Applicator handbook

Roofspec
Viking

Taking care of detail

Introduction

This handbook is issued as one part of the Viking Roofspec Licensing programme.

Installation of Viking Roofspec membrane products must only be undertaken by trained, licensed installers. Further product and specification information is available from Viking Roofspec www.vikingroofspec.co.nz or www.vikingroofspec.co.nz/cadresources/enviroclad/

Contents

A note about safety

All work should be undertaken in line with current occupational safety and health legislation.

You are responsible for your personal safety and the safety of those around you. Viking Roofspec urges you to take the time to understand your obligations and to plan and undertake your work safely.

Working at Heights

"Roof work should only be undertaken by persons who have the knowledge, experience and resources necessary for the work to be completed safely." From Guidelines for the provision of facilities and general safety in the Construction Industry to meet the requirements of the HEALTH AND SAFETY IN EMPLOYMENT ACT 1992 & REGULATIONS 1995.

For more information regarding Worksafe requirements, please contact the Department of Labour. Information online is available at **www.worksafe.govt.nz/worksafe/**

Hazardous Materials

(Completion of Unit Standard 15757 (working at heights) is highly recommended for installers of roofing membranes.

Some materials used with this system are flammable or toxic. Safety information regarding these can be found in appropriate Material Safety Data Sheets (MSDS), available from Viking Roofspec. Correct personal protective equipment should be used where applicable.

Heat

Heat-guns used for the welding of Enviroclad or Dec-K-ing can reach temps beyond 400°C.

Take care not to touch hot nozzles and burn yourself in the use of these tools.

Substrate preparation

Do not proceed with the application of this membrane system until you have confirmed the substrate meets the minimum requirements outlined in the latest Viking Roofspec Masterspec specification and Viking Roofspec Substrate Checklist.

All construction should comply with New Zealand Building Code.

Correct substrate installation is critical for durability and performance of the membrane. Failure to strictly comply with substrate specification may affect the product warranty. Refer to Viking Enviroclad Warranty for further details.

All membranes have a propensity to show movement on plywood substrates. This is exhibited as “tenting”- a peak in the membrane above the plywood joints. If this roof or deck is to be a visual feature, please contact Viking for an alternative substrate preparation specification.

Notes for the Membrane applicator

Do not proceed with the application of this membrane system until you have confirmed the substrate meets the minimum requirements outlined in the latest Viking Roofspec Masterspec specification and Viking Roofspec.

Substrate Checklist. All construction should comply with New Zealand Building Code.

Correct substrate installation is critical for durability and performance of the membrane. Failure to strictly comply

with substrate specification may affect the product warranty. Refer to Viking Enviroclad Warranty for further details. All membranes have a propensity to show movement on plywood substrates. This is exhibited as “tenting”- a peak in the membrane above the plywood joints. If this roof or deck is to be a visual feature, please contact Viking for an substrate alternative preparation specification.

Notes for the Builder:

If you have a query regarding this substrate specification please call Viking on 0800 729 799.

- *Cover the substrate to keep it dry, ensuring the waterproofing membrane can be installed when needed. Communicate early with your Viking Approved Applicator on the project scheduling to ensure weather exposure is kept to a minimum.
- Correct substrate installation is critical to the durability and performance of the membrane.
- Failure to strictly comply with substrate specification may affect the product warranty. Refer to Viking Enviroclad Product Warranty for further details.

- All construction should comply with the New Zealand Building Code. Contact your local council for further details.
- Communication between the Applicator and Construction Company will assist to ensure this specification is met. Information regarding our products, specifications and warranties is available at **www.vikingroofspec.co.nz.**
- Information regarding our products, specifications and warranties is available at www.vikingroofspec.co.nz If you have a query regarding this substrate specification please call Viking on **0800 729 799.**

Substrate checklist: plywood

- [ ] Framing supports at 400mm centres (in one direction). All plywood edges must also be supported. Do not use tongue and groove plywood. Viking Roofspec can accept the maximum support spacings provided in Table 15C of CHH Ecoply Specification Guide.
- [ ] Minimum thickness 17mm, F8, CCA H3.2 treated, structural plywood (not LOSP treated).
- [ ] Minimum CD grade with the sanded C face upwards.
- [ ] Plywood laid with face grain at right angles to supports.
- [ ] Plywood laid with staggered joins in a brick bond pattern with 3mm expansion gap between plywood sheet edges. Bond-breaker tape recommended over ply sheet joins prior to membrane application. **If roof is visual consider using Viking Dec-K-ing substrate checklist to minimise plywood movement.**
- [ ] Plywood is screw-fixed with 10g x 50mm SS counter-sunk screws at 150mm centres on all sheet edges and at 200mm centres through the body of the sheet. All screws to be counter sunk 1-2mm. Gluing to supports is recommended.
- [ ] Chamfer all external edges with a minimum radius of 5mm.
- [ ] ***Plywood is to be kept dry at all times during construction.** Blow torch drying the plywood surface prior to membrane application does not comply. Plywood and framing supports to be at no more than 18% moisture content.
- [ ] For Roofs and Roof Decks over living spaces, all cavities must be ventilated and insulated in compliance with clause H1 NZBC. Cavity ventilation is not required for a Warm Roof system which meets or exceeds the minimum R value requirements.
- [ ] All drains and outlets are membrane compatible. Note that TPO membranes cannot be welded to Stainless Steel scuppers or sumps. Accessories must have Clamped Grates or be TPO weldable.
- [ ] Please ensure you have clearly ordered the correct membrane, colour and thickness for your project.
- [ ] Ensure minimum required falls are met. Specific design* or as per E2/AS1 2011 states 2° for roofs (-1:30 or 34mm/mt), 1.5° for decks (-1:40 or 25mm/mt) and 0.5° for internal gutters (1:100 or 10mm/mt). **Specific Design to shed water and prevent moisture ingress with minimum finished fall of 1:80 and gutters 1:100*

Substrate checklist: concrete

- [ ] Ensure concrete substrate has been allowed to fully cure - at least 28 days from pour.
- [ ] If concrete is 'Green' (over 75% *RH) then 2 full coats of Viking Surface Sealer HydrEpoxy should be applied prior to Membrane application. If the concrete is less than 28 days old and a concrete surface sealer has been used or a rapid curing compound, you must identify the product and verify correct curing has taken place prior to laying.
- [ ] *Relative humidity of concrete substrates must be 75% or less before application. (This can be verified with the use of a hygrometer). Viking Roofspec recommends the use of 2 Coats of **Viking Surface Sealer** to control moisture within the substrate prior to the waterproofing membrane installation.
- [ ] Fill hollows or holes with a cement plaster, or FLC.
- [ ] Surface to be smooth, clean, dry and free of debris or release agents.
- [ ] Venting installed as required. Contact Viking Roofspec if a venting specification has not been provided. Viking Roofspec recommend one vent per 50m^2.
- [ ] Use minimum 50mm bond-breaker tapes over expansion joints.
- [ ] Minimum 20mm triangular fillets at the base of upstands for Butylclad, Epiclad or Torch-on membranes. (Not required for Enviroclad or Dec-K-ing).
- [ ] All drains and outlets are membrane compatible. Confirm with Viking Roofspec if required.
- [ ] Ensure minimum required falls are met. Specific design* or as per E2/AS1 2011 states 2° for roofs (-1:30 or 34mm/mt), 1.5° for decks (-1:40 or 25mm/mt) and 0.5° for internal gutters (1:100 or 10mm/mt). **Specific Design to shed water and prevent moisture ingress with minimum finished fall of 1:80 and gutters 1:100*
- [ ] Reinforced concrete structures can use 1° or 1:60 fall.

Please ensure you have ordered the correct membrane, colour and thickness for your project.

Do's and Don'ts

Do's

- Take ownership of your work and installed roof.
- Check entire substrate has been installed correctly to Viking Roofspec's specification.
- Check that all that all correct outlets and overflows have been installed before installation of the membrane.
- Discuss with the builder any special requirements or tricky junctions such as diverters.
- Only apply membrane if the conditions are suitable for proper use of the adhesives. Membrane should only be applied when the adhesive is tacky without transfer to a dry finger.
- Clean all Enviroclad welds and details with Enviroclad's Weathered Membrane Cleaner.
- Use a spray bottle with clean Enviroclad Splice Wipes.
- Run test-welds prior to Robotic-welding or Rhinobond application.
- Pressure roll all welds and details when welding.
- Use hook blade knives and scissors for cutting of membranes.
- Test all Enviroclad lap welds and details with a seam-probe.
- Confirm with a builder if a flood-test is required. Most useful or practical in internal gutters.
- Always work safely and to the requirements of the Building and Construction worksafe requirements.

Dont's

- Don't place hot or sharp objects directly on the membrane.
- Don't leave any running heat-gun or torch directly pointed at any membrane if not specifically using the tool for laps or detailing.
- Don't apply adhesive to membrane where it will be welded for laps or detailing. Clean thoroughly if some exist.
- Don't use incompatible components or materials for the membrane job you're installing.
- Don't use thinners or solvents around Dec-K-ing.
- Don't use any cleaner other than Viking Weathered Membrane Cleaner for Enviroclad.
- Don't use solvents to thin Enviroclad or Dec-K-ing adhesives as there are no compatiable solvents.
- Don't turn-off any welding heat-guns or robotic tools without cooling down first.

Enviroclad accessories

Respiratory protection required, unless there is adequate ventilation (refer to MSDS)

Appropriate gloves required (refer to MSDS)

Flammable Material

Adhesive and Sealants

STP000

STP012

STP860

STP870

Product Code	Description	Size	Est. Coverage*	Weight	M³
STP000	Enviroclad Adhesive	19L	2m² per litre	18kg	0.03
STP012	Clear Cut Edge Sealant	300ml	–	N/A	N/A
STP860	Universal Single-Ply Sealant	300ml	–	N/A	N/A
STP870	Water Cut Off Mastic	300ml	–	N/A	N/A

*Rates are indicative only. Coverage depends on surface texture and condition

Tru Ground Electronic Leak Detection Conductive Primer

ILD001

Product Code	Description	Size	Est Coverage*	Weight	M3
ILD001	Leak Detection Conductive Primer	19L	Aprox 110m²	22Kg	0.03

Rates are indicative only. Coverage depends on the surface treatment condition

Cav-Grip III Adhesive

STP904

STP907

STP905

STP906

Product Code	Description	Size	Est. Coverage*
STP904	Cav Grip III	13.6kg	92m^2
STP905	Cav Grip Hose	1.8m	NA
STP905A	Cav Grip Hose	3.6m	NA
STP905B	Cav Grip Hose	5.4m	NA
STP906	Cav Grip Spray Gun (adjustable)	NA	NA
STP907	Untack Cleaning System	5kg	NA
STP908	Cav Grip Spray Gun (with extension)	NA	NA
STP909	Cav Grip Gun Replacement Tips	NA	NA

*Rates are indicative only. Coverage depends on surface texture and condition

Water-based Epoxy

VPS100A

VPS100B

Attention: Activator recommended for installations in cold conditions.
Call 0800 729 799 for more information.

Product Code	Description	Size	Coverage*
VPS100A	Viking Primer Sealer Part A	10L	6 – 8m^2 per litre per coat of A+B mixture
VPS100B	Viking Primer Sealer Part B	10L	
VPS104A	Viking Primer Sealer Part A	4L	
VPS104B	Viking Primer Sealer Part B	4L	

- *Rates are indicative only. Coverage depends on surface texture and condition
- Can be used with all membranes except Torch-On
- Apply 2 coats for shower protection and to seal concrete
- Allow 2 hrs drying time above 10°C
- 72 hours curing before applying solvent adhesives

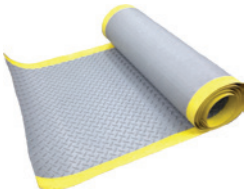
Membrane Cleaner and Splice Wipes

STP001

STP480

Product Code	Description	Size
STP001	Enviroclad Weathered Membrane Cleaner	19L
STP480	Enviroclad Splice Wipes (150)	N/A
To be used with Enviroclad and Epiclad only		

Enviroclad Walkway Roll



STP710

Product Code	Description	Colour	Width	Length
STP700	Enviroclad Walkway Roll*	White	870mm	15.2m
STP710	Enviroclad Walkway Roll*	Grey	870mm	15.2m

- *Sold cut-to-length
- Refer to Viking Product Data sheet for Enviroclad walkway roll

Corners and T-Joint Covers

STP210

STP310

STP410

STP211

Product Code	Description	Colour
STP200	Enviroclad Outside Corner Fluted	White
STP210	Enviroclad Outside Corner Fluted	Grey
STP300	Enviroclad Inside Corner	White
STP310	Enviroclad Inside Corner	Grey
STP400	Enviroclad T-joint Cover	White
STP410	Enviroclad T-joint Cover	Grey
STP201	90 Degree Internal/External Corner	White
STP211	90 Degree Internal/External Corner	Grey

Coloured Non-Reinforced Detailing Material

STP600

STP614

Slate Grey

Patina Green

Rock Brown

Medium Bronze

Ironsand

Product Code	Description	Colour	Width	Length
STP600	Enviroclad Non-reinforced TPO	White	300mm	15.2m
STP610	Enviroclad Non-reinforced TPO	Grey	300mm	15.2m
STP613	Enviroclad Non-reinforced TPO	Slate Grey	610mm	15.2m
STP614	Enviroclad Non-reinforced TPO	Patina Green	610mm	15.2m
STP615	Enviroclad Non-reinforced TPO	Rock Brown	610mm	15.2m
STP621	Enviroclad Non-reinforced TPO	Medium Bronze	610mm	15.2m
STP620B	Enviroclad Non-reinforced TPO	Ironsand	610mm	15.2m
Sold cut-to-length				

Drains and Overflows

SDM051

SDM050

SDM055

SDM056

Product Code	Description	Size
SDM051	Drain or Over-flow	150mm
SDM049	Drain or Over-flow	80 / 100mm
SDM050	Deck Drain with flat Grill	80 / 100mm
SDM056	Side Exit Drain	80mm
SDM055	Side Exit Drain or Over-flow	80mm

Drains Vented / Overflow Hats and Trims

SDM066C2

SDM066

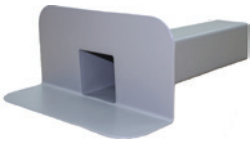
STP605

SDM063

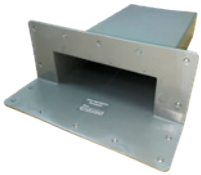
SDM060

Product Code	Description	Size
SDM066C2	Inter-balcony Drains-Vented	175mm
SDM066	Inter-balcony Drains-Non vented	175mm
STP605	Dropper Drains	275mm
SDM063	Overflow Hat	80 / 100mm
SDM060	Soffit Trim	80mm

Scuppers



STP602



STP603

Product Code	Description	Size
STP601	Scuppers onto which Enviroclad membrane can be welded	100 x 65mm
STP602		100 x 100mm
STP603		200 x 75mm

Overflow and Sumps

STP604

IMR400T

IMR120T

Product Code	Description	Size
STP604	Overflow	310mm
IMR400T	Sumps with TPO Weldable Flanges	350mm
IMR120T	Sumps with TPO Weldable Flanges	360

Roof Vents

IMV113

STP607

Product Code	Description	Size
IMV111	Roof Vent Aluminium Grey Mushroom	215mm
IMV113	Roof Vent Aluminium Grey	120mm
STP607	Weldable vent for roof cavity ventilation. Grey only.	80mm

Pourable Pockets and Pourable Sealant

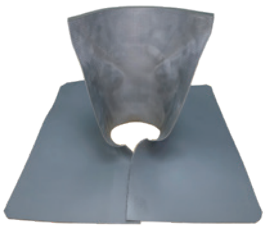
STP460

STP450

Product Code	Description
STP450	**Grey** – Pourable pocket. For cluster of odd shaped penetrations.
STP460	Sealant – Coverage = Each TPO Pourable Sealer Pocket Requires 1.4 Lts – 2Lts of sealant

Pipe Seal and Split Pipe Boot

STP430

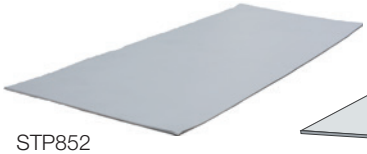


STP830

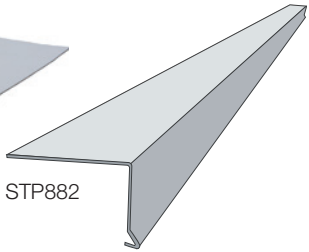
Product Code	Description	Size
STP420	**White** - Pipe Seals used for flashing pipe penetrations.	From 25m to 150min diameter.
STP430	**Grey** - Pipe Seals used for flashing pipe penetrations.	
STP830	Split Pipe Boot – 80mm	203mm x 127mm x 80mm
STP831	Split Pipe Boot – 100mm	203mm x 127mm x 100mm

- Can be used with Enviroclad only
- Temperature of penetration shall not exceed 70°C

TPO Coated Metal & Aluminium Drip-edge



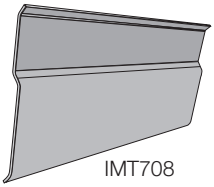
STP852



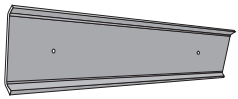
STP882

Product Code	Description	Colour	Dimensions
STP852	TPO Coated Aluminium (1.6mm)	Grey	1.2m x 3.0m
STP882	TPO Coated Alum. Drip edge	Grey	100mm x 65mm x 3.0m

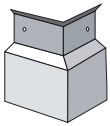
Edge Fasteners and Pressure Bars



IMT708



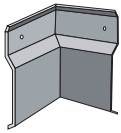
IMT710



IMT709

SDF110C

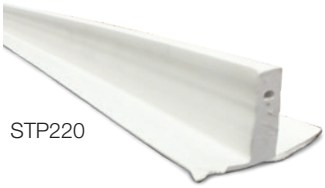
SDF110



IMT711

Product Code	Description	Finish
IMT708	Termination Flashing Cover Plate	Aluminium
IMT709	Pressure Bar	Aluminium
IMT710	External Corner	Aluminium
IMT711	Internal Corner	Aluminium
SDF110	Dual Purpose Edge Fastener	Grey (Alum)
SDF110C	Edge Fastener	Silver (Alum)

TPO Weldable Rib

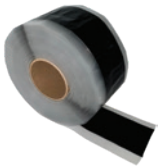


STP220

Product Code	Description
STP220	TPO Weldable Rib (White)
STP221	TPO Weldable Rib (Grey)
STP222A	TPO Weldable Rib (Patina Green)
STP222B	TPO Weldable Rib (Rock Brown)
STP222C	TPO Weldable Rib (Slate Grey)
STP222	TPO weldable rib (Mansard Brown)
STP222D	TPO Weldable Rib (Medium Bronze)
NB: Ribs not available for the Ironsand coloured membrane - closest colour to Ironsand is Medium Bronze	

Acoustic Mounting Block and Tape

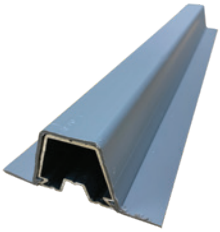
ACM250



SMT076V

Product Code	Description	Size
ACM275	Acoustic Mounting Block	275mm
ACM550	Acoustic Mounting Block	550mm
Can be used with all membrane types		

Ejot Mounting Bar



STP223

STP224

Product Code	Description	Size
STP223	Mounting Bar	3000mm
Can be lap taped to Butylclad and Epiclad Can be welded to Enviroclad		

Welding Nozzles

SDM145

SDM146

SDM147

SDM148

SDM149

SDM151

Product Code	Description
SDM145	20mm Standard Nozzle
SDM146	20mm 120° Nozzle
SDM147	20mm 60° Nozzle
SDM148	40mm 60° Nozzle
SDM149	40mm Standard Nozzle
SDM151	20mm 90° Nozzle

Welding Tools and Kits

SDM140

SDM163

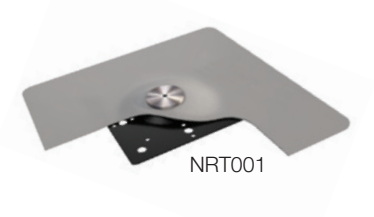
LEIST 1

SDM159A

Product Code	Description	Amp
SDM140	Leister Hand Welder	7 amp
SDM159A	Leister Uniroof 300	15 amp*
SDM163	Leister Unidrive 500	15 amp*
LEIST 1	Leister Hand Welder (7 amp) with: 40mm roller; brass roller; 40mm and 20mm nozzles; seam probe and carry case	
LEIST 2	Leister Hand Welder (7 amp with digital reading) with: 40mm roller; brass roller; 40mm nozzle and carry case	
LEIST 3	Leister Hand Welder (7 amp with digital reading) with; 40mm roller; brass roller, 40mm and 20mm nozzles; seam probe and carry case	

- *Appropriate generators for 15 amp power must be used. Please don't swap out plugs to 10 amp
- This will void the warranty of the machine

Rooftrak Anchor System*



NRT001

Product Code	Description	Dimensions
NRT001	Anchor for Mounting Plant (Pre-applied Membrane Flange)	250mm x 250mm x 25mm Height
*For mounting plant on roofs or adding on walls		

Welding Rollers and Seam Probe

SDM153

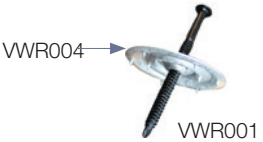
SDM155

SDM157

STP880

Product Code	Description
SDM153	Brass Pressure Roller
SDM155	Silicone Pressure Roller 40mm
SDM157	PTFE Pressure Roller (Blue 25mm)
STP880	Seam Probe

Mechanical Fastening Systems



VWR005

Product Code	Description	Size
VWR001	Ply / Steel Tray Fasteners	50mm
VWR002	Ply / Steel Tray Fasteners	76mm
VWR003	Ply / Steel Tray Fasteners	100mm
VWR004	Membrane Piranha Plates	60mm dia
VWR005	Rhino Bond Plates	80mm dia
VWR007	Concrete Fasteners	50mm
VWR008	Concrete Fasteners	76mm
VWR009	Concrete Fasteners	100mm

Enviroclad Attachment Options

Viking Enviroclad is a single-ply, polyester fabric reinforced, thermoplastic polyolefin (TPO) waterproofing sheet membrane for flat or pitched roofs and decks.

Viking Enviroclad Roofing and Deck Membrane can be installed using three different fixing methods, one fully bonded, the other two mechanical. The standard method is fully bonded with heat welded seams. The mechanical methods are, RhinoBond System, induction welds the membrane to pre-installed washers beneath the membrane. The other mechanical method uses HP-X Fasteners and Piranha Plates fixed through the membrane and then covered by the membrane laps

- **Fully-Adhered** – membrane is adhered to a suitable substrate utilizing an appropriate bonding adhesive e.g. Standard Membrane and FleeceBack (FBS)
- **RhinoBond (Induction-Welded)** – membrane is attached over a suitable substrate via an induction welding tool being placed over the membrane where a fastened TPO induction welding plate is located to weld the two components together.
- **Mechanically Fastened** – membrane is attached to the roof deck over a suitable substrate utilizing plates and fasteners which are overlapped with membrane

Enviroclad Fully Adhered

Before installing the membrane, ensure the substrate meets the correct specification for the membrane type. Refer to Viking substrate checklist.

Careful planning of sheet placement to shed water with roof falls, should be done prior to membrane installation.

1. Ensure the roof is free of obstructions such as vents or skylights to minimize cuts and joins so that the sheets can be laid in one piece. Any penetrations should be carried out and flashed after the membrane has been laid. Refer to the accessories section of this manual for flashing materials.

2. Ensure that water does not flow beneath any completed sections of the membrane by completing all flashings, terminations and welds by the end of each day.

3. Sweep / blow or preferably vacuum all loose debris from the substrate. This is most important for the finished appearance of a single ply membrane.

4. Using a chalk line, mark out the roof and position individual sheets prior to adhering to the substrate.

5. Fold back the sheet to reveal half of the underside. Sheets can be folded either length or width ways. When the width of a sheet runs over a ridge, creasing can be avoided by folding the sheet back along its length.

6. A. Thoroughly stir (min 5 minutes) the Enviroclad adhesive and with a 8–10 mm medium nap 23cm roller, apply an even coating of adhesive to the exposed underside of the membrane and to the adjoining substrate.

   B. CavGrip III spray applied adhesive. Apply to both the substrate and the underside of the Enviroclad membrane.

7. Allow the adhesive to dry until tacky and it will not stick to a dry finger.

8. Carefully and evenly roll the glued membrane onto the glued substrate, avoiding creases wrinkles and air pockets.

9. Brush down the bonded section of membrane immediately with a soft bristle broom, applying downward pressure to remove any trapped air.

10. Fold back the unglued half of the sheet and repeat the above bonding procedure.

11. Install adjoining sheets in the same manner, overlapping edges a minimum of 50mm to provide for a minimum 40mm hot air weld.

12. Clean edges to be welded using Weathered Membrane Cleaner, (refer to Membrane Cleaning process).

13. Weld the Enviroclad sheets a minimum of 40mm with an automatic welding machine (refer to Membrane Welding process).

Enviroclad FBS

Enviroclad FBS (Fleece-Backed System. It is suitable for low slope and pitched roofs, internal gutters, parapets, balconies / decks, and roof gardens.

Enviroclad has no limitations within New Zealand. It may be specified in all Climate Zones as defined in NZBC H1/AS1 and all Exposure Zones as defined in NZS3604

FleeceBACK TPO membranes are intended to be used with adhered or mechanically fastened roofing systems. FleeceBACK TPO is ideally suited for roof garden and solar panel applications and projects demanding superior wind uplift resistance due to its added toughness and durability. FleeceBACK TPO is also a great solution for buildings requiring low noise and odours during roofing application. FleeceBACK Enviroclad TPO membrane can be adhered directly to new substrates of plywood, steel, concrete or to existing roofing substrates such as timber sarking or existing membranes or substrate containing bitumen. FleeceBACK Enviroclad TPO membrane is adhered to substrates using Flexible FAST Adhesive on the main field areas and upstands, with alternative adhesion to upstand areas only, using Viking Cav-Grip III Low VOCw

Installation

Enviroclad FleeceBack FBS

1. The surface to which adhesive is applied must be dry and free of any protrusions, sharp edges, loose or foreign materials, oil, and grease. Depressions greater than 6 mm should be filled with Flexible FAST Adhesive or another approved patching material. All sharp projections must be removed. Previously unexposed asphalt must be primed with CAV-GRIP III, while old exposed bitumen (in cases where oil in the membrane is exposed or bleeding) should utilize Bleed Trap.

2. Apply Flexible FAST Adhesive when the substrate and ambient temperatures are 15°C or above. Cartridges should be stored for use at temperatures between 20°C – 30°C. Ensure cartridges are kept out of direct sunlight to prevent overheating and expansion of the adhesive within the cartridge.

3. Apply FAST Adhesive in ribbons spaced 150 mm – 300 mm apart. Use 150 mm centres within 1.2 meters - 5.4 meters from all roof perimeters, including roof edges, gutters, parapets, pop-ups, skylights, and large penetrations. *Refer to Ribbon centers:

4. Extruded Wet Bead of 15 mm.

5. Note: Use Viking Flexible FAST Adhesive PDS STP900b in conjunction.

Barn Door Method:

1. Unroll FleeceBACK sheet, fold in half widthwise, and bond one sheet at a time.
2. Apply FAST Adhesive to the substrate in 150–300mm ribbons with a minimum 15mm wet bead.
3. Apply adhesive to a 2m length for approximately 7m^2 coverage.
4. Allow adhesive to rise (1–2 minutes), then place FleeceBACK membrane into it.
5. Roll the membrane with a 70kg roller to embed the fleece.
6. Remove any adhesive from the splice/lap area immediately with Weathered Membrane Cleaner if necessary.

Materials used with the Adhered Attachment Methodology

Viking Enviroclad

1.14, 1.5mm polyester fabric reinforced, multilayer, synthetic roof waterproofing sheet based on TPO. It is supplied in rolls 3 m wide x 30.4 m long, 3.66 m wide x 30.4 m long and 4.88m wide x 30.4 m long.

Viking Enviroclad with APEEL™ Protective Film

Viking Enviroclad but with a removable protective film to protect the Viking Enviroclad during construction. (Note: APEEL™ Protective Film is to be removed within 90 days of installation.)

Viking FleeceBACK (FBS) Enviroclad

2.52 mm polyester fabric reinforced, multilayer, synthetic roof waterproofing sheet based on TPO with a fleece backing. It is supplied in rolls 3.6 m wide x 30.4 m long.

Sure-Weld Bonding Adhesive

a high strength, solvent-based contact adhesive that is used to bond Viking Enviroclad to various porous or non-porous substrates. It is supplied as a yellow liquid in 5 US Gallon pails.

Flexible FAST Dual Cartridge Adhesive

a low-rise VOC free, construction grade, two component polyurethane adhesive used to bond Viking FleeceBACK (FBS) Enviroclad to various substrates. It is supplied in 1.5 L dual cartridge (750 ml of A and B).

CAV-GRIP III Adhesive/Primer

is a spray-applied, aerosol contact adhesive and primer used to bond standard Viking Enviroclad to various substrates. It is supplied as 13.6 kg of adhesive in a self contained spray system.

Enviroclad RhinoBond Mechanical fixing

This is an alternate method for securing the Viking Enviroclad (TPO) membrane and is intended to be used in conjunction with the Viking Roofspec Enviroclad TPO Specification and Details. For detailed information, please refer to the project-specific specifications or contact Viking Roofspec for assistance.

RhinoBond provides security of fixing into the substrate if overlaying an existing roof system, or where the client wants to reduce the use of solvent-based adhesives.

It is an advanced powerful induction heating system that creates a strong bond between the underside of the Enviroclad TPO roofing membrane and specially coated fastening plates fixed through to the substrate. Being a non-penetrating method of mechanically securing the membrane into the supporting substrate it can reduce cost and waste by negating the need to either remove and dispose of the existing membrane or replacing the substrate entirely if it is deemed suitably supportive. RhinoBond can use the same fastener and plate to secure the membrane and insulation (when needed) to the roof-deck without penetrating the roofing material itself.

The Induction Welding (RhinoBond) Attachment Method incorporates 80mm diameter corrosion-resistant plates with a hot melt TPO coating. The RhinoBond Plates are installed with HP-X Fasteners to the specified substrate (Plywood, Concrete and Steel Deck)

Installation

- Keep substrate and membrane clean. Any debris on the top of the substrate or the membrane should be removed prior to initiating the induction welding process. Use a leaf blower or broom to eliminate any debris from the membrane surface.

- Keep magnets clean. If a metal shard or other debris from the roof sticks to the magnet, it can cause damage to the membrane surface in the weld area. Periodically ensure there are no contaminants on the bottom sideof the magnet.

1. Calibration of Rhinobond Induction Tool
   - Prior to proceeding with membrane attachment to the plate, the RhinoBond Induction Tool must be calibrated. Follow calibration process as required (5 plates) each morning and afternoon. Keep records for QA

   - Recalibrate the RhinoBond tool whenever the ambient temperature changes by 7°C (warmer or colder)
2. Avoid fastener overdrive to prevent plate from deforming
3. Keep the RhinoBond plates clean. Otherwise clean with Viking TPO Weathered-Membrane cleaner
4. Reduce UV exposure to RhinoBond plates. Cover each day.

5. Keep the under-side of the Enviroclad membrane clean to ensure a clean weld to the RhinoBond plates

6. Leave the Enviroclad to relax flat to where it wants to lay. In other words, do not fix at points then try to pull tight

7. Activate induction welding tool and leave in place until heating cycle is complete (approx. 5 secs based upon correctly calibrated setting for the days conditions)

8. Immediately after, place clean Magnet on the membrane over the plate and leave in place for at least 45-60 seconds. Regularly wipe the Magnet clean to remove any debris.

Materials used with the RhinoBond attachment Methodology for Viking Enviroclad Roofing and Deck Membrane supplied by Viking Roofspec are as follows:

Viking Enviroclad

- 1.14, 1.5mm polyester fabric reinforced, multilayer, synthetic roof waterproofing sheet based on TPO. It is supplied in rolls 3 m wide x 30.4 m long, 3.66 m wide x 30.4 m long and 4.88m wide x 30.4 m long.

Viking Enviroclad with APEEL™ Protective Film

- Viking Enviroclad but with a removable protective film to protect the Viking Enviroclad during construction. (Note: APEEL™ Protective Film is to be removed within 90 days of installation.)

HP-X Fasteners

- #15 wire diameter, mini drill point, buttress style thread fasteners for the mechanically fixed Viking Enviroclad. (50mm, 76mm, 100mm, 125mm)

Rhino Bond System:

- 80 mm round specially TPO coated plates: A 80mm diameter, 0.7mm thick, corrosion-resistant steel plate with hot melt coating on the top surface. The plate is used in conjunction with Viking's HP-X Fasteners to attach the roofing assembly and is activated using the RhinoBond Induction Welding Tool.

- RhinoBond Induction Welding Tool: An induction heating tool is used to emit the magnetic field that activates the hot melt coating on the top surface of the RhinoBond or Isoweld Welding Plate to fuse with the roofing membrane. Refer to RhinoBond Owner's Manual for additional information.

- Magnetic heat sink poles: A stand-up device that allows the weld to cool as it holds the membrane to the heated plate. Refer to RhinoBond Owner's Manual for additional information

Enviroclad Traditional Mechanical fixing

This is an alternate method for securing the Viking Enviroclad (TPO) membrane and is intended to be used in conjunction with the Viking Roofspec Enviroclad TPO Specification and Details. For detailed information, please refer to the project-specific specifications or contact Viking Roofspec for assistance.

Traditional Mechanical fixing provides security of fixing into the substrate at the sheet edges by utilizing Piranha plates and HP-X Fasteners. This methodology of mechanically securing the membrane into the supporting substrate it can reduce cost and waste by negating the need to either remove and dispose of the existing membrane or replacing the substrate entirely if it is deemed suitable and structurally sound.

Installation:

Prior to commencing installation, inspect the substrate to determine its condition and suitability. The substrate must be structurally sound, clean, dry, and free of contaminants such as oil, grease, dirt, and debris. Any existing membrane or material that is loose, brittle, or deteriorated should be removed. Ensure that the substrate is free of sharp objects or irregularities that might damage the membrane.

Cleaning: Thoroughly clean the substrate using appropriate methods such as sweeping, vacuuming, or power washing to remove all dirt, dust, and debris.

Repairs: Address any surface defects, such as cracks, holes, or protrusions. Fill cracks and holes with suitable repair materials and grind down any high spots or protrusions to create a smooth and even surface.

Membrane Placement, Attachment, and Hot Air Welding

- A minimum of one perimeter sheet shall be installed at edges of each roof level and 3.66 m, 3.04 m or 2.44 m wide membrane shall be installed in the field of the roof.
- Membrane sheets shall be mechanically fastened with the appropriate Viking Fastener/ Fastening Plate spaced 150 mm to 300 mm on center, depending on project criteria, within the membrane splice.
- Overlap adjacent membrane sheets approximately 140 mm at those locations where Fastening Plates are located (along the length of the membrane) and a minimum of 50 mm at end roll sections (width of the membrane).
- Hot air weld the membrane sheets a minimum of 40 mm with an Hot Air Welding Machine.
- Membrane laps must be prepared with Weathered Membrane Cleaner. Wipe the surface where Weathered Membrane Cleaner has been applied with a clean, dry HP Splice Wipe or other white rag to remove cleaner residue prior to hot air welding.

- Weld up all the laps with a min 40mm weld

Materials used with the Viking Enviroclad Roofing and Deck Membrane supplied by Viking Roofspec are as follows:

Viking Enviroclad

1.14, 1.5mm polyester fabric reinforced, multilayer, synthetic roof waterproofing sheet based on TPO. It is supplied in rolls 3 m wide x 30.4 m long, 3.66 m wide x 30.4 m long and 4.88m wide x 30.4 m long.

Viking Enviroclad with APEEL™ Protective Film

Viking Enviroclad but with a removable protective film to protect the Viking Enviroclad during construction. (Note: APEEL™ Protective Film is to be removed within 90 days of installation.)

Viking FleeceBack (FBS) Enviroclad

2.52 mm polyester fabric reinforced, multilayer, synthetic roof waterproofing sheet based on TPO with a fleece backing. It is supplied in rolls 3.6 m wide x 30.4 m long

HP-X Fasteners

#15 wire diameter, mini drill point, buttress style thread fasteners for the mechanically fixed Viking Enviroclad. (50mm, 76mm, 100mm, 125mm)

Piranha Plates (Washers)

Galvalume coated plates (washers) with twelve barbs (in two rows of six). They are 60 mm diameter, 0.9 mm thick with upturned edges.

Notes regarding adhesive:

- Ensure that the adhesive is not too thinly applied. Coverage should be a maximum of 2 square metres per litre for both surfaces. A 19 litre container will adhere 38 square meters of installed Enviroclad.
- Enviroclad adhesive should be applied at a minimum 10ºC. Due to solvent flash off, condensation may form on freshly applied adhesive when the ambient temperature is near dew point. If condensation occurs the application of the adhesive should be stopped, until the temperature and conditions are favourable. Then a fresh coat of adhesive can be applied over the previously coated surface.
- Take care not to apply any adhesive to the membrane edges to be welded. As a precaution, mark the underside of the membrane with a chalk line.

Membrane cleaning process

1. Only material from new rolls, which is un-weathered, (and has not been cut-to-length by Viking Roofspec) can be considered clean and weldable. Clean all surfaces that are to be welded with STP 001 weathered membrane cleaner

2. Enviroclad which has been purchased in cut lengths must be cleaned with Weathered Membrane Cleaner prior to welding.

3. Wear nitrile rubber gloves to apply Weathered Membrane Cleaner to the welded seam area with an HP welded seam wipe. Then, use a separate clean, dry welded seam wipe, and remove any residual membrane cleaner, ensuring that the welded seam area is completely dry.

4. Only HP splice wipes (STP480) should be used for cleaning of membrane laps prior to welding.

Application / Robotic heat welding

Automatic/Robotic heat welding

The four key factors of a successful weld are;

- clean material
- heat
- speed
- compression

Test Welds

1. Perform a test weld (minimum three metres) at least at the start of work each morning and afternoon.

2. Cut out a test sample approximately one inch wider and longer than the width of the seam (cut across the welded seam).

3. Peel the test sample apart after it has thoroughly cooled (approximately 10 minutes) and examine for a consistent 40mm wide minimum weld. Delaminating of the membrane from the scrim-reinforcement is an indication of a properly welded seam.

4. Identify the following seam problems to assure seam quality: **Discoloured or melted membrane** – Increase speed or decrease temperature setting if membrane discolours or exhibits melting (membrane begins to flow).

5. **Voids and wrinkles -** A proper welded seam has no voids or wrinkles and must be at least 40mm wide. Refer to Seam Probing procedures outlined below for proper inspection of seam deficiencies.

6. Avoid excessive heat when welding sheet membrane and accessories. This can accelerate the migration of the oil out of the membrane, causing it to become brittle over time and turn white.

Robot Welder Settings

When welding an Enviroclad seam, there is no set temperature or speed suitable for all applications. Test welds must always be undertaken to determine the settings for the environment. (Under ideal conditions, temperatures average 300-320°C, at a speed of around two metres per minute. These settings must not be taken for granted.)

You can consult the Viking Roofspec technical department for recommendations concerning temperature setting and speed control. Typically, the colder the ambient temperature and the membrane, the slower the machine should be run.

Following is a list of items to be checked to determine the temperature and the speed at which a welded seam should be completed:

1. When the membrane is in direct sunlight, the temperature or robot speed may have to be adjusted when moving into a shaded area. Remember the membrane surface in a shaded area will be cooler than a surface that is in sunlight. Darker coloured membrane will be warmer than lighter and may affect the welder speed.
2. Dampness on the membrane from dew; a passing rain shower; or misting condition will reduce heat from the welded seam due to evaporating moisture from the membrane surface. Do not attempt to weld damp material.
3. Wind has a cooling effect as it blows over the surface. It will also affect the air flow in the welded seam reducing the effectiveness of the hot air gun. This will require the operator to increase heat from the hot air gun or reduce the welder speed.
4. Substrates make a substantial difference to the amount of heat required to produce a fully welded seam. The robot will have to be adjusted accordingly: plywood and concrete act as “heat sinks” (drawing heat out of the weld) and may require a higher temperature, or slower speed setting than welding over insulation.
5. Membrane “bleed-out” from between sheets will not occur with Enviroclad membrane if properly welded. If bleed-out is occurring (the dark underside of the membrane begins to melt and flow), either the welder speed should be increased, or temperature decreased.

6. Set the speed, airflow and heat settings.

7. Start the machine and allow it to run for 4-5 minutes for the heat to come up to the set value.

8. Perform a test weld at least at the start of work each morning and afternoon. Test welds should be made if any changes in substrate or weather conditions occur.

9. Position the welder over the lap with the outside of the large silicone pressure wheel right on the edge of the lapping (top) sheet.

10. Position the small aluminium guide wheel right on the outside edge of the lapping sheet.

11. Lift the lap and insert the blower nozzle between the sheets and press it home. The machine will begin welding at the pre set speed. Guide the machine gently by keeping it to the guide wheel position on the lap.

Note: Ensure the power cord has plenty of slack so that the machine is not dragged off course. Ensure the cord is kept out of the path of the machine.

12. When near to the end off the lap, removing the nozzle from the lap will stop the machine from moving. Now mark this point with a water soluble marker and complete the lap with a hand held welder and roller.

13. Use a hand welder to weld a T joint cover over all T joint intersections.

ALL WELDS MUST BE CHECKED USING A SEAM PROBE.

Robotic welding trouble shooting:

When poor welding is occurring, check the following:

1. If the membrane is overheated on one side or the other, check the nozzle to be sure it is distributing the heat evenly between the two sheets.

2. If the heat is bypassing the edge of the sheet producing a cold weld along the edge of the welded seam, be sure the nozzle extends 2-3mm outside the lap edge.

3. If the probed welded seam is tight at the edge but a cold weld is present in the centre of the welded seam (the heat is melting the edges but does not melt the centre of the welded seam), check to be sure the robot is not running too fast.

4. Ensure the silicone pressure wheel is intact with no voids in the silicone. If voids are present, incomplete welding will result.

5. The automatic welder nozzle should be adjusted as close to the pressure wheel as possible. If the nozzle is too far away from the pressure wheel, distortion of the membrane may occur due to heat expansion.

Note: Adjust weld nozzle so the curved portion (heel) extending outside the seam area does not contact or drag on the exposed surface of the membrane. This portion of the nozzle should be 1.5mm above the membrane surface.

1. Overheating the membrane will cause poor welds. The temperature and welder speeds must be determined based on test welds prior to actual sheet welding.

2. Clean screen of dirt and debris on air inlet of heat gun every day. Accumulation of contaminants on screen will reduce air flow and heat output of welder.

Application / Hand welding

Hand Held Welder Settings

Temperature setting for hand held welders when used for non reinforced Enviroclad materials, should be approximately 280ºC for a Leister AT welder.

Temperature settings for hand held welders when used for reinforced Enviroclad membrane, should be approximately 300º-320ºC.

Exact settings will vary based on ambient temperatures, substrate and type of welder.

Roller Use

Silicone roller should always be placed flat against membrane to be welded. Do not turn roller on edge to weld membrane or flashings.

When using a hand welder, follow the welding nozzle perpendicular (across) the seam with the roller; do not run the roller up and down the length of the seam. Even pressure is essential to the weld and the entire seam must be rolled evenly.

ALL WELDS MUST BE CHECKED USING A SEAM PROBE.

Seam probing

- Welded seams must be probed throughout the day to check seam quality and to make adjustments to welding equipment. Particular attention must be given to all membrane intersections and welded seams at insulation joints. In addition, there should be periodic checks (including at the start of each day) to verify the strength of the seams. The repair of deficiencies must be done routinely throughout the day but no later than the end of each workday.
- Allow welded seams to cool thoroughly for approximately 30 minutes. Premature probing can damage warm seams.
- Draw the probing tool tip along the edge of the welded seam. Apply firm pressure to probe the seam junction, but not into the bottom membrane sheet. The tool will not penetrate into the lap area of a properly welded seam.
- If the seam probing tool penetrates into the lap area, mark the seam (using a water-soluble marker) at the beginning and the end of voids or wrinkles in the seam edge.
- Repair seam deficiencies as soon as possible using the hand held welder. These should be made the same day they are discovered.
- Return to probe repaired seams after they have cooled completely. If the repair is acceptable, wipe off the water soluble marker lines; if not acceptable, repair the seam using the procedures for repair of welded seams as outlined in Welding Repairs.
- Apply an approximately 3mm bead of Cut-Edge Sealant on all cut edges of the reinforced membrane after seam probing is completed. (Cut-Edge Sealant is not required on vertical welded seams.)

Note: Using a seam probe after applying Cut Edge Sealant will damage the sealant. Apply sealant only after probing.

ALL WELDS MUST BE CHECKED USING A SEAM PROBE.

Weld repairs

- Prior to proceeding with any repair, the area to be repaired must be cleaned. Scrub the existing membrane area to be repaired with a primer pad and Weathered Membrane Cleaner.
- Clean all residue from the area to be welded with a HP Wipe or natural fibre (cotton) clean rag.
- Weld the new membrane to the cleaned area using standard welding procedures.
- Position the hand held welder facing into void so hot air is forced between overlapping membranes. Roll the top membrane surface using positive pressure toward the outer edge until the heated membrane surfaces are fused.
- Exposed scrim-reinforcement (resulting from scorching surface of membrane) and test weld areas must be repaired by overlaying the damaged area with a separate piece of Enviroclad reinforced membrane with rounded corners. The overlay must extend a minimum of 50mm past the area to be repaired.
- Probe all edges of the overlay once cooled to ensure a proper weld has been achieved.
- Seal all cut edges of Enviroclad reinforced membrane with Cut-Edge Sealant.
- The same overlay repair procedures may be used for punctures in the Enviroclad membrane.

Flashing

General Flashing Conditions:

- Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using Enviroclad reinforced membrane.
- Enviroclad non-reinforced membrane can be used for flashing pipe penetrations, sealant pockets and scuppers as well as inside and outside corners when the use of pre-moulded or pre-fabricated accessories are not feasible.
- All existing loose flashings should be removed prior to application of Enviroclad membrane. Install surface mounted flashings and compression bar terminations directly to the wall surface.
- When required, membrane shall be adhered to vertical surfaces with Enviroclad adhesive. The adhesive shall be applied continuously, without globs or puddles, with a medium nap paint roller.
- After the adhesive has dried to the point that it is tacky but does not string or stick to a dry finger, roll the membrane onto the adhesive.
- Care must be taken when setting the flashing to avoid bridging at angle changes (i.e., where a parapet or roof penetration meets the roof deck). This can be accomplished by gently heating and creasing the membrane into the angle change. Terminate the edges of the installed membrane in accordance with Viking Roofspec details. Where membrane sheets overlap at a bridging point, a T-joint cover should be applied over the lap at the transition point.
- In areas where metal counter flashings are used as the vertical termination, the counter flashing must be sealed with PT304 sealant to prevent moisture migration behind the new wall flashing.

Notes:
On walls, parapets, skylights, etc, the flashing height must be calculated so that the Enviroclad membrane flashing includes a minimum 40mm heat weld on to the horizontal surface.

Roof walkways

Enviroclad Heat Weldable Walkway Rolls:

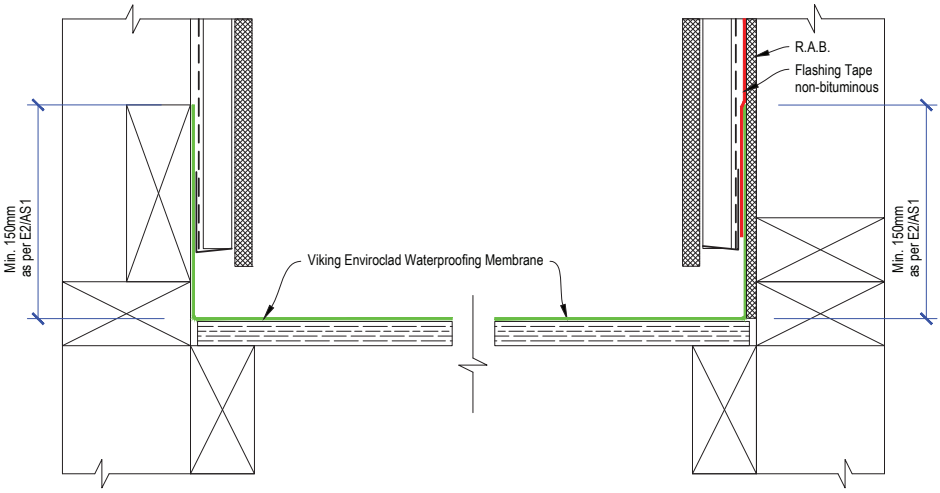
- Allow the walkway to warm by the sun prior to welding so distortion will not occur due to expansion.
- Use Weathered Membrane Cleaner to prepare the area to be welded to the walkway material.
- All residue should be removed by wiping with a clean dry HP welded seam Wipe or other white natural fibre (cotton) rag.
- Position the walkway material and cut the Walkway Rolls into maximum 3.0m lengths and position with a minimum 25mm gap between adjacent pieces to allow for water drainage. Cut the walkway so a 100mm minimum gap is created over any field welded seams running across (since the attachment of the walkway to the membrane is permanent, this will allow access to the field seams).
- Weld four edges of the walkway material to the membrane- leaving a 100mm gap at the uppermost and lowermost edges, to allow for moisture to pass beneath. (Typically the same speed and temperature settings will be used for this procedure as for welding membrane to membrane. A test weld is always recommended prior to performing welds to the installed membrane).

Clean Up

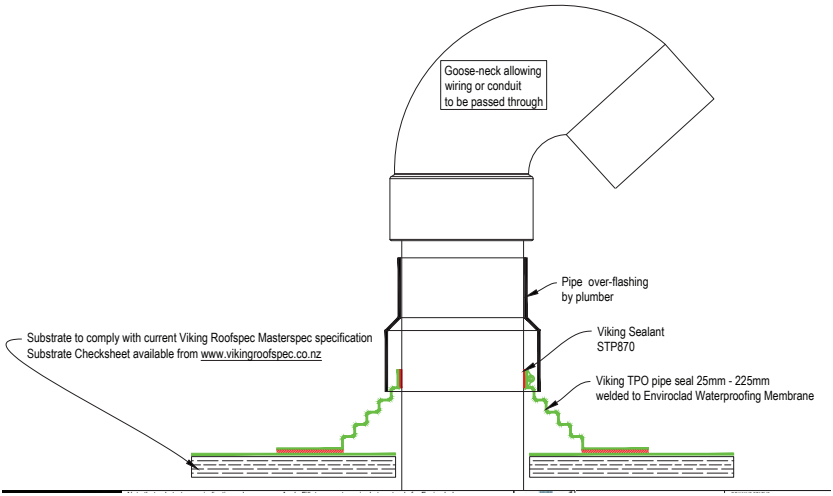
Hand prints, footprints, general traffic grime, pollutants and dirt may be cleaned from the surface of the Enviroclad membrane with neutral detergent and water, followed by rinsing the area with clean water. Weathered Membrane Cleaner can also be used to clean the surface of the Enviroclad membrane.

Standard details

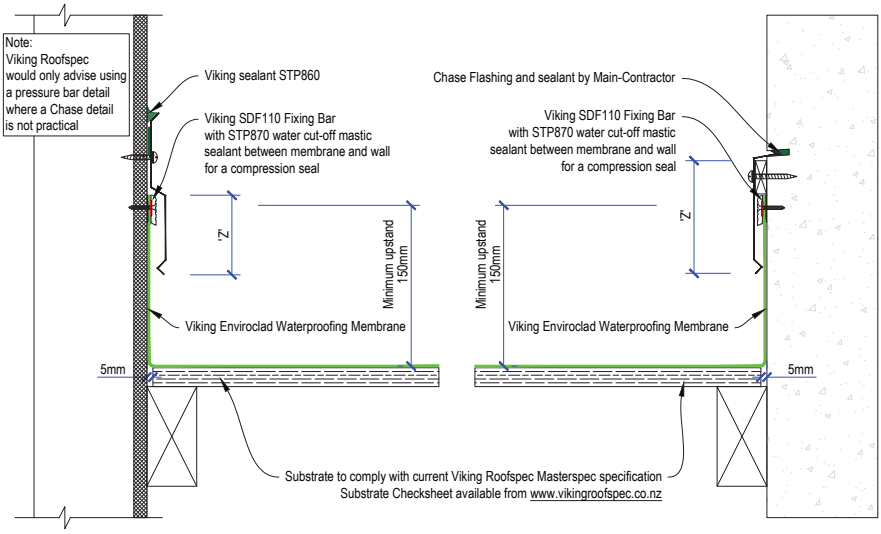
Cavity Wall Upstand



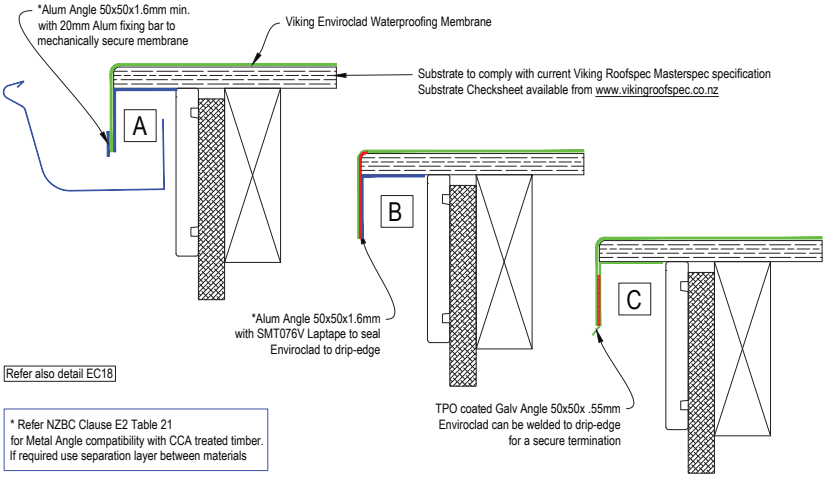
Pipe Penetration



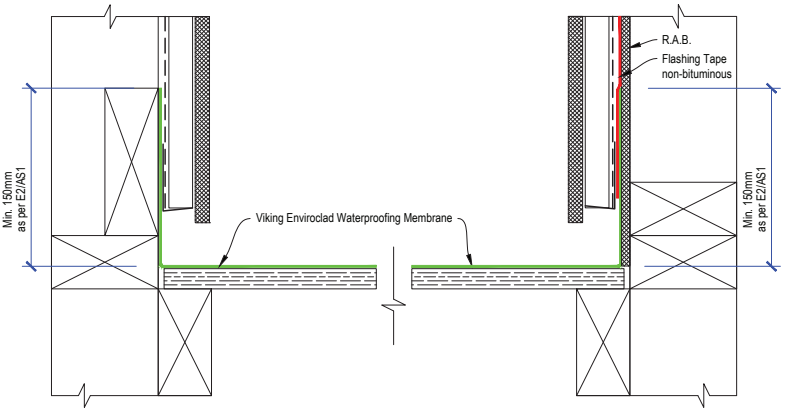
Chase Face Upstand



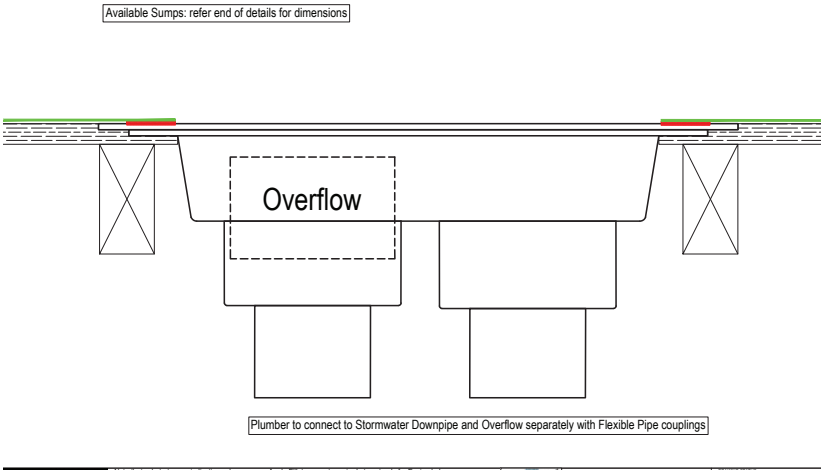
Drip Edge



Clamped Drainage and Overflows



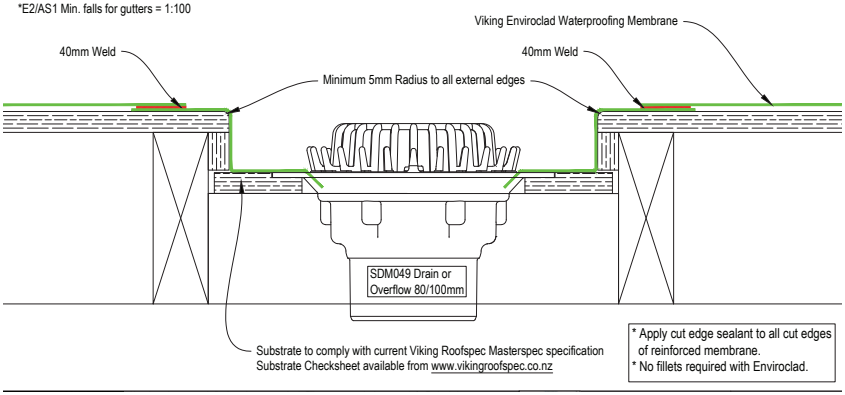
Dropper Outlet and Overflow



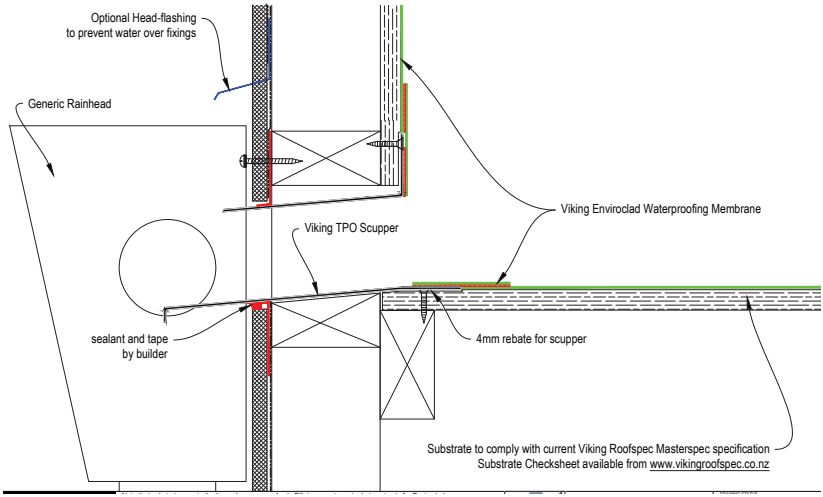
Internal Gutter

It is Viking Roofspecs view that Internal Gutters can be eliminated in most cases.
In doing so you may Reduce overall heights or increase roof falls while reducing risk and detail.
To find out more contact Viking Roofspec Technical 0800 729-799

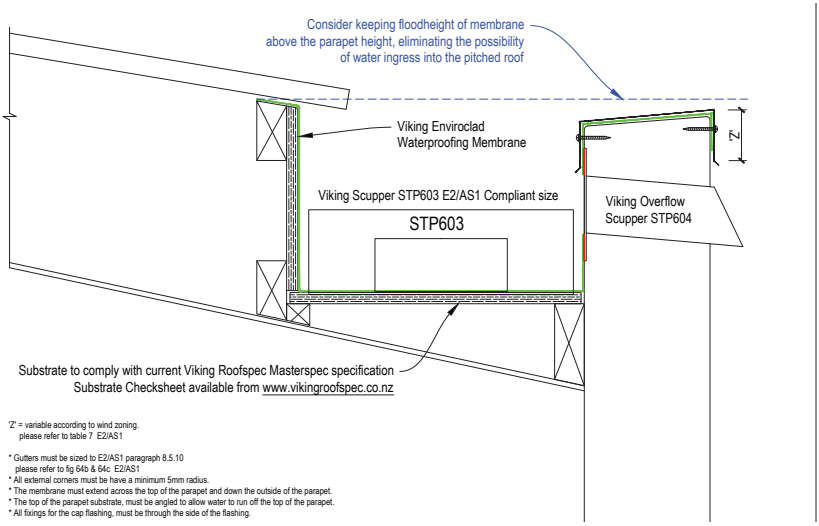
*E2/AS1 Min. falls for gutters = 1:100



Scupper



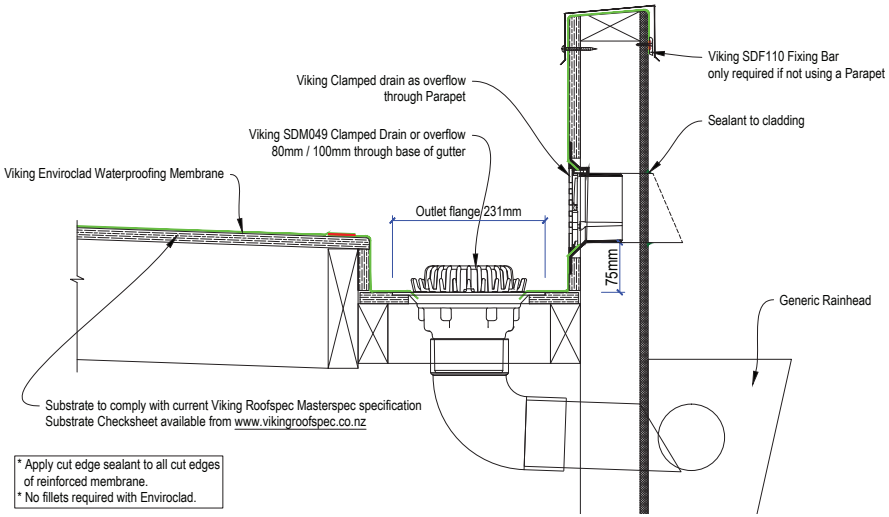
Parapet Gutter to Metal Roof



'Z' = variable according to wind zoning.
please refer to table 7 E2/AS1

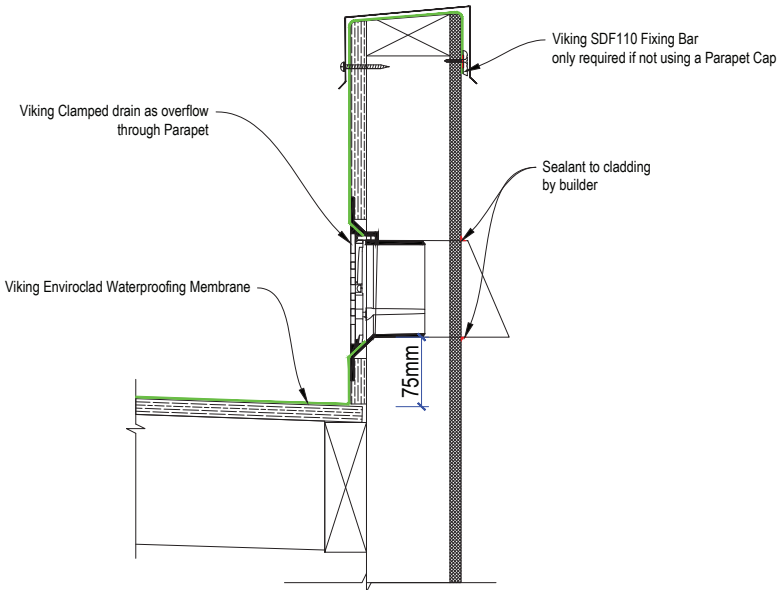
* Gutters must be sized to E2/AS1 paragraph 8.5.10
please refer to fig 64b & 64c E2/AS1
* All external corners must be have a minimum 5mm radius.
* The membrane must extend across the top of the parapet and down the outside of the parapet.
* The top of the parapet substrate, must be angled to allow water to run off the top of the parapet.
* All fixings for the cap flashing, must be through the side of the flashing.

Parapet Gutter

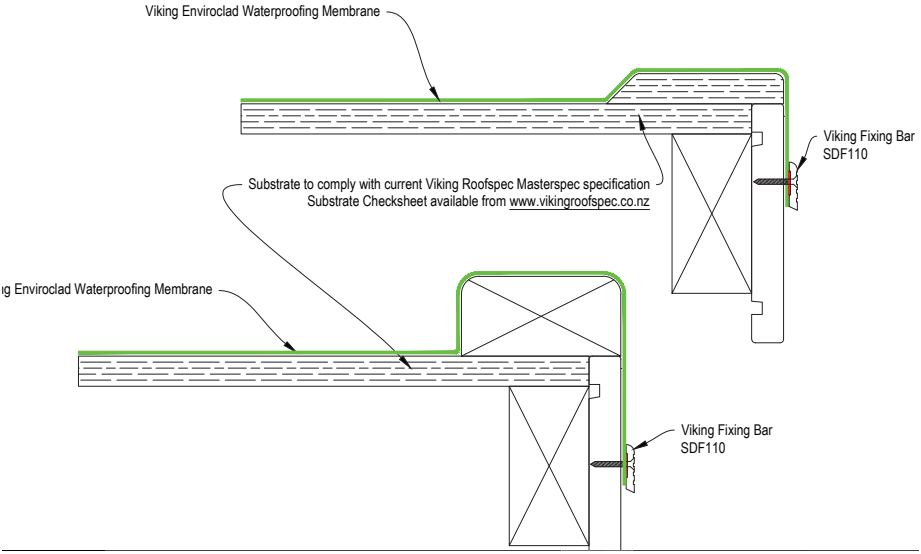


* Apply cut edge sealant to all cut edges
of reinforced membrane.
* No fillets required with Enviroclad.

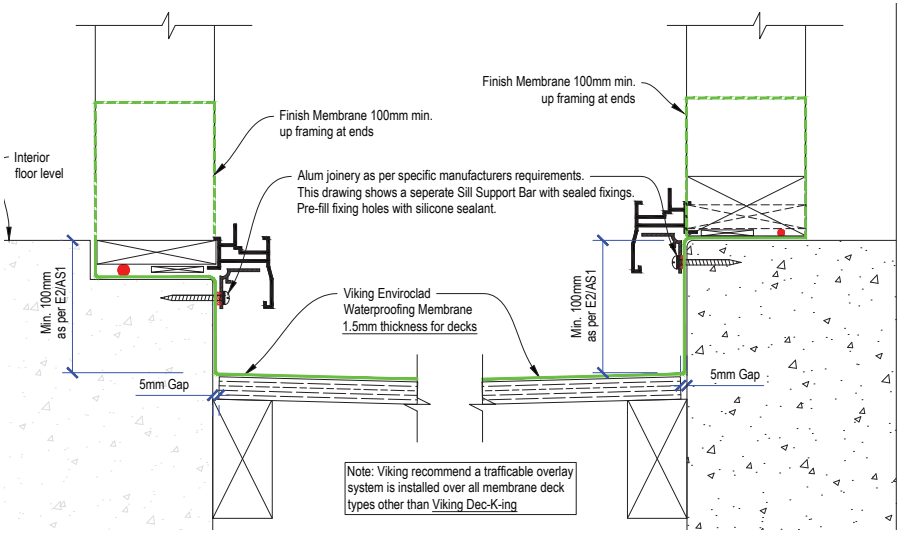
Parapet Overflow



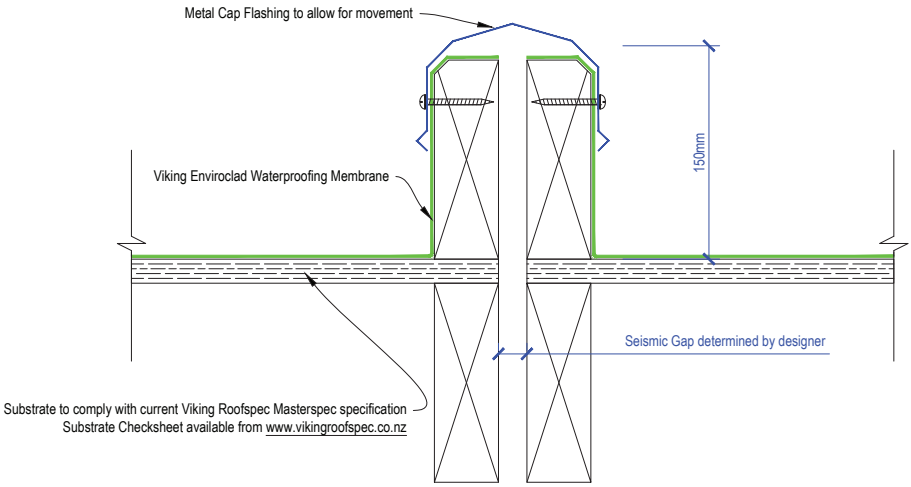
Barge Edges



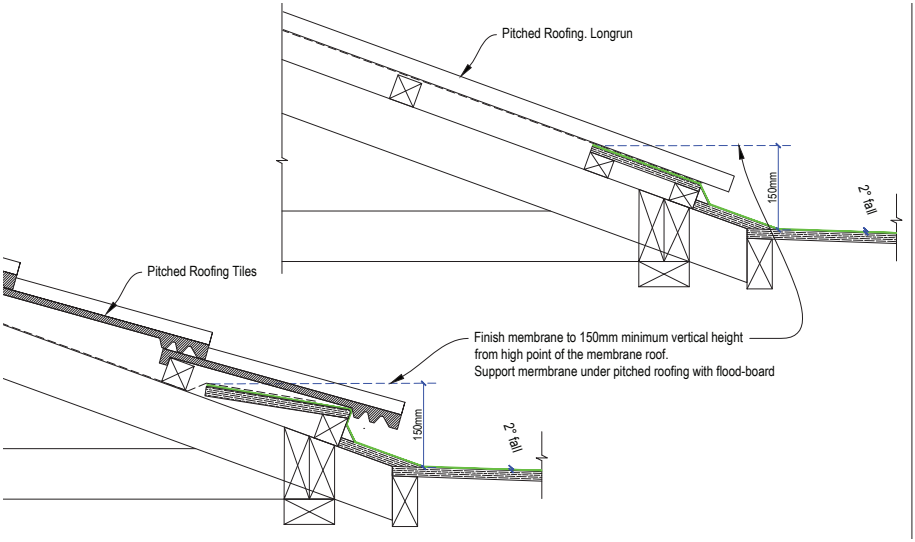
Door Threshold



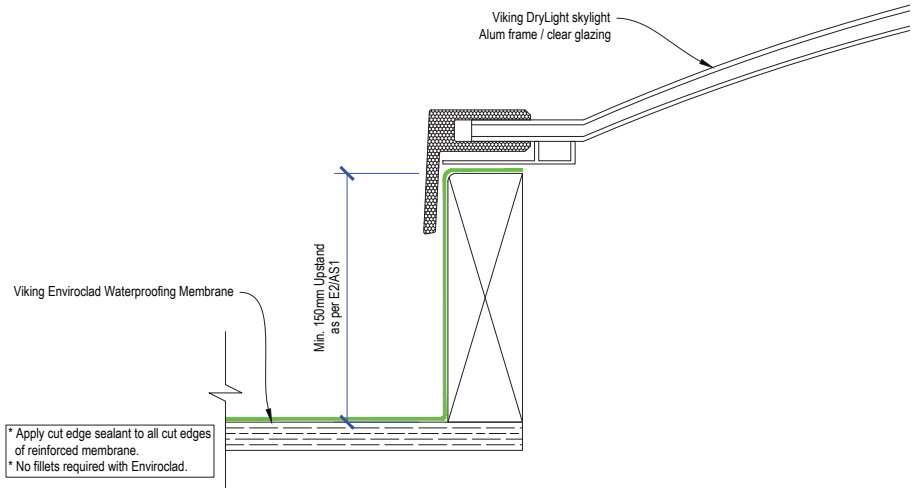
Construction Joint



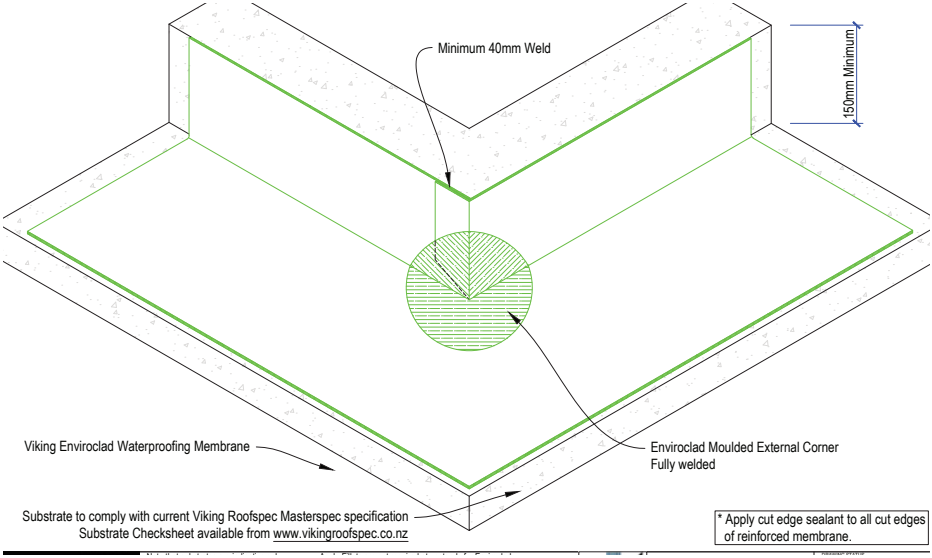
Pitched Roofing Junction



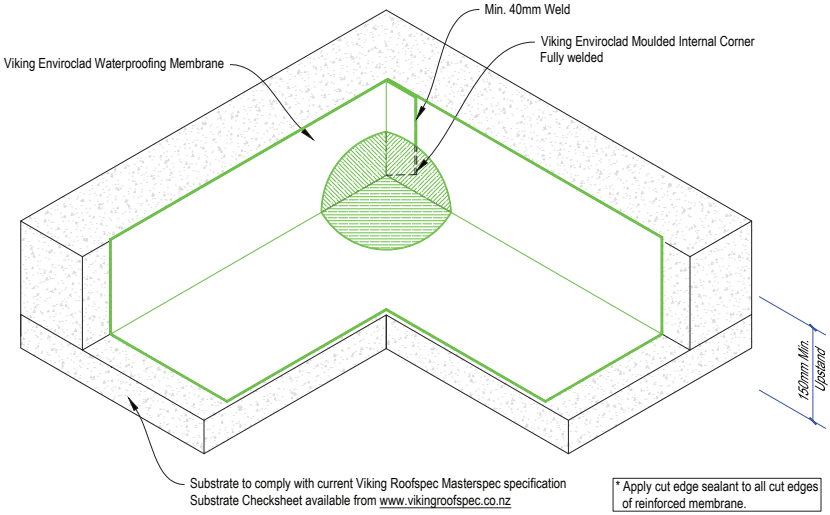
Skylight Upstand



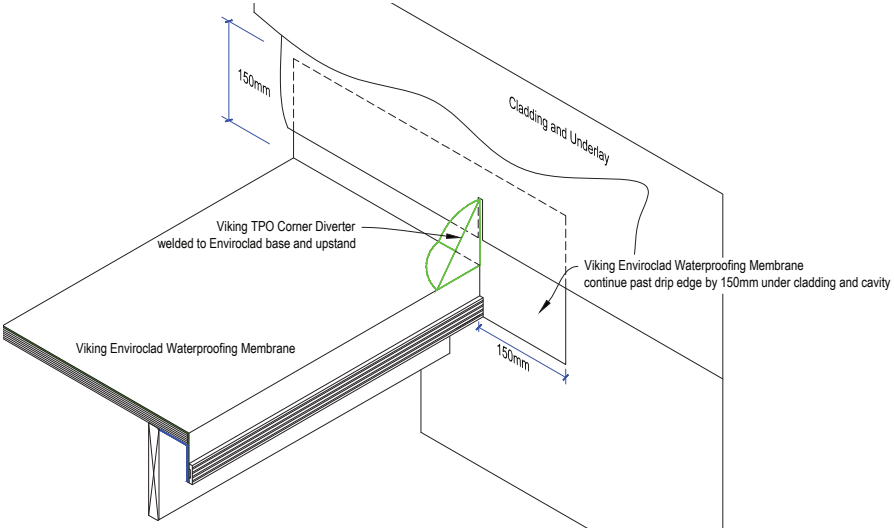
External Corner

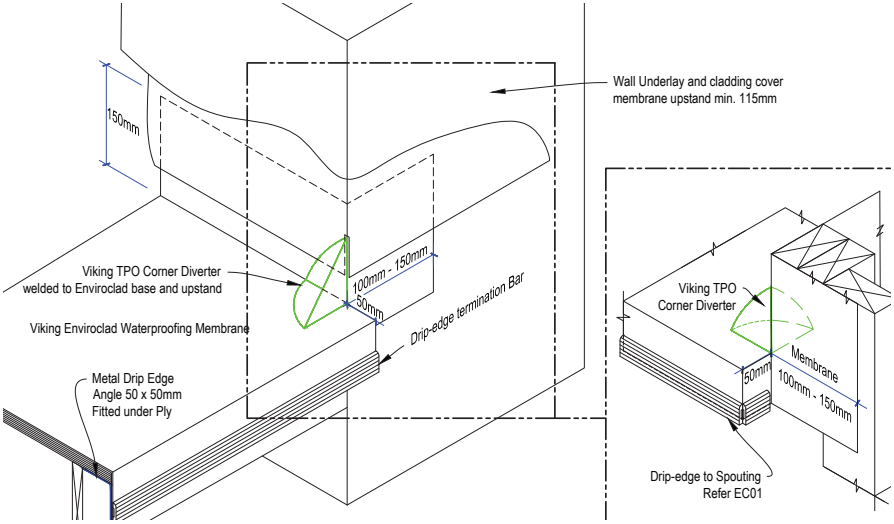


Internal Corner

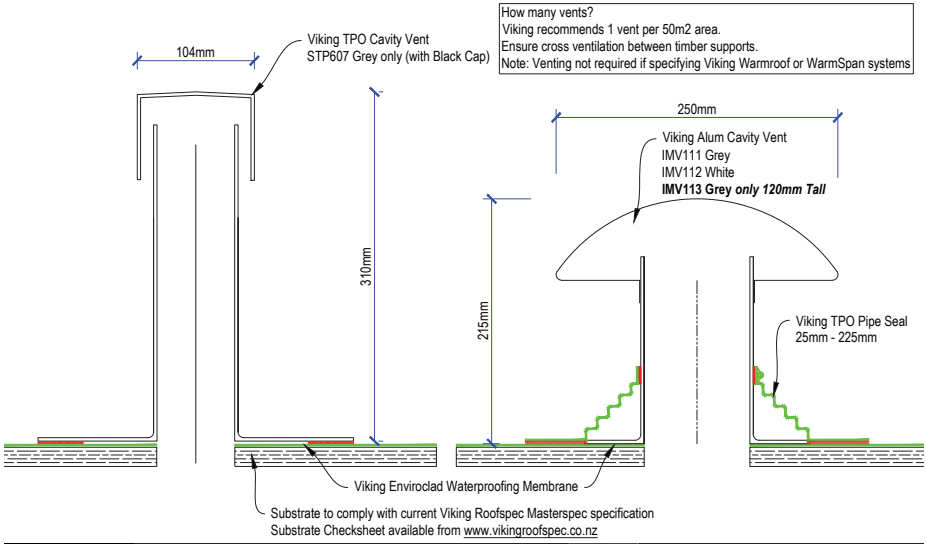


Kickout Diverter

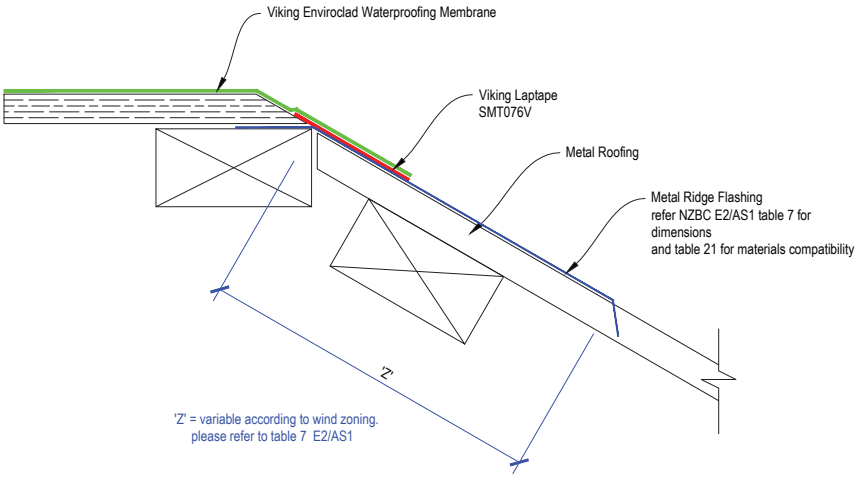




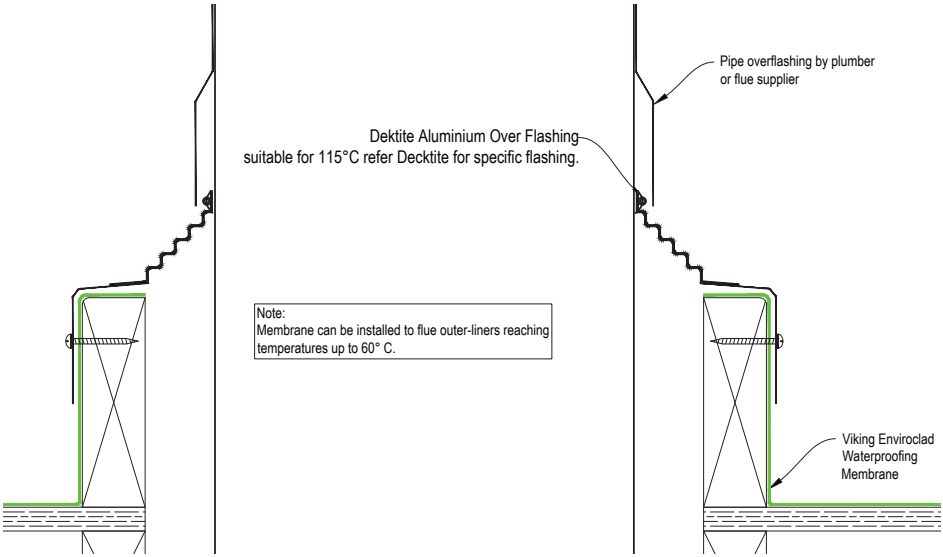
Vents



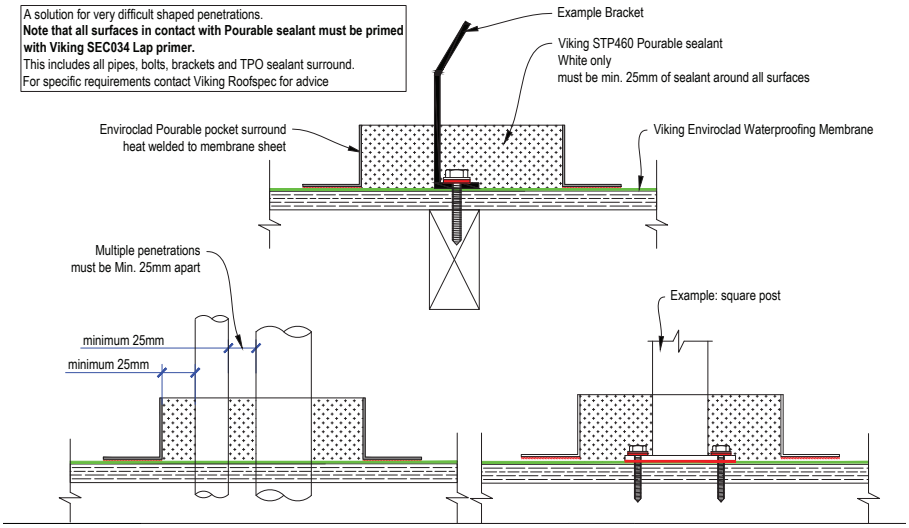
Mansard Junction



Oversized Pipe

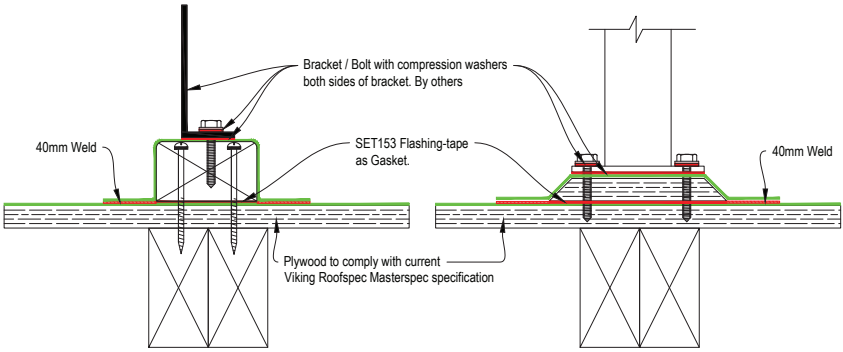


Pourable Pocket

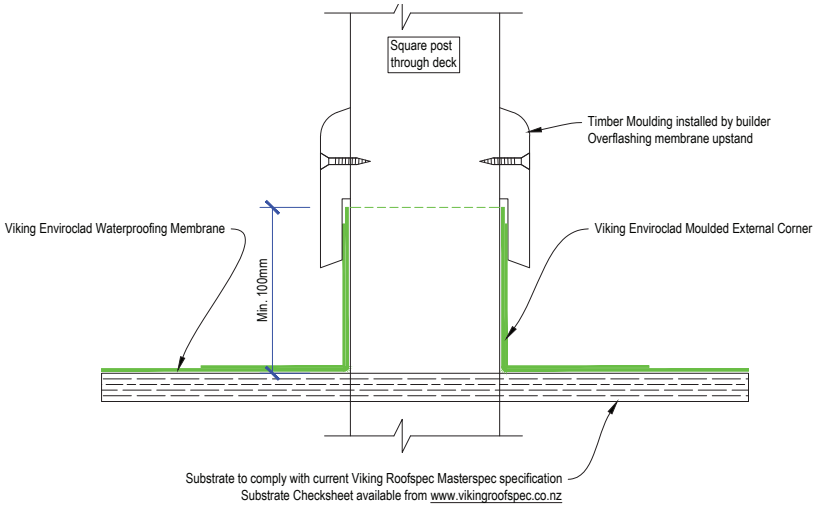


Plinth

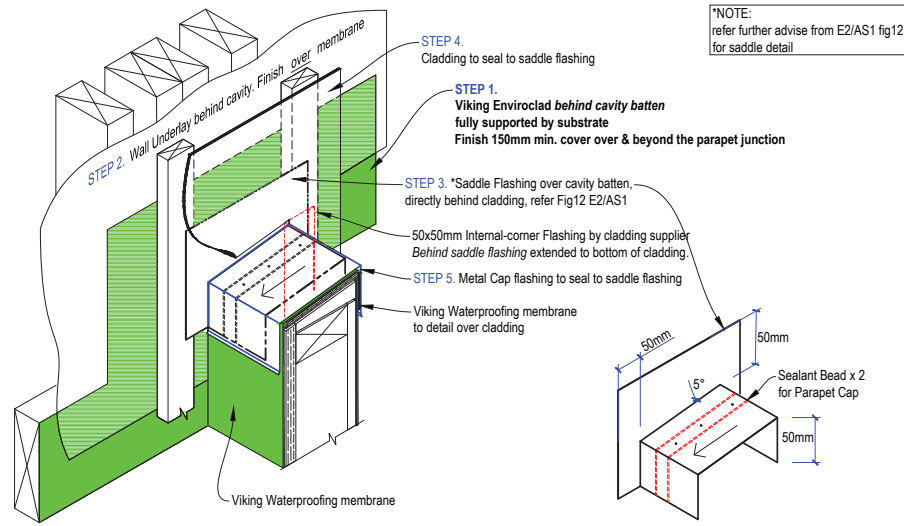
Consider Viking Detail EC23 as a better option for supporting Mechanical Plant on membrane roofs.
Although Viking Roofspec do not recommend fixing posts or plant through the top of Membrane roofs or decks if this is required then use of a plinth detail provides that fixings by other trades are keep off the main deck flood area.
Viking Roofspec recommend that any fixing of plant is kept independent of the membrane roof ideally through vertical surfaces such as parapets.
All fixings must be sealed.
Note: Viking Roofspec or our Approved Applicators do not warranty fixings installed by other trades.



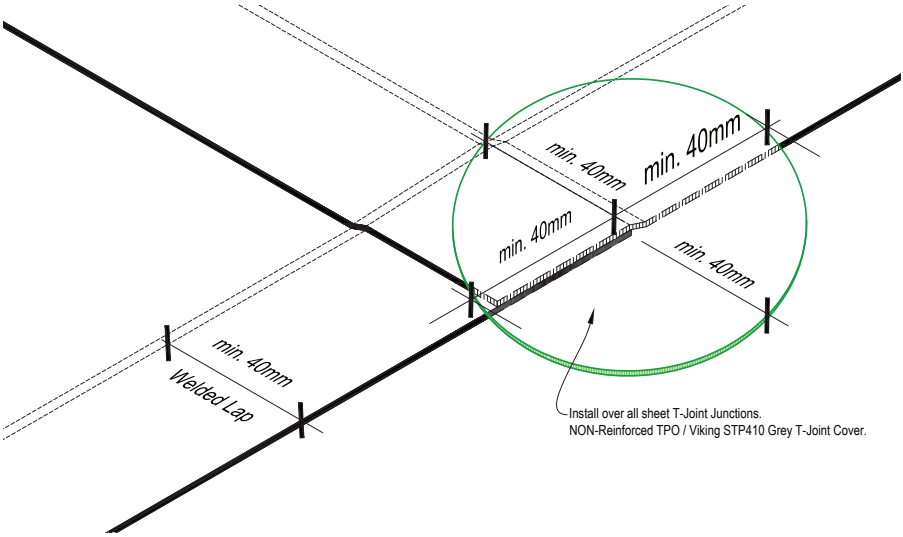
Square Post



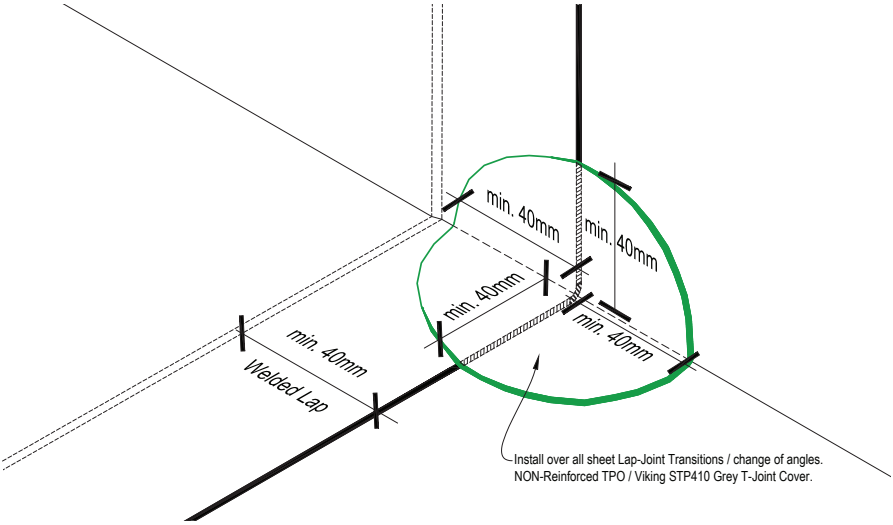
Parapet Junction



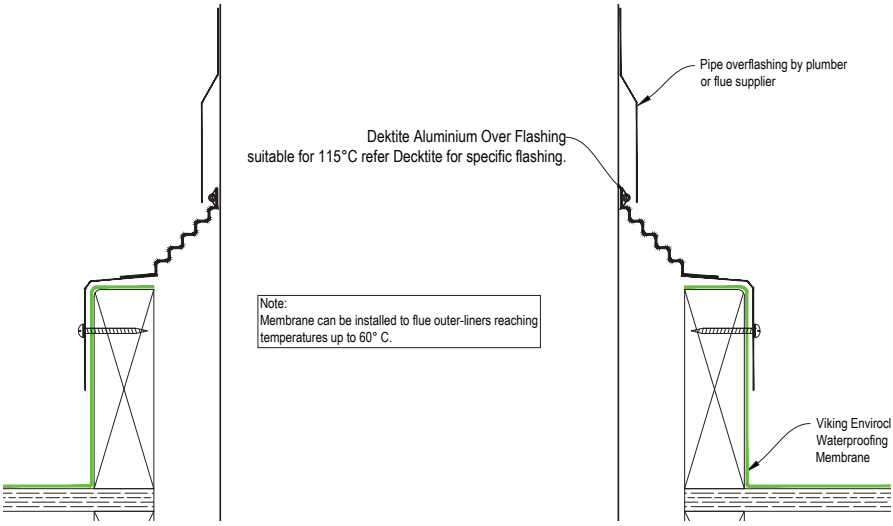
T Joint



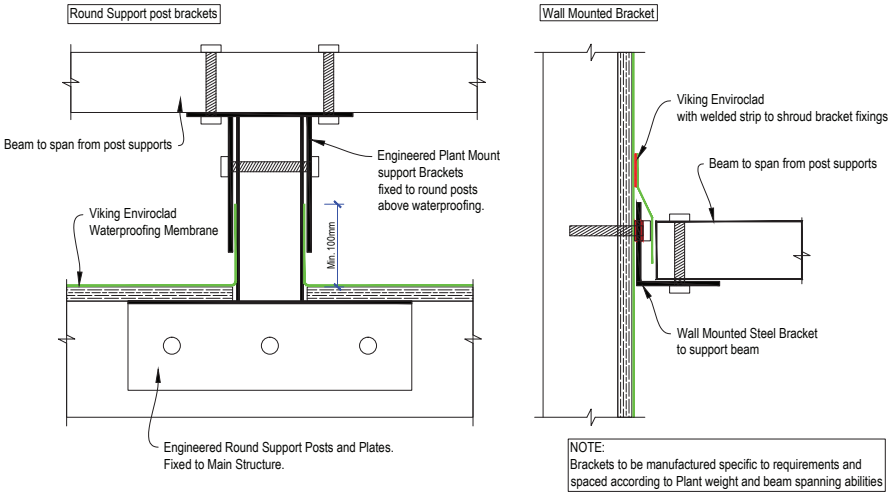
Lap Transition



Flue Penetration

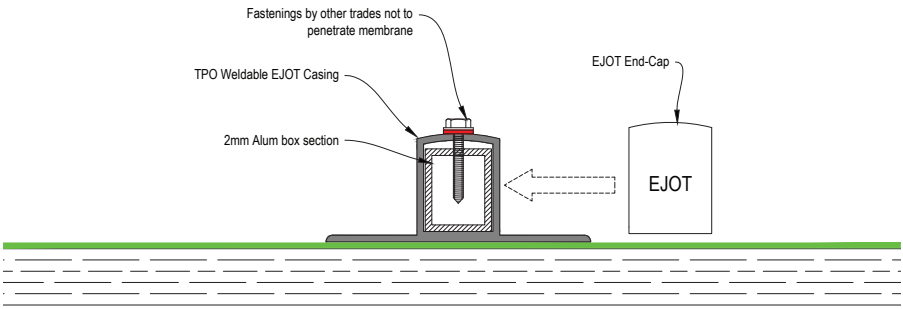


Plant Mounting Brackets

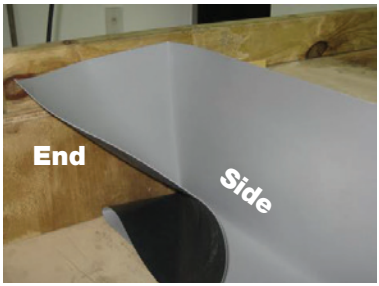


EJOT Bar

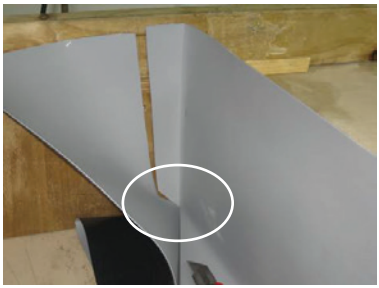
Creates a LOW-RISK fixing base for light-weight mechanical and electrical essentials such as pipework and cable trays - through to light weight solar PV and solar thermal installations.



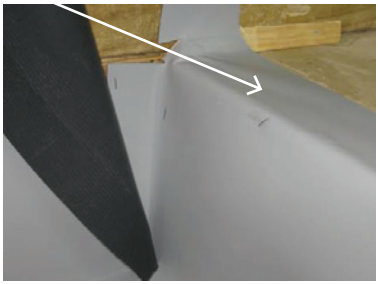
Step by step application



1. Fold the membrane into the corner to create a standard “pigs ear”.



2. Cut straight down the end of the membrane to create a 40mm tab on the End. Stop about 25mm from the base. At the bottom angle the cut at 45° to the centre of the internal corner (see circle).



3. Turn the cut membrane. The piece that was at the End vertical surface, will turn and overlap the Side (see arrow). Trim to create 40mm tab.

4. Weld the cut tab from the bottom up. Use the welding tool at heat setting #7 for reinforced welding like this

Step by Step
Internal Corner Transition

5. Using a cone shaped internal corner, set the corner, and hold it in place with a roller. Use the welding tool at heat #5. Direct the heat toward the base material, and follow the nozzle closely with the roller. Start at the base.

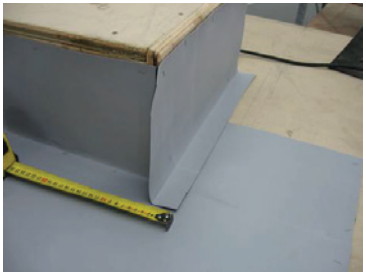
6. Use the penny roller to ensure the corners are tightly welded to the base membrane first, directing the heat from above.

7. Use the penny roller to ensure the corner is welded tightly into any membrane “step-offs”

8. Use a seam probe to test the welds, after the membrane has been allowed to cool. If any part of the weld fails, it need to be opened as far as possible, cleaned and re-welded.

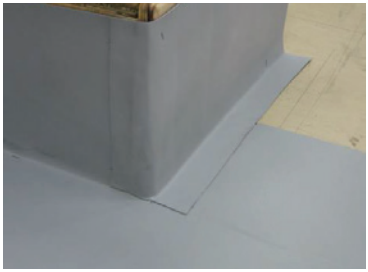
Step by Step
External Corners

1. Lay membrane past corner, and cut off flush.



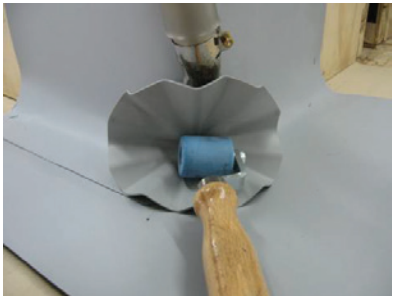
2. Lay adjoining sheet. Allow a minimum 50mm for welds at the base and around the corner.

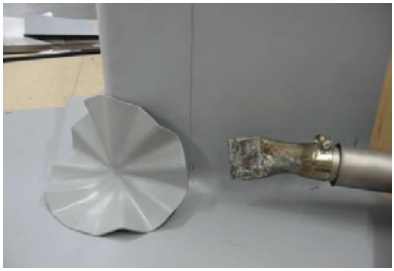
3. Weld at the base and around the corner.

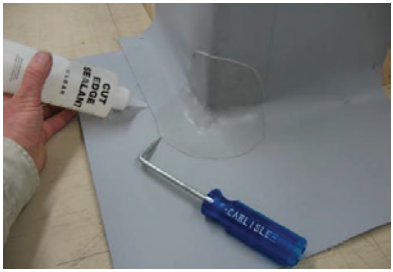


4. Over the top of the adjoining field sheets, apply either a fluted external corner or 90° external corner.

Step by Step
External Corner Fluted







1. Beginning with your corner tabbed around as previous. Minimum 40mm welds at base and tabbed around corner.
2. Centre the fluted corner on the transition point. Press it onto the corner and weld the top half directly up the vertical edge. Aim the welder at the base material, to avoid too much heat on the unreinforced material. Follow the welder closely with the roller.
3. Weld the base directly out from the same centre point.
4. Use the hand welder to gently warm the fluted corner. This will allow the material to stretch slightly.
5. Weld the base flat, followed by the top sides. Ensure the corners are well sealed.
6. Test every weld, and seal cut edges with Cut Edge Sealer.

Step by Step
Scupper

1. Lay the Enviroclad sheet through and over the scupper opening. The scupper opening should be rebated 2-3mm into the plywood substrate.
2. Cut out the scupper opening.
3. Cut the scupper flange down to fit. You will require a minimum 40mm to weld to.
4. Apply a continuous bead of Water Cut-Off Mastic (STP870) to the Enviroclad field sheet, around the scupper opening. (This will seal against the back of the scupper face).
5. Fit the scupper. This can be screwed in place, or just welded in place.
6. Cut a piece of reinforced Enviroclad. This should be at least 40mm wider than the scupper face.
7. Heat and crease the Enviroclad at the line of transition. Weld to the base of the scupper flange, and weld to the field sheet.

Step by Step
Scupper

8. Weld into the corner, using the penny roller to ensure the membrane is sealed.
9. Weld up either side of the scupper face.
10. Allow to cool and seam probe all welds.
11. Seal edges with Cut Edge Sealant

Stage 1 :

Enviroclad Assessment

1. What must you have on hand when transporting Dangerous Goods?

2. What do you need to complete to become a Viking Stage 3 licensed installer?

3. What product is used to clean Enviroclad before welding laps and details?

4. Why shouldn't you mix a solvent with Enviroclad adhesive? (STP000)

5. Name 2 details where the T-Joint cover will be used.

6. What 2 products must be used to prepare all surfaces inside an Enviroclad Pourable Pocket?

7. Where would you use water cut off mastic STP870?

8. How should exposed cut-ends of the Enviroclad sheet be treated? And Why?

9. What can you use TPO coated steel for?

10. What four factors make a successful weld join?

(1) (3)

(2) (4)

11. What should you do before using a Robot Welder or RhinoBond Plate Induction Welder on a roof?

12. What effect can a concrete substrate have on the welding of membrane weld?

13. What is the correct lap width for Enviroclad?

    mm

14. According to E2/AS1 code what is the minimum degree of fall for…

    a roof

    a gutter

    a deck

15. How should the plywood grain be laid in relation to the supporting timbers?

16. What type of fixings must be used to fasten the plywood?

17. What is the correct gap between plywood sheets?

18. As well as the Viking Approved Applicator (company), who else should be identified on a Certificate of Workmanship warranty?

19. When welding and detailing Enviroclad what is the most important task to continue throughout the day?

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Roofspec Viking

Taking care of detail

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