

Issue 1 - May 2010



System Installation GUIDELINES

IKO **spectraplan**
TPE

Spectra **ROOF**
SINGLE PLY ENGINEERING

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About the IKO Group

IKO is a family owned company that has been committed to manufacturing quality residential and commercial roofing products since 1951. Our company motto is "Setting the Standard" and that's what we do; set the standard for quality, durability and innovation.



The IKO Group is a global leader in the manufacture and supply of roofing and waterproofing products. Group headquarters are in Alberta, Canada, with production carried out at plants throughout North America and Europe.

In the UK, IKO PLC embraced some of the most respected and long-established brands in the marketplace, including Ruberoid Building Products, Permanite Engineered Roofing Systems, Permanite Asphalt, Marley Waterproofing, Hyload and SpectraROOF Single Ply Engineering.



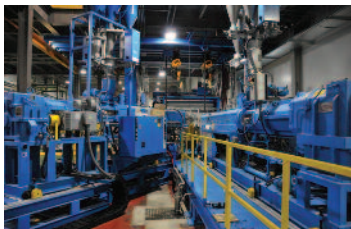
IKO PLC's product range includes:

- Polymeric Single Ply Systems
- Monolithic Hot Melt Roofing Systems
- Reinforced Bituminous Membrane Systems
- Mastic Asphalt Systems
- Green Roof Systems
- Insulation Materials and Roofing Accessories
- Pitched Roof Protection Systems
- High Performance DPC & Cavity Tray Systems
- Below Ground DPMs & Tanking Systems
- Waterproofing Solutions & Compounds

SpectraROOF UK Manufacture

SpectraROOF Single Ply Engineering is one of the fastest growing businesses within the IKO Group. It provides the latest generation of polymeric single ply membranes, including TPE, TPO and PVC systems and associated ancillaries.

Spectraplan membranes are manufactured in a purpose built, state-of-the-art manufacturing facility based in Chesterfield, UK. Substantial investment in the latest extrusion technology and computer controlled manufacture ensures consistently high quality membranes are produced while also saving on energy and wastage.



Key Benefits

- Dedicated UK-based manufacturing unit
- BS EN ISO 9001* accreditation
- BS EN ISO 14001* accreditation
- Extensive range of products
- Complete system offer
- Trained technical support staff
- Stringent product testing procedures.

As a global leader in the manufacture and supply of waterproofing, roofing and insulation materials, IKO is committed to minimising its environmental impact. IKO takes responsibility for the effects its business has on the planet. From planning and paperwork, to our manufacturing processes and materials, distribution and use, we consider the environmental impacts throughout the product lifecycle.

The SpectrarooF UK manufacturing plant is built using recycled building materials and is designed in accordance with BREEAM**, the world's leading and most widely used environmental assessment method for buildings.

It also re-uses by-products from manufacture, wraps products in minimal packaging and employs a streamlined transportation network.

All polymeric materials offered by SpectrarooF are resistant to weathering, chemical oxidation and UV radiation which ensures long term durability, a key factor in environmental sustainability.

* ISO9001 is the International Standards Organisation Standard for Quality Management Systems. ISO14001 is the International Standards Organisation Standard for Environmental Management Systems.

**Building Research Establishment Environmental Assessment Method.

Spectraplan TPE Membranes

Spectraplan TPE membranes have a unique formulation with both thermoplastic (TP) and elastomeric (E) properties. They are durable, environmentally friendly and offer flame-free application as membrane laps are homogeneously welded using hot air.



Spectraplan TPE is produced in a range of different membrane 'types' designed for specific applications:

- **Spectraplan SM120**

Polyester scrim reinforced membrane for mechanically fastened roofing systems. The membrane is mechanically fastened in the overlap using IKOfix Stress Plates and IKOfix Screws, the fixing passes through the insulation and vapour control layer (if present) into the deck. Overlaps are hot air welded. Spectraplan SM120 can also be used for ballasted systems, green roof systems or alternatively on adhered systems using Spectrabond TPE contact adhesive. Spectraplan SM120 is also used as the upstand detailing membrane on all Spectraplan systems.

- **Spectraplan SG120**

Polyester fleece backed membrane for bonded roofing systems. The membrane is bonded to the substrate using Spectrabond low foaming PU Adhesive. Side laps are hot air welded. End laps are butt jointed and waterproofed with a cover strip.

- **Spectraplan D**

Homogeneous roofing membrane for use on complex detailing.

- **Spectraplan Walkway**

Heavy duty TPE membrane with a grid pattern for use on walkways.

The Spectraplan range is provided in two standard colours; light grey (RAL 7035) and dark grey (RAL 7011).

Tools and Equipment

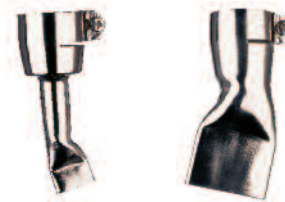
- **Hot Air Hand Welders** - Quality hot air hand welding tools are available from Leister (Triac PID) and Sievert (TH1750) These tools are lightweight and have a digital temperature display showing 'set' and 'actual' air temperatures up to maximum 600°C. The recommended welders have stepless electronic temperature control and are available in both 110v and 230v.



- **Automatic Hot Air Welders** - Suitable machines are available from both Leister (Varimat) or Sievert (TW5000), and weigh approximately 25kg. The digital temperature display shows 'set' and 'actual' air temperatures up to a maximum 660°C. Maximum welding speeds are between 5-7metres per minute. These machines have stepless electronic temperature and welding speed control. The independent suspension pressure roller ensures consistent distribution of pressure on uneven substrates.



- **Nozzles** - A 40mm wide nozzle should be used where stresses occur on the membrane laps e.g. in the field zone. The 20mm wide nozzle is used for welding laps located at intricate detailing e.g. internal corners, and are interchangeable with the hand welders outlined above.



- **Seam Pressure Roller** - 40mm wide silicone roller for providing pressure to welded laps.



- **Penny Pressure Roller** - 6mm brass roller for providing pressure to welded detailing.



- **General Tools** - Spectraplan TPE membranes are generally cut using scissors although a flat bladed knife can be advantageous at detailing. A wire brush is required to remove polymer deposits from welding nozzles. Wide paintbrushes or compatible application rollers are suitable for application of Spectrabond Contact Adhesive. A chalk line should be used to mark the membrane prior to cutting. Tape measures should be used to ensure consistency of lap widths. Welded seams should be checked using a suitable seam check tool.



Storage Guidelines

Once delivered to site the membrane should be protected against exposure from rain and site dirt.

When stored in clean & dry conditions the Spectraplan membrane needs no additional cleaning.



Cleaning Regime

- **For new or already clean TPE**
 - No action needed
- **For lightly soiled TPE**
 - Wipe off any debris / water
- **For heavily soiled TPE**
 - Wipe off any debris / water
 - Wash / scrub membrane with soapy water
 - Allow to dry



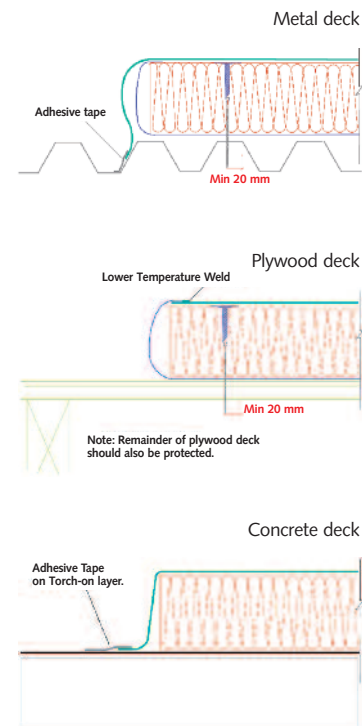
Day Joints

Day joints help to protect from water ingress under incomplete areas roof.

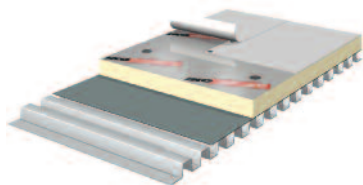
The day joints should be installed when work is either interrupted due to adverse weather or at the end of each working day.

IKO would always recommend good roofing practice and promote that only areas that can be completed that day should be laid and that detail work is completed as the roof progresses.

The diagrams opposite show typical methods of sealing day joints.



Mechanically Fastened Roofing System



Installation Guidelines - Spectraplan SM

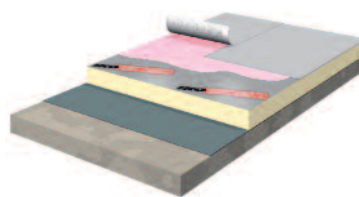
1. Carefully unroll the Spectraplan SM out over the previously prepared substrate. If installing on a profiled metal deck ensure that the membrane is perpendicular to the direction of the deck sheet.
2. Allow membrane to relax prior to installing fixings (5-10 mins depending on ambient temperature).
3. Install the IKOfix fasteners, using an appropriate installation tool 30mm from the rear edge. Fasteners must



be installed at the fixing centres specified by IKO for the specific project.

4. Unroll the next roll of Spectraplan SM ensuring the end laps are staggered and the side overlaps the previously installed sheet by 110mm.
5. Hot air weld the side laps with an automatic welder or hot air gun and allow to cool completely.
6. Mechanically check the integrity of the cooled weld by running a 4mm wide screwdriver (with rounded edges) along the seam applying pressure into the seam.
7. In corners and other areas where additional fastening is required install IKOfix fasteners through the roof sheet and cover with a 200mm wide strip of Spectraplan SM. Hot air weld both sides and ends.
8. At upstands and at all roof penetrations secure the Spectraplan SM membrane with a toothed bar.
9. Cover 10mm gap in the toothed bars with a 50mm x 50mm piece of Spectraplan SM and weld to the roof sheet.
10. Waterproof the toothed bar with the upstand flashing hot air welded to the roof sheet.

Adhered Roofing System

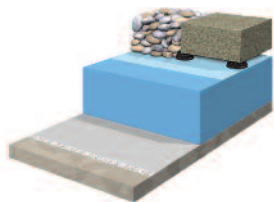


The PU adhesive must be given time to activate prior to applying the membrane. On activation i.e. the point at which the adhesive will afford the highest bond strength, the surface of the adhesive starts to change from pink to opaque.

Installation Guidelines - Spectraplan SG

1. Before use thoroughly stir the Spectrabond PU Adhesive. Replace the container lid when work is interrupted. If required warm the Spectrabond PU Adhesive in warm water.
2. Allow membrane to relax prior to installing fixings (5-10 mins depending on ambient temperature).
3. Unroll the Spectraplan SG over the prepared substrate and fold back approximately half its length.
4. Using a sheepskin or similar roller apply a primer coat of Spectrabond PU to the substrate surface, priming only the area of roof where the membrane will be laid.
5. Carefully roll the Spectraplan SG into the primed surface and roll with water filled roller or soft bristled broom.
6. Fold back other half of the roll of Spectraplan SG and repeat the procedure.
7. Unroll the next roll of Spectraplan SG, ensuring the end laps are staggered and the side overlaps the previously installed sheet by 50mm.
8. Repeat the adhering process.
9. Fully hot air weld the 50mm side lap and allow to cool completely.
10. Mechanically check the integrity of the cooled weld by running a 4mm wide screwdriver (with rounded edges) along the seam applying pressure into the seam.

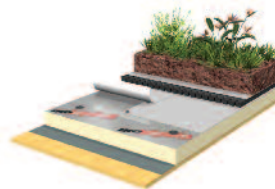
Inverted and Ballasted Roofing System



Installation guidelines using Spectraplan SM 120 / SM 150 (Inverted Roof Option)

1. Carefully unroll the Spectraplan levelling layer over the previously prepared deck. All end and side laps to be a minimum of 100mm.
2. Carefully unroll the Spectraplan SM out over the levelling layer.
3. Unroll the next roll of Spectraplan SM ensuring the end laps are staggered and the side overlaps the previously installed sheet by 80mm.
4. Hot air weld the side laps with an automatic welder or hot air gun and allow to cool completely.
5. Mechanically check the integrity of the cooled weld by running a 4mm wide screwdriver (with rounded edges) along the seam applying pressure into the seam.
6. At upstands and at all roof penetrations secure the Spectraplan SM membrane with a toothed bar.
7. Cover 10mm gap in the toothed bars with a 50 x 50mm piece of Spectraplan SM and weld to the roof sheet.
8. Waterproof the toothed bar with the upstand flashing hot air welded to the roof sheet
9. Thoroughly check the roof area for damage and weak welds paying close attention to all cross-joints and T seams.
10. Install the approved thermal insulation over the SM membrane ensuring that all insulation boards are laid with staggered joints and the boards are clear from debris.
11. Unroll the filter/separation layer over the completed roof area allowing 100mm overlap on all side and end laps.
12. If using round washed pebbles as ballast then the separation layer must be installed to a minimum height of 50mm up all upstands.
13. Install approved ballast.

Green Roofing System



Installation guidelines using Spectraplan SM 120 / SM 150 (Warm Roof Option)

1. The finished Spectraplan waterproofing system must be inspected and approved by IKO Technical personnel and independently, electronically tested before any roof garden finishes are applied. Green roofs should only be installed onto adhered or mechanically fixed single ply systems.
2. Install IKO Drainage and Edge Retention Trim at open roof edges and at intermediate positions on the roof as specified.
3. Unroll and loose lay IKO Plasfeed 5+1 directly over the finished waterproofing membrane. Rolls should be laid overlapping the geotextile layer on to the previously laid roll. IKO Filter Fleece should be laid at perimeter details and penetration upstands, where the selvage of the IKO Plasfeed 5+1 is insufficient to provide continuity of the filter layer with 100mm lap joints dressing 100mm on to the Plasfeed 5+1 geotextile.
4. Lay IKO Growing Substrate directly on to the surface of the Plasfeed 5+1, to the specified depth. Evenly broadcast slow release fertiliser across the growing medium prior to the installation of the sedum blankets (coverage approximately 100gms per m²).
5. Lay the IKOgreen Sedum Blanket directly on to the surface of the growing medium, with joints staggered and close butted. Any excess pieces of sedum blanket must be removed from the roof immediately. Any areas of soil loss to the blanket must be filled and planted with Sedum cuttings.
6. Install around all perimeter upstands, rooflights, vents, and outlets etc, a vegetation barrier of 20/40mm rounded washed stones approximately 300mm wide, to the depth of the growing medium and sedum blanket. Install vegetation barrier to cover the edges of the sedum by 100mm to protect against wind uplift.

System Accessories

A range of ancillaries is available to complement the Spectraplan TPE membranes:

Spectraclad Coated Metal

Spectraclad coated metal is a steel sheet pre-coated with homogeneous TPE membrane. The coated metal can be fabricated off-site to form perimeter details such as drip edges and upstands. The TPE membrane surfacing to the metal enables Spectraplan TPE Membranes to be heat welded to preformed edge details to ensure the perimeters are fully sealed and waterproofed.



Spectraclip

Spectraclip Lightning Conductor Clips are polyethylene clips which can be directly heat welded to Spectraplan TPE Membranes to enable lightning conductor systems to be secured to the roof area. The clips should not be installed over any joints in the membrane and should be fitted at maximum of 1.0m centres.



Spectrabond Low Foaming PU Adhesive

Spectrabond PU Adhesive is a ready to use, high performance, single component, moisture curing polyurethane adhesive for bonding fleece backed polymeric single ply membranes to rigid insulation and other suitable substrates. The adhesive is cold applied and has been specially developed to allow safe and rapid bonding of suitable membranes.



Spectrabond TPE Contact Adhesive

Spectrabond TPE Contact Adhesive is a ready to use synthetic rubber based, contact adhesive for adhering TPE roofing membranes onto various substrates. It is easy to apply using brush or roller and is specifically used to adhere Spectraplan TPE membranes to various substrates at upstands and details.



3 Spectraplan System Overview



IKOfix Telescopic Fixing Plates and Fixing Screws

Polypropylene telescopic fixing tubes for fixing membranes and insulation in warm roof build-ups, used in conjunction with the appropriate fixing screws. Using fixing tubes reduces thermal bridging and can offer cost savings when fixing through large insulation thicknesses. The telescopic effect means they can also protect the fixing from damage caused by foot trafficking.



Pressure Plates

Metal pressure plates suitable for membrane and insulation applications. Flat plates are used for rigid / flat surfaces and those with a deeper recess are suitable for compressible substrates.



Termination Bars & Clamping Strips

Metal clamping and termination bars for mechanical fixing of Spectraplan membranes at perimeters.



Spectraplan Standing Seam Profile

Spectraplan Standing Seam Profile is a preformed profile used to simulate a metal standing seam joint. The profile is manufactured from homogeneous TPE and is heat welded.



Vapour Control Layers (VCLs)

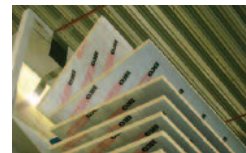
A range of bituminous VCLs are available to complement Spectraplan systems. These include metal lined membranes with an impervious aluminium core, and a number of other high performance polyester-based options suitable for either torch-on, pour and roll or self-adhesive application.

Spectravap - Polyethylene Vapour Control Layer (VCL)

Spectravap is a 0.3mm thick polyethylene VCL, suitable for use on most Spectraplan mechanically fastened systems. It is loose laid over the surface with side and end laps overlapped by a minimum of 80mm and sealed with a suitable jointing tape.

PIR Thermal Insulation

Enertherm PIR high performance insulation boards are totally CFC/HCFC free, and are made from rigid polyisocyanurate foam. They are available with a choice of facings - perforated (mineral-coated) glass tissue, or tri-ply gas-tight aluminium.



Bond and Seal Activating Cleaner

Bond and Seal Activating Cleaner is a activating solution for use in the preparation of non porous substrates prior to using Bond and Seal Mastic.

Bond and Seal Mastic

Bond and Seal Mastic is an elastic and versatile PU sealant, designed to be used with Spectraplan TPE membranes. Bond and Seal Mastic is fully compatible with Spectraplan TPE membranes and should always be used in conjunction with Bond and Seal Activating Cleaner.



Spectratex Separation Layers

Spectratex Separation Layers are a range of polyester geotextile isolation and protection fleeces. They are used to protect the Spectraplan waterproofing membrane on ballasted roofs and as a separation layer over contaminated or uneven decks.

Hand Welding



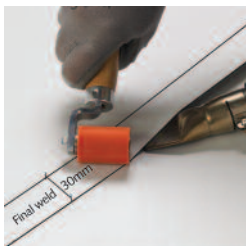
1. When hot air welding Spectraplan the overlap should be clean and dry. The following minimum system overlaps are required.
Adhered - 60mm, Loose laid - 80mm
Mechanically fixed - 120mm.

TACK WELD *The tack weld prevents movement of the overlap.*



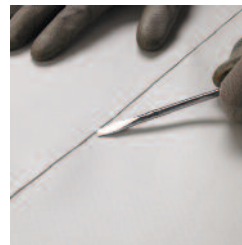
2. Position the welding nozzle at the rear of the overlap allowing for a 30mm lap to remain once welded (see illustration).

PRE-WELD *The pre-weld acts as a continuous air trap, ensuring minimal heat loss during the final weld stage.*



3. Always roll the pressure roller fully across the seam. A distance of 20mm should be kept between the roller and nozzle.

FINAL WELD *The final weld ensures that the overlap is watertight.*



4. The seams are to be checked once they have completely cooled. Seams are checked using an approx 5mm wide probe with rounded edges.

SEAM CHECK *A seam check is not a leak test but will help to identify weak welds.*

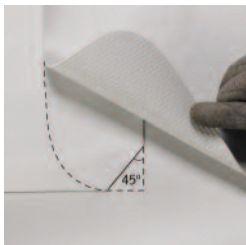
GENERAL INFORMATION ON WELDING SPECTRAPLAN MEMBRANES

Spectraplan SM and SG can be welded at temperatures ranging from 200°C to 600°C.

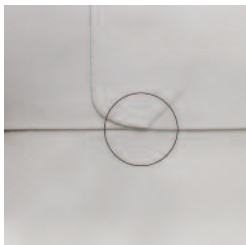
The appropriate temperature should be selected depending on individual speed preferences and ambient conditions.

Spectraplan D should be welded at temperatures between 200°C and 400°C, allowing for greater control when dealing with intricate or difficult details.

Cross Joints



1. Mitre the lower layer of overlap seam as illustrated. Round off corner to top overlap layer. Fully weld subsequent layers of membrane to fieldsheet.



NOTE Care should be taken at point of potential capillary (see illustration).

Adhering Upstands



1. The Spectrabond Contact Adhesive is applied evenly with a brush or compatible application roller. Absorbent substrates may require 2 or more coats of adhesive.

NOTE If in doubt please contact IKO Technical Services Department on +44 (0)1257 256855.

The primed substrate must be allowed to dry fully before further coats or membrane are applied.

NB. Normal conditions require one coat.

Please refer to the Spectraplan Application Manual for advice on suitable substrates when using Spectrabond contact adhesive.

Insulation boards will require their joints taped.

All substrates must be completely dry before applying contact adhesive.

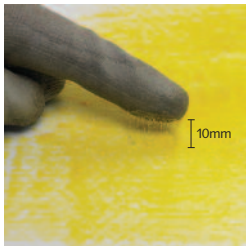


2. Spectrabond Contact Adhesive is now applied to the back of the Spectraplan membrane with a brush or compatible application roller.

Residual adhesive should be removed.

Care should be taken not to apply adhesive in areas of seam to be hot air welded.

Adhering Upstands (continued)



3. When the solvent has evaporated, position the Spectraplan membrane onto the primed substrate.

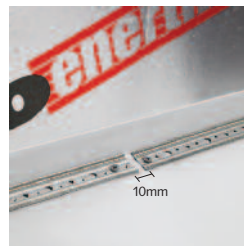
The evaporation time will depend on the weather conditions, amount of adhesive applied and type of substrate being adhered to.

An indication of when sufficient solvent has evaporated is by the finger test (see diagram). Adhesive strands should be approximately 10mm.



4. Once the membrane has been applied to the substrate the surface must be rolled to ensure all air pockets are removed and that intimate contact is achieved between the membrane and substrate.

Spectraplan System Construction



1. A 10mm clearance is needed between the bar ends due to expansion and contraction of the bar.

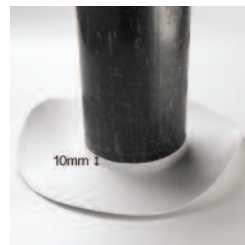


2. Cover the bar ends with a sacrificial piece of Spectraplan. This will help protect the membrane flashing from sharp edges.

Pipe Flashing



1. Cut a hole in the Spectraplan field membrane.
This needs to be slightly larger than the pipe diameter.



3. Once in position the base plate apron will create a 10mm upstand around the pipe.



- 2a. Cut a hole in the Spectraplan D base plate apron 10mm smaller than the pipe diameter.

NB. The outer diameter should be large enough to cover any additional fasteners.



4. Hot air weld the outer edge of the base plate apron to the field sheet.

TIP *Welding temperature for Spectraplan D should be approximately 220°C.*



- 2b. Pull the base plate apron over the top of the pipe.

TIP *Warming up the inner hole with a hot air gun will help this process.*



5. Cut out a pipe collar flashing to suit the pipe dimensions. A 20mm (min) vertical overlap and 15mm (min) horizontal overlap should be allowed for.

It is advised to prepare the horizontal overlap prior to installation (as illustrated).

Pre-bend the horizontal overlap using a silicone seam pressure roller.

Pipe Flashing (continued)



6. Once prepared, position the pipe collar flashing around the pipe and tack weld into position.



7. Hot air weld the vertical pipe collar seam.

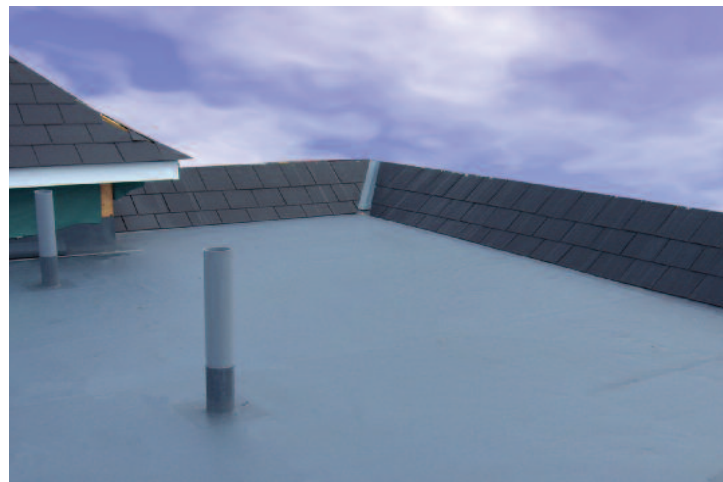


8. Hot air weld the horizontal seam to the apron base plate.

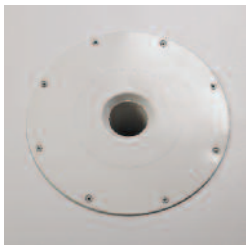


9. Completed detail

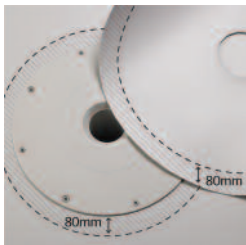
Once completed, the top of the pipe is to be clamped with a mechanical restraint and sealed using Spectraplan bond & seal mastic. Sealed surfaces should be primed prior to sealing with bond and seal activating cleaner.



Rainwater Outlets



1. Position the outlet on top of the Spectraplan membrane and mechanically fix through the membrane into the substrate using the appropriate fixings. On mechanically fastened systems additional fasteners and pressure plates may be required around the outlet.



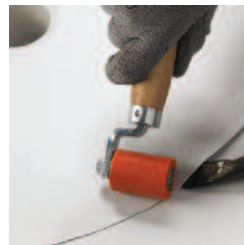
2. A membrane flashing is required to ensure the waterproof integrity between the fieldsheet and the outlet. The membrane must be sufficiently sized to allow for a pre weld and final weld onto the field sheet (80mm min overlap). The welded areas are illustrated.



3. Once cut, position the rainwater outlet flashing. Allow the inner diameter hole to be 5mm (minimum) larger than the outlet opening (as illustrated).

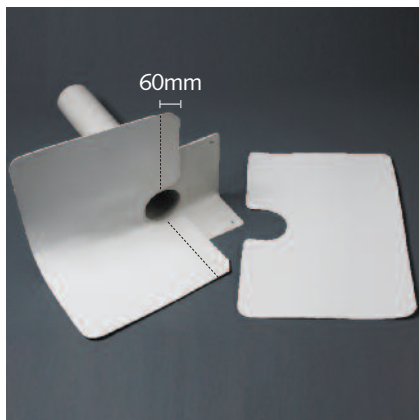


4. Hand weld the membrane flashing to the Spectraplan outlet.



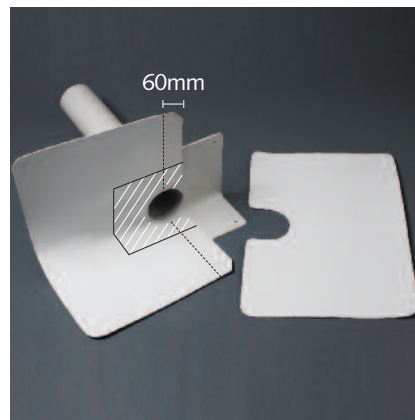
5. Hand weld the membrane flashing to the fieldsheet.

Parapet Outlets (Option A)



Two matching Spectraplan D pieces should be cut as illustrated. One piece should be welded to the outlet first. Then the second piece can be positioned and welded to the outlet. Once this operation is completed the outer edge can be welded to the fieldsheet and upstand flashing.

Parapet Outlets (Option B)



Weld the two Spectraplan D pieces to the outlet prior to installing it. Remember to leave the fixing points of the outlet free from weld and complete outer edge welding after the outlet has been installed. Once secured the Spectraplan cloak can be welded to the fieldsheet and upstand membrane.

Internal Corner (horizontal fold)



1. Adhere Spectraplan SM membrane into corner ensuring that the membrane is tight into all angles.

TIP 20mm nozzle advised.

TIP For corners that are not 90 degrees, allow for an oversized membrane flashing that can then be trimmed. Form internal fold as illustrated.



2. Form a 45 degree mitre and crease fold with a silicon roller.



3. Hot air weld the gusset

TIP Allow the gusset to completely cool before moving onto the next stage.

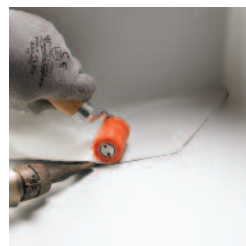
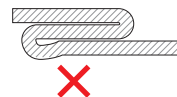
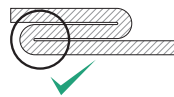


4. Weld lower flap to fieldsheet.



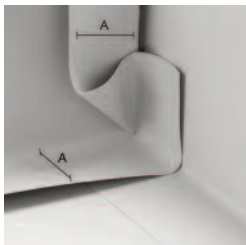
5. Hot air weld the remainder of the gusset.

TIP The critical weld is at the internal fold.



6. Complete the weld from the corner outwards.

Internal Corner (vertical fold)



1. Cut and adhere into position the Spectraplan SM membrane. Ensure that sufficient material is allowed for on the vertical corner return. (see illustration). If the corner is not square, allow for an oversized membrane flashing and trim back. Ensure membrane is tight into all angles.



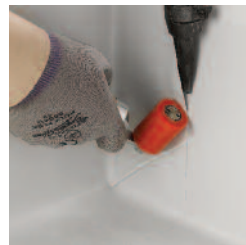
2. Form a 45 degree mitre and crease fold with a silicone roller. Hot air weld the gusset.

TIP Allow the gusset to completely cool before moving onto next stage.



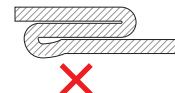
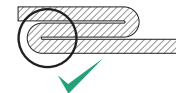
3. Hot air weld the Spectraplan SM membrane flashing overlap to the adjacent flashing and fieldsheet.

TIP Work away from the internal angle.



4. Hot air weld the remainder of the gusset.

TIP The critical weld is at the internal fold.



5. Completed corner.

External Corner



1. Make a cut in the Spectraplan SM membrane in line with the vertical corner.



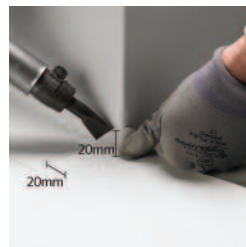
2. Warm up the Spectraplan SM membrane flashing along the vertical edge and dress the membrane around the corner, avoiding ripples.



3. Hot air weld the Spectraplan SM membrane flashing overlap to the field sheet.



4. Prepare a corner patch from Spectraplan D approx 20mm larger than the required dimensions. Round off the corner before tack welding into position.



5. Tack weld the rounded corner into position. Allow for a minimum of 20mm on the vertical surface.

NOTE Hot air weld Spectraplan D at approx 250°C.



6. Trim the corner patch in line with outer edge of the upstand flashing.

External Corner (continued)

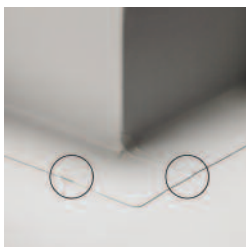


7. Hot air weld the top of the raised section of the corner patch to the upstand flashing. Now weld either side of the raised corner to the adjacent angle.

TIP Allow Spectraplan D to cool fully before proceeding to next stage.



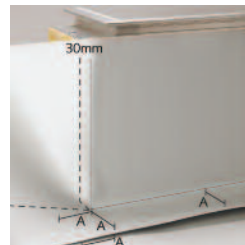
8. Hot air weld the remainder of the corner detail.



9. Completed detail.

TIP Care should be taken on the capillaries (see illustration)

Rooflights



1. Adhere Spectraplan D to the rooflight kerb using Spectraplan Contact Adhesive. Ensure that there is sufficient membrane overlap either side of the rooflight (see illustration). Cut out the corner as illustrated. Once trimmed allow for min 30mm extra membrane to return around rooflight corner.

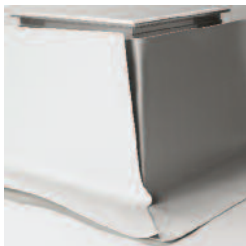


2. Warm up the Spectraplan D and adhere to the adjacent surface. Ensure that areas to be hot air welded are free from adhesive.



3. Ensure that there is sufficient membrane either side of the rooflight. Trim excess membrane and allow for a thumb sized tab of material in the base of the corner (as illustrated).

Rooflights (continued)



4. The corner is now ready for welding.

TIP *It is advised that all four corners are prepared as outlined previously prior to welding.*



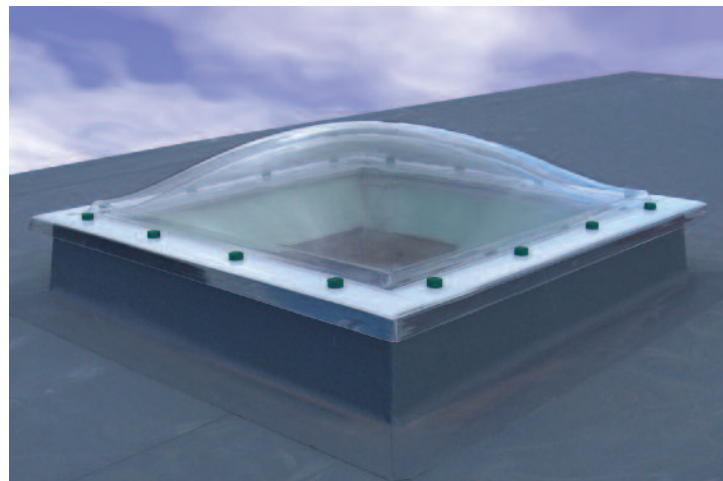
5. Pre-weld the vertical and horizontal seam starting from the internal angle each time. The protruding thumb tab should be welded first.



6. The final weld can now be completed. Start the vertical and horizontal weld from the thumb tab.



7. Completed detail.

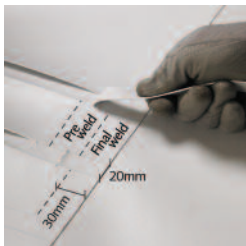


Peel Tests

1. Optimum welding quality can be ensured by

- Test weld prior to actual welding.
- Seam check during welding.
- Seam check after welding.

Before welding the membrane a peel test must be carried out to determine the optimum welding parameters for that day. Subsequent test welds should be carried out if outside temperature dramatically changes. Peel tests should be performed for each piece of hot air welding equipment used.



2. Peel test across the seam

The fully cooled welded seam must not separate within the final weld zone. 20mm wide strips are cut across the welded seam and care is to be taken to only cut the top layer.

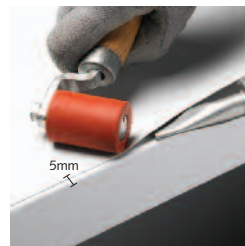
When machine welding the test weld must not separate within the whole width of the weld.



3. Peel test along the seam

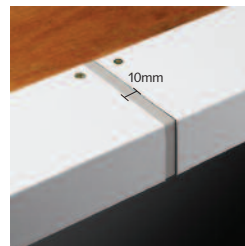
The fully cooled welded seam is tested by pulling the top layer of the seam. This will also establish if a continuous weld has been achieved in the final weld zone.

Roof Trims



1. Weld Spectraplan SM membrane directly to Spectraclad trim.

Ensure membrane is positioned a minimum of 5mm from the outer edge of the trim.



2. Insert butt strap between joint of Spectraclad trims.

Leave a 10mm expansion gap between trims as illustrated.

Trim Fixing Guide

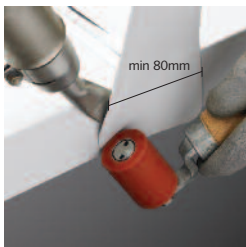
- General trims on adhered upstands
- fix at 250mm centres.
- Trims used as mechanical restraint
- fix at 150mm centres.
- Trim used as part of a mechanically fixed upstand - fix at 150mm centres.
- Fixings should be staggered on wide horizontal surfaces.

Roof Trims (continued)



3. Apply a 30mm strip of self adhesive aluminium tape over expansion gap.

This will help to provide a clean line on the pre-weld.



4. A Spectraplan D strip should be welded to the face of the trim.

NOTE Welding temperature for Spectraplan D should be approx 250°C.

Face Fixing Guide

- a. 50mm - 90mm deep trims - 0.6mm butt strap plate needed.
- b. 90mm - 120mm deep trims - face fixed at each end.
- c. 120mm - 150mm deep trims - face fixed at one metre spacings.

In the event that Face Fixing is not possible

- a. If a suitable face fixing cannot be achieved then face fixings can be substituted for additional 0.6mm galvanised butt straps.
 - b. 50mm - 90mm deep trims - each end and in the centre of the trim.
 - c. 90mm - 150 deep trims - at 500mm spacings including each end.
- Trims protected from wind damage by guttering may not need additional face fixing.
If in doubt please consult IKO Technical Services Department on +44 (0)1257 256855.

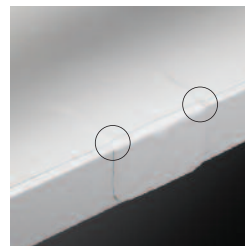
Roof Trims (continued)



5. Complete the remaining weld of the Spectraplan D strap.



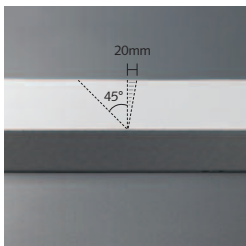
6. Complete butt strap detail.



7. Hot air weld the fieldsheet or upstand flashing directly to the trim.

NOTE Care should be taken to ensure a capillary is not created when passing over the butt strap.

Spectraclad Roof Trims Internal Corner



1. Mark mitre on Spectraclad metal and cut out excess to fit internal corner.

TIP: Ensure drip return is cut directly below fold point so that a straight corner can be formed.

To ensure accuracy, transfer cutting point with a right angled straight edge.



2. Internal corner once cut.



3. Fold Spectraclad roof trim to form corners and fix to substrate.



4. Cut and adhere Spectraplan SM membrane to substrate. Ensure membrane is free from adhesive in the section to be welded to Spectraclad trim. Once in position weld Spectraplan SM membrane to the trim and fieldsheet.

TIP: Before folding the membrane onto the horizontal surface of the parapet, heat up the Spectraplan membrane at the point of the fold with the hot air welder.

This will help to create a clean, neat edge.



5. Cut and position patch as illustrated using Spectraplan D membrane only.



6. Hot air weld down the Spectraplan D corner patch.

Spectraclad Roof Trims External Corner



1. Mark a line on Spectraclad metal and cut to fit external corner.

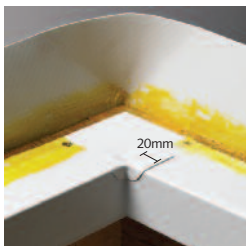
TIP: Ensure drip return is cut directly below fold point so that a straight corner can be formed.

To ensure accuracy, transfer cutting point with a right angled straight edge.



2. Fold the Spectraclad roof trim to form external corner and fix to substrate.

Cover the remainder of the corner by inserting a section of Spectraclad metal as illustrated.



3. Cut and adhere Spectraplan SM membrane to the substrate.

Ensure membrane is free from adhesive in section to be welded to Spectraclad trim. Cut Spectraplan D patch and weld into position as illustrated. To ensure coverage, cover cut edge of trim.



4. Weld one side of the Spectraplan SM membrane to the Spectraclad metal.

Create a 45 degree fold in the Spectraplan SM membrane. Hot air weld the pocket together and allow to fully cool before continuing.



5. Hot air weld the remaining side of Spectraplan SM membrane to the Spectraclad trim.

Ensure mitred pocket is fully welded.



Appley Lane North
Appley Bridge
Wigan, Lancashire, WN6 9AB

Sales Support

T: 0844 873 1063

F: 0844 873 1067

Email: sales@spectrarooft.co.uk

Technical Services

T: 0844 412 7207

F: 0844 412 7208

Email: technical@spectrarooft.co.uk

www.spectrarooft.co.uk



Company Registered in England No. 2678296 –

Registered Office: Appley Lane North, Appley Bridge, Wigan, Lancashire, WN6 9AB

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