



DURABILITY • PUNCTURE RESISTANCE • LONG-TERM PERFORMANCE

DuoPly EPDM flat roofing system installation manual.

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1. Introduction

This guide is not a replacement for DuoPly EPDM training necessary for any recognized installer of the system. For additional information please contact the manufacturer/distributor:

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2. Preparations

2.1. Tools

2.1.1. General tools

Tape Measure

Pencils/Chalk Line

Hook blade knife/Scissors

Brooms Soft & Stiff

Squeegee

2.1.2. Electrical tools

Drill/Driver

2.1.3. Hand tools

Claw Hammer

Hammer Tacker (stapler)

Mastic Gun

Tin Snips (pref. long nose)

2.1.4. Adhesive tools

225mm medium pile roller for Roof Deck Adhesive-WBA

Squeegee for Roof Deck Adhesive-PU

25-75mm brushes for DuoPly Primer & Contact Adhesive

Rubber Gloves

Steel Hand Roller

2.2. DuoPly Material Precautions

- Ensure storage area for DuoPly materials is cool, dry and well ventilated but never exposed to freezing conditions.
- When storing and using keep all materials away from all sources of heat, flame or sparks.
- Before and during use, whisk the DuoPly Primer and stir contact adhesive to agitate any sediment in the can.
- Suitably ventilate confined areas to ensure safe working conditions.

2.3. Weather Precautions

- Stop work below 5 °C unless suitable precautions are taken
- Use PU deck adhesive in place of deck adhesive (WBA) at temperatures less than 5 °C
- PS uncured flashing tape should be a minimum of 37 °C (body temperature) prior to use.
- Areas that are primed with DuoPly primer or adhered with contact and PU adhesive must be dry prior to application.

3. Substrate Considerations

To ensure a quality finished roofing system, some basic steps must be taken to give a smooth, even finished surface.

Conditions	Description
Smooth	Surface to be free of sharp edges, all fixings level with surface.
Ponding	Ponding does not affect the life span of the system. However it is good practice where possible to eliminate ponding by altering the substrate prior to laying the DuoPly material.
Dry	If the area to be bonded has been open to weather conditions, water, frost, ice, or snow must be cleared from the relevant surface and the area allowed to dry.
Clean	All areas (deck and upstand) to be adhered must be swept clean of dirt, stones and dust. Using adhesives on dusty surfaces will reduce the strength of the bond between the DuoPly and relevant surface.
Substrate	Less than 5mm are acceptable. Fill voids over 5mm with suitable material or over deck.

4. Installations

4.1. General Guidelines

Before commencement of work check you have all the relevant materials and tools.

- Position the sheets as close as possible to finished position allowing excess material for terminations.
- Check all measurements before cutting the sheet membrane.

4.2. Fully Adhered Membrane

Step 1	When deck preparation is complete or new decking has been installed fit 50mm x 25 mm treated batten to form an upstand if required on non-run off edges, when using plastisol edge system. Also install batten, level with decking, on front of fascia to create a drip edge to the gutter, if using PVC drip edge install back plate.
Step 2	Cut DuoPly EPDM to length allowing an overlap on all perimeters where needed. Ensure correct positioning and smooth out. When laying more than one sheet of material, mark the edges on the deck to give accurate glue lines. Fold or roll back the material to half its length.
Step 3	Using a medium pile roller apply the deck adhesive to achieve a smooth, even application. When applying, stop the deck adhesive 50mm from any upstand termination. Apply the adhesive all the way up to the gutter edge.
Step 4	When ready to lay the DuoPly membrane, walk the material down or roll the material, in to the glued surface.
Step 5	Starting from the glue point, push the air out from under the rubber using the squeegee. Do this from the middle to the end of the sheet not pushing the squeegee to the sides. Repeat the process for the remaining area.

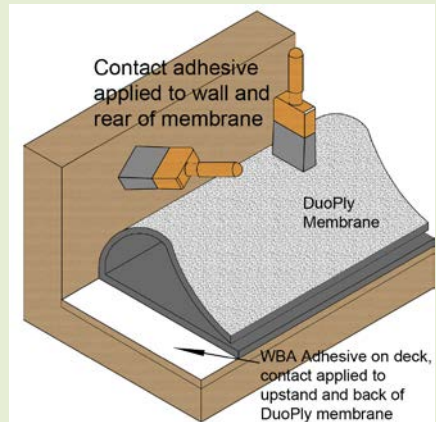
4.3. Contact Adhesive

DuoPly contact adhesive is used on all vertical surfaces on the roof area, e.g. wall upstands, batten and sky light edges. This adhesive will work on porous and non-porous surfaces, providing they are clean and dry.

Once the flat area has been adhered using deck adhesive, keep the 50mm area around the perimeter free from glue. Fold back the sheet material to expose the clean deck area, upstand and the fleece side of the DuoPly sheet.

Apply the contact adhesive to the 50mm of exposed decking and upstand, taking care not to mix with the deck adhesive. Also apply the contact adhesive to the underside of the DuoPly material.

Mate the two surfaces together leaving no voids between the DuoPly and the receiving surface.



4.4. DuoPly Primer

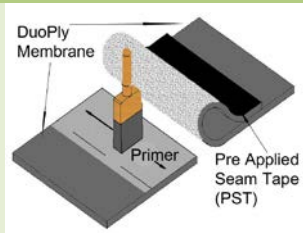
The DuoPly Primer must be used in conjunction with the pressure sensitive (PS) tapes. It should be applied to all areas where the PS tapes are applied.

- Ensure there are no naked flames near the primer.
- Whisk the DuoPly Primer before and during use to agitate any sediment in the container.
- To prolong the life of the primer, minimise its exposure to the air by decanting into smaller, air tight containers capable of holding a suitable amount for the desired working day.
- Only use in dry and clean conditions.
- Apply the DuoPly Primer with no pooling or drips.
- Only apply the tape to the primed area when the DuoPly Primer is touch dry.

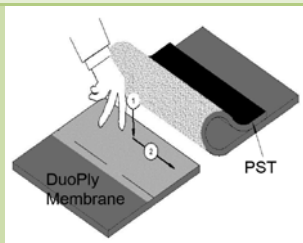
5. Pressure Sensitive Tapes

5.1. Membrane splicing Pre-applied Seam Tape (PST)

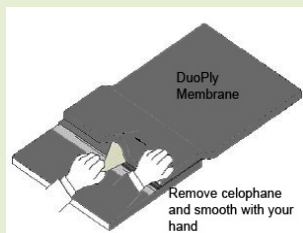
When the DuoPly membrane has been adhered into position and the upstands contacted, the splicing process is the next step.



Once the sheet material has been fully bonded to decking, mark the bottom sheet where the top lap will sit with minimum 75mm overlap & fold back the top edge. Apply the primer, evenly and without puddling, to the bottom overlap.

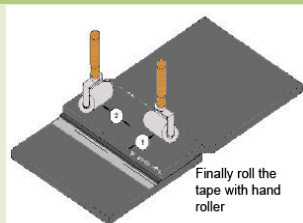


Test the primed area to ensure the DuoPly primer is completely dry.



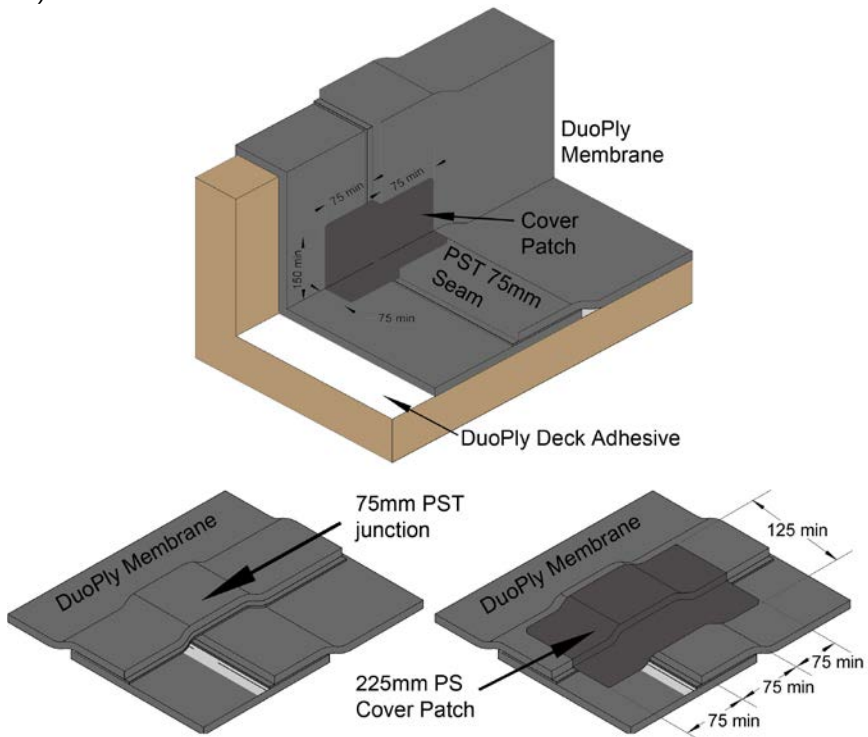
Before removing the cellophane backing from the tape, lay down the entire top lap edge, allowing it to sit in its natural position.

Remove the cellophane backing and smooth the tape into the primed area ensuring to remove any trapped air from the seam.



Once in place, using the steel hand roller, roll out the entire join. DuoPly primer must be visible along the entire length of the seam.

Where the 75mm tape goes through an angle change, cover this area with 225mm flashing tape. This must be a minimum of 75mm either side of the join, 75mm onto the deck and 150mm up the wall (where the upstand allows).

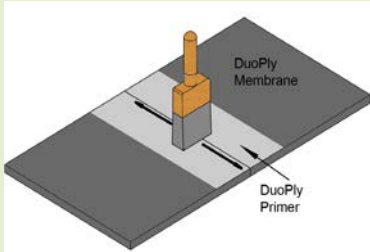


The 150mm tape is a semi-cured EPDM tape. It is not designed for use as a cover piece for the 75mm tape on angle changes, nor is it designed to be moulded around or onto objects on the roof. For these, use 225mm PS uncured flashing.

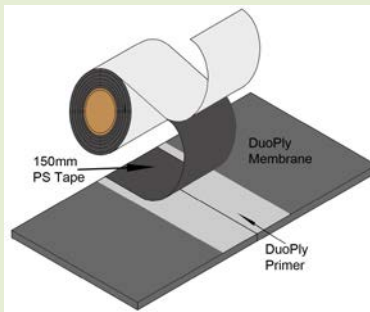
5.2. 150mm (6") Cover Strip

- This splice is for use at end laps (along the width of the sheet), for example, where there is no Pre-applied Seam Tape (PST)
- Install sheets so there is no gap between them to ensure the tape sits smoothly.

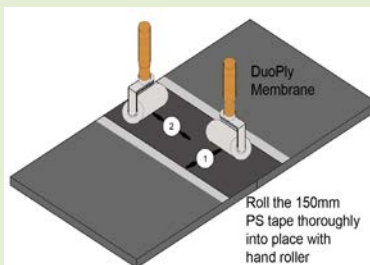
- Where ever the 150mm tape goes through an angle, for example, an upstand or a wall, use 225mm flashing tape to cover the angle change. This is done in the same way as the angle change for 75mm secure tape.



Mark on the roof where the tape is going to lay, ensuring it will be centred over the joining pieces. Next apply DuoPly primer along the join.



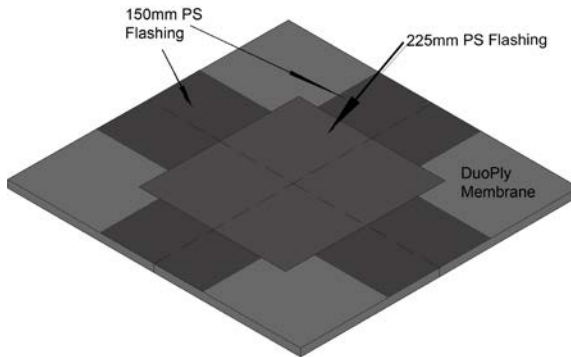
When the DuoPly Primer is dry, position the 150mm tape to the marks, with the cellophane side facing down. Peel off about 0.5 m of cellophane at a time and smooth out with a flat hand, forcing all the air out in the process.



Using the steel hand roller, roll out the entire join.

If the tape becomes misaligned or the roll comes to its end, cut the tape and start a new piece with an overlap of 75mm and start the process again. Where this is done a cover piece of 225mm flashing must be fitted over the overlap.

Where the 150mm tape is used and it meets or runs over a 75mm or another 150mm join or vice versa (looks like a T is formed by the joins), this must be covered by a 225mm flashing tape with the flashing edges 75mm from the tape joining point (see page 9 & 11).



The 150mm tape is a semi-cured EPDM. It is not designed for use as a cover piece for the 75mm tape on angle changes, nor is it designed to be moulded around or onto objects on the roof. For these use 225mm PS uncured flashing.

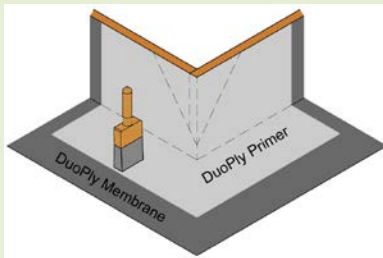
5.3. 225mm (9") PS Uncured Flashing

This tape is used for any detail work necessary on the roof. It has the ability to mould to nearly any shape and will also adhere to most surfaces, as long as the surface is clean and dry and correctly primed with the DuoPly Primer.

Tips

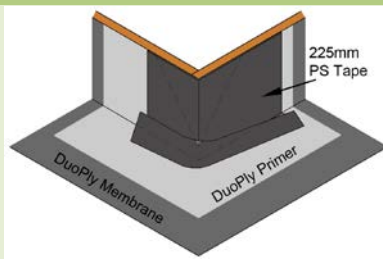
- Firstly thoroughly mix the DuoPly Primer before and during use to achieve a constant liquid.
- Using a lint-free cloth or clean brush to apply the HP250 primer, carefully open the can, trying not to damage the seal.
- Apply the HP250 primer in a circular motion, evenly and without puddling. Once applied, immediately replace the lid on the primer container. Let the primed area become completely dry.
- When in position all flashings must be rolled out using a 2" steel hand roller once in position.
-

5.3.1. External corner

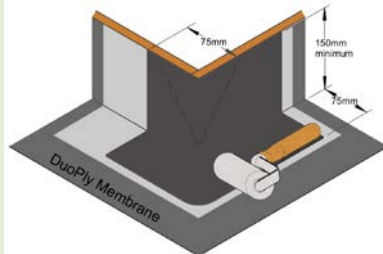


Cut the DuoPly membrane to fold round the corner with no tenting or creasing of the membrane.

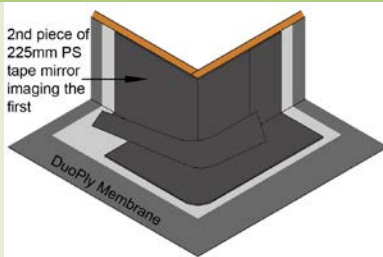
Next cut 225mm PS flashing to correct size to cover the area, mark round the flashing and apply the DuoPly Primer to the area to be flashed.



Once the primer is dry, remove the cellophane backing on both sides and start fitting from the top point. Work the tape down releasing any air in the process. Work the tape tight into the bottom angle change avoiding any bridging or bubbles, then fold the tape onto the deck area.

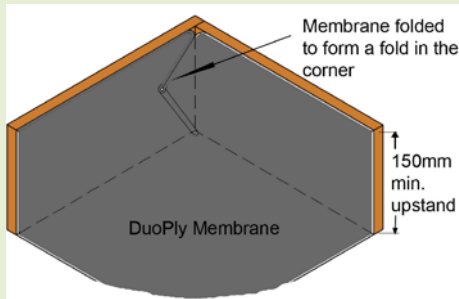


Roll out the adhered flashing with a steel hand roller to achieve full strength in the joint.

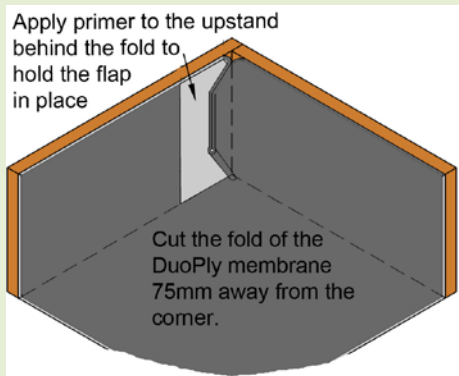


Repeat the process, overlapping the first flashing from the other direction using another piece of 225mm flashing shaped and applied using the same method. Roll the entire flashing to finish, ensuring the tape is pressed in fully to any steps to remove any openings.

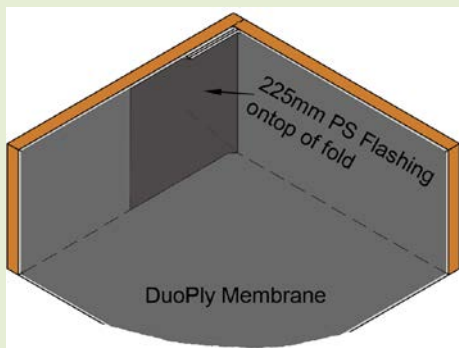
5.3.2. Internal corner



Once the DuoPly FleeceBack is bonded to the upstand, form a pigs ear and trim to desired height. Ensure that the cut height of the flap is a minimum of 75mm above the deck height.



Prime the wall side and facing side of the pigs ear to prepare for holding back of flap and application of 225mm tape.



Cut 225mm PS tape to size for finishing flashing detail. Cover over the pigs ear with the PS tape to finish and roll out.

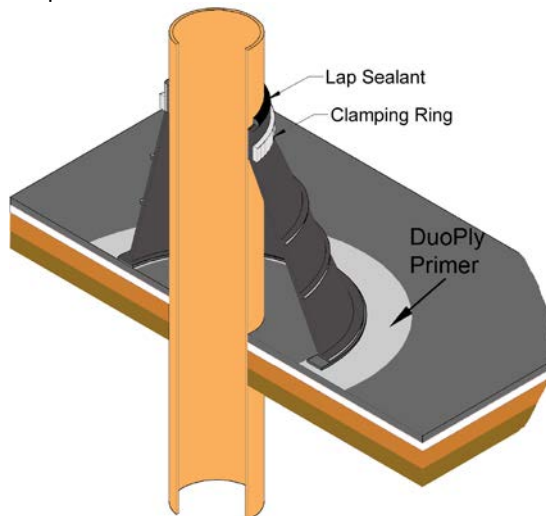
6. Pipe Boots

There are two methods for flashing pipes.

6.1. Pre-formed Pipe Boot

Pre-formed pipe boots can be used or, if this is not practical, a boot can be made on site using the 225mm PS uncured flashing tape. The pre-formed pipe boot shown below comes in two sizes, to fit pipe diameters of 25-175mm or 25-150mm.

- To fit the pipe boot, cut the boot above the rib line for the correct size and slide over the pipe.
- Mark around the base of the boot on to the DuoPly FleeceBack membrane, raise the boot and prime the marked area. Leave to dry, lower the boot, remove the cellophane film and adhere with hand pressure finishing with a steel hand roller. Securely fit the jubilee clip around the top of the boot.



6.2. 225mm (9") PS Uncured Tape for Pipe Flashing

Alternatively, pipes can be sealed by using three pieces of 225mm flashing tape moulded around the base of the protrusion.

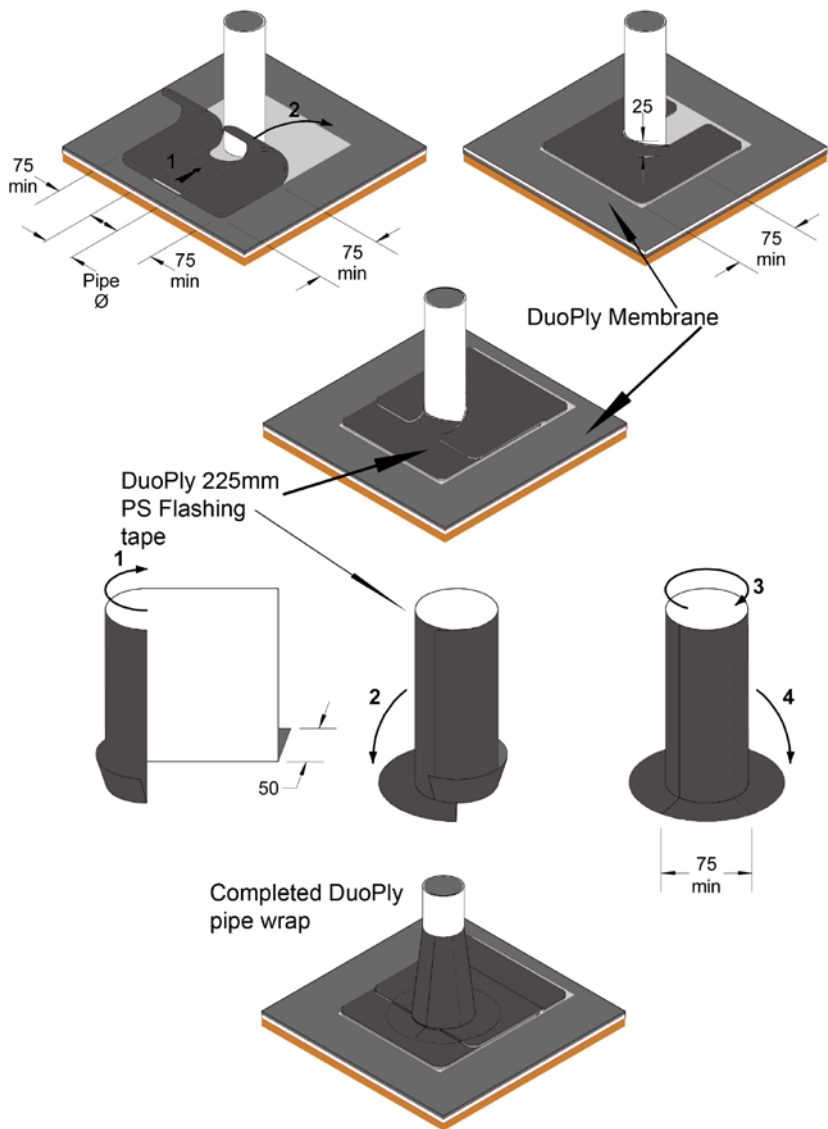
For this, use

Base pieces: Two identical size pieces at:

Width = 225mm Length = 75mm plus pipe diameter

Top piece: Width = 225mm Length = 75mm plus pipe circumference. (see following page)

Prime all areas to which 225mm tape is going to be adhered, including overlaps and the pipe.

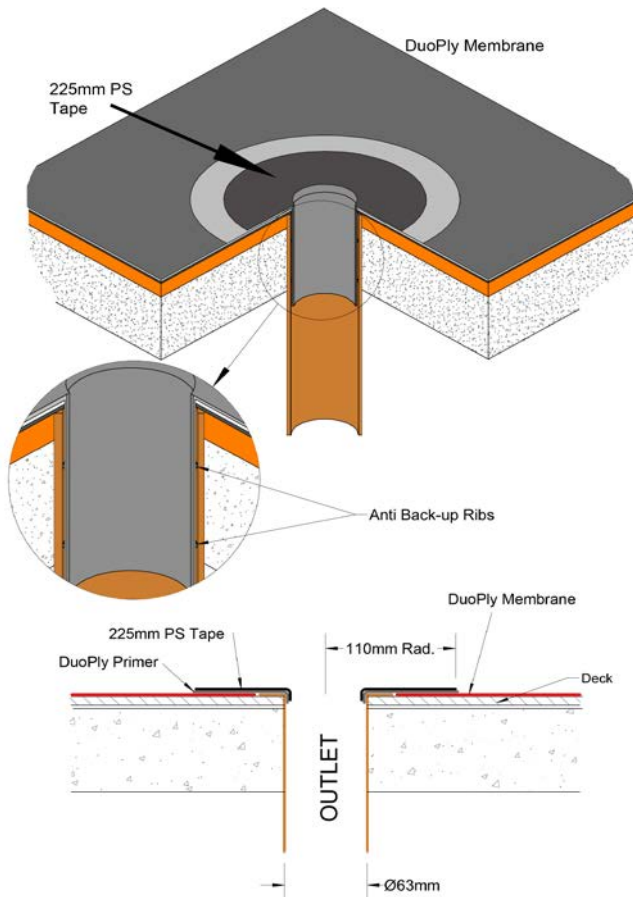


7. Internal Drain

There are two basic methods for sealing to an internal drain. Pre-made outlets of various types can be used for standard outlets or an on-site method may be used for non-standard outlets.

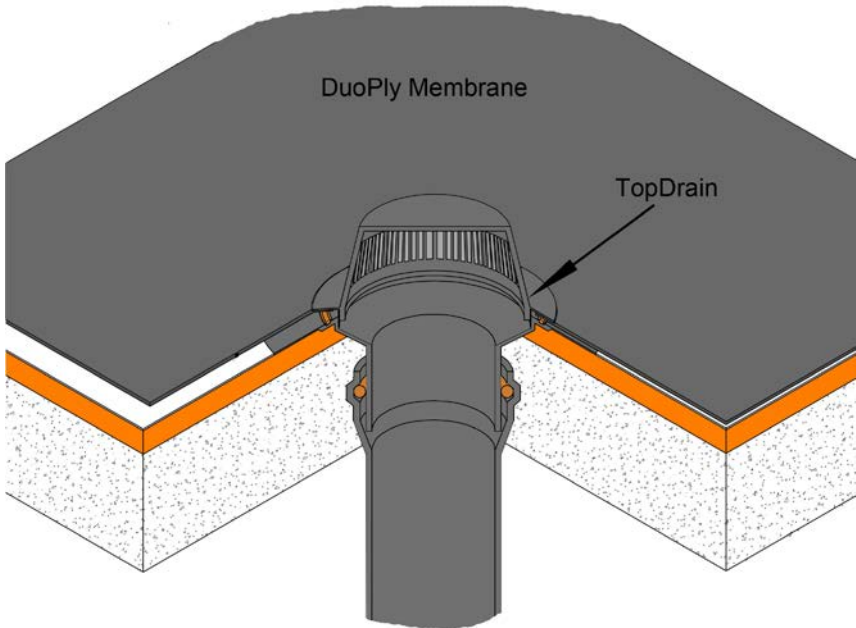
7.1. Anti backup drain for 68mm outlet

These are made to be inserted into the existing 68mm external diameter down pipe. The outlet is fitted with an anti backup seal to achieve a watertight joint. The outlet is attached to the membrane using 225mm PS uncured flashing tape. A leaf grate for this outlet is also available



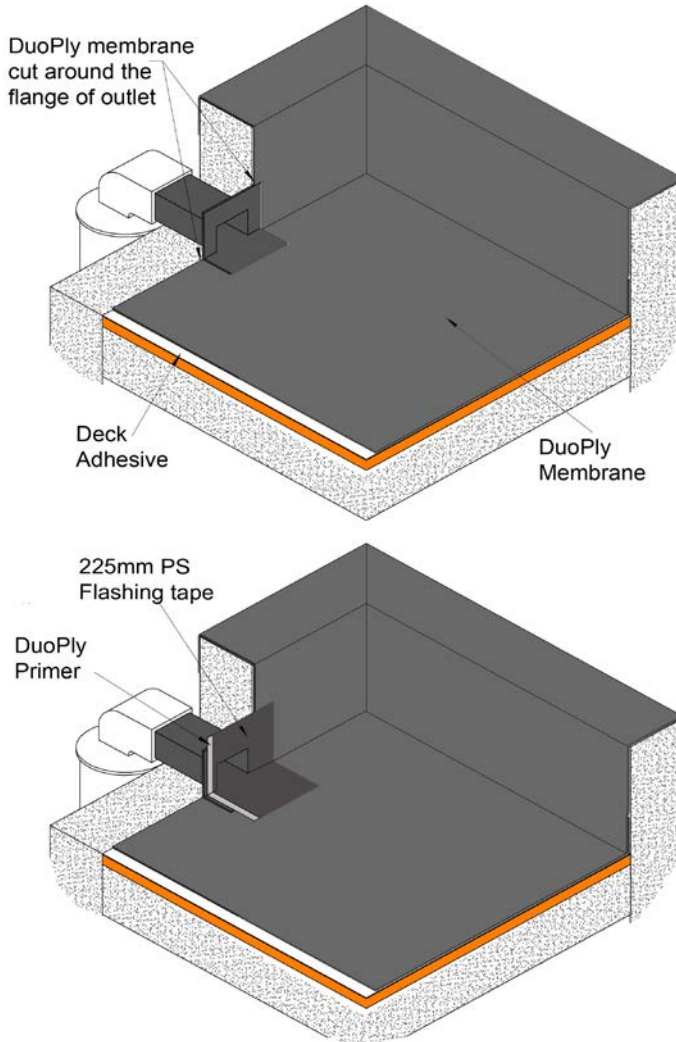
7.2. Top Drain

These are designed for 110mm down pipes to allow high water flow on larger roofs. They are fitted to the deck and sealed to the membrane by means of a clamping ring. The Top Drain includes clamping ring and leaf grate as standard.



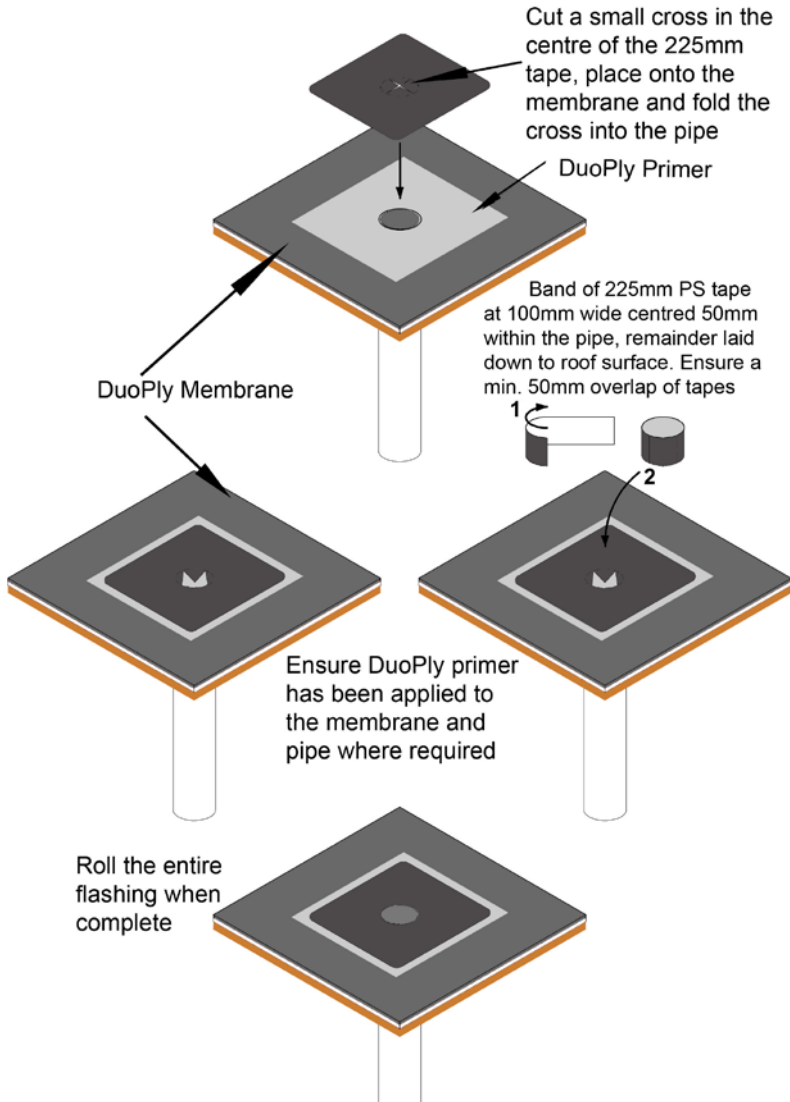
7.3. Angled Roof Drain

For roofs designed with horizontal drains to go through walls and pitched roofs, we have an outlet that is fitted to the deck and sealed to the membrane using 225mm PS Uncured flashing tape.



7.4. For non standard design

This method uses just the 225mm PS uncured flashing tape to seal the membrane to the outlet pipe.

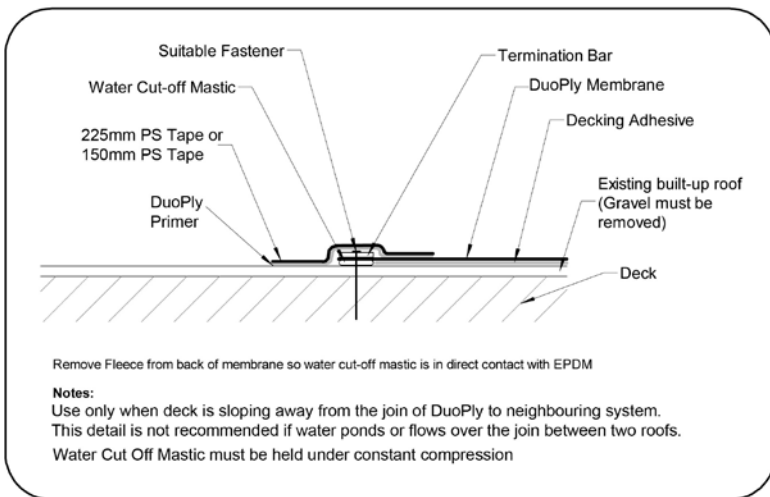
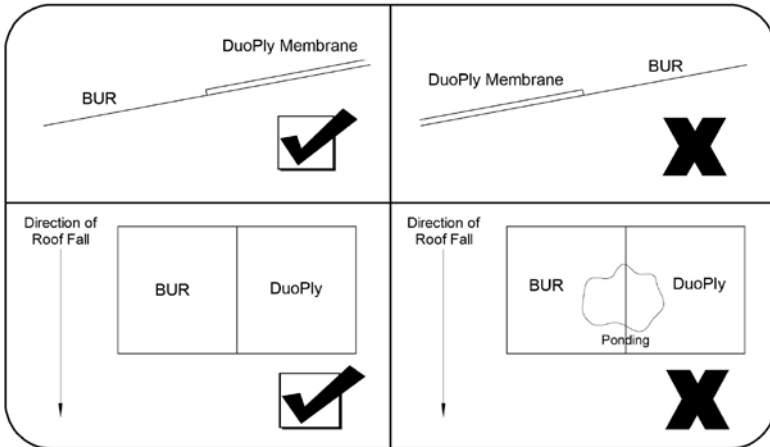


8. EPDM to BUR join

There are four alternate methods to be used when the new DuoPly roof joins directly onto a neighbouring flat roof. The diagram below shows simple guide lines to follow in the planning stage of the roof.

8.1. Cold tie-in

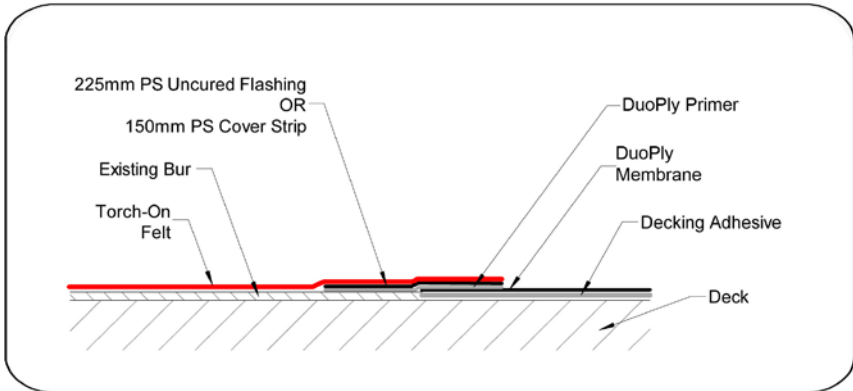
This uses a termination bar and water cut off mastic.



8.3. Hot tie-in option 1

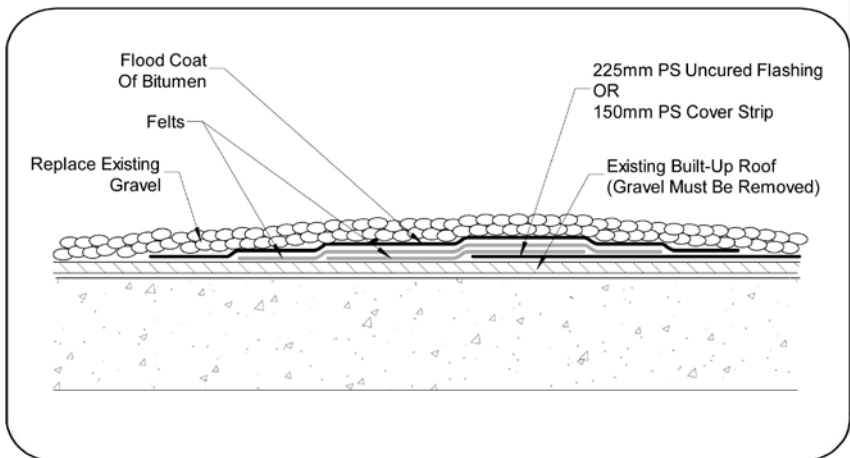
This uses torch on felt to tie in to PS flashing tape.

TORCH-ON FELT



8.4. Hot tie-in option 2

This uses built up felt and bitumen to tie in to PS flashing tape.



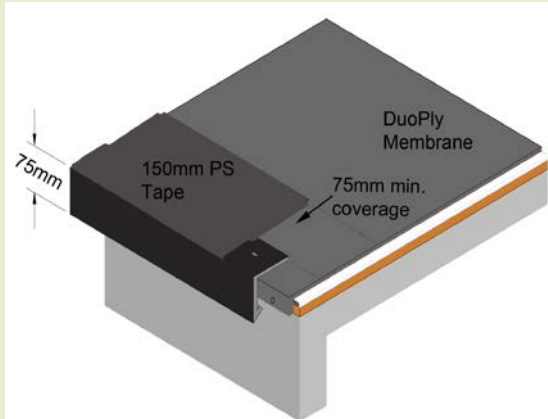
OPTION 1 - HOT TIE IN

9. Edge Terminations

9.1.3 Gutter Drip Edge

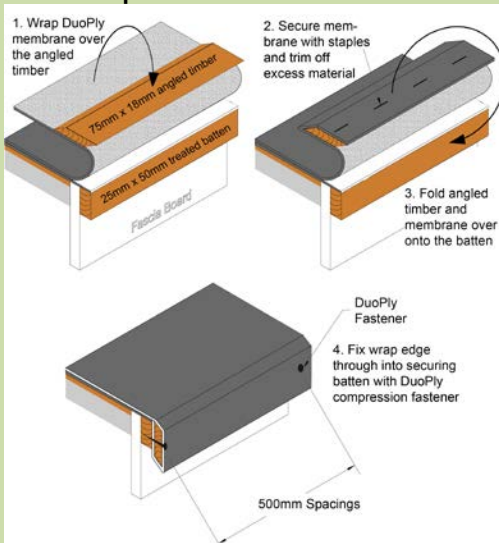
This can be done in three ways either by using a metal drip edge, Flex-Edge, or by using a wooden wrap edge.

Metal



Allow enough sheet material to hang over the edge by 50mm. Position the 75 mm edge trim onto the decking, sitting over the top of the rubber, and fix downwards into the decking. Then join the trim onto the ClassicBond sheet using the 150mm tape and EPDM primer.

Timber Wrap



The fillet used must be cut with a 45 degree angle top and bottom, to form a parallelogram. The height from top point to bottom point is a minimum of 75mm. Whatever the depth of wrap used, must also at least double the length of membrane overhang.

Flex-Edge Gutter Trim



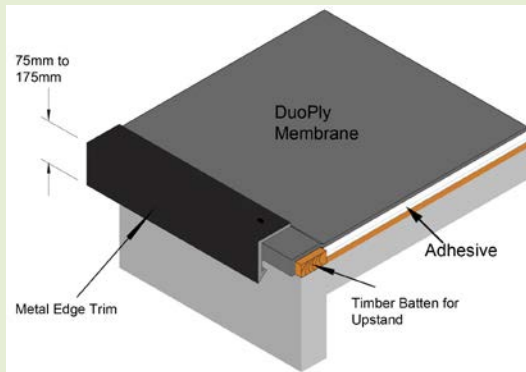
Fix the drip edge back plate level or just below the leading edge of the roof deck.

Fold the membrane down over the back plate.

Position the front plate on top so the profiles of both plates mate up and fix the front plate in place using the supplied fasteners.

9.2. Fascia Termination

Metal Edge Termination



Timber battens to be installed at the perimeter of the roof to act as a water check.

Fixings to be positioned at a maximum of 500mm apart.

The use of butt straps to join trims together is recommended.

Available as standard 75mm, 100mm, 125mm, 150mm and 175mm in depth.

Flex-Edge Fascia Trim



No perimeter batten required for this method, the trim forms its own compression seal around the perimeter.

Lay the membrane to allow a min. 50mm overhang down the edge of the roof.

Line the trim up with the edge of the roof and press the trims into place, the foam seal under the trim requires 30% compression to create a water tight seal.

Fix into place with the supplied fasteners and use trim joiner clips and corners where required.

9.3. Wall Trim Termination

Wall Chase Detail



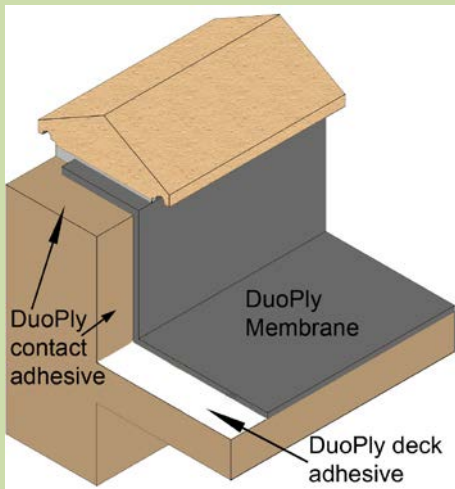
Cut a chase into the wall a minimum of 25mm and clean wall & chase of any dust or debris.

Insert wall trim into chase and where two trims join overlap by a minimum of 100mm.

Face fix using mechanical fixing, at a maximum of 500mm spacings.

Finish with DuoPly lap sealant, an appropriate grade mastic or mortar into the chase and along the top edge of the trim.

Coping Stone Detail



Lay DuoPly EPDM 2/3rds across the top of the parapet wall, using contact adhesive.

Lay the mortar bed from the rubber across to the outer brick wall to form a solid bed

Lay coping stones ensuring that they give suitable overhang past the wall on both sides.

ROOFING TERMS

BONDING ADHESIVE: Adhesive used to adhere the DuoPly Membrane to substrate, walls, and curbs. It should be thoroughly stirred before using.

WBA ADHESIVE: Adhesive for DuoPly Membrane to flat areas of timber, concrete, mineral felt, asphalt, and suitable insulation board.

PU DECK ADHESIVE: Deck Adhesive for non-absorbent decks and when working below 4°C.

CURED COVERSTRIP: 150mm (6") wide cured EPDM membrane with Butyl Tape laminated to one side. Used when stripping in metal drip edge, repairing cuts in the field membrane, or flashings.

UNCURED FLASHING: Uncured 225mm (9") EPDM membrane with Butyl Tape laminated to one side. Used whenever roof detailing has to be installed.

After Uncured Flashing is applied, it will cure in the position in which it was applied.

DUOPLY EPDM MEMBRANE: Cured field sheet membrane with a polyester fleece backing applied to roof decks, walls, and flashings.

FISH MOUTH: A wrinkle is formed when an increasing amount of membrane is forced onto an area too small to accommodate the material. When the wrinkle ends at the edge of the material, a conical opening is formed called a Fish Mouth. Wrinkles and Fish Mouths in seams are not acceptable. They must be removed and covered with a T-Joint patch.

FLASH OFF: Allowing the solvents in the contact adhesives or DuoPly primer to evaporate, leaving the material in a not wet or stringy condition, before mating the two surfaces together. If the proper Flash Off time is not allowed, blisters will form in the membrane. Blisters will not harm the membrane and over time, will usually disappear.

LAP SEALANT: Applied to exposed edges of field seams, uncured flashings and wall trims where required.

METAL DRIP EDGE: Used to create a finished appearance and prevent water from running down the surface of fascias and walls.

PIPE BOOT: Pre-molded EPDM boot. The best and most cost effective way to flash pipes. Supplied with stainless steel clamp used to secure the top of the Pipe Boot to the Pipe

SEAM TAPE: Butyl Tape used to splice two layers of membrane into a watertight seam. For DuoPly membranes this is all Pre-applied Seam Tape (PST) on the rolls.

DUOPLY PRIMER: Solvent based primer used to clean and prime DuoPly EPDM membrane before applying Pre Applied Seam Tape (PST) or any Cured or Uncured Tape.

DO NOT APPLY PRIMER DIRECTLY TO TAPE.

Primer is only applied to surface being prepared to accept DuoPly PS Tape products.

TERMINATION BAR: Extruded aluminium bar which can be used to terminate the membrane at parapet walls, chimneys, skylights, and AC curbs. The proper fastener should be installed per the manufacturers' recommendation.

WATER CUT-OFF MASTIC: Used to create a waterproof compression gasket whenever the membrane is mechanically fastened using a Termination Bar, or Pipe Boot Clamp, Water Cut-Off Mastic is applied between the membrane and the pipe, or wall. The mechanical termination is installed over the membrane, compressing the mastic and creating the gasket.

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