

### Section 1 - Flat Roof

### Section 2 - Pitched Roof

### Section 3 - Square and Conservation

### Section 4 - Fireproof ceiling diffusers

### Section 5 - Light kits

### Section 6 - Black-out diffuser

### Section 7 - Motorised light shut-off damper

### Section 8 - Monovent fitting instructions

### Section 9 - Commercial SunPipes



### Frequently asked questions

#### **“How long can a SunPipe be?”**

A SunPipe can be almost any length that you wish, but loses 6% of light for every metre of SunPipe. For very long SunPipes, a larger diameter should be used. There is a 12% light reduction for every 45° bend. On smaller sizes the total effective maximum length is 8m, and up to 20m on larger sizes.

#### **“What spacing should I use for SunPipes?”**

In general terms we recommend 230mm diameter Sunpipes at 2 metre, 300mm diameter at 3 metre intervals, 450mm diameter SunPipes at 4m intervals and 530mm diameter SunPipes at 5 metre spacings.

#### **“Do I need planning permission?”**

No, normally it is not necessary to apply for planning permission for the installation of a SunPipe. However, if your property is situated in Scotland or a Conservation Area then specific permission must be obtained from your Listed Building Officer.

#### **“Are SunPipes suitable for use in a bedroom?”**

Yes, but bear in mind that in summer months, due to the efficiency of the SunPipe, your bedroom will be flooded with natural day light first thing in the morning. For this reason, installations in bedrooms or hospital wards can have either a black-out diffuser or a motorised light shut off damper.

#### **“Does the SunPipe require maintenance?”**

Due to the shape of the dome, the SunPipe is self-cleaning. The ceiling diffuser fits snugly into the base of the fixing ring to prevent dust or dirt entering the system and as a result the interior mirror finish surface never requires any maintenance. If however you are fitting a light kit, the bottom ceiling diffuser can be removed but care must be taken not to leave fingermarks on the internal mirror finish of the SunPipe.

#### **“Will the top dome discolour over time?”**

The top domes are UV protected and carry a ten year guarantee. However, after 10 years there may be a slight clouding of the external surface.

#### **“How much light output will I achieve?”**

The light output will vary accordingly to the time of the year, the position of the SunPipe on your roof, the size of SunPipe and the internal finishes of your room.

### Preparation and safety information

#### **Scaffolding**

For flat roofs and single storey buildings not exceeding 10ft. (3m) in height, access to the roof can be gained by ladder, but caution should be taken to prevent any falling materials. For two-storey buildings and pitched roofs a tower scaffold or similar should be provided to gain access to the roof if it is greater than 10ft. (3m) in height from ground level and not more than 20ft. (6m) in height. For access to roofs greater than 20ft. (6m) in height a professionally installed scaffold access should be provided. All scaffolding and ladders must be properly fixed to the building and all necessary precautions must be taken to prevent falling materials and provide a safe working environment for personnel.

#### **Electricity**

Normal safety precautions should always be followed. A low voltage power supply should be used when appropriate. Care should be taken to ensure there are no wires, cables, leads, water or gas pipes near the work area. Suitable eye protection and protective gloves must be worn.

#### **Cutting**

SunPipe tubes can be sharp after their ends are cut with tin snips, protective gloves must be worn.

#### **Dust**

A safety mask should be worn to ensure you don't inhale dust when carrying out the installation of a SunPipe system.

#### **Other safety recommendations**

Don't fit SunPipe when it is raining or the roof area is wet or slippery.

#### **You will need the following equipment:**

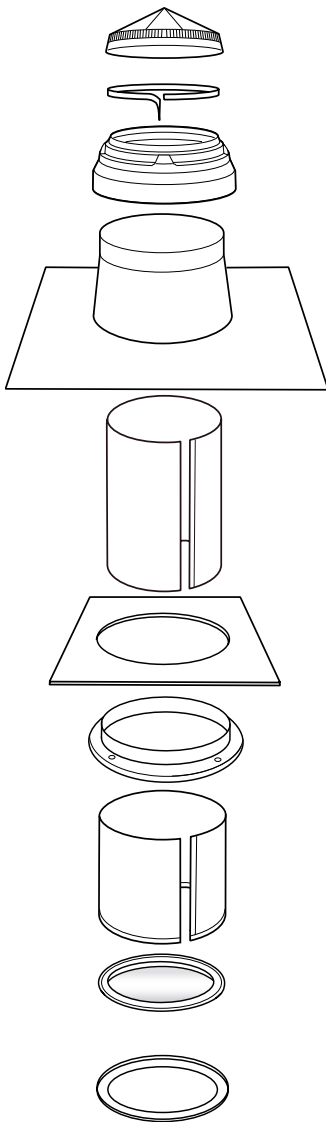
Protective eyewear, Protective gloves, Protective breathing mask, Ladders, Tin snips, Power drill, Power jig-saw, Dispensing gun to dispense the silicone sealant supplied, Miscellaneous other tools.

#### **Building Regulations**

Always check with your local council that your installation complies with all local Building Authority requirements.

# FLAT ROOF INSTRUCTIONS

## 1.0 Components for a standard kit installation of a DIAMOND dome in a FLAT ROOF



### Polycarbonate roof dome

### Brushed nylon condensation sealing gasket

**ABS or Galvanised flashing plate and collar** Flat roofs are usually covered in built up felt roofing, asphalt, lead or a proprietary single ply roof covering - such as Sarnifil. For asphalt, Trocal or hot applied bitumen roofing the galvanised flashing plate will be required. The standard ABS flashing plate will be suitable for most other roof types. Whether or not you have an ABS or galvanised flashing plate, a standard ABS collar is supplied.

### Plain end SunPipe 610mm

must be used to terminate above ceiling level

### 3mm plywood backing panel and marking out template

### Fixing ring

to be fitted to ceiling opening

### SunPipe bell end

slides over end of plain end pipe above ceiling level

### Ceiling diffuser

opal or prismatic

Clip on **Diffuser trim** in white as standard [also stainless steel effect, brass or chrome effect available at additional cost]

## Installation pack



### 15 x 15mm self tapping stainless steel screws/washers

5 x for fixing the collar to the flashing plate, 4 x for fixing the pipe to the ABS collar, 5 x for fixing the dome to the ABS collar, 1 x spare



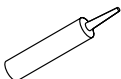
### 13 x 35mm or 45mm screws (depending on SunPipe size)

5 x for fixing the Ceiling diffuser, 8 x for fixing the Flashing plate to roof.



### 10 x Black washers

5 x for use when fixing the Dome, 4 x for use when fixing the Collar to the Flashing plate, 1 x spare.



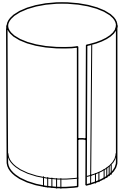
**Silicone sealant** (not to be used on lead flashings)



**Silver aluminium tape**

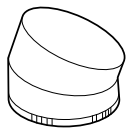
## Optional additional components

**SunPipe 610mm extension length with crimped end**



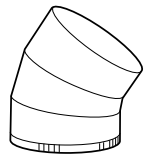
**2 section 30° adjustable elbow**, used where a small offset is required

includes 5 x 3.2mm x 10mm pop rivets for assembly of 450mm and 530mm elbows (see Section 1.6)



**3 section 45° adjustable elbow** for large offsets

includes 10 x 3.2mm x 10mm pop rivets for assembly of 450mm and 530mm elbows (see Section 1.6)



## Alternative components

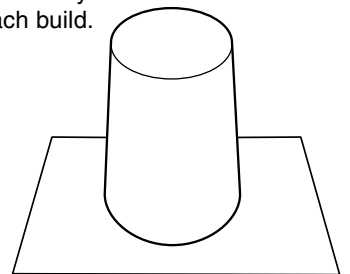
### Hemispherical dome

1000mm & 1500mm SunPipe systems are only available in the hemispherical dome.



### Green roof application

Height of cone will vary according to each build.



## 1.1 Installation instructions for a DIAMOND dome in a FLAT ROOF

### 1.2 Planning and starting your installation

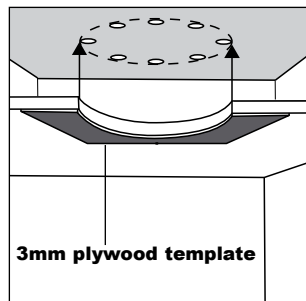
**It's normal to fit the SunPipe between joists**  
(which are generally at 16" (400mm) centres)

#### TIPS FOR FINDING JOISTS

Some flat roofs have a narrow ventilation gap or grille, just behind the fascia board running along the edge of the roof (which often supports the rainwater gutter). The joist positions can be seen through the gap.

When you have decided where you would like the SunPipe to be positioned on the ceiling of your room, drill a small pilot hole to determine whether there is sufficient clearance within the ceiling space. For most domestic applications, the SunPipe will fit easily between flat roof joists, it may be necessary therefore to slightly adjust the centre point of the SunPipe location so as to fit between the joists without cutting the joists.

Use the 3mm plywood backing panel as a marking out template and carefully enlarge the hole ensuring that the hole is in the centre of the two joists (the 3mm plywood panel is used later to secure the Ceiling trim). Enlarge your pilot hole to 2" (50mm) in diameter. Check that there are no adjacent power or other services nearby, then enlarge the hole to 6" (150mm) diameter.

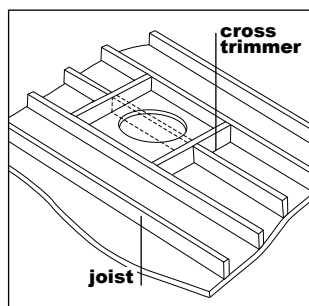


Enlarge the hole to the sizes shown in the table below. Drill directly upwards and through the external roof covering above, eight equally spaced pilot holes inside the perimeter of the ceiling hole.

Nominal	SunPipe dia	Actual dia	Hole size to cut
230mm	9"	(230mm)	240mm
300mm	12"	(305mm)	315mm
450mm	18"	(458mm)	470mm
530mm	21"	(536mm)	550mm
750mm	30"	(762mm)	780mm
1000mm	40"	(1000mm)	1030mm
1500mm	60"	(1500mm)	1530mm

#### What if there isn't enough space to fit your SunPipe between existing rafters or joists?

In most homes SunPipes will fit between existing rafters or joists. However, if there isn't sufficient space, as a guide, on a 'cut roof', one rafter and ceiling joist may be cut to allow installation of your SunPipe but cross trimmers between adjacent rafters or ceiling joists must be installed at each side of the openings to support the 'cut' ends.



**Under no circumstances should any element of a structured timber or beam be cut without prior clearance from a structural engineer.**

### 1.3 Preparatory work outside

Establish whether your flat roof is safe to walk and work on. If it isn't, prepare 'duck-boards' so that you can work safely.

Place the flashing plate over the eight pilot holes, aligning the pipe with the holes.

Mark the perimeter of the square plate on the roof, using a felt pen or masking tape.

Cut the roof covering back to 2" (50mm) beyond the flashing plate.

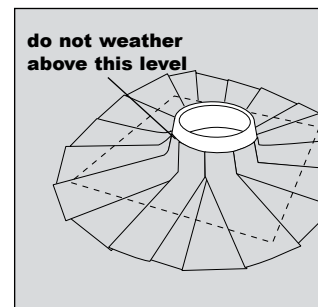
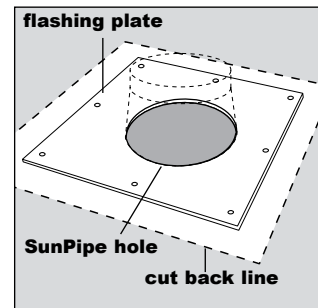
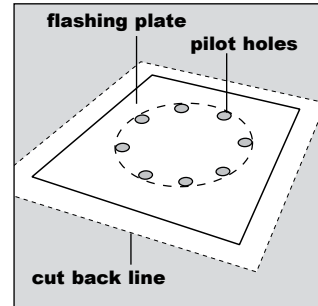
Using the eight perimeter guide holes, cut a circular hole through the roofing board material. The hole must align with the hole in the ceiling below.

Ensure that the surface to receive the flashing plate is clean, dry and free from imperfections. Secure the flashing plate with the 45mm screws provided.

Using felt, asphalt or lead, appropriate to the roof covering you have, form a weatherproof dressing around the flashing plate, up to a height of 6" (150mm).

Don't weatherproof on the upper vertical section of the flashing plate as it could obstruct the fitting of the ABS collar described later.

Once the flashing plate is secure and the weatherproof dressing finished, sit the ABS collar onto the flashing plate.

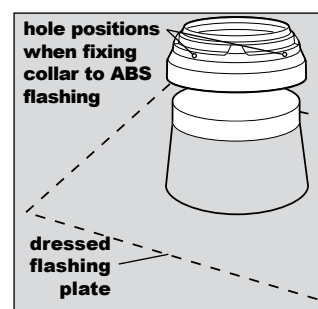


### 1.4 Fitting the collar

Drill five equally spaced holes around the collar in the positions shown adjacent.

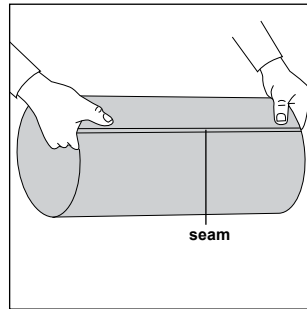
When using the ABS flashing plate, use the closed pop rivets supplied or use the 15mm self tapping screws and washers if using a galvanised flashing plate.

Apply silicone sealant over the screws/washers to form a weatherproof seal.

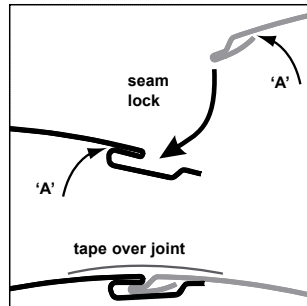


## 1.5 Assembling the pipe

Lie the pipe on its side with the seam facing upwards. It is important that the protective film should be left on the inside surface of the pipe until later. This protects the pipe from dirty finger marks and also stops dust or dirt getting on the surface of the pipe.



Align the ends of the pipe. The special seams clip into one another forming a locking action. Put pressure on the seam all along its length to ensure the seal is secure.



Carefully apply a length of aluminium tape over the made joint, as it is extremely difficult to remove the tape once applied.

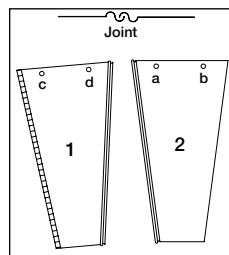
Carefully run a Stanley knife down both sides of the joint at points 'A' as shown, where the protective film is attached to the inside of the pipe so as to be able to release the film later without too much difficulty.



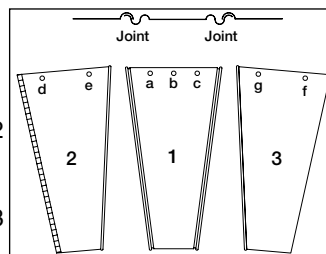
**Care must be taken when handling the SunPipe, as the edges may be sharp.**

## 1.6 Assembly of 450mm and 530mm elbows

1. Pop rivet Section 1 together at 'c' and 'd'
2. Pop rivet Section 2 at 'b'
3. Insert Section 1 into Section 2
4. Pop rivet Section 2 at 'a'



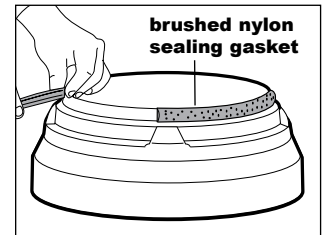
1. Pop rivet Section 1 together at 'a', 'b' and 'c'
2. Pop rivet Section 2 at 'd'
3. Insert Section 1 into Section 2
4. Pop rivet Section 2 at 'e'
5. Pop rivet Section 3 at 'f'
6. Insert Section 1 into Section 3
7. Pop rivet section 3 at 'g'



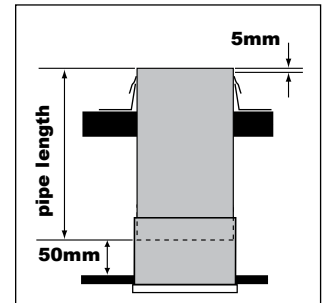
**Note:** It is recommended that you peel back the protective lining just sufficient to assemble the elbow but leave the protective film in place to be removed after the fitting of the elbows, to avoid the possibility of fingermarks or damage to the completed elbows.

## 1.7 Fitting the first pipe

Carefully apply the brushed nylon gasket to the top of the collar (as shown). The gasket should be level with the top of the ABS flashing or collar. This gasket seals the SunPipe against ingress of dirt or insects but still allows the SunPipe to 'breathe', thereby preventing any later problems of condensation.

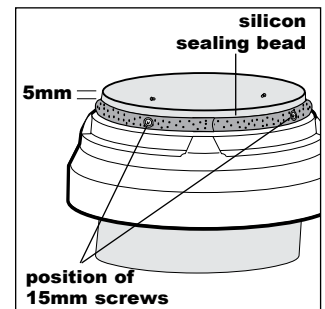


Measure the distance from the top of the collar to the underside of your ceiling. The pipe should project 5mm above the collar and be cut approximately 50mm above the room's ceiling.



**If fitting additional lengths, the crimped end should be at the bottom.**

Insert the topmost pipe into the ABS flashing plate from underneath. Allow the pipe to project 5mm through the top of the collar.



Secure the pipe in position using four of the 15mm self tapping screws and washers supplied, screwing through the brushed nylon gasket and into the rigid SunPipe.

Once the pipe is fixed in position, carefully wipe the top of the outer surface of the SunPipe to remove any moisture, dirt or finger marks, etc. and apply a thick bead of silicone sealant, to seal between the SunPipe and the ABS collar as shown, and then allow to dry.



**This is the most important part of the Sun Pipe installation since this silicone sealant will prevent any rain or condensation from running down the outside of the SunPipe which may create a water stain on the ceiling.**

## 1.8 Fitting the dome

Before attaching the top dome to the flashing or collar, peel the protective film from the top rim of the first pipe and push it down the pipe, just enough to form a protective 'plug' at the bottom of the pipe.





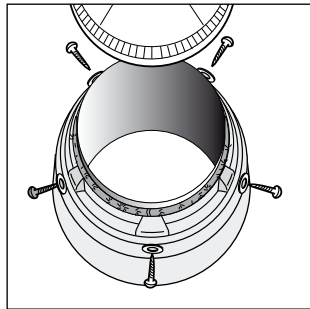
**Take care when handling the dome so as not to scratch the surface.**

Align the pre-drilled holes on the dome with the lugs on the collar/upstand. Secure the roof dome to the collar/upstand using five 15mm self tapping screws and washers supplied.

All external works are now complete.

Carefully brush down the roof covering and the flashing to remove any particles of dust or dirt. Clean the dome with a soft cloth and water to ensure that the dome is free from any finger marks, dust or dirt

**Note:** When the SunPipe is initially installed, particularly in winter months, the air contained within the SunPipe tube does contain moisture and it is quite common therefore to see beads of condensation forming on the inside of the SunPipe dome immediately after installation. This is quite normal and the design of the SunPipe dome is such that this condensation will run down the inside of the dome, into the condensation gasket and will dry out naturally.



## 1.9 Fitting additional extension pipes

Fit additional straight lengths to suit your particular roof void. The crimped ends are slightly smaller than the plain ends. The crimped ends fit tightly into the plain ends.

If there is a large void between the ceiling of your room and the flat roof, you may need to connect additional pipes together.



Alternatively you may want to create an offset. This is when the SunPipe has two elbow sections. This can enable the SunPipe to enter the room in a location which is not directly underneath where it exits through your roof. Rotating the elbow sections can achieve different angles.

**Ensure that all of the protective film is removed from the previous pipe or elbow just before attaching the next section.**

Once you are satisfied that the angle and the location of the tubes are correctly aligned to pass through the loft space, continue as above with third or fourth sections and further elbow joints, depending on the distance you are spanning.

**Make sure the final pipe you use has two plain ends as the bell end needs to fit over the bottom of the plain end pipe.**

When you are satisfied that the angles and connections are all correct, drill small pilot holes on each side of the SunPipe tube to elbow joints and screw the joints together with self tapping screws.

**The silver aluminium tape should be used to seal all the joints and seams against dust and dirt, apply carefully as it is extremely difficult to remove once applied.**

On long unsupported lengths of pipe, additional fixing screws can be used to fix the SunPipe to any adjacent joist or rafter. Perforated strapping and drop wires should be used where it is considered there is likely to be any weight imposed on the elbow joints, such as long horizontal runs or complicated routes where the SunPipe may have to twist and turn. Drop wires should always be fixed vertically and attached to the rafters above and the perforated strapping should be fastened around the SunPipe and secured with suitable fixings.

## 1.10 Fitting the ceiling diffuser



**To avoid any possibility of eye damage, be careful not to look upwards through the SunPipe.**

The efficiency of the unit is such that even in dull light, eye damage could result.

Screw the fixing ring through ceiling and into the plywood backing template using five of the 45mm screws supplied

Remove the protective film from the assembled bell end length

Pass the bell end length through the fixing ring and slide over the trimmed plain end pipe.

**Remove any remainder of the protective lining.**

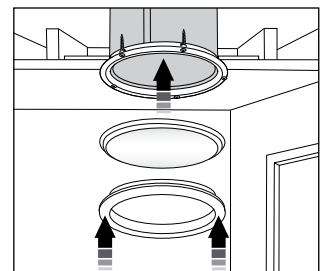
The ceiling diffuser is designed to push fit into the bottom of the bell end pipe. Twist the little turn buttons, which securely hold the diffuser in place. You can then clip the diffuser trim into place, making sure the lugs on the inside of the trim do not align with any of the screw position cut-outs on the fixing ring.

If the ceiling is not perfectly flat, such as an Artex ceiling or similar, apply a thin bead of a proprietary sealant, such as Decorator's Mate, around the external edge of the white trim to seal any gap between the ceiling trim and the ceiling itself. Lugs must not align with central ring diffuser clips. If it is ever necessary to remove the ceiling trim at a later date, clean off the proprietary filler and remake the joint.

**Return to the loft space and carefully seal all joints and seams of the bell end length.**

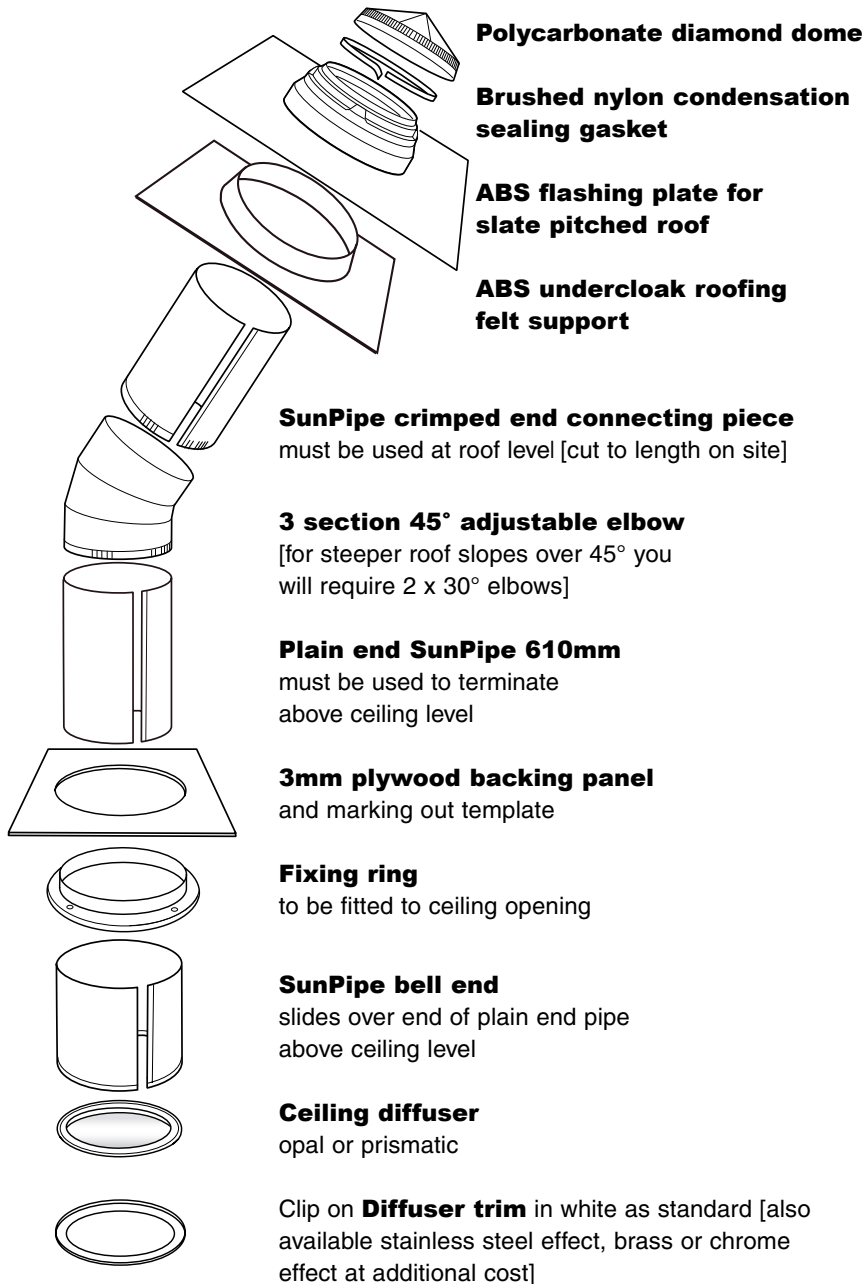
Dust may enter the SunPipe during installation, which may settle on the ceiling diffuser over a period of time. Simply remove the trim and diffuser and clean with a dry lint-free cloth, then replace and reseal if necessary.

No further cleaning or long term maintenance should be required but if flies for insects appear in the diffuser, these should be removed. Some insects are attracted by strong light so carefully check to ensure that silver tape covers every possible gap or small hole.

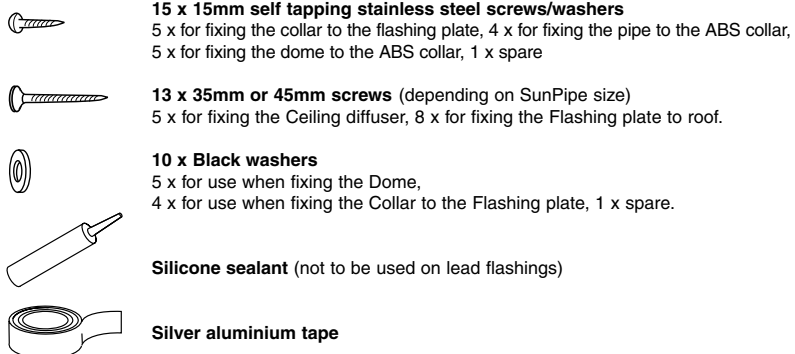


# PITCHED ROOF INSTRUCTIONS

## 2.0 Components for a standard kit installation of a DIAMOND dome in a PITCHED ROOF

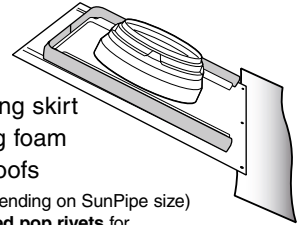


### Installation pack



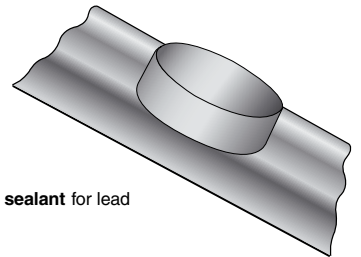
### Alternative components

**ABS flashing** plate, weathering skirt and weathering foam for plain tiled roofs  
includes 3 or 5 (depending on SunPipe size) **4mm x 15mm closed pop rivets** for attaching weathering skirt to flashing plate



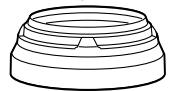
**Lead flashing** for bold rolled tile roofs

includes **lead sealant** for lead flashing only



**ABS collar** for use with lead flashing

includes 5 x **4mm x 15mm closed pop rivets** for attaching ABS collar to lead flashing plate



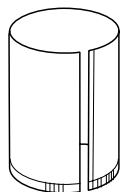
**Hemispherical dome**

1000mm & 1500mm SunPipe systems are only available in the hemispherical dome.



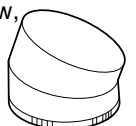
### Optional additional components

SunPipe 610mm extension length with crimped end



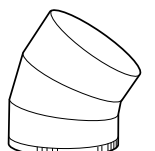
2 section 30° adjustable elbow, used where a small offset is required

includes 5 x **3.2mm x 10mm pop rivets** for assembly of 450mm and 530mm elbows (see Section 1.6)



3 section 45° adjustable elbow for large offsets

includes 10 x **3.2mm x 10mm pop rivets** for assembly of 450mm and 530mm elbows (see Section 1.6)

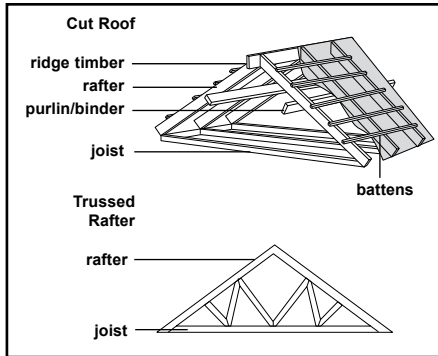


## 2.1 Installation instructions for a DIAMOND dome in a PITCHED ROOF

### 2.2 Before you start work

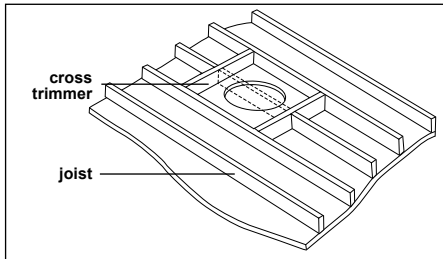
#### It's safer to fit the SunPipe between rafters?

Most pitched roofs are constructed using the 'Cut Roof' or the 'Trussed Rafter' method. In newer buildings, trussed rafters are more common.



#### What if there isn't enough space to fit your SunPipe between existing rafters or joists?

In most homes SunPipes will fit between existing rafters or joists. However, if there isn't sufficient space, as a guide, on a 'cut roof', one rafter



and ceiling joist may be cut to allow installation of your SunPipe but cross trimmers between adjacent rafters or ceiling joists must be installed at each side of the openings to support the 'cut' ends.



**Under no circumstances should any element of a trussed rafter or, on a cut roof, a ridge timber, purlin or binder be cut without prior clearance from a structural engineer.**

### 2.3 What's the best location for a SunPipe?

The most efficient place for your SunPipe is on a south facing roof slope. Always locate it as near to the ridge as possible.

Try to avoid sheltered or concealed areas of your roof since the SunPipe will not benefit from direct sunlight. In these circumstances the amount of light produced by the SunPipe which is in the shadow of the roof, will be similar to the amount of light obtained from a normally installed SunPipe on an overcast day.

There are a variety of views that have been given in the past on the best position for a SunPipe on a north facing roof. Previously our advice was to fit a vertical flashing on a north facing roof. However, our experience indicates that on a north facing roof, whether the SunPipe is vertical or perpendicular to the roof surface, there is very little difference in performance and therefore we do not need to recommend the use of a vertical SunPipe. We recommend the compact flashing with an elbow used internally as for any other SunPipe application.

### 2.4 Preparing for your particular roof type

SunPipes are suitable for virtually any type of roof covering but these instructions are particularly written for slate or tiled roofs.

For bold roll tiled roofs, you will require our lead flashing.

For thatched roofs, metal profile, asbestos, or other unusual roof coverings, please call our technical department on 01494 897705.

### 2.5 Preparatory work outside



You will need safe secure ladders and possibly a tower scaffold with all necessary safety rails to gain access to the roof surface. Ladders or tower scaffold must be safely tied into the building structure.

You will then need to gain access into the loft space, so from a secure and stable ladder or fitted loft ladder, enter the loft.

The floor areas in some lofts are not safe to walk on.

Use temporary boards to span between the joists if this is the case. Look carefully at the area where you want to install your SunPipe. Make sure there are no obstructions to the installation such as water tanks, pipes, electrical cables, etc.

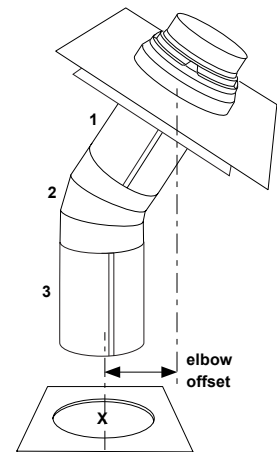
### 2.6 Positioning the SunPipe

Determine where you want the SunPipe to be positioned in the ceiling and where you want it to exit through the roof. For best results, try to position the dome directly above your chosen location of the ceiling diffuser not forgetting to allow for the elbow offset.

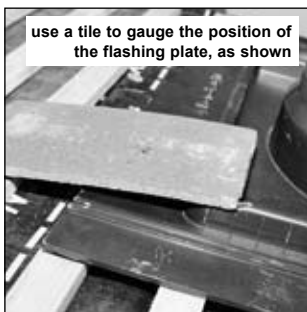
To aid the positioning you can place the plywood template at the chosen diffuser position and pre-assemble the first pipe(1), elbow(2) and second pipe(3) together (as shown).

Mark the diffuser position by drilling a small hole through the centre of the plywood template(x).

Push a screwdriver through the internal felt, and out through the external roof covering at the chosen location for dome. (this will lift the tiles and make it easier to see where you need to enlarge the hole for the SunPipe.



## 2.7 Removing the tiles or slates



Establish the position in which the SunPipe is to be installed by locating the screwdriver inserted from inside. Remove the tiles or slates from around the area and set aside. Temporarily place the flashing plate in position so that it is centred over the pilot hole. Remove sufficient tiles to mark and cut back the battens and cut diagonals in the felt covering to allow for the installation of the pipe. Refer to the table below to determine the size of the hole to mark.



*(Tip: you can also use the flashing plate to mark the hole size and position)*

Nominal	SunPipe dia	Actual dia	Hole size to cut
230mm	9"	(230mm)	240mm
300mm	12"	(305mm)	315mm
450mm	18"	(458mm)	470mm
530mm	21"	(536mm)	550mm
750mm	30"	(762mm)	780mm
1000mm	40"	(1000mm)	1030mm
1500mm	60"	(1500mm)	1530mm

## 2.8 Fitting the ABS Undercloak

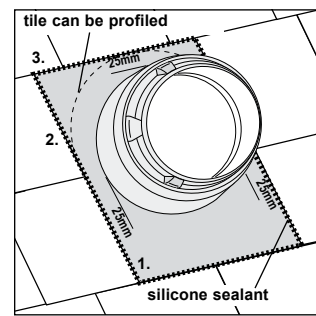
The ABS undercloak felt support plate is used to hold the roof felt in position to prevent it drooping. Once the position of the SunPipe has been determined and the felt cut, trim the ABS undercloak with a stanley knife to fit between the rafters then push up the undercloak support plate towards the underside of the roof to make the roofing felt in a taut condition. Fix the support plate in position by screwing to the existing roof batons.



Alternatively, two additional noggings can be screw fixed into the rafters to support the ABS undercloak plate.

## 2.9 Fitting the flashing plate on a slate roof

When fitting a SunPipe in a slate roof, the ABS flashing provides sufficient weatherproofing. Therefore the ABS flashing plate should be tucked under the row of slates above, interleaved with the slates on each side and sit on top of the row of slates below. Use the 45mm long screws which are supplied, to fix the ABS flashing plate to the roof battens.



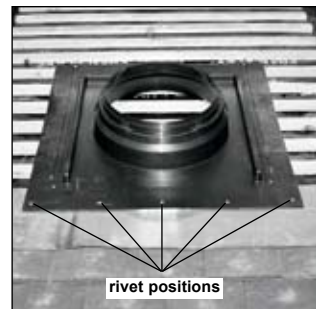
1. Wherever possible, align the bottom edge of the ABS flashing with the bottom edge of a row of slates. Cut the slate both sides and top to within 25mm of the SunPipe flashing collar.
2. Then re-lay the next row of slates carrying the slate over the ABS flashing but stopping 25mm short of the SunPipe upstand collar.
3. The third row of slates should then be carried over so as to weather the top edge of the ABS flashing.

Apply a thick bead of silicone sealant (supplied) around the slate edge and flashing plate to ensure a completely waterproof seal.

**With some natural or man-made slates which are more than 5mm in thickness, it is advisable to use the weathering skirt as set out in the following paragraphs.**

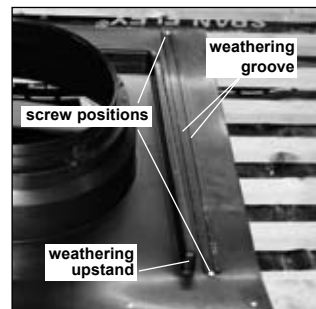
## 2.10 Fitting the flashing plate on a tiled roof

When fitting the SunPipe in a plain tiled roof you should use the weathering skirt which is fixed using a Poly-Butyl strip and pop rivets.



Lay the skirt on a flat surface and clean off any dirt or dust. Take the ABS flashing and carefully remove the protective paper and then place it firmly on top of the skirt, allowing the skirt to overlap by approximately 50mm to the underside of the ABS flashing. Secure the skirt with the pop rivets as shown.

Carefully position the ABS flashing (with its skirt) onto the roof.



Fix down the ABS flashing plate to the roof battens using the 45mm screws supplied as shown.

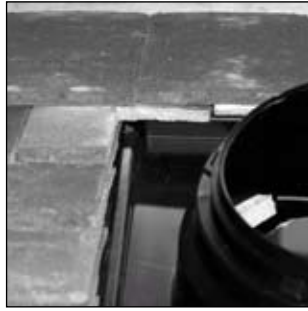
Make sure that you use two screws in line with the bottom edge of the ABS collar but also outside of the weathering upstand, this will pull the ABS flashing down on to the batten allowing the correct alignment of the roof tiles.

Apply a small amount of silicon sealant over the rivet and screw heads, this will ensure a waterproof seal.





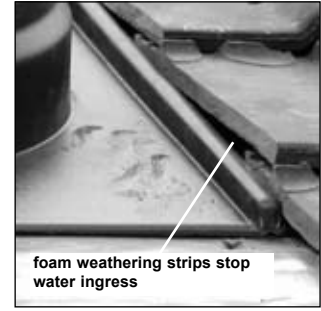
Stick the foam weathering strip to the flashing as shown below ensuring its positioned outside the weathering upstand.



You can then cut the tiles around the ABS upstand and place the tiles in position to make sure they fit.



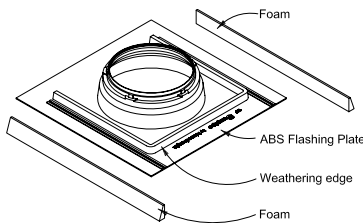
If necessary, grind off the corner nib on the back of the tiles to ensure the tiles sit correctly on top of the flashing plate.



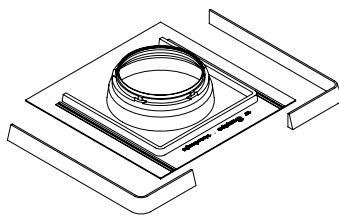
foam weathering strips stop water ingress

## 2.11 Foam weathering installation details for plain tiled roofs

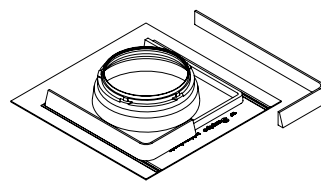
**230mm (9") SunPipes** - supplied with 2 x 750mm strips of high density foam



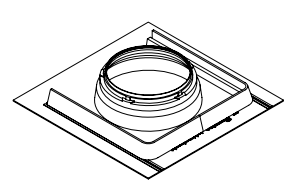
Remove the covering of the fixing tape and bend the foam to the shape of the weathering upstand on the ABS flashing plate.



Adhere the foam to the flashing plate starting at the centre of the weathering upstand with the angled edge of the foam facing outwards.

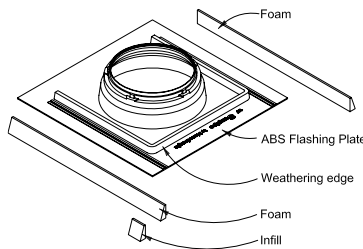


Repeat the process for the remaining piece of foam, so that the two pieces meet at the centre of the weathering upstand and trim foam to suit.

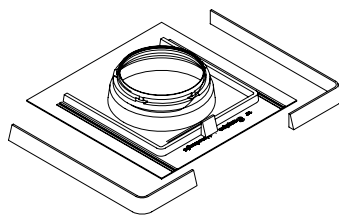


Repeat the process for the remaining piece of foam.

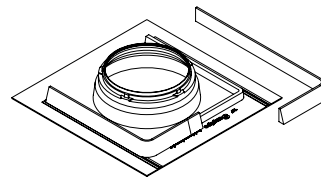
**300mm (12") SunPipes** - supplied with 2 x 750mm strips and 1 x 50mm infill of high density foam



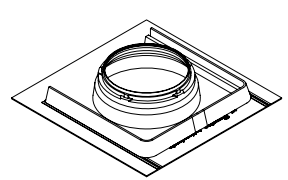
Remove the covering of the fixing tape and bend the foam to the shape of the weathering upstand on the ABS flashing plate.



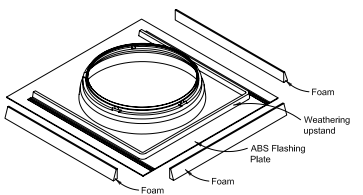
Adhere the foam infill to the flashing plate starting at the centre of the weathering upstand with the angled edge of the foam facing outwards.



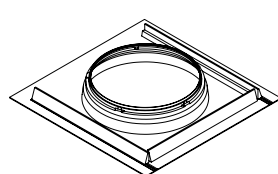
Repeat the process for the 2 x 750mm pieces of foam, so that the two pieces meet the infill and formed round the weathering upstand.



**450mm (18")mm and 530mm (21") SunPipes** supplied with 3 x 750mm of high density foam

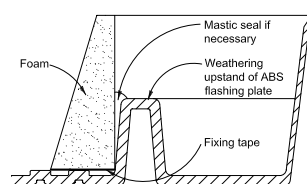


Remove the covering of the fixing tape fit each length of foam to each section of the ABS flashing plate weathering upstand.



Trim to length as necessary.

**Typical section detail**  
(Through foam on weathering upstand)



When the tile is placed on top, it will compress the foam but if necessary a mastic seal can be used.



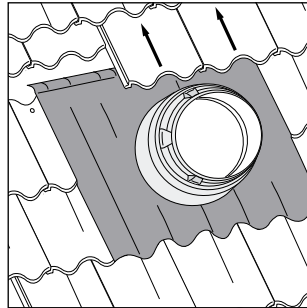
**Note:** Depending on tile type it may be necessary to trim the top foam and the foam strips either side of the flashing plate. When trimming the side strips they need to form a series of 'steps', as shown, where the tiles will sit. This ensures the tiles will sit flat down on top of the flashing plate. Be careful not to cut too much as the foam needs to form a weatherproof seal between the flashing plate and tiles.

## 2.12 Fitting a lead flashing on bold rolled tiles

For bold rolled or profiled tiled roofs a Code 4 lead flashing can be supplied. It is supplied with the sides rolled and an ABS support ring for transportation. Unroll the sides and remove the ring prior to installation. It is important not to damage the lead, since any blemishes are very difficult to remove.

Position the lead flashing on the roof at the desired position then remove the row of tiles above the top of the lead flashing. Dress about 25mm over the top of the next row of tiles, as shown. This helps to stop the lead flashing from sliding.

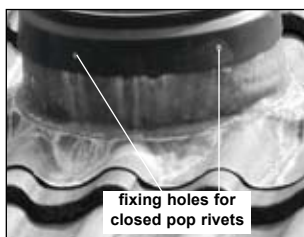
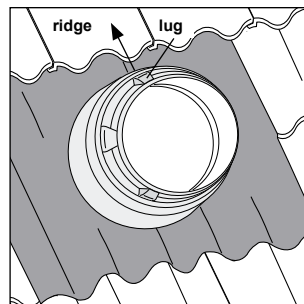
Dress over the row of tiles at the top edge of the lead and over the row of tiles at the bottom of the lead, replace tiles removed.



## 2.13 Fitting the collar

Place the collar carefully over the top of the lead making sure to align one of the lugs on the collar pointing towards the ridge of the roof (as shown) then push down the collar so that it fits firmly on top of the lead.

Drill five equi-spaced holes around the lowest part of the collar, then secure the collar to the lead flashing with closed pop-rivets (supplied). If you need to seal any of the lead, make sure you only use the lead sealant provided.

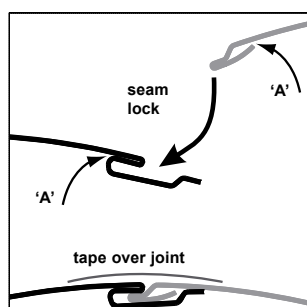


## 2.14 Assembling the pipe



**Care must be taken when handling the SunPipe, as the edges may be sharp.**

Carefully run a Stanley knife down both sides of the joint before assembling at points 'A' as shown, where the protective film is attached to the inside of the pipe so as to be able to release the film later without too much difficulty.

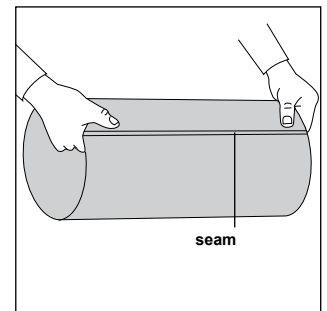


Lie the pipe on its side with the seam facing upwards. It is important that the protective film should be left on the inside surface of the pipe until later. This protects the pipe from dirty finger marks and also stops dust or dirt getting on the surface of the pipe.

Align the ends of the pipe. The special seams clip into one another forming a locking action. Put pressure on the seam all along its length to ensure the seal is secure.



**Carefully apply a length of aluminium tape over the made joint, as it is extremely difficult to remove the tape once applied.**



## 2.15 Assembly of 450mm and 530mm elbows

230mm (9") and 300mm (12") elbows are sent fully assembled, for 450mm (18") and 530mm (21") elbows

**Please refer to Section 1.6 on Page 4**

750mm dia (30") elbows are also sent 'flat packed' and should be assembled as for 450mm and 530mm elbows

## 2.16 Fitting the first pipe



**Ensure the first pipe is the SunPipe crimped end connecting piece (see Section 2.0).**

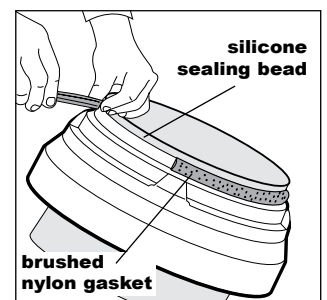
From the loft space push the first pipe (crimped end should be facing into the loft) through ABS undercloak and out through the flashing plate or collar by about 50mm.

Push in the elbow section, adjusting it by rotating the sections to achieve the correct angle so the crimped end of the elbow points vertically down

Push the second pipe into the elbow opening and check it aligns to the ceiling opening position. If necessary, adjust the first pipe by sliding in or out of the flashing or collar to achieve this.

Once satisfied, remove the elbow and second pipe taking care not to move the first pipe, then return to the roof.

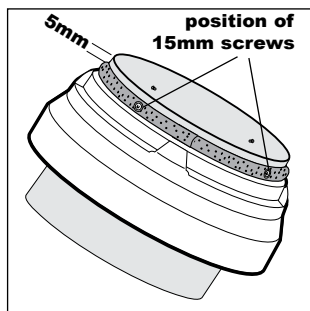
Carefully apply the brushed nylon gasket to the top of the collar (as shown). The gasket should be level with the top of the ABS flashing or collar. This gasket seals the SunPipe against ingress of dirt or insects but still allows the SunPipe to 'breathe', thereby preventing any later problems of condensation.



Secure the pipe in position using four of the 15mm self tapping screws and washers supplied, screwing through the brushed nylon gasket and into the rigid SunPipe.

Trim the top of the pipe with tin snips (if necessary) to leave at least 5mm of pipe protruding through the flashing or collar.

Once the pipe is fixed in position, carefully wipe the top of the outer surface of the SunPipe to remove any moisture, dirt or finger marks, etc. and apply a thick bead of silicone sealant, to the gap between the SunPipe and the ABS collar, and then allow to dry.

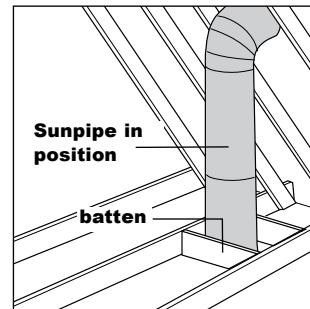


**! This is the most important part of the SunPipe installation since this silicone sealant will prevent any rain or condensation from running down the outside of the SunPipe which may create a water stain on the ceiling.**

## 2.18 Notes on internal arrangements for all PITCHED ROOF installations

Peel off the coloured protective film down the first pipe, carefully allowing it to form a descending 'plug' which prevents dust or dirt getting into the pipe whilst the installation is being completed.

Push in the elbow, and check the alignment as described in Section 2.16 and adjust if necessary to achieve the correct angle so that crimped end of the elbow points vertically down.



**Ensure that all of the protective film is removed from the previous pipe or elbow just before attaching the next section.**

The second straight section of pipe should then be assembled as previously described and the two (or more) pipes connected together. Once you are satisfied that the angle and the location of the tubes are correctly aligned to pass through the loft space, continue as above with third or fourth sections and further elbow joints, depending on the distance you are spanning.

**! Make sure the final pipe you use has two plain ends as the bell end needs to fit over the bottom of the plain end pipe.**

When you are satisfied that the angles and connections are all correct, drill small pilot holes on each side of the SunPipe tube to elbow joints and screw the joints together with self tapping screws.

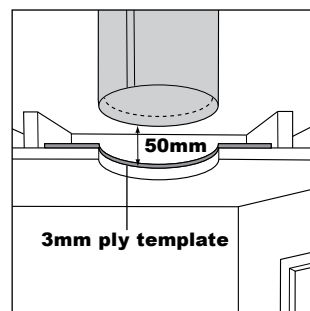
**Use the silver aluminium tape to seal all the joints and seams against dust and dirt, apply carefully as it is extremely difficult to remove once applied.**



On long unsupported lengths of pipe, additional fixing screws can be used to fix the SunPipe to any adjacent joist or rafter. Perforated strapping and drop wires should be used where it is considered there is likely to be any weight imposed on the elbow joints, such as long horizontal runs or complicated routes where the SunPipe may have to twist and turn. Drop wires should always be fixed vertically and attached to the rafters above and the perforated strapping should be fastened around the SunPipe and secured with suitable fixings.

Having established the entry point of the SunPipe into the room below, use the 3mm ply backing panel as a template to mark out the opening. Then use a pad saw or similar to carefully cut out the opening.

The bottom of the SunPipe tube should be trimmed back so that it is approximately 50mm above the top of the ceiling.



Insert the 3mm plywood backing panel in the ceiling space over the hole to provide extra support when fixing the ceiling diffuser (you may have to cut the plywood in two if you have limited access to the ceiling space).

## 2.17 Fitting the dome

Before attaching the top dome to the flashing or collar, peel the protective film from the top rim of the first pipe and push it down the pipe, just enough to form a protective 'plug' at the bottom of the pipe.

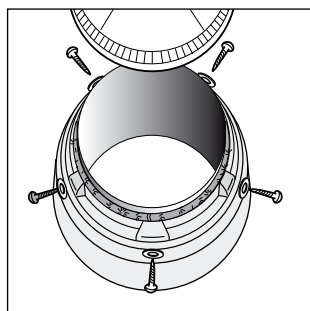
**! Take care not to scratch the dome when positioning it.**

Align the pre-drilled holes on the dome with the lugs on the collar/upstand. Secure the roof dome to the collar/upstand using five 15mm self tapping screws and washers supplied.

All external works are now complete.

Carefully brush down the roof covering and the flashing to remove any particles of dust or dirt. Clean the dome with a soft cloth and water to ensure that the dome is free from any finger marks, dust or dirt

**Note:** When the SunPipe is initially installed, particularly in winter months, the air contained within the SunPipe tube does contain moisture and it is quite common therefore to see beads of condensation forming on the inside of the SunPipe dome immediately after installation. This is quite normal and the design of the SunPipe dome is such that this condensation will run down the inside of the dome, into the condensation gasket and will dry out naturally.



## 2.19 Fitting the ceiling diffuser



**To avoid any possibility of eye damage, be careful not to look upwards through the SunPipe.**

The efficiency of the unit is such that even in dull light, eye damage could result.

Screw the fixing ring through ceiling and into the plywood backing template using five of the 45mm screws supplied

Remove the protective film from the assembled bell end length

Pass the bell end length through the fixing ring and slide over the trimmed plain end pipe.

**Remove any remainder of the protective lining.**

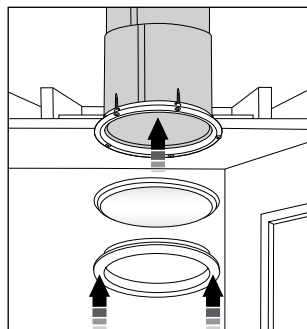
The ceiling diffuser is designed to push fit into the fixing ring. Twist the little turn buttons, which securely hold the diffuser in place. You can then clip the diffuser trim into place, making sure the lugs on the inside of the trim do not align with any of the screw position cut-outs on the fixing ring.

If the ceiling is not perfectly flat, such as an Artex ceiling or similar, apply a thin bead of a proprietary sealant, such as Decorator's Mate, around the external edge of the white trim to seal any gap between the ceiling trim and the ceiling itself. Lugs must not align with central ring diffuser clips. If it is ever necessary to remove the ceiling trim at a later date, clean off the proprietary filler and remake the joint.

**Return to the loft space and carefully seal all joints and seams of the bell end length.**

Dust may enter the SunPipe during installation, which may settle on the inside of the ceiling diffuser over a period of time. Simply remove the trim and diffuser and clean with a dry lint-free cloth, then replace and reseal if necessary.

No further cleaning or long term maintenance should be required but if flies for insects appear in the diffuser, these should be removed. Some insects are attracted by strong light so carefully check to ensure that silver tape covers every possible gap or small hole.



## 3.0 The Square & Conservation SunPipe

The following should be read in conjunction with the specific instructions relating to the Conservation and Square Rooflights Installations and these Instructions must be strictly observed.

Having installed the Square or Conservation Rooflight into the roof structure, in accordance with their Instructions, open the rooflight fully and carefully hold open in position or temporarily remove.

Take the aluminium transition unit and carefully push through the opening. Please note that for certain sizes of SunPipe, the transition unit is manufactured in two sections.

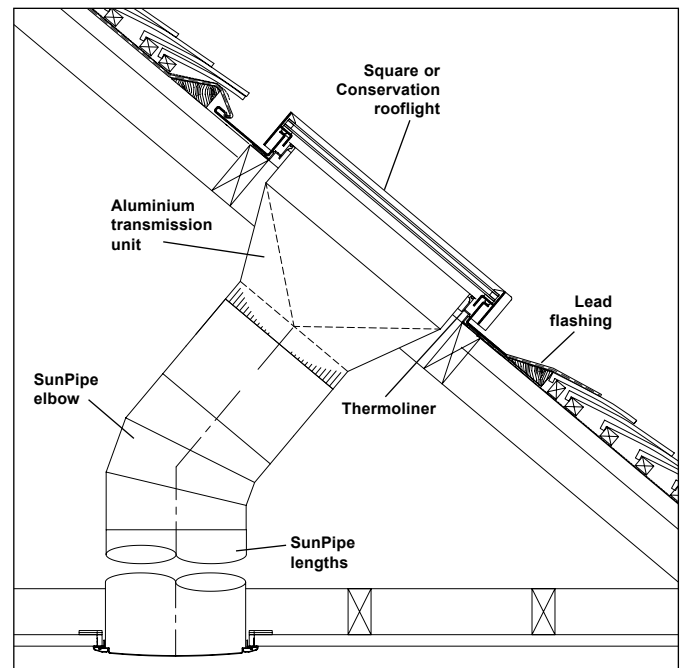
The top edge of the transition unit should lip over the Thermoliner, as shown in the Rooflight Installation Instruction leaflet, and can be fixed in that position but the glass rooflight will normally be sufficient to hold the transition unit in position.

Shut the rooflight or refix the glass rooflight and frame and using the bolts supplied, bolt down the steel rooflight.

Take care not to damage the leading edge of the transition unit and then connect up the SunPipe length and elbow of the SunPipe system to suit the desired location following the appropriate instructions set out earlier in this document.

Continue with the installation of the remainder of the SunPipe system, as the Pitched Roof SunPipe Installation Instructions.

Fit the ceiling diffuser as Section 2.19 above.



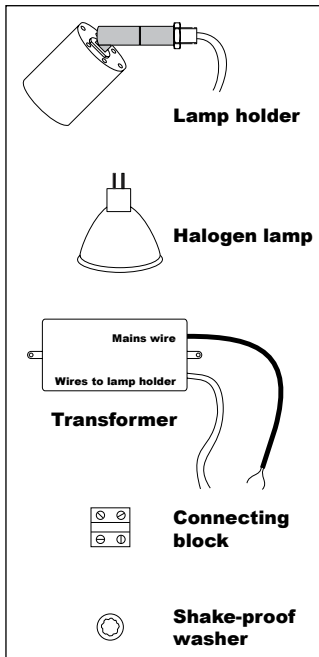
## 4.0 Fireguard ceiling diffusers

There are two types of Fireguard ceiling diffusers, a ceramic Fireguard diffuser or a fire choke collar, but specialist fixing details are available separately in this respect on request.

# OPTIONAL ACCESSORIES

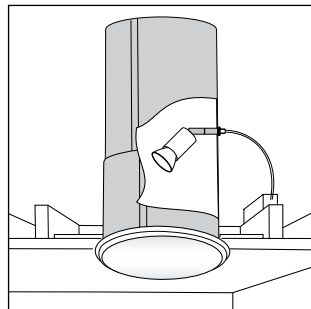
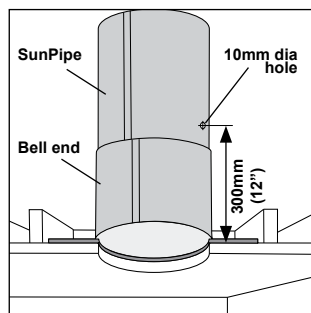
## 5.0 Light Kit fitting instructions

### Light Kit Components



Install the SunPipe as set out in these installation instructions, but do not fit the ceiling diffuser. If the ceiling diffuser is already fitted, gently prise off the diffuser trim, twist the little turn buttons on the fixing ring and remove the diffuser.

Mark the position of a hole to be drilled 300mm (12") up from the base of the bell end) on the outside of the SunPipe and drill a 10mm diameter hole through the SunPipe.



Remove any burrs from the inside and outside of the SunPipe taking care not to scratch the inside of the SunPipe.

Pivot lamp holder through 45° and remove the locking nut.

From the inside of the SunPipe pass the wires and threaded end of the holder through the hole previously drilled in the SunPipe.

Place the shake-proof washer over the threaded end of the lamp holder, thread the nut onto the lamp holder and finger tighten.

Angle lamp holder to point down towards the diffuser as shown and tighten locking nut. Push fit the lamp into the holder.

**! WIRING TO THE MAINS MUST BE CARRIED OUT BY A QUALIFIED ELECTRICIAN**

Using the connecting block connect the two wires from the lamp holder and the two wires from the transformer (not the mains brown and blue wires). The transformer can now be screwed to a rafter, if required.

Push the ceiling diffuser into the fixing ring. Twist the little turn buttons, which securely hold the diffuser in place. You can then clip the diffuser trim into place, making sure the lugs on the inside of the trim do not align with any of the screw cut-outs on the fixing ring.

## 6.0 Black out diffuser fitting instructions

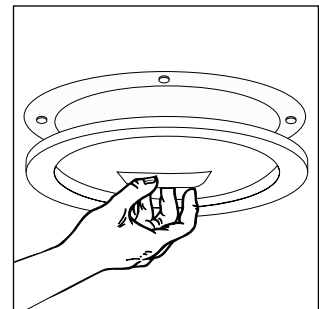
Install the SunPipe as set out in these instructions, but do not install the diffuser trim. If the diffuser trim is already fitted, gently prise off the trim.

Clip the new white black-out diffuser trim into place, making sure the lugs on the inside of the trim and the pre-drilled holes for the magnets do not align with any of the screw cut-outs or button tab positions on the fixing ring.

Fix the four magnets to the face of the ceiling trim using the 3mm x 30mm screws supplied. Place the screw through the magnet ensuring it sits flush in the countersink. Using the supplied PH1 screwdriver bit, screw through the pre-drilled holes on the face of the ceiling trim and through into the ceiling and plywood backing plate.

To use the black out diffuser, grasp the handle and offer the black out lid to the white diffuser trim and rotate until the lid 'pops' into place. Due to the strength of the magnets you will be able to feel when the magnets are aligned.

To remove, simply grasp the handle on the black out lid and pull away from the ceiling.



## 7.0 Motorised Light Shut-off Damper

We produce a motorised light shut-off damper but this is normally used for commercial applications.

Installation is relatively simple, following the same sequence as installing SunPipes generally, but due consideration should be given to the weight of the motorised shut-off damper and providing a suitable support method, to ensure that the unit is properly supported from the roof structure and does not rest on the ceiling.



**! WIRING TO THE MAINS MUST BE CARRIED OUT BY A QUALIFIED ELECTRICIAN**

It is normal practice for a motorised light shut-off damper to be operated by a simple wall switch.

# MONOVENT INSTRUCTIONS

## 8.0 Installation instructions for a MONOVENT SUNCATCHER

There are two types of Monovent SunCatcher, the ABS 350 and ABS 550 system.

### 8.1 Flat roof

As detailed in Fig 1, follow the procedure as set out in Section 1.1 of this installation booklet.

An opening needs to be formed through the flat roof of either 320mm dia (for the ABS 350) or 520mm dia (for the ABS 550).

Both systems are designed to be installed without the necessity of cutting any structural timbers but as set out in Section 2.1, it may be necessary to trim just one flat roof joist.

Install the ABS or galvanised standard flat roof flashing plate according to the roof type and once correctly positioned, weather in the flashing plate, as set out in Section 1.3 of these instructions.

A separate ABS fixing ring is supplied and should be secured in position by pop rivets or screws to the top of the flashing plate.

Thereafter, the ABS unit should be lowered into position and slide over the ABS fixing ring, so that the fixing ring is flush with the underside of the outer skirt. Ensure this is level and then fix the outer skirt to the ABS fixing ring using screws or pop rivets.

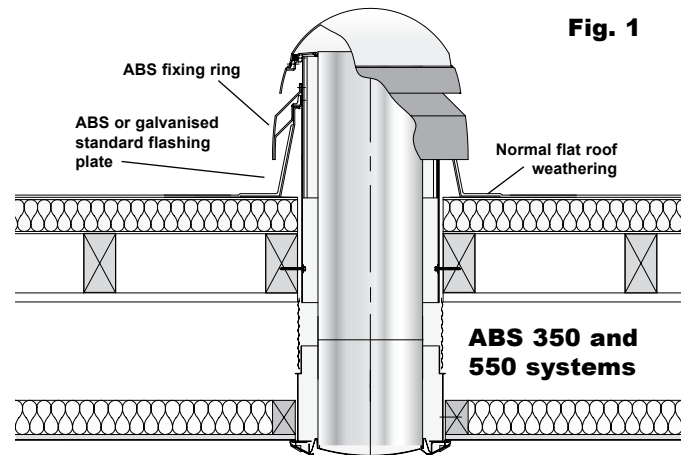


Fig. 1

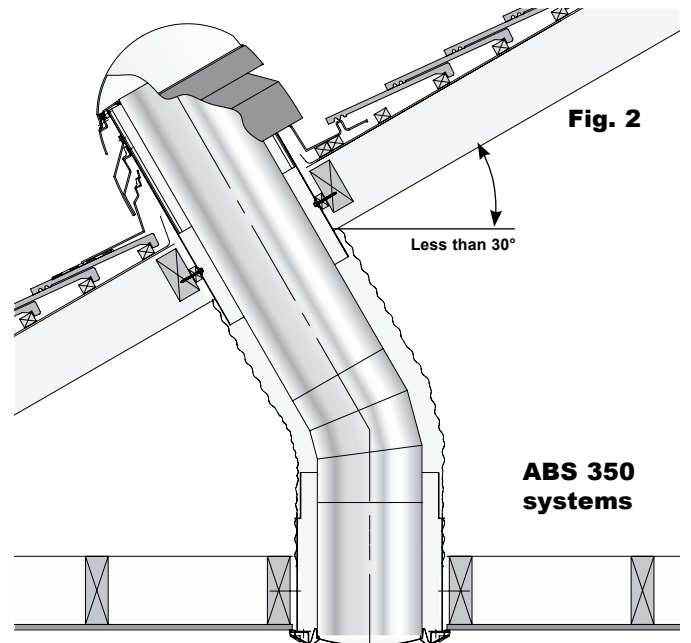


Fig. 2

### 8.2 Pitched roof

For ABS 350 systems fitting to a roof of less than 30°, follow the procedure as set out in Section 2 of this installation booklet and particularly Sections 2.9 to 2.11 on Page 8.

For ABS 350 systems over 30° pitches and all ABS 550 systems, the systems must be installed vertically as shown in Fig 3.

For Bold Roll roofs a pre-formed lead flashing is utilised. At the rear and sides of the flashing it may be necessary to dress the lead to the roof profile. An extended ABS skirt is provided.

#### INTERNAL FIXING ARRANGEMENT

A galvanised builders band (not supplied) should be fitted to the lower section of the trunk and attached firmly to the joists bridging any gaps, as shown below.

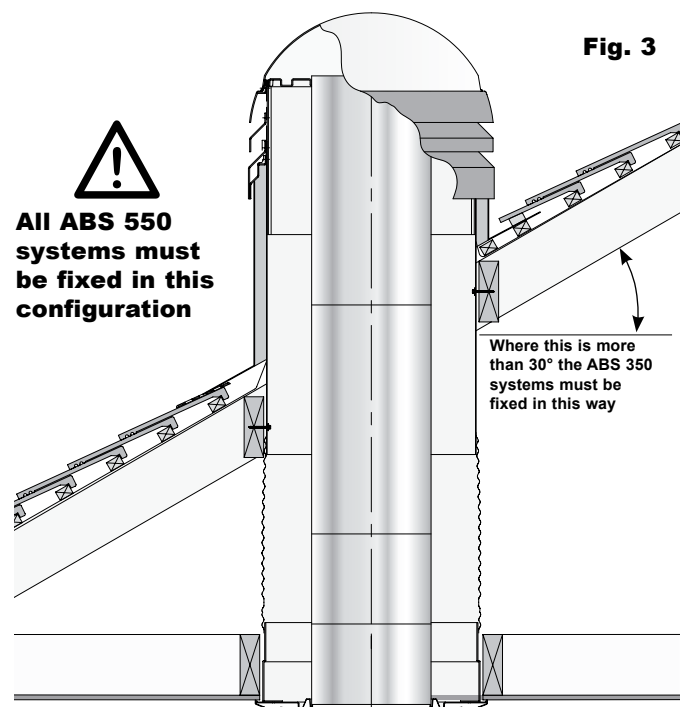


Fig. 3

### 8.3 Assembling the SunPipe and top dome

Install the SunPipe components following the procedure as set out in Section 1.5 to 1.10. Please note the nylon sealing gasket is pre-assembled to the Monovent Suncatcher system.

Make up the remaining SunPipe components. Establish the ceiling opening location but do not secure into position at this stage.

Make up the remaining SunPipe components ensuring that the SunPipe terminates 5mm above the internal ABS body and seal the joint with silicone sealant provided. Establish the ceiling opening location but do not secure into position the SunPipe components at this stage.

Once all the SunPipe components (excluding the Bell end length) are fitted, secure the bottom section of flexible ducting to the ceiling unit using the clamp band supplied.

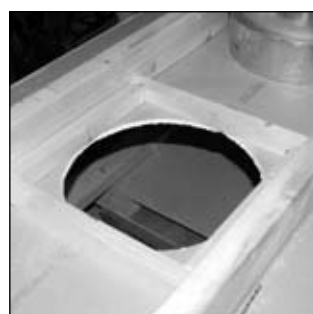
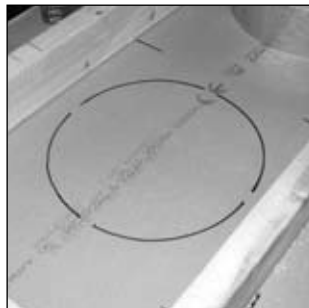
Pull the flexible ducting tight to ensure the smooth passage of air.



### 8.4 Installing galvanised ceiling transition

Mark the required position of the ceiling opening from above using the Galvanised Transition as a template.

Drill and provide a pilot hole to the centre of the opening.



Additional trimmers may be required to secure the Galvanised Transition in place.

Cut the ceiling opening using a pad saw.



Push the Galvanised Transition through the ceiling opening until it is approximately 5mm below ceiling level. Fix the Galvanised Transition in place using the screws supplied fixing into the side trimmers.

### 8.6 Installing the prismatic diffuser and ceiling bezel

Pass the bell end length through the Monovent ceiling bezel and push the bell end length into the inside of the SunPipe, all as set out in Section 1.10 of these instructions. Ensure that the diffuser terminates approximately 15mm below ceiling level and then tape the bell end length into position, inside the SunPipe on a temporary basis.



Align the clear polycarbonate air vent diffuser into position and drill through the fixing lugs into the ceiling and fix into position using the screws supplied. Be careful not to overtighten the diffuser to the plasterboard ceiling, as this may prevent the white diffuser bezel clipping on to the air vent diffuser.



Finally clip the white diffuser bezel into place making sure to align the lug with the cutout on the diffuser.



### 8.5 Installing SunPipe components and flexible ventilation ducting

Measure the required flexible ducting length and cut to length using scissors and wire cutters. Secure the top section of flexible duct to the galvanised body using the clamp band supplied. Tie up the end of the flexible ducting to allow the fitting of the remaining SunPipe components.

Install the SunPipe components (excluding the Bell end length) down to ceiling level and secure into position as per Sections 8.3 and 8.4 (i.e. as earlier Sections 1.5 to 1.10)

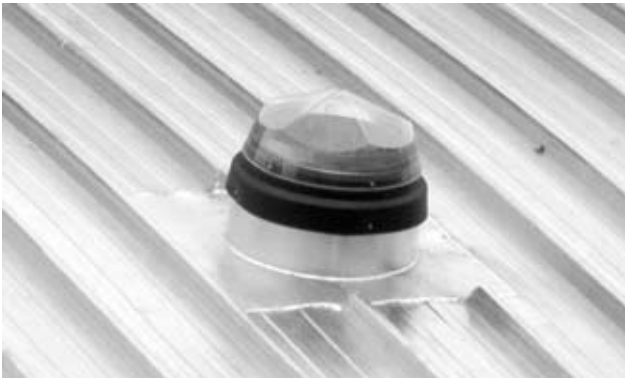
### 8.7 Suspended ceilings

For installations into a Suspended ceiling, a 12mm plywood template will be required. Cut the plywood to the same size as the ceiling tile. Mark the position of the opening centrally to the ceiling tile and fix battens to the plywood template to secure the Galvanised Transition. Finally glue/contact adhesive the ceiling tile to the plywood template and the cut the hole of both the plywood and the ceiling tile. Thereafter proceed as above.

## 9.0 SunPipe Commercial

Monodraught manufacture a number of commercial SunPipes, particularly the 750mm Diamond Dome system and the 1000mm and 1500mm diameter Hemispherical Domes, these are normally installed to a flat roof or metal standing seam roof.

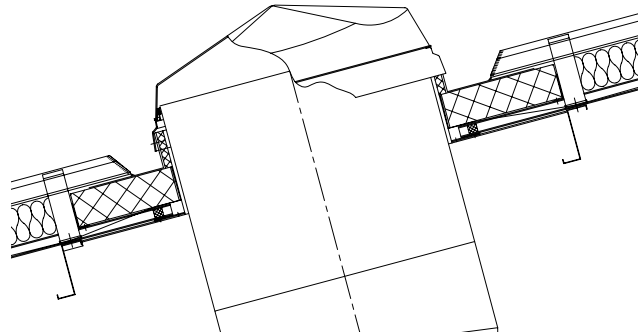
The installation procedure will be basically the same as the Installation Instructions on the smaller systems, with the exception that the SunPipe pipe sections are supplied as half pipes 750mm long and "flat packed" (but pre-rolled and pre-drilled) that need to be assembled together.



**Installation method to a standing seam metal profile roof (for all sizes)**



**The 750mm Diamond Dome**



Installation drawings are normally provided for such commercial applications by Monodraught.

A limited range of accessories are also available.

## Installation Notes

### Maintenance

The SunPipe is designed to be maintenance free and the shape of the dome and the flashing is designed to be self-cleaning. If for any reason, further cleaning is required, only warm, soapy water should be used to wash the external dome and flashing. Take great care not to scratch the dome when washing. Internal cleaning should not be required since all components are effectively 'sealed-for-life'.

SunPipe has a 10 year guarantee against any defects arising due to faulty materials.

### When the installation is complete

Please leave these installation instructions with the owner of the SunPipe. This will enable them to carry out the straightforward maintenance mentioned right.

Dispose of all packaging carefully and responsibly.

This product should not be discarded with household waste. Take to your local authority waste disposal centre

# Monodraught SunPipe

Halifax House, Cressex Business Park, High Wycombe, Bucks HP12 3SE  
Tel: 01494 897700 Fax: 01494 532465 www.sunpipe.co.uk email: info@sunpipe.co.uk