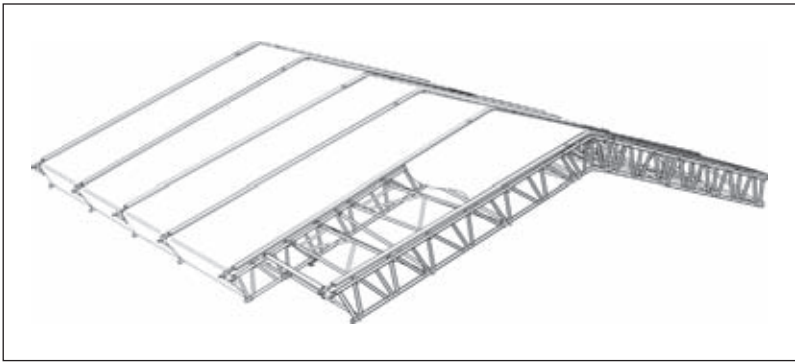


COMBISAFE®

UBIX® Temporary Roofing System



USER INSTRUCTION

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Subject to changes

General

UBIX is a modular all-aluminium temporary roofing and weather-proofing system using the slide sheet or “keder” principle which allows the roof covering to be installed in complete safety from underneath. UBIX can be built safer and faster than many existing roofing systems. Using an exclusive and revolutionary button system to retain the sheet tracking, UBIX uses custom-designed COMBISAFE UBIX aluminium beams to maximise performance.

Choosing the Span Type

UBIX is suitable for symmetric or asymmetric duo pitch spans, arch and mono pitch spans using either the 78 cm or 45 cm deep beams. The following table provides a typical range of suitability for the various span types excluding any special measures:

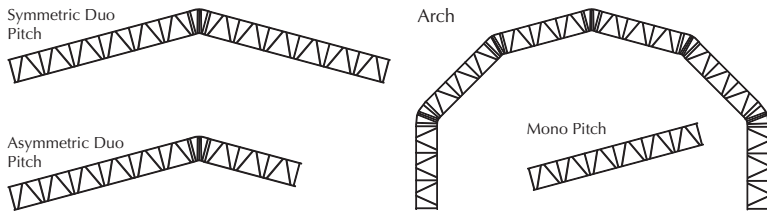
Beam Size	Duo Pitch		Mono Pitch ⁽²⁾	Arch ⁽³⁾
	Symmetric	Asymmetric ⁽¹⁾		
45 cm	21 m	18 m	14 m	27 m
78 cm	36 m	32 m	19 m	44 m

1 Asymmetric roof assumes one side slope 50% longer than other side slope.

2 Mono pitch span assumes a minimum angle of 15 degrees.

3 Uses 3 or 5 no ridge beams.

Wider spans are possible subject to individual engineering approval.



Erection Methods

UBIX can be erected by a variety of methods which should be chosen considering the size of the roof trusses and all relevant site conditions:

- In situ erection on a scaffold supported with a perimeter platform.
(It is considered that this method is suitable for spans up to 15 m only).

If the assembled trusses are too heavy to handle, alternate methods should be utilised:

- Erection by crane
- Erection from central tower
- Roll-out method.

Compliances

There are no current International Standards for modular temporary roofing systems. The NASC has issued a Technical Guidance Note TG9 for Temporary Roofing Design & Construction and this should be consulted for guidance in the UK only.

The notes which follow have been prepared for the guidance of those concerned with the erection of the system and therefore do not form a part of any contract. The UBIX Roofing System is designed on the basis of a series of simply supported beams. It is the contractor's responsibility to provide a suitable support structure. It is also the contractor's responsibility to meet the requirements of the Health & Safety at Work Act, statutory regulations and relevant codes of practice. Combisafe wish to maintain the most effective methods at all times and therefore reserve the right to amend the following pages without prior notice.

Delivery and Storage

It is the responsibility of the contractor to unload the components and check for any damage. Before assembly, ensure all items are undamaged and fit for purpose. Any damaged items should be segregated and replacements requested. Components may be stored in the open, but the area should be secure and care taken to keep them clean.

Safety Considerations

Adopt a safe system of work at all times. Plan the safe system prior to commencement of the job, ensuring that it is specific to the particular application and method of assembly. Ensure that all erecting personnel are adequately trained in the assembly of UBIX, erection training and/or erection supervision is available from Combisafe if required.

Adopt suitable protective measures to ensure against falls from height.

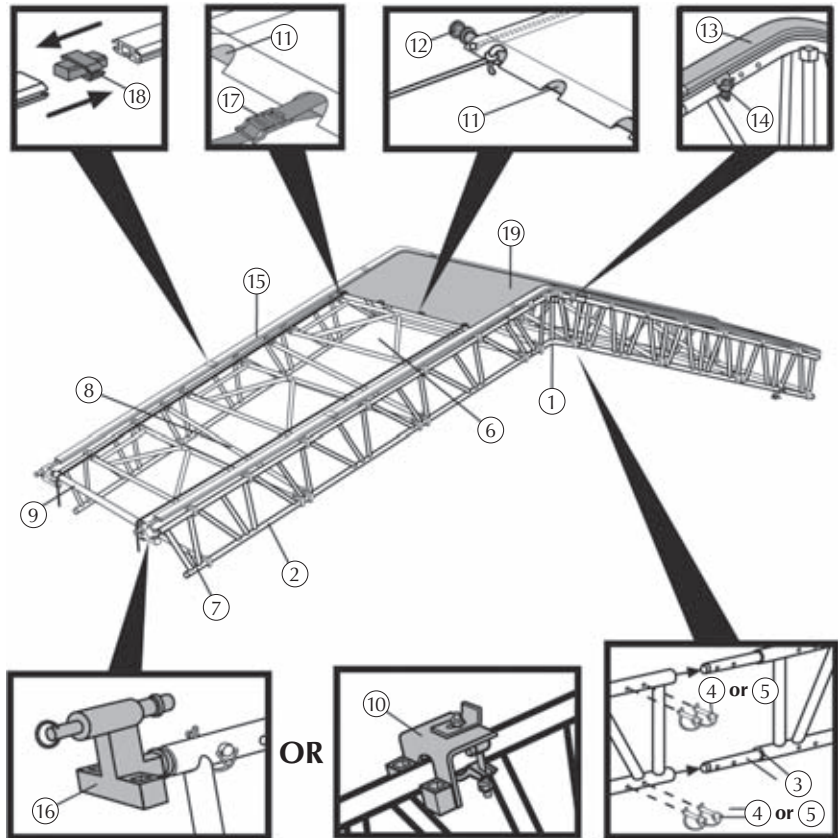
Preparation

We recommend that at least four persons will be required to erect the UBIX System. All roofing projects should be designed by a competent engineer and the drawing must be present on site for guidance.

It is recommended that the supervisor should check that the following are satisfactory before commencing roof erection:

- Visual check of scaffold.
- Ledger or beam and inside standard support detail.
- RunWay™ track and supports (where relevant for rolling roofs) are installed correctly.
- Safe means of access to level of works where roof is to be installed.
- Sufficient means of protection and safe system of work at level where roof is to be installed. (i.e. fully boarded and guardrailed to inside and outside face or some other means of fall arrest system in place).
- If a crane is to be used, check site is suitable for setting up and there are no overhead power lines or obstructions.
- The general alignment of the supporting scaffolds and any level differences. (Note that if the scaffold splays or the front and back supporting scaffold is not parallel, the levels will differ and adjustments will need to be made to the supporting scaffold structure to ensure the roof sits level).

Component recognition



- ① Ridge Beam
- ③ Beam Spigot
- ⑤ M12 x 60 Special Nut and Bolt
- ⑦ Horizontal Brace
- ⑨ Roller Brace
- ⑪ Sheet Tension Tube
- ⑬ Ridge Track
- ⑮ Sheet Track
- ⑰ Ratchet Strap
- ⑲ Roof Sheet

- ② 78 cm/45 cm Beams
- ④ Quick Release Pin
- ⑥ "K" Frame
- ⑧ Diagonal Brace
- ⑩ Intermediate Roller Brace Coupler
- ⑫ Sheet Pulling Bar
- ⑭ Ridge Track Securing Pin
- ⑯ Eaves Track Stop
- ⑰ Tracking Spigot

Components

Ridge Beam ①

18° x 78 cm and 18° x 45 cm is formed at 18 degrees to provide the roof pitch. 36° ridge beams also available (image not shown)

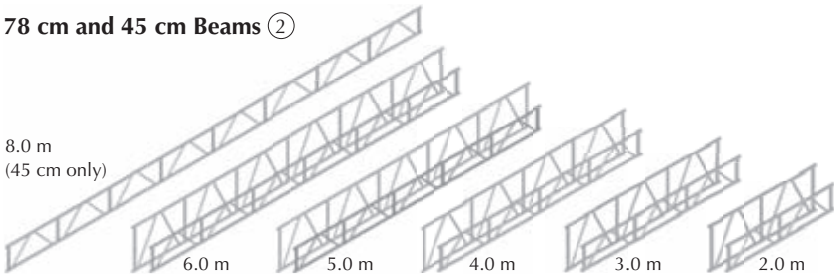


Eaves Beam

36° x 75 cm and 36° x 45 cm Eaves Beams.

78 cm and 45 cm Beams ②

8.0 m
(45 cm only)



1.0 m beams are available by special order.

Beam Spigot ③

Steel tube with 4 no. through bolt holes to connect the top and bottom chords of beams.



Quick Release Pin ④

Used to secure Beam Spigots and Eaves Track Stop ⑯.



M12 x 60 ⑤

Special Bolt and Lock Nut alternative to ④.

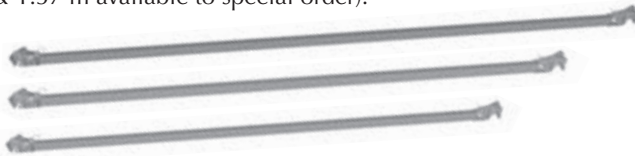


“K” Frame ⑥

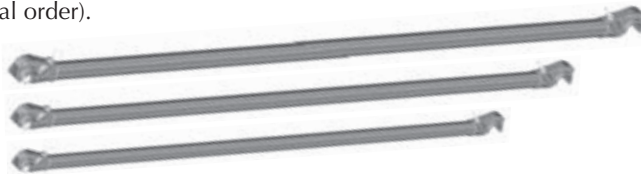
Brace frame which connects the top members of pairs of trusses. The ends have a special claw casting for simple fixing. The casting includes a top button which secures the track sections. (2.07 m, 2.57 m, 3.07 m. & 1.57 m available to special order).

**Horizontal Brace** ⑦

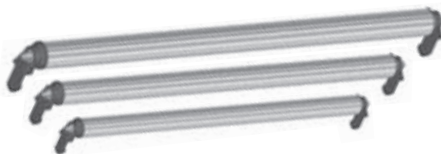
Provides horizontal restraint between top or bottom members of adjacent trusses. Ends include the claw casting and track button. (2.07 m, 2.57 m, 3.07 m. & 1.57 m available to special order).

**Diagonal Brace** ⑧

Provides diagonal bracing between top and bottom members of adjacent beam trusses. It is similar to, but longer than, the horizontal brace. There is no button on the end casting. (2.07 m, 2.57 m, 3.07 m x 78 cm 45 cm. & 1.57 m available to special order).

**Roller Brace** ⑨

Links adjacent trusses at eaves and ridge, roller action aids sheet installation and tensioning. (2.07 m, 2.57 m, 3.07 m. & 1.57 m available to special order).



Intermediate Roller Brace Coupler ⑩

Special coupler for terminating sheeting at intermediate positions.



Sheet Tension Tube ⑪

Slides through pockets in the ends of the sheeting to enable tensioning and fixing. (2.07 m, 2.57 m, 3.07 m. & 1.57 m available to special order).



Sheet Pulling Bar ⑫

Inserted through Tension Tube, nylon rollers guide the leading edge of the sheet smoothly over the roof; simply removed once sheet is installed, specify 1 per roof. (Adjustable 2.07 m > 3.07 m).



Ridge Track 18° ⑬

Provides the guide track and support for the roof sheeting at the ridge position. Requires 2 x ⑭ to secure.



Ridge Track 36° (image not shown)

Requires 2 x ⑭ to secure.

Ridge Track Securing Pin ⑭

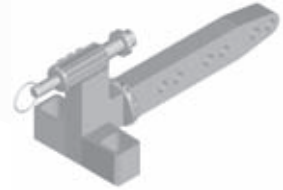
Quick release pin secures track to ridge beam.

**Sheet Track** ⑮

Provides the guide track and support for the sheeting.
(2, 3 & 4 m lengths).

**Eaves Track Stop** ⑯

Positioned at the eaves to tension the sheeting track and connect the roller brace.
(Use 1 x ④ to secure).

**Ratchet Strap** ⑰

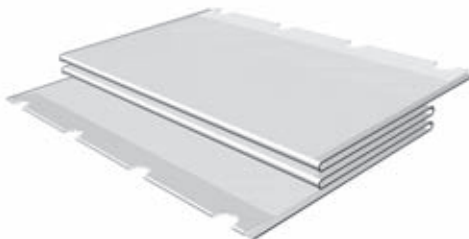
Secures and tensions the roof sheeting to the structure at the eaves. Length of tail 2 m.

**Tracking Spigot** ⑱

Joins, locks together and seals successive lengths of tracking.

**Roof Sheet** ⑲

Manufactured from high grade, flame retardant PVC coated, polyester fabric. Semi-translucent sheets are located in the tracking and pulled into position across the roof. (2.07 m, 2.57 m, 3.07 m & 1.57 wide to special order).



Parts list

Part No:	Description	Weight
Beams		
16031845	(UNBS) Aluminium Ridge Beam 18° x 0.45 m	8.5 kg
16031878	(UNBS) Aluminium Ridge Beam 18° x 0.78 m	9.8 kg
16033645	(UNBS) Aluminium Ridge Beam 36° x 0.45 m	8.45 kg
16033678	(UNBS) Aluminium Ridge Beam 36° x 0.78 m	9.9 kg
20002000	(UNBS) Unit Beam Alloy 0.78 m x 2.0 m	11.0 kg
20003000	(UNBS) Unit Beam Alloy 0.78 m x 3.0 m	16.7 kg
20004000	(UNBS) Unit Beam Alloy 0.78 m x 4.0 m	22.0 kg
20005000	(UNBS) Unit Beam Alloy 0.78 m x 5.0 m	27.4 kg
20006000	(UNBS) Unit Beam Alloy 0.78 m x 6.0 m	32.7 kg
20012000	(UNBS) Unit Beam Alloy 0.45 m x 2.0 m	9.5 kg
20013000	(UNBS) Unit Beam Alloy 0.45 m x 3.0 m	14.1 kg
20014000	(UNBS) Unit Beam Alloy 0.45 m x 4.0 m	18.7 kg
20015000	(UNBS) Unit Beam Alloy 0.45 m x 5.0 m	23.2 kg
20016000	(UNBS) Unit Beam Alloy 0.45 m x 6.0 m	27.8 kg
20018000	(UNBS) Unit Beam Alloy 0.45 m x 8.0 m	37.0 kg
20080001	(UNBS) Beam Spigot Steel	1.6 kg
Braces		
16052072	(UBIX) 'K' Frame 2.07 m	11.7 kg
16052572	(UBIX) 'K' Frame 2.57 m	14.5 kg
16053072	(UBIX) 'K' Frame 3.07 m	17.3 kg
16062072	(UBIX) Horizontal Brace 2.07 m	3.9 kg
16062572	(UBIX) Horizontal Brace 2.57 m	4.6 kg
16063072	(UBIX) Horizontal Brace 3.07 m	5.3 kg
16072072	(UBIX) Diagonal Brace 0.78 x 2.07 m (White Label)	3.9 kg
16072572	(UBIX) Diagonal Brace 0.78 x 2.57 m (Blue Label)	4.6 kg
16073072	(UBIX) Diagonal Brace 0.78 x 3.07 m (Green Label)	5.3 kg
16082072	(UBIX) Diagonal Brace 0.45 x 2.07 m (Black Label)	3.7 kg
16082572	(UBIX) Diagonal Brace 0.45 x 2.57 m (Red Label)	4.4 kg
16083072	(UBIX) Diagonal Brace 0.45 x 3.07 m (Orange Label)	5.1 kg
16092072	(UBIX) Roller Brace 2.07 m	10.0 kg
16092572	(UBIX) Roller Brace 2.57 m	12.0 kg
16093072	(UBIX) Roller Brace 3.07 m	14.0 kg
Track		
16110018	(UBIX) Ridge Track 18° x 1.3 m	2.6 kg
16110036	(UBIX) Ridge Track 36°	2.8 kg
30091270	(SAAC) Quick Release Pin M12 x 70 for ridge tracks	0.1 kg
16122000	(UBIX) Sheet Track 2.0 m	3.6 kg
16123000	(UBIX) Sheet Track 3.0 m	5.5 kg
16124000	(UBIX) Sheet Track 4.0 m	7.2 kg
16220001	(UBIX) Rubber Spigot Mk IV	0.04 kg

Part No:	Description	Weight
Fasteners		
30081263	(SAAC) Special Bolt with Centrelock Nut M12 x 60	0.1 kg
30091260	(SAAC) Quick Release Pin M12 x 60	0.1 kg
Accessories		
16152072	(UBIX) Sheet Tensioning Bar 2.07 m	8.3 kg
16152572	(UBIX) Sheet Tensioning Bar 2.57 m	10.5 kg
16153072	(UBIX) Sheet Tensioning Bar 3.07 m	12.7 kg
16163250	(UBIX) Sheet Pulling Bar	7.8 kg
16170000	(UBIX) Track Stop-eaves	1.1 kg
16170001	(UBIX) Intermediate Roller Brace Coupler	3.3 kg
16240003	(UBIX) Ratchet Strap 2.0 m	0.48 kg
Sheeting (Longer sheets available to special order)		
16350100	(UBIX) Sheet 10.00 m x 2.07 m	12.4 kg
16350150	(UBIX) Sheet 15.00 m x 2.07 m	18.6 kg
16350200	(UBIX) Sheet 20.00 m x 2.07 m	24.8 kg
16350250	(UBIX) Sheet 25.00 m x 2.07 m	31.1 kg
16350300	(UBIX) Sheet 30.00 m x 2.07 m	37.3 kg
16350350	(UBIX) Sheet 35.00 m x 2.07 m	43.5 kg
16350400	(UBIX) Sheet 40.00 m x 2.07 m	49.7 kg
16350045	(UBIX) Sheet 45.00 m x 2.07 m	55.9 kg
16360100	(UBIX) Sheet 10.00 m x 2.57 m	15.4 kg
16360150	(UBIX) Sheet 15.00 m x 2.57 m	23.1 kg
16360200	(UBIX) Sheet 20.00 m x 2.57 m	30.8 kg
16360250	(UBIX) Sheet 25.00 m x 2.57 m	38.6 kg
16360300	(UBIX) Sheet 30.00 m x 2.57 m	46.3 kg
16360350	(UBIX) Sheet 35.00 m x 2.57 m	54.0 kg
16360400	(UBIX) Sheet 40.00 m x 2.57 m	61.7 kg
16360045	(UBIX) Sheet 45.00 m x 2.57 m	69.4 kg
16370100	(UBIX) Sheet 10.00 m x 3.07 m	18.4 kg
16370150	(UBIX) Sheet 15.00 m x 3.07 m	27.6 kg
16370200	(UBIX) Sheet 20.00 m x 3.07 m	36.8 kg
16370250	(UBIX) Sheet 25.00 m x 3.07 m	46.1 kg
16370300	(UBIX) Sheet 30.00 m x 3.07 m	55.3 kg
16370350	(UBIX) Sheet 35.00 m x 3.07 m	64.5 kg
16370400	(UBIX) Sheet 40.00 m x 3.07 m	73.7 kg
16370045	(UBIX) Sheet 45.00 m x 3.07 m	82.9 kg

Assembly

Erection Procedure

NOTE

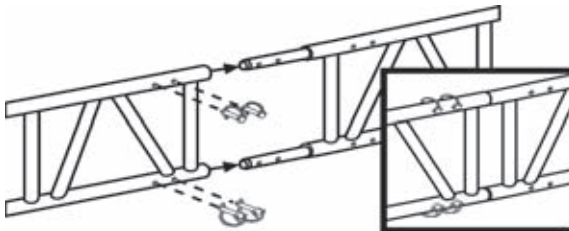
The UBIX roof components for assembly should be selected in accordance with the engineer's design that will have been produced for the project. This user guide covers the principal components, but the details of any knee bracing, tension wires, spine beams or any similar special requirements should be sought from the engineer's design drawing.

Assembling Trusses

Construct trusses on the ground if practicable, to limit working at height. Take the appropriate lengths of pre-spigoted beams and connect together with the special fasteners. All beams should be connected together using either the quick release pins or the M12 x 60 special nut and bolt or a combination of the two fixing types in accordance with the following diagrams.

Connect beams together using 2 spigots (Pt 20080001) and either:

1. 8 x quick release pins (Pt 30091260)
2. 8 x special nut and bolt (Pt 30081263)
3. LHS 4 x 30091260 and RHS 4 x 30081263



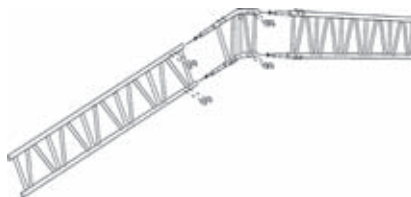
Completed connection

NOTE

Orientation of end diagonals in each beam.

Assembling Ridges

Add ridge beam to end of beam in the centre by sliding onto spigots. Also secure with quick release pins.

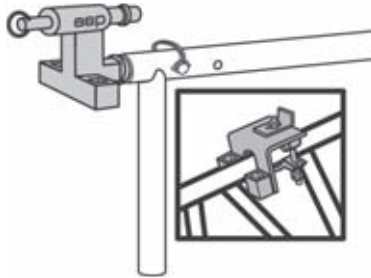


Track Stops

Insert eaves track stops into the open end of the top chord of each beam and secure with one quick release pin.

NOTE

If truss protrudes more than 1.0 m outside the scaffold support, consider the use of the intermediate Roller Brace Coupler. (See Eaves Termination page 24).



Erection in situ (Spans up to 15m)

Working Platform

Where practicable, increase the available working area by enlarging the platform width at the gable end nearest to the unloading position to provide a minimum 3 metre wide area upon which to assemble and rest completed beam lines.



Alternatively extend the outer standards of the gable end scaffold to provide a support for the first truss while it is being assembled.

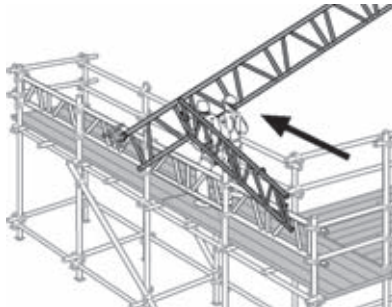
NOTE

Toeboards omitted from all drawings for clarity.

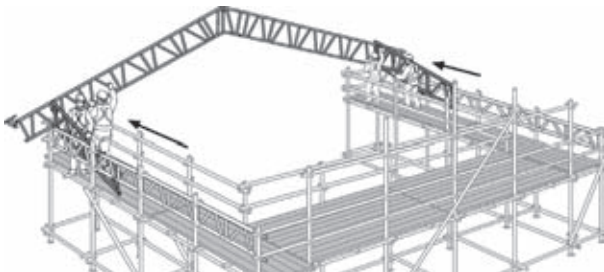


First Truss

Single assembled trusses can usually be manually lifted by operatives from the extended working platform or from the temporary assembly position on the gable end. Attach a double coupler to one side of the complete truss in exactly the same position each time (i.e. against a vertical or diagonal). This will ensure when landing the truss that it sits at right angles to the support. Walk the beam to the far gable end along the scaffold top lift, restraining the apex against overturning with a safety line or by attaching short beams as levers.



On the opposite side, fix a double coupler to the support, leaving the gate open to receive the truss. Raise truss into final position, drop the previously fitted double coupler over the support and secure to support scaffold, using a temporary brace to prevent overturning. Allow the opposite side to slide through the coupler gate and then secure.

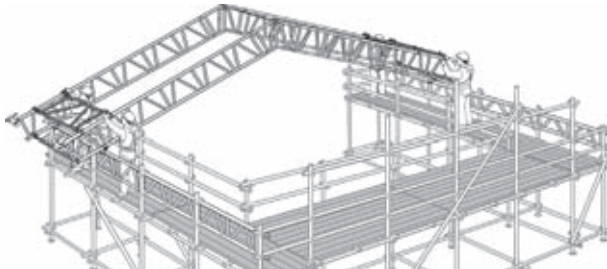


Second Truss

Construct next truss in the same way, walk into position and support.

Bracing the First Bay

Attach two “K” frames to the first truss, one either side, fitting the snap-on claws into the space between the first pair of diagonals of the beam. Hold the K-frame just over the 2nd truss and move the truss so that when the claws are engaged, they are in exactly the same position against the diagonals as the 1st truss. (Continue this procedure for all trusses). To ensure correct beam alignment, pull the claws back and down so they butt against the diagonals. The knee of the frame is mounted towards the apex as shown. Operatives should now pull the truss out under control until spacing permits attachment of both “K” frame claws on each side.



Fit the first diagonal brace on each side and the first horizontal brace (claws between first upright and diagonal) to the lower chord.

Secure the second truss to the support scaffold with load-bearing couplers.

Note 1

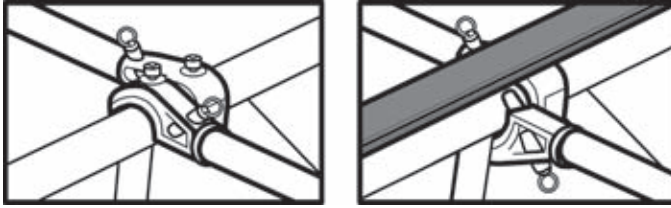
All braces are connected by push fit. Ensure that the braces are held at 90 degrees to the beam line prior to installation. Following installation ensure that the steel securing pin is fully extended so that the ring pull is in contact with the claw.

NOTE

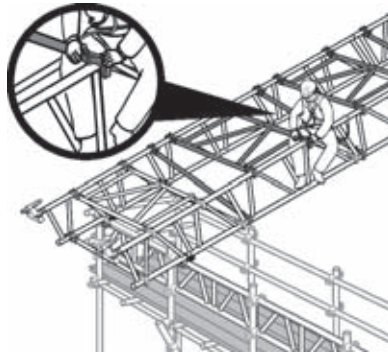
Note failure of this pin to engage is a clear indication that the brace is not square to the beam and should be realigned.

Note 2

Braces should be installed to the beam chords with the button nuts facing upwards to receive the sheet tracking. Where braces are required to link pre-sheeted bays these can be fitted to the underside of the top chord with the button nuts facing downwards. This also applies if access to the intermediate bay is required at a later date, enabling future removal without disturbing the tracking.



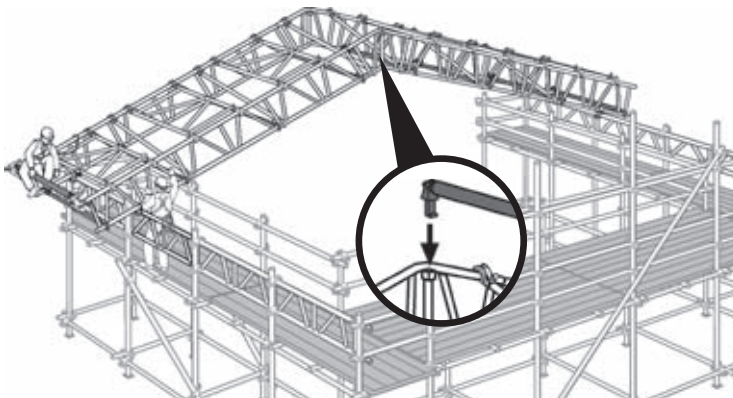
An operative should ascend the beam lower chord. Attach the next K-frame, normally at 1.0 m frequency. Attach diagonal braces from top to bottom chords, fitting the lower claw between the upright and diagonal upslope from each K-frame. Diagonal brace spacing is normally 2.0 m centres.



Roller braces are fitted into the pockets of the ridge beam and of the track stops at the eaves. Install horizontal brace to bottom chord between upright and diagonal starting at the eaves and spacing usually at 2.0 m centres.

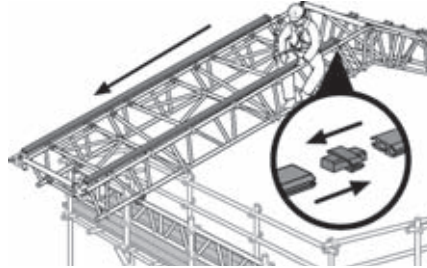
NOTE

At this point it is recommended that the operatives take with them the sheet pulling ropes. (Attach the rope to belt)

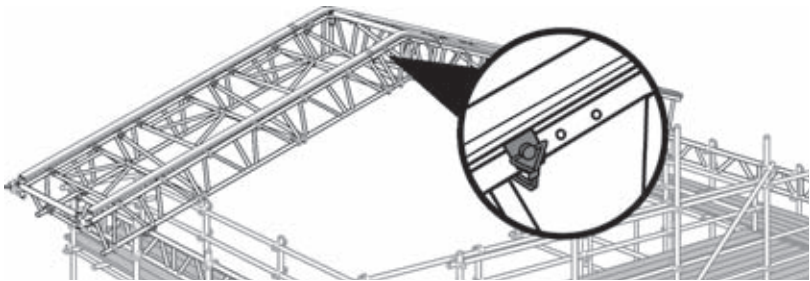


Tracking

While fitting braces, the operatives should also assemble the track sections. Start from the ridge, sliding the track section down slope over the buttons built-in to each claw until it abuts the tracking stop. To extend the track, insert a rubber tracking spigot and push the next track section into place firmly. Then secure the locking screws. The ridge tracks are secured last using special quick release pins.

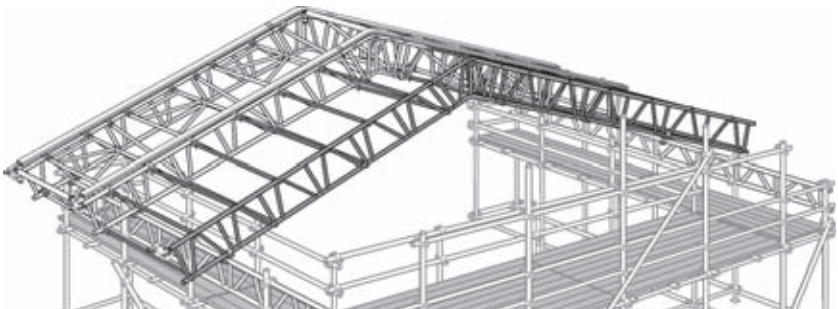


Continue to secure "K" frames and braces as per the design drawing until the first braced bay is complete.



Erecting Further Bays

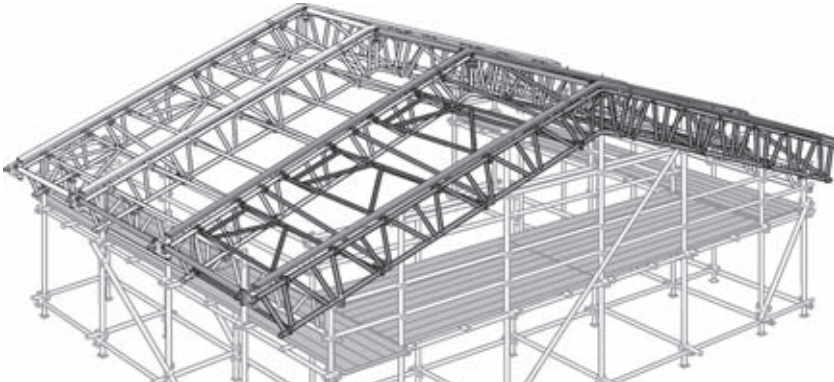
Once the first fully braced bay has been completed, assemble next truss as before, walk into position and attach to the already erected bay with swivel couplers. Attach horizontal braces to the new truss, release the swivel couplers and pull out the new truss until the claws can be connected to the previously erected bay. Secure the new truss to the support scaffold with load-bearing couplers.



Continue to erect further bays in a similar manner until the roof structure is complete. Refer to the design drawing for horizontal and diagonal bracing nodal frequency, which is usually 1.0 m spacing on the upper chord and 2.0 m spacing on the lower chord. Fully-braced bays are normally required every fifth bay. As each truss is completed, secure to the support scaffold.

NOTE

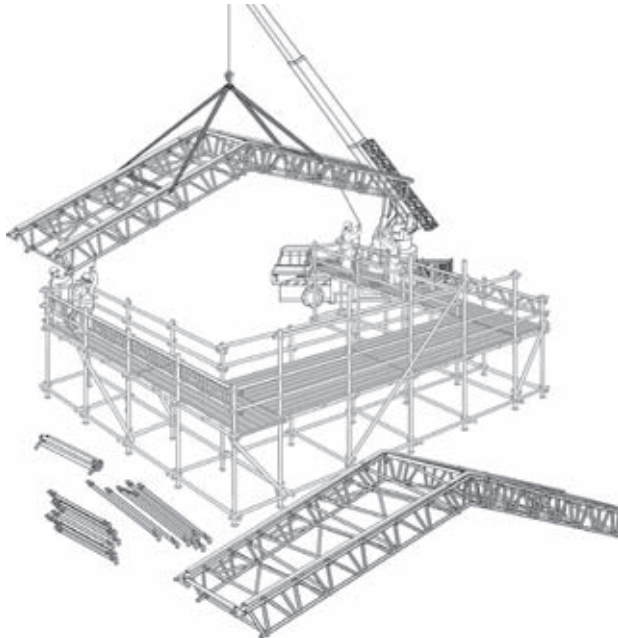
Ensure that the end bay is fully braced. In some cases this may result in the final two bays being both fully braced.



Crane Erection

UBIX can be safely built by being assembled in sections on the ground and then craning them into position.

This will reduce the work to be conducted at height, but consideration will still be required for suitable access, temporary bracing and slinging.



Assembling Braced Bays

It is important to fully brace each of the bays to be lifted, but infill bays only require horizontal braces to connect to the complete crane lifted bays.

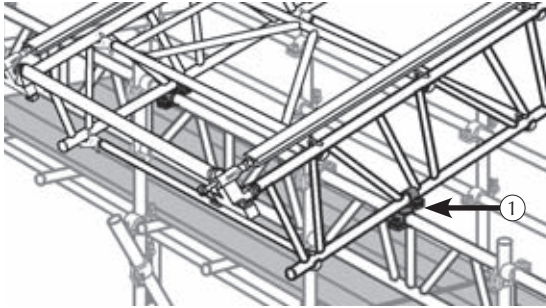
If craning into position, attach infill single braces to K-frames in order to reduce the amount of work to be carried out at height. These can be released and clipped into the infill bays once the complete braced bays have been lifted into position.

Before lifting the completed bays into position, take the sheet pulling rope over the bay. This will eliminate the need to climb over the roof once the bay is in position. The sheeting can then be installed from the boarded level thus reducing the need to work at height.

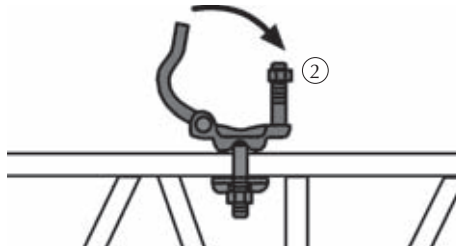
Attach a double coupler to one side of the complete truss in exactly the same position (i.e. against a vertical post or diagonal). This will ensure that when landing the bay, it sits at right angles to supporting ledger or beam.

NOTE

- ① Couplers positioned in the same place against each truss.



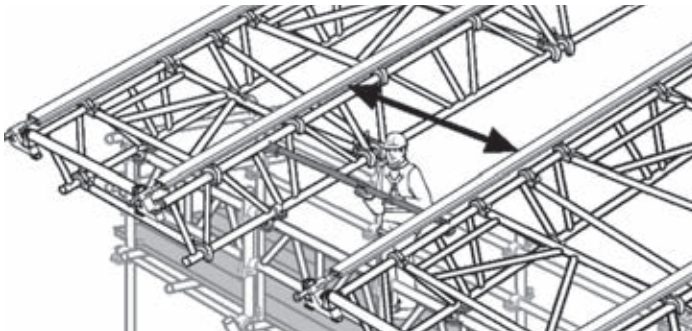
Fit the opposite side double couplers directly onto the ledger or beam and only secure the gate to the ledger/beam. Allow the truss to locate into the gate and slide through until it finds its position.



NOTE

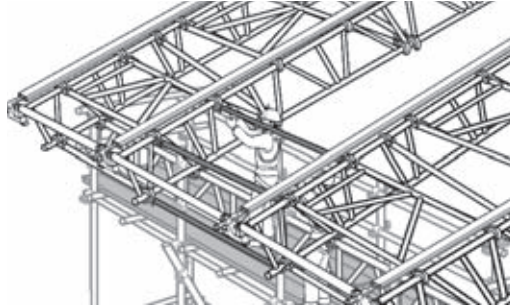
- ② Coupler attached to opposite side support beam. Gate open to receive truss.

To assist with the correct dimensional spacing of the braced bays, use a single horizontal brace attached to the previously fixed bay. Hold the bay to be lowered into position approximately 50 mm above the supporting ledger or beam.



Once satisfied the alignment is correct, lower the bay into position and fix one side with the doubles first attached to the truss and secure.

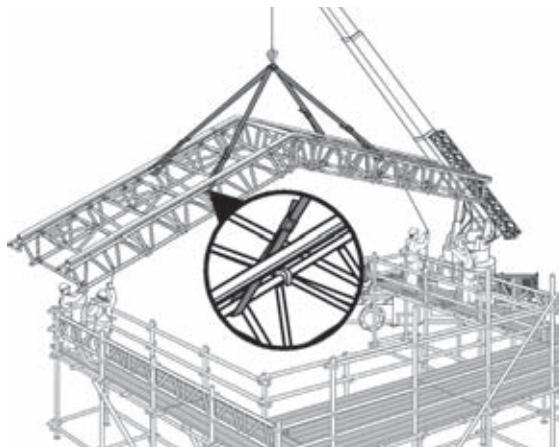
Adopt the same procedure for the opposite side, lower and allow the truss to slide through the gates on to the double coupler fitting and secure.



With alternate fully-braced roof bays in position, the bays between can be infilled. Horizontal braces are fitted upside down beneath the adjacent top beam members. This avoids interference with the sheeting tracking. The horizontal braces are positioned similarly to the top member and those on the adjacent complete beams, but offset to sit outside, rather than between the beam diagonals to avoid interference.

Slinging

The sling positions should be determined by a competent design engineer. A complete bay should be lifted from a minimum of 4 slinging points, all at node positions and adjacent to the bracing frames. Straps, not chains, must be used and care taken not to damage the sheeting tracks.



Lifting

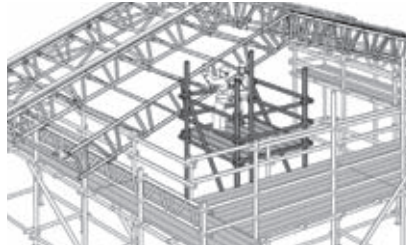
The crane lifting of roofing sections that have already been sheeted could be adversely affected by wind conditions, and is not recommended.

NOTE

Do not attempt crane lifting unless conditions are suitable.

Erection from Central Tower

A central tower can be constructed from scaffolding if circumstances allow to act as temporary support for truss assembly. This central working platform can receive beam sections for final assembly into complete trusses and be used to secure them to the support scaffold.

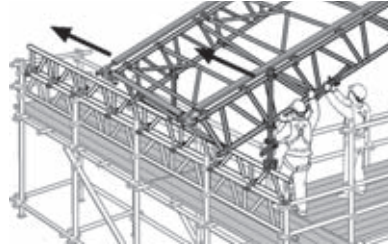


NOTE

Imposed loads on the tower and underlying structure should be assessed by a competent engineer and a suitable design provided prior to starting work.

Roll Out Method

This method requires a running beam along each support scaffold and specialised roof castors (available from Combisafe). Roof trusses are assembled from a suitable working platform at the loading end and rolled out progressively, with each bay being constructed and rolled out in turn.



NOTE

Imposed loads on the support scaffold during rolling operations should be assessed by a competent engineer and a suitable design provided prior to starting work.

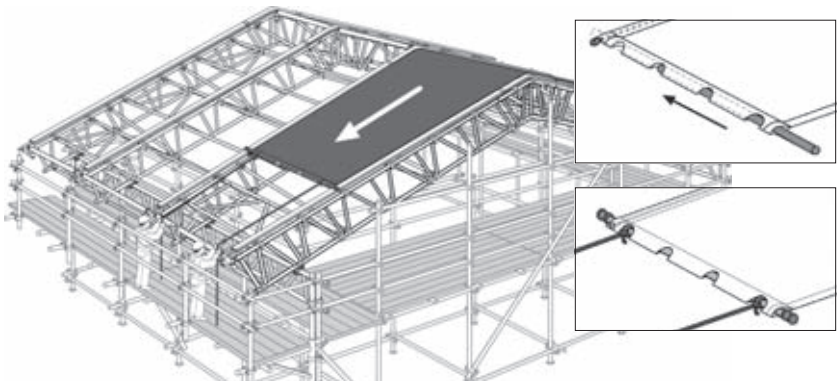
A separate User Instruction is available for Roll-out Erection.

Sheeting

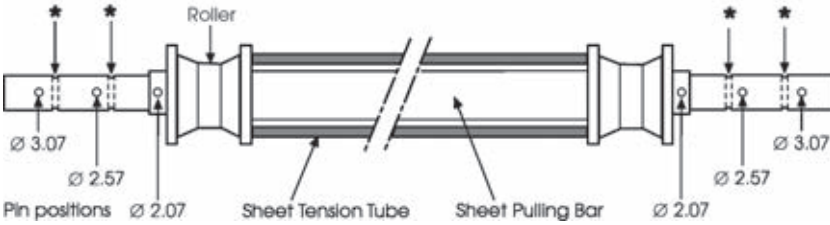
The prevailing weather conditions may determine whether it is safe to commence the sheeting operation, as the sheets will be vulnerable to high winds. Sheeting is ideally carried out by four operatives, two on each side of the roof. Safe working platforms must be provided or built-in to the support scaffold for these operatives.

Ensure sheets are leaf folded, clean and fit for use. Visually check the keder bead for cuts/damage. **DO NOT USE** if damaged. Place sheeting on boarded lift directly below bay.

Insert Sheet Tension Tube into hem on leading edge of sheet and at the exposed outer front pockets secure the two pulling ropes.



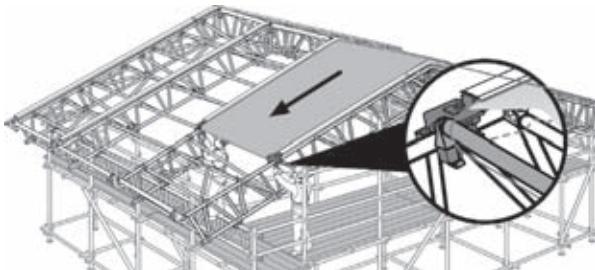
★ For UBIX applications ignore these holes



Remove one roller from the Sheet Pulling Bar and insert the bar through the tension tube, then refit the roller to secure. Position the rollers according to the diagram above, so that they fit over the tracking each side. Insert sheet beading into tracking up to 1.5 m in depth, to ensure correct alignment, running the rollers over the top surface of the tracking. Gradually and evenly pull the ropes to slide the sheeting across the roof within the tracking. When fully sheeted, fit another Sheet Tension Tube into the trailing edge hem and secure these tubes to scaffold ledgers on either side, one side with couplers and the other side using 2 x ratchet straps.

Eaves Termination

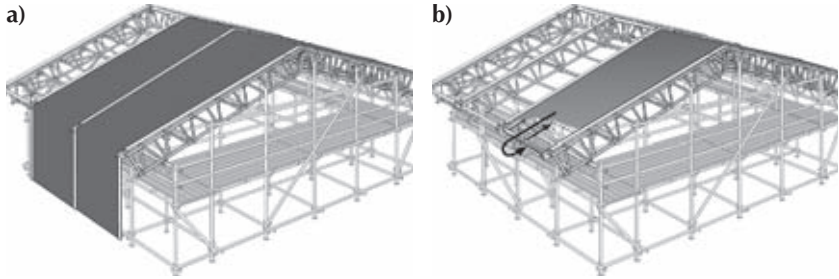
Use the intermediate roller brace coupler if required to terminate sheeting at any point on the length of the beam. This is an alternative to the eaves track stop, which can only be used at the end of a beam.



Excess Sheeting

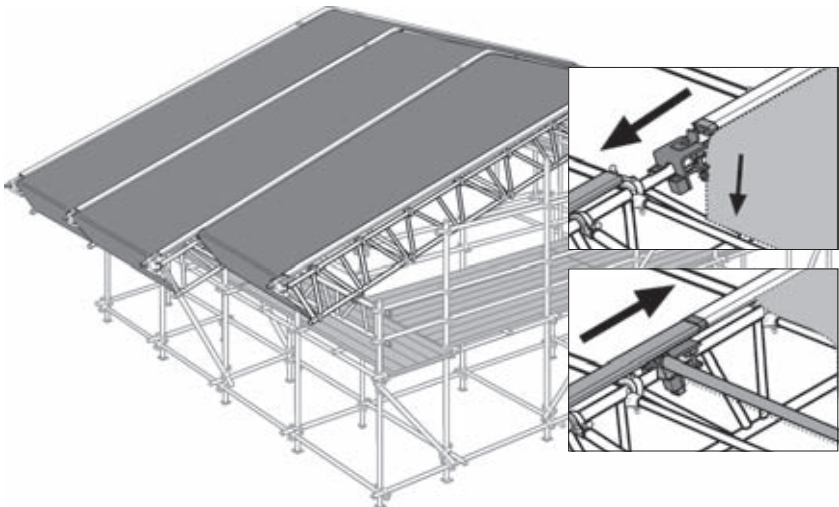
There are two recommended methods of dealing with excess sheeting:

- a) Pull excess sheeting down the outside face of the scaffold.
- b) Return the sheeting around the roller brace and over the bracing frames.



Staggered Bays

Using the intermediate roller brace coupler, adjoining sheets can be terminated at different points. Arrange the tracking sections so that a joint corresponds to the required termination point, and pull the lower track section back slightly so that the sheet bead may be disengaged from the track bore and pulled down. (Remove the lower part of the shroud on the tracking spigot with a knife* to facilitate this). Remove the L-shaped track stop from an intermediate roller brace coupler and fit the coupler under the track at the desired termination point. This will provide a housing for a roller brace and enable the sheet to be supported at the eaves.



* and cut away a small section of the track extrusion with a hacksaw.

Forming Openings in Completed Roofs

Plan openings in advance, as it will be necessary to position an infill (non-braced) bay in the correct location, and to fit infill horizontal braces upside down on the top chord (see drawing on page 16).

If it is desired to open a pre-planned bay, ensure that weather conditions are appropriate for handling the released sheet. Release the sheet tensioners on each side and, working from an appropriate platform, pull the sheet back over the roof to open the desired area, securing the sheet in the open position. Ascend the beam and remove the horizontal braces in the open area. The roof should be reclosed at the end of each shift or before the onset of unfavourable weather, using the methods described in the erection guidance above.

Rainwater Management

Ask Combisafe for guidance, as methods will vary according to the application.

Inspection

Inspect all work done. Ensure that structural and weatherproofing requirements have been satisfied.

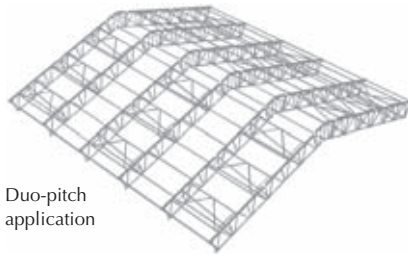
Maintenance

Check all welded joints for cracks and examine tubular members for bends, kinks and dents. Consult Combisafe for advice if in doubt.

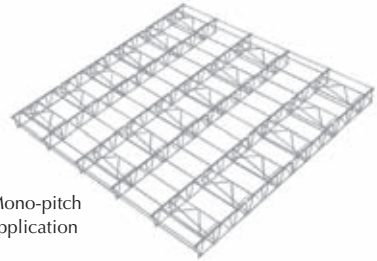
Lubricate claw pins frequently with WD40 or similar, **avoid grease**.

It is strongly recommended, to ensure longevity of the sheets, that they are cleaned after use, neatly leaf folded and stored under cover in dry, clean conditions.

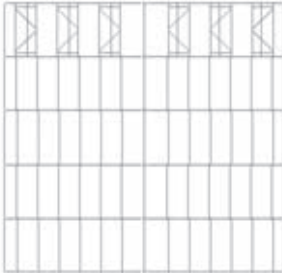
Bracing Configurations



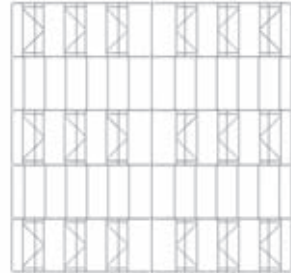
Duo-pitch application



Mono-pitch application



Braced 5 in 1 bays when manually built



Braced 1 in 2 bays when lifted by crane

Brace Spacing	Manually erected	Crane erected
Braced bays	1 in 5	1 in 2
	plus 1 at each gable end	plus 1 at each gable end
K-Frame spacing	1 m on the top chord	1 m on the top chord
Horizontal brace spacing	2 m on the bottom chord	2 m on the bottom chord
Diagonal brace spacing	Every 2 m	Every 2 m
Infill Bays	Maximum 4 unbraced bays before next braced bay	Maximum 1 unbraced bay before next braced bay
	Horizontal brace spacing	1 m on the top chord
	2 m on the bottom chord	4 m on the bottom chord

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