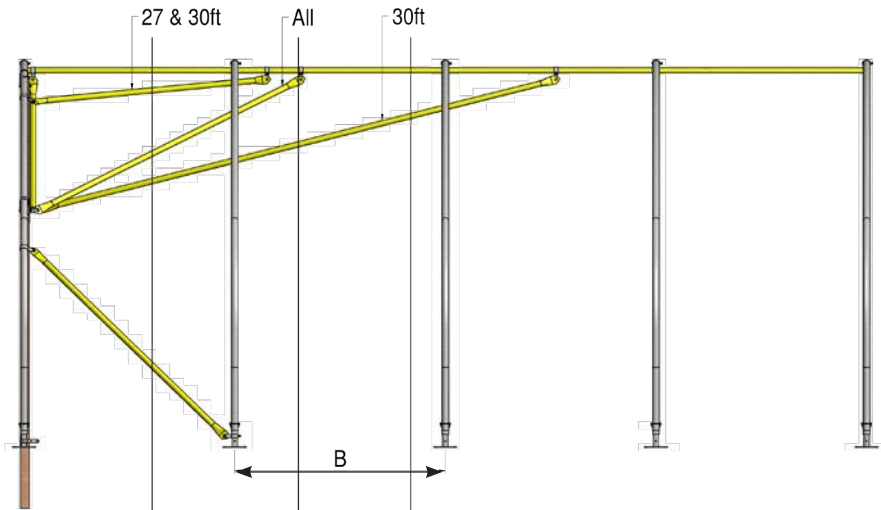
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Northern polytunnels are renowned for their strength which is why you can expect to see them in the most hostile environments, from the Shetlands to The Falklands.

- Superior All Aluminium Side Rails
- ArmourGuard® Steel
- Superior Brackets & Fittings
- Cover Tensioning System
- 2.5mm Wall ArmourGuard® Steel Foundations.
- Wiggle Wire Aluminium Fixing System

Check out our comparison chart on the back page to compare the components that we use.

Side Elevation

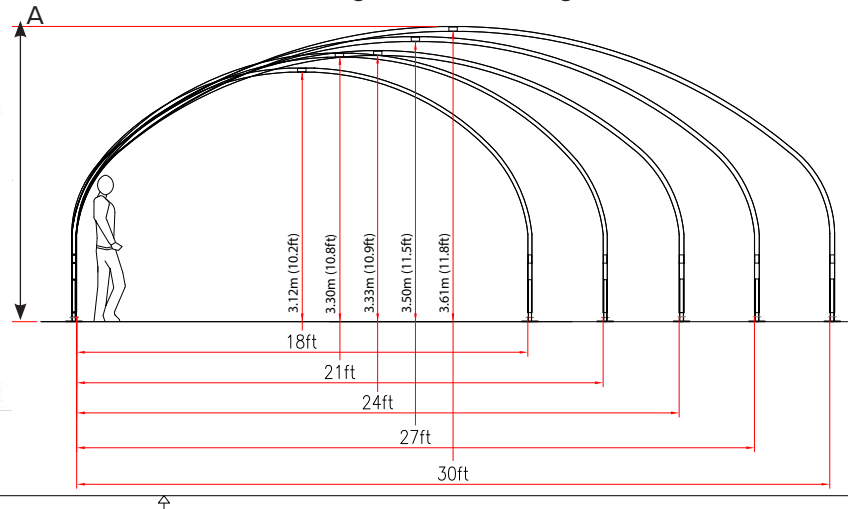


Plan Elevation

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High sided option height	3.77m	3.95m	3.98m	4.15m	4.26m
Standard height	3.12m	3.30m	3.33m	3.50m	3.61m
Standard hoop spacing	8	8	7	7	6
Foundation tubes	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm
Hoop diameter	50.8mm	50.8mm	60mm	60mm	60mm
Number of hoop pieces	4	4	4	4	4
Number of struts/stabilisers per end	5	5	5	7	8
Strut/stabiliser diameter	50.8mm	50.8mm	50.8mm	50.8mm	50.8mm
Framework tension system	Yes*	Yes*	Yes*	Yes*	Yes*
Ridge bar diameter	50.8mm	50.8mm	50.8mm	50.8mm	50.8mm
CROP BARS					
Main crop bar diameter	50.8mm	50.8mm	50.8mm	50.8mm	50.8mm
Number of crop bar hangers	2	2	2	2	2
Crop bar hanger diameter	32	32	32	32	32
ALUMINIUM					
Base rail section sizes	54x53mm	54x53mm	54x53mm	54x53mm	54x53mm
Side rail section sizes	79x53mm	79x53mm	79x53mm	79x53mm	79x53mm
POLYTUNNEL COVERINGS					
Polythene manufacturer	BPI UK	BPI UK	BPI UK	BPI UK	BPI UK

*Heavy duty galvanised foundation tubes with 3.5mm wall thickness to give increased protection from corrosion.

**Our steel work is high tensile Armourguard. Material certificates are available on request.



northern polytunnels

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Side Vent Options



Over a certain length, commercial tunnels can struggle with stagnant air in the middle of the structure that airflow from open doors cannot circulate.

The best recourse for this is to opt for side ventilation. Whether manual winch, gearbox or motor-driven, it gives the grower control over the environment in the polytunnel. Opening the side vents allows air to flow throughout the tunnel reducing hot spots in summer. Closing them during cooler months reduces heat loss and encourages the grower to bring on plants earlier in the year.

Side vents are designed work in conjunction with open doors and/or roof ventilation, allowing full circulation through the tunnel.

Side Vent Automation

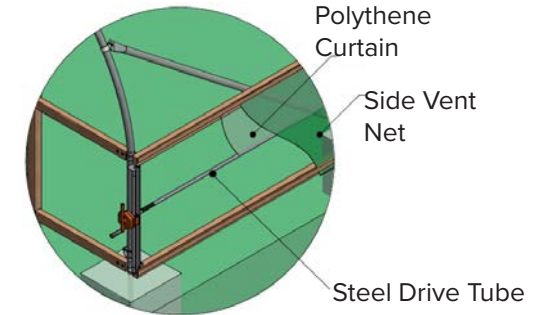
All our side vent options are able to be fully automated, with or without temperature control. See page 21



Polytunnel Vent Motor

Economy Range

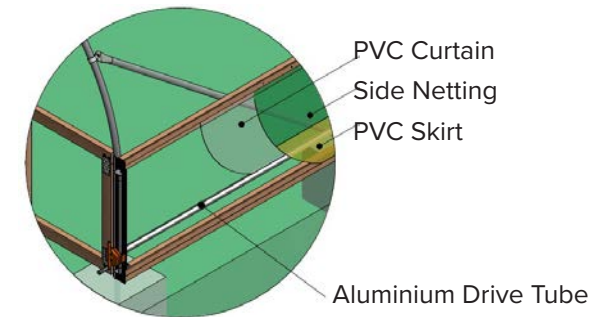
- Timber Base Rails
- Timber Side Rails
- Timber Battens
- Full Depth shade net only (no skirt)
- Manual Gearbox
- Steel Curtain Tube
- Wind-Up Polythene Curtain



This is our entry level side vent. This system is available for polytunnels with timber side rails. The polythene screen and exterior netting are battened on to the side rails using wooden laths. The screen on this vent is polythene and clips directly onto a steel drive tube and is raised or lowered with a manual gearbox. There are no draft panels.

Commercial Timber Range

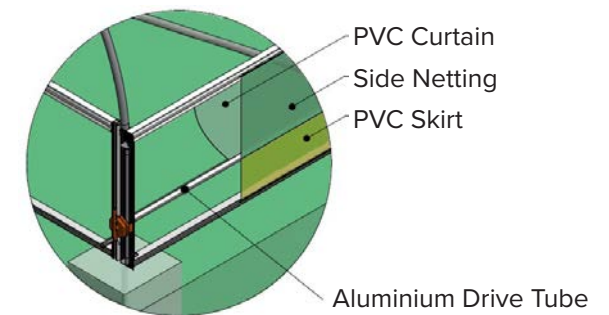
- Timber Base Rails
- Timber Side Rails
- Timber Battens
- Full Depth net with PVC skirt
- Draft Panel Ends
- Manual Gearbox
- Aluminium Curtain Tube with Keder Slot
- Wind-Up PVC Curtain with Keder



This is our professional range side vent with a manual gearbox operating the internal roll-up PVC screen. This system is available for polytunnels with timber side rails. The PVC screen and exterior netting are battened on to the side and base rails using wooden laths. The netting comes complete with a solid draft-proof skirt, draft panels are also fitted to the mesh where the curtain ends to minimise the cold air entering the tunnel. The PVC Screen fits inside the aluminium drive tube using a Keder bead and is raised or lowered with a manual gearbox. (An automation option is available)

Commercial Aluminium Range

- Aluminium Base Rails
- Aluminium Side Rails
- Full Depth skirt to net
- Draft Panels
- Manual Gearbox
- Aluminium Curtain Tube with Keder Slot
- Wind-Up PVC Curtain with double Keder



This is our superior range side vent with a manual gearbox operating the internal roll-up PVC screen. This system is available for polytunnels with aluminium side rails. The polythene screen and exterior netting are connected to the side and base rails using wiggle wire. The netting comes complete with a solid draft-proof skirt, draft panels are also fitted to the mesh where the curtain ends to minimise the cold air entering the tunnel. The PVC Screen fits inside the aluminium drive tube using a Keder bead and is raised or lowered with a manual gearbox. (An automation option is available)



We only offer sliding doors on our commercial tunnels. Over the years we have learned that doors on polytunnels work better and last longer if they slide rather than swing. We offer 2 models; a low-cost timber framed, clad in polythene and our new heavy duty aluminium frame, clad with PVC. Both versions come with our aluminium profile sliding track and 4-wheel roller carriages.

Low-cost Timber Doors

3" x 2" timber with fixing battens

Polythene cover

Nail plate joints

NP door furniture Door shoes fixing to the posts, drop bolt at the back of the door, door catch, small channel to hold the together when shut.

Heavy Duty Aluminium

NP designed aluminium door profile with wiggle wire fixing system

Clear PVC top panel

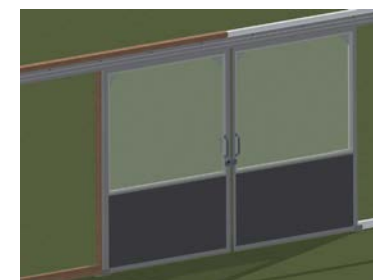
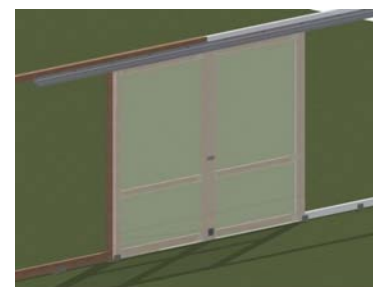
PVC grey lower panel

Steel, bolt on triangle corner plates

PVC finishing strip to cover the perimeter wiggle wire

Brush strip seal at the rear of the door (optional)

NP Designed door furniture, Door shoes to fix to the door posts, drop bolt at the rear of the door, full length channel section to form a seal between the doors, door catch.

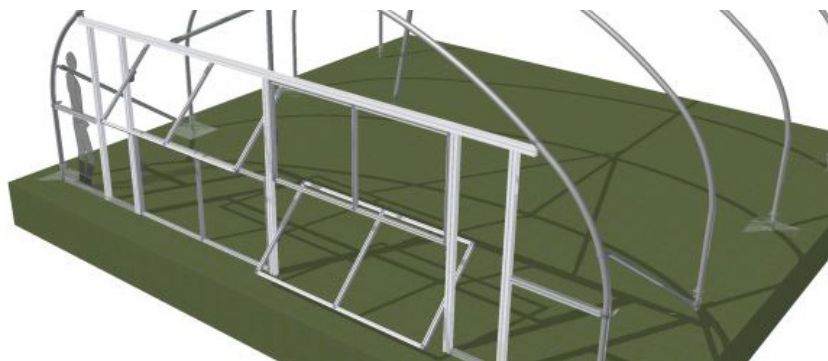




Louvres are easily fitted to the ends of our structures. They can be used in conjunction with doors and the configuration can vary, depending on the size of your structure.

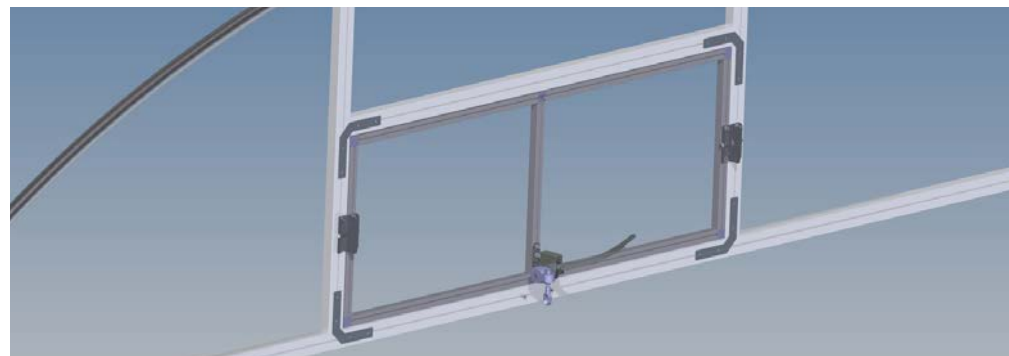
Louvre measurement: 0.79m x 2.12m.

Actual 'opening' size: 0.8m x 2.15m.



Ventilation Louvres - Pull Cord (Gable end instead of a door)

These feature our unique 3 positional hinge which locks the louvre in place. This allows the louvre to be set in the fully open position, (90°) 1/2 open (45°) or closed. These can either be single row or a double row (as above) for extra ventilation.



Ventilation Louvres - Rack and Pinion (Above the door)

These louvres feature a rack and pinion system for opening, controlled by a gearbox with winding handle. The rack and pinion louvres are fully adjustable, not just limited to the three positions like the pull cord louvres.

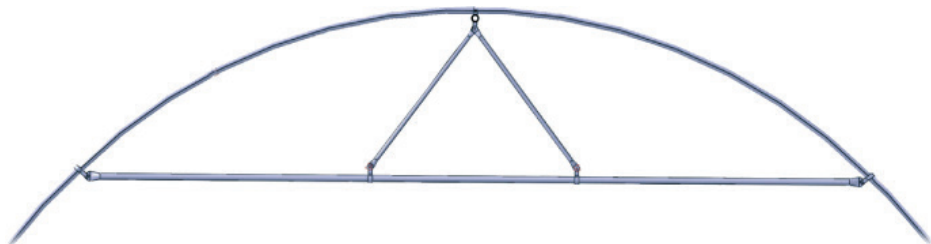
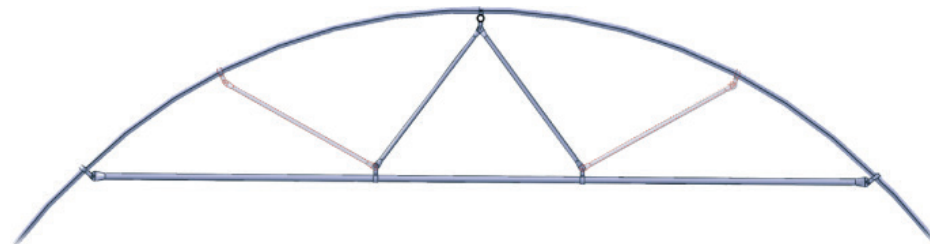

Inverted V Crop Bar

W-Hangers Crop Bar

It may seem like an obvious statement, but the more steel in the structure, the stronger it is. How much steel you need can depend heavily on the prevailing weather in your area. You can use the maps and tables included in this brochure (page 6) to check your average wind speed and snow load. This will help you to determine which kind of crop bar hangers you should choose; the “Inverted V” for lighter weather loading, or the sturdier “W-Hangers” for heavier weather loading, load bearing apparatus and crop support.

Formed from 50mm and 32mm diameter, Armour-guard coated steel tubing, our crop bars and hangers are just as strong and durable as the hoops they service. Not only do they pin the hoops together, they prevent lateral movement and joint loosening. When fitted with “W-Hangers”, they’re strong enough to carry direct loading. This is often seen in retail locations where large numbers of hanging baskets or planters are to be displayed. Crop bars also form the backbone of vital irrigation and air circulation systems as they are able to carry the additional load of water pipes, heaters and fans.

Our crop bars are just another reason why Northern Polytunnels produce the most robust tunnels on the market, specifically designed to stand up to the worst that the British weather can throw at them.


V Hangers - Sufficient throughout most of the UK

W Hangers - Used in more extreme locations on wider tunnels



Roof Ventilation & Controller



These roof air extraction fans have revolutionised the way that polytunnels can be ventilated. These fans extract heat from the roof space of the greenhouse at its highest point. Which, in turn, draws cooler, fresher air in from the doors or side vents creating air movement in the structure. The 240v fans can be connected to either a simple on off switch, one of our fan controllers or a climate computer.

The fitting of these couldn't be easier, simply cut out a 30-35cm hole in your polytunnel cover, insert the fan from the inside in a rotating motion and clip on to the support bars. It is important that the hole you make in the polythene is smaller than the diameter of the casing to create an air tight seal.

The number of fans required depends upon the volume of warm air you want to expel and how quickly you want to expel it. As a general guide we would recommend a maximum of one fan for every 350m³ of air space – this would allow up to 13 air changes per hour. Typically, one fan would be required for every 35ft to 80ft of polytunnel, depending on the width, height, and existing ventilation systems. For a 30ft (9.14m) wide polytunnel this would be approx. 1 fan for every 36ft (11m) length of polytunnel. Therefore, a 30ft wide x 110ft long polytunnel would require a maximum of 3 fans. Even if only a single fan was installed you would still feel a significant difference as you would still achieve 4-5 complete air changes per hour.



Fan Controller

This precise, adaptable and dependable temperature controller is the ideal partner to any of the air circulation fans offered in our brochure, allowing for maximum economy and temperature control.

This robust unit can also be configured to work with heaters in winter. It's a fantastic way of keeping simple, but accurate control over your growing environment.

- Function for ventilation in summer
- 1 Single temperature dial control
- From 0° to 30° control
- Temperature sensor on a 20m cable
- Fan appliances output load 1kw inductive
- Can run up to five roof fans
- Splash proof IPX4



Closed



Open

Weight: 7.5kg
Top diameter at cowl: 42cm
Overall diameter at base: 57cm
Overall height: 39cm
Air flow: 4,600m³/hr (2,700cfm)
Wind Speed: 10.8m/sec
RPM: 1390
Power Supply: Requires single phase 220-240v (50 Hz)
Motor: 200w (0.9A)
Protection: IP55 | Comes with a mesh guard on the inlet



Optimal ventilation is vital as it plays a significant role in the cultivation of crops. Effective air circulation not only supports but drives crop growth and gives the grower complete control over the climate inside the tunnel. Mould and fungal diseases thrive on poor ventilation, which is why proper air flow is so important. It's not all about the heat. On a humid and sunny day, when the temperature inside the greenhouse rises excessively, it's important to open the vents to avoid overheating and to spread that cooler air evenly throughout the tunnel. This can be achieved using circulation fans throughout the structure.

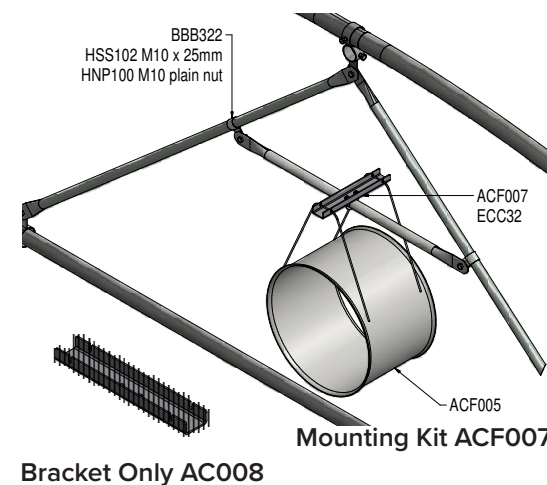
NP Air Circulation Fans

These are purpose-built greenhouse circulation fans manufactured from Stainless steel for an attractive appearance without rust issues and long service life. They have a sealed motor unit to prevent water ingress.



Specifications	AC04 Circulation Fan	AC05 Circulation Fan
Blade diameter	400mm	500mm
Voltage	240/220 Vac 50Hz	240/220 Vac 50Hz
Power	250w (1 Amp)	370w (1.5 Amp)
Rpm	1400	1400
Air Flow	4350 m3hr	5800 m3hr
Weight	13kg	13kg
Maximum spacing	25m	25m

Air Circulation Hanging Kits



Variable Fan Speed Control

Simply loop the fan's power supply through this switch for variable air flow.

- FCS15 up to 1.5 Amps
- FCS30 up to 3 Amps
- FCS60 up to 6 Amps



Temperature Controller FCP02

This precise temperature controller is the ideal partner to any of our air circulation fans, allowing for maximum economy and temperature control. It can also be configured to work with heaters in winter.

- 1 Single temperature dial control
- From 0° to 30° control
- Temperature sensor on a 25m cable
- Thermostat for heating and cooling
- Splash proof IPX4
- Fan appliances output load 1kW inductive
- Heater appliances output load 3kW resistive
- Can run up to five 200w fans or one 3kW electric heater



Side Vent Automation



Northern Polytunnels has brought together selected components to allow you the full automation of your ventilation systems allowing more accurate temperature control and set and leave operation.

The system fits directly on the end of our aluminium drive tube sections utilising a 24volt low powered motor with limit switches to set the upper and lower heights. The motors are powered with the driver units which supply the 24DC volt power, this will run 2 motors. The driver units can be standalone manual controlled or linked together to an automatic vent controller which can control multiple driver units.

This simple climate-computer is based around a required temperature set point. When the temperature exceeds this the vents start to open in increments.

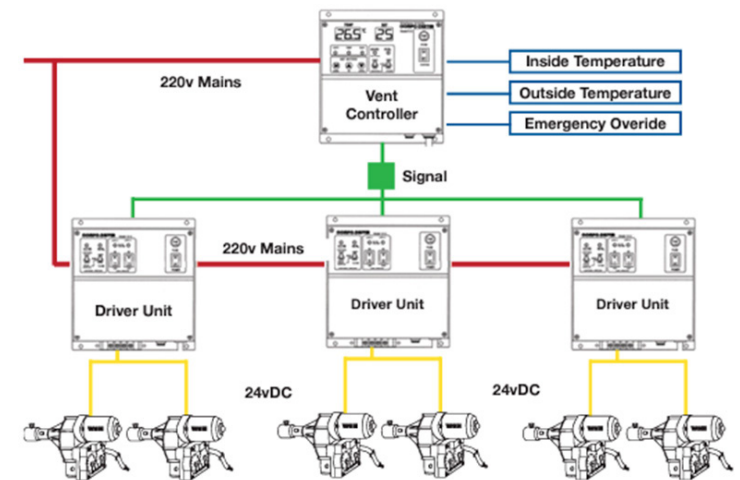
A 'waiting time' can be programmed between the increments allowing the temperature to stabilise before further operation. Likewise, when the greenhouse temperature starts to fall below the desired temperature, the same happens in reverse as the vents close. A buffer can be set of the desired temperature, where operation is delayed until further fluctuations occur. In the event of a sensor failure, an 'emergency' high temperature sensor will command the vents.

An outside temperature sensor (supplied) or rain sensor (optional extra) can also be used to make ventilation decisions.



Unit Includes:

- Inside temperature sensor on 20m cable.
- Outside temperature sensor.
- Emergency high temperature sensor.
- Connection box for signal driver unit / control panel.



Overhead Irrigation Systems



NP overhead irrigation kits utilise the best components we can source including VDL valves and pipework, Netafim down tubes, anti-drip valves and nozzles giving high spray uniformity with minimal wasted water.

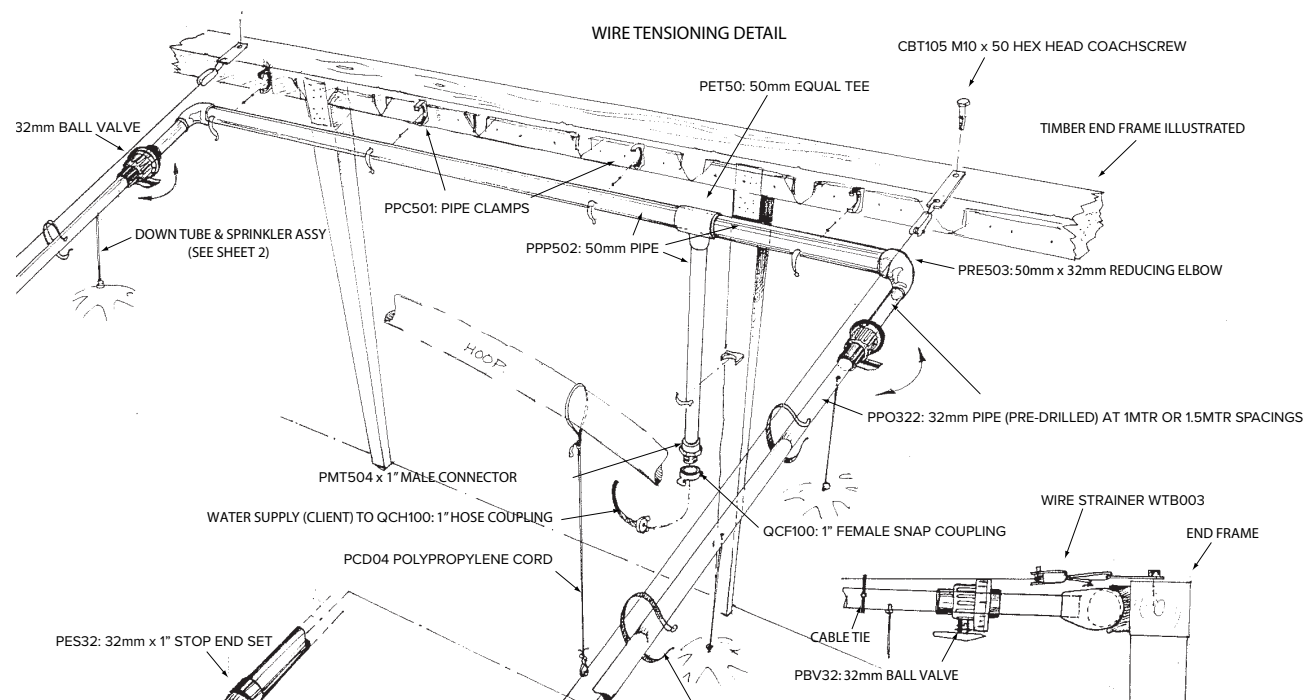
Our kit includes 30cm weighted down tubes, anti-drip valves and a nozzles/sprinkler specific to each width of greenhouse, twin 32 mm PVC spray-lines with PVC ball valves on each line, these are connected to a 50mm PVC header manifold with a drop pipe and connection for a Geka snap coupling.

All straining wires, tensioners and header brackets are included in the kit.

Sprinkler Performance

Each sprinkler is connected to a weighted 30cm down tube this allows the sprinkler to work in a true plumb position for optimum performance.

These are connected to a pressure release anti drain valve, these prevent the water within the sprayline dribbling out after a watering period has ended, saving water and leaving the line ready and primed for the next use.



Automating Your System

Our systems are supplied for manual use with a shut off ball valve on each line. The system can easily be upgraded to automatic timer controlled by fitting solenoid valves, these can also be retro fitted later. Then simply wire in one of our irrigation controllers.



Heron Mi Irrigation Controllers



Galcon 8100-GQ



Bermad Solenoid Valves

Have You Enough Water To Run An Overhead Irrigation System?

The simple way to measure this is with a bucket with measurements on the inside. Run your hose or tap fully open and time how long it takes to put 5 litres of water in it.

Calculation

It takes 5 seconds to fill the bucket with 5ltr of water.

$$\text{Ltr qty} / \text{time seconds} \times 60 = \text{LTR per minute} \times 60 \text{ mins} = \text{LTR per hour}$$

$$(5 / 5) \times 60 = 60 \text{ LTR per minute} \times 60 \text{ mins} = 3600 \text{ LTR/hour}$$

Structure Width	Running	Ltrs/ hour per mtr of green house length	Average 25m long greenhouse
18ft	Single line	70 LTR/h	1750 LTR/HR
	Twin line	140 LTR/h	3500 LTR/HR
21ft	Single line	70 LTR/h	1750 LTR/HR
	Twin line	140 LTR/h	3500 LTR/HR
24ft	Single line	90 LTR/h	2250 LTR/HR
	Twin line	180 LTR/h	4500 LTR/HR
27ft	Single line	90 LTR/h	2250 LTR/HR
	Twin line	180 LTR/h	4500 LTR/HR
30ft	Single line	90 LTR/h	2250 LTR/HR
	Twin line	180 LTR/h	4500 LTR/HR

We Stock A Full Range Of Equipment Including;

- Hoses and hose fittings
- Drip irrigation parts and assemblies
- Professional lances
- PVC pipes and valves
- LDPE Pipes and fittings dripper assemblies
- MDPE pipes and fittings
- Tanks, filters and pumps



Overhead Hose Tracking Kits



Steel Water Storage Tanks



Porus Pipe



Professional Lances



PVC Pipes

Benching



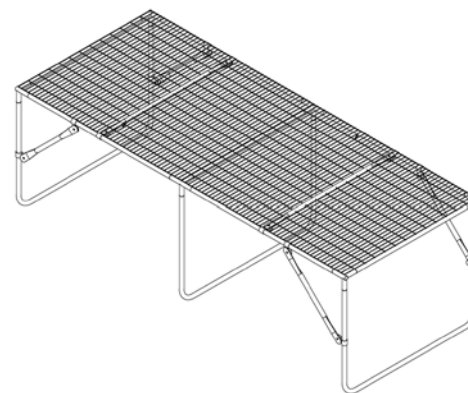
Our robust cost-effective benching system is modular meaning that its easily dismantled and reassembled to expand or reduce in size.

The benching comes as a flat pack which is easy to re-site or store when not in use.

The construction is based on our ArmourGuard 25mm diameter tube which has a magnesium zinc coating for years of rust-free life. Our specially designed corner and side fitting gives the bench its modular capability and strength. It is supplied with four corner bracing bars to give extra stability.

The bench top is a hot dipped galvanised mesh with a 3mm wire diameter and hole size of 25mm x 75mm.

Available in 1mtr wide and in multiples of 1.2m lengthways, allowing you to create a continuous bench to suit the length of your polytunnel or plant display area.



Specifications

- Width: 1.8m
- Height: 0.8m
- Length: Minimum 2.4m then multiples of 1.2m
- Main Frame: 25mm ArmourGuard fully galvanised
- Heavy Duty: 75mm x 25mm Steel mesh top (3mm diameter wire)

Staging

Our staging kits are a low cost solution where a full length bench is required for your polytunnel.

We ONLY provide the steel frame, leaving you to provide your own table-top. Some customers use heavy-duty, galvanised weldmesh, whereas others choose timber slats. Whatever your choice, our staging kits provide the ideal framework on which to grow your potted plants. Supplied with fasteners for fixing timber slats.

Our staging can be installed in new and existing polytunnels.



Insulated Polytunnels (Twin Skinned)



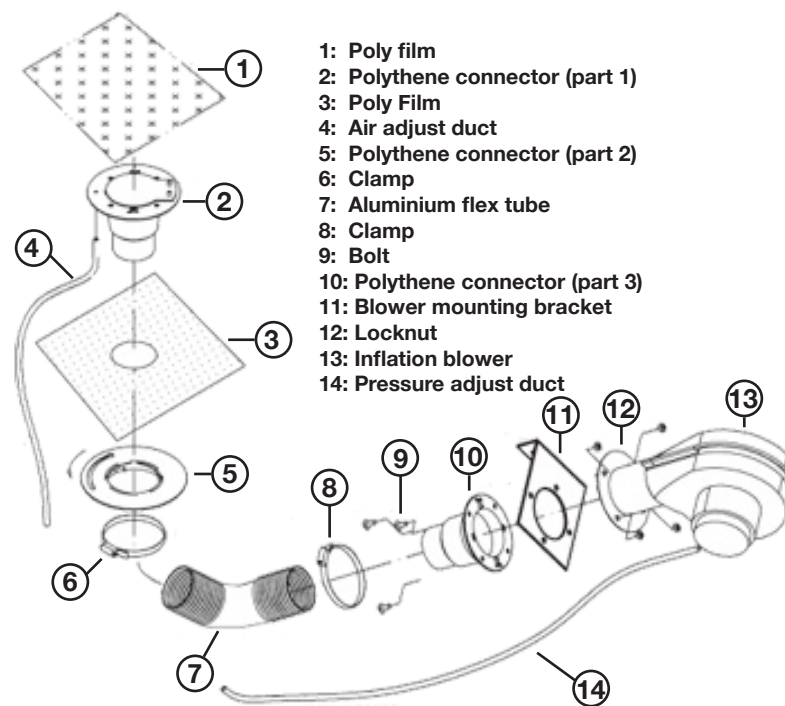
Polythene clad structures (polytunnels) hold heat as well as, if not better, than glass structures. Twin-skinned polythene clad structures can reduce the rate of heat loss by a further 30%-40% compared to single-skinned polythene structures. So, it can make perfect sense to twin-skin your polytunnel where heat inputs are used. This is a relatively simple task which requires an inflation fan to blow air between two layers of polythene, creating an air bubble and insulating the structure.

Clear polythene covers are often preferred, as two diffused covers could restrict too much daylight.

The fan is operated by air pressure, so if air leaks out from between the two polytunnel covers (causing a fall in pressure) the fan's sensor automatically switches it on and tops up the air. During periods of snow, the air pressure can be relaxed to allow the sheets to touch, thus using the heat transfer to melt any unwanted snow loading.

Twin-skinned polytunnels can be supplied as a complete package, or we can upgrade existing polytunnels. Alternatively, you can purchase the parts required separately.

Several covers can be inflated from a single fan (up to 1,000m²), using our 'linking' kits.



Foundation Options

There are several methods of securing your polytunnel to the ground. All of our foundation tube options use the same heavy-duty, thick walled (2.5mm), Armourguard galvanised steel tube with our unique polythene cover tensioning system, whereby the hoop sleeves over the foundation tube. This allows each hoop to be raised and locked in position after the cover has been fitted in order to achieve a drum-skin finish.

Traditional Concreting Method

This involves digging a series of holes (approx. 50 x 50 x 50cm) and concreting them in to the ground with approx. half of the foundation tube protruding above ground level. It's the weight of the concrete which provides the basis for the anchorage.



Base Plates

Where a polytunnel is being erected on a concrete base we offer our 'base plate' foundation option. These are short foundation tubes which are welded on to a thick steel plate. The plate has four holes to accommodate the sleeve anchors with which to secure the foundation tubes. Sleeve anchors are provided.

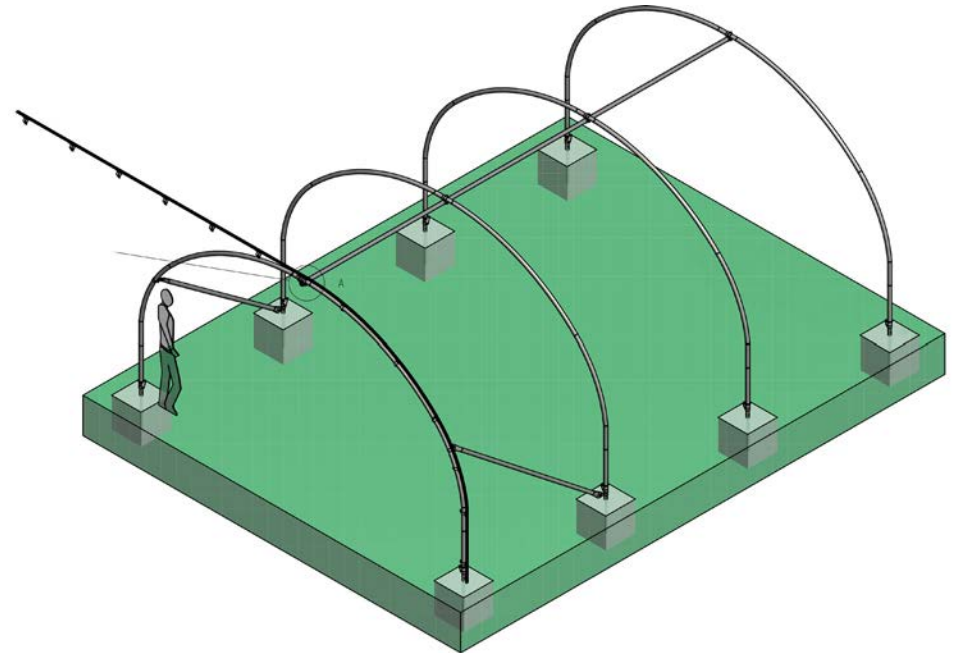
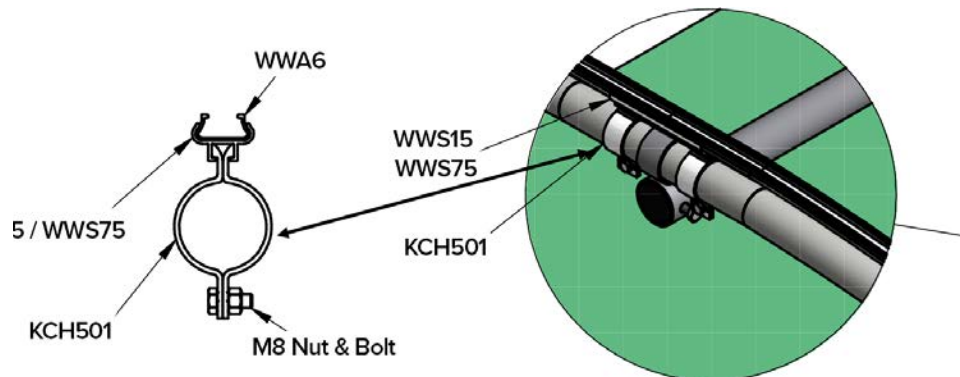


If you're a little behind schedule and want to install your foundation tubes ASAP, we can deliver them in advance of your polytunnel. Please state when ordering.

Wiggle Wire

A hoop-mounted trapping system allowing the separation of the ends from the main cover, meaning less folds and pleats, while allowing end panels to be replaced individually if damaged.

- Eliminates excess vibration and weak-spots.
- Long-term savings on repair bills
- Gives a flawless, professional finish.



Ground Cover



With less than 5% light transmission, ground cover is an effective weed control fabric.

- Manufactured from black polypropylene (100gm/m²) with 25cm x 25cm green grid lines for accurate plant spacing.
- Optimum water permeability (15ltr/m²/second). Ideal for above-ground or below-ground applications.
- UV stabilised for long life.

Colour: Black with green grid lines. **Weight:** 100gr/m² **Light Transmission:** Less than 5%
Water Permeability: 15ltr/m²/second (EN ISO 11058). **Grid Lines:** 25cm x 25cm for accurate plant spacing.

Width	Roll Length
1m wide	100m
1.3m wide	
2m wide	
3.3m wide	
4m wide	
5m wide	
5.3m wide	

Heaters

We can supply a full range of heaters from a small propane fuelled frost protection heater to a large oil fuelled heating system that will integrate with an environment controller.

Call our sales team today so that we can help choose the right heater for your polytunnel.



Concept Heaters (Direct and In-Direct Fired)



Convective Heater with 12vDC/240vAC Fan



Easy Clean, In-Direct Fired Cabinet Heaters



Quick Comparison Guide

WIDTH OF POLYTUNNEL IN FT	Competitive Budget Range					Commercial Timber Range					Commercial Aluminium Range				
	18ft	21ft	24ft	27ft	30ft	18ft	21ft	24ft	27ft	30ft	18ft	21ft	24ft	27ft	30ft
Standard Height in Metres	3.12	3.3	3.33	3.5	3.61	3.12	3.3	3.33	3.5	3.61	3.12	3.3	3.33	3.5	3.61
High Sided Option Height in Metres	na	na	na	na	na	3.77	3.95	3.98	4.15	4.26	3.77	3.95	3.98	4.15	4.26
Foundation Tubes Wall Thickness in mm	1.5	1.5	1.5	1.5	1.5	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Hoop Diameter in mm (E370 Galv High Tensile)	50.8	50.8	50.8	60.3	60.3	na	na	na	na	na	na	na	na	na	na
Hoop Diameter in mm (Armourguard see note)	na	na	na	na	na	50.8	50.8	60.3	60.3	60.3	50.8	50.8	60.3	60.3	60.3
Number of Hoop Pieces	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Struts per End	5	5	5	6	6	5	5	5	7	8	5	5	5	7	8
Strut/Stabiliser Diameter	35	35	35	35	35	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8
Cover Tensioning System	X	X	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ridge Bar Diameter in mm	35	35	35	35	35	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8
Main Crop Bar Diameter in mm	35	35	35	35	35	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8
BASE AND SIDE RAILS															
Timber Base Rail Size in mm	75x50	75x50	75x50	75x50	75x50	100x50	100x50	100x50	100x50	100x50	na	na	na	na	na
Aluminium Box Profile Base Rail Size	na	na	na	na	na	na	na	na	na	na	79x53	79x53	79x53	79x53	79x53
Timber Side Rail Size	75x50	75x50	75x50	75x50	75x50	100x50	100x50	100x50	100x50	100x50	na	na	na	na	na
GABLE ENDS															
Timber End Frames in mm	75x75	75x75	75x75	75x75	75x75	100x50	100x50	100x50	100x50	100x50	na	na	na	na	na
Aluminium Box Profile in mm	na	na	na	na	na	na	na	na	na	na	79x53	79x53	79x53	79x53	79x53

Notes

Steel is high tensile Armourguard steel with a Zinc magnesium coating for an extended lifespan.

Heavy duty galvanised foundation tubes with 3.2mm wall thickness to give increased strength and protection from corrosion.