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| Please find below our current Masterspec Specification for Viking Epiclad FBS.Our focus is to ensure that you have the right information and technical support required to make specifying our roofing and waterproofing solutions easy.If you require any of our CAD details you can find them on our website [www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz)For any further support please do not hesitate to contact us on 0800 729 799.Kind Regards,The team at Viking RoofspecVK_ROFS_4C_SL_TCD T: 0800 729 799 F: 0800 729 788info@vikingroofspec.co.nz[www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz) |

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**4422VB VIKING BUTYLCLAD AND EPICLAD MEMBRANE ROOFING**

## 1. GENERAL

 If you have pre-customised this work section using the "questions and answers" provided as part of the downloading process, it may be necessary to amend some clauses to suit the final project-specific version.

 The section must still be checked and customised to suit the project being specified, by removing any other irrelevant details and adding project-specific details and selections.

 This section relates to Viking **Butylclad** and Viking **Epiclad** EPDM sheet membrane systems:

 - applied as a fully adhered single-ply waterproofing membrane

 - bonded to timber, construction plywood, concrete or fibre cement sheet

 Modify or extend the above description to suit the project being specified. For specific technical information refer to Viking Roofspec.

 An alternative to the fully bonded or fully adhered system is the loose lay application. This specification does not cover loose lay application.

 When laying over an existing bituminous substrate or very rough concrete refer to 4422VR VIKING EPICLAD FBS RE-ROOFING MEMBRANE section or 4422VE VIKING ENVIROCLAD & ENVIROCLAD FBS MEMBRANE section for Enviroclad FBS membrane.

### 1.1 RELATED WORK

 Refer to ~ for ~

 Include cross references to other sections where these contain related work.

 Refer to 7411 RAINWATER SPOUTING SYSTEMS for rainwater disposal.

 Other related sections in Masterspec Standard could be:

 4422VR VIKING EPICLAD FBS RE-ROOFING MEMBRANE for roofing system designed for the retrofit of existing bitumen, malthoid, concrete or tongue and groove sarking.

 4421VB VIKING BITUCLAD TORCH ON MEMBRANE ROOFING for modified bitumen membranes.

 4422VE VIKING ENVIROCLAD & ENVIROCLAD FBS MEMBRANE

 **Documents**

### 1.2 DOCUMENTS

 Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

 [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1 External moisture

 [AS/NZS 1604.3](http://www.masterspec.co.nz/redirect.aspx?pl=1183) Specification for preservative treatment - plywood

 [AS/NZS 2269.0](http://www.masterspec.co.nz/redirect.aspx?pl=1046) Plywood - Structural - Specifications

 Delete from the DOCUMENTS clause any document not cited. List any additional cited documents.

 The following are related documents and if referred to in the work section need to be added to the list of DOCUMENTS.

 [NZBC B2](http://www.masterspec.co.nz/redirect.aspx?pl=223)/AS1 Durability

 [NZBC E1](http://www.masterspec.co.nz/redirect.aspx?pl=227)/AS1 Surface water

 [NZBC F2](http://www.masterspec.co.nz/redirect.aspx?pl=236)/AS1 Hazardous building materials

 [NZS 3101](http://www.masterspec.co.nz/redirect.aspx?pl=294) Concrete structures standard - the design of concrete structures

 [NZS 3604](http://www.masterspec.co.nz/redirect.aspx?pl=301) Timber-framed buildings

 BRANZ publication Good practice guide to membrane roofing

 BRANZ publication Selecting roof claddings

 Check with Viking Roofspec to ensure that you have the most up to date information.

### 1.3 MANUFACTURER/SUPPLIER DOCUMENTS

 Manufacturer's and supplier's documents relating to this part of the work:

 Viking Waterproofing Membrane Systems manual

 Viking **Butylclad** or **Epiclad** Plywood Substrate Checklist

 Viking Concrete Substrate Checklist

 Viking **Butylclad** or **Epiclad** Standard Details

 Viking **Butylclad** or **Epiclad** Applicator Manual

 [BRANZ Appraisal 307](http://www.masterspec.co.nz/redirect.aspx?pl=167) - Viking **Butylclad**, **Epiclad** & **Epiclad** FBS Roof Membrane Systems

 Copies of the above literature are available from Viking Roofspec

 Web: [www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz)

 Email: info@vikingroofspec.co.nz

 Telephone: 0800 729 799

 Facsimile: 0800 729 788

 It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation, finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.

 **Warranties**

### 1.4 WARRANTY - MANUFACTURER/SUPPLIER

 Provide a material manufacturer/supplier warranty:

 20 years: For Viking **Butylclad** Membrane

 20 years: For Viking **Epiclad** Membrane

 - Provide this warranty on the Viking Roofing standard form.

 - Commence the warranty from the date of completion of fixing.

 Refer to the section 1237 WARRANTIES for additional requirements.

 Modify or expand the clause to suit project or manufacturer/supplier requirements.

### 1.5 WARRANTY - INSTALLER/APPLICATOR

 Provide an installer/applicator warranty:

 5 years: For Viking **Butylclad** membrane when installed by Viking approved applicator

 5 years: For Viking **Epiclad** membrane when installed by Viking approved applicator

 - Provide this warranty in the Viking Rubber Membrane Product Warranty standard form.

 - Commence the warranty from the date of completion of fixing.

 Refer to the section 1237 WARRANTIES for additional requirements.

 Modify or expand the clause to suit project requirements.

### 1.6 WARRANTY - VIKING FULL SYSTEM WARRANTY

 *\* Available only upon application\**

 Provide a Viking Full System Warranty for materials and installation:

 20 years: For Viking **Butylclad** Membrane

 20 years: For Viking **Epiclad** Membrane

 - Apply for when the project consists of over 300m² of membrane.

 - Approved Applicator must hold a current Stage 3 Viking Roofspec Licence.

 - Provide this warranty on the Viking Full System Warranty job completion form.

 - Commence the warranty from the date of completion of fixing.

 Refer to the section 1237 WARRANTIES for additional requirements.

 Modify or expand the clause to suit project requirements.

 **Requirements**

### 1.7 QUALIFICATIONS

 Installation of the membrane to be carried out by Viking Approved Applicators. Installation of substrates must be completed by suitably qualified persons in accordance with instructions given in Manufacturers Technical Literature and [BRANZ Appraisal 307](http://www.masterspec.co.nz/redirect.aspx?pl=167).

### 1.8 NO SUBSTITUTIONS

 Substitutions are not permitted to any specified Viking membrane waterproofing materials, or associated products, components or accessories.

 **Performance**

### 1.9 TEST

 Flood test horizontal applications with a minimum 50mm depth of water for 24 hours. Make good any lack of watertightness when the surface is completely dry.

 Not all applications can be checked. All gutters should be checked.

### 1.10 PERFORMANCE

 Accept responsibility for the weather-tight performance of the completed roofing system, including all penetrations through the roof and junctions with walls and parapets. All penetrations to comply with [NZBC, E2/AS1](http://www.masterspec.co.nz/redirect.aspx?pl=347) and Viking Roofspec specifications and Standard Details.

 Refer to later EXECUTION clause on co-operating with others on the installation of elements which penetrate or adjoin the roofing system; including walls and parapets, skylights, sundry elements fixed through the roofing surface, service pipework, etc.

## 2. PRODUCTS

 **Materials**

 Select the system for this work (Butylclad or Epiclad) and then use the PRODUCTS and EXECUTION clauses required for that particular system.

 **Accessories**

### 2.1 RAIN HEADS

 Rotationally moulded one piece plastic rain head.

 75mm, 100mm 150mm or 200mm outlets.

### 2.2 VENTS

 Aluminium vent.

 Used for disbursement of vapours from membrane roof cavities

 Used to protect areas of roof or deck exposed to frequent foot traffic.

### 2.3 SCUPPER OUTLETS

 Proprietary scuppers.

 100m x 70mm or 200mm x 75mm (compliant to E2/AS1).

### 2.4 OVERFLOW

200mm X 75mm parapet mounted overflow

 Other size options available from Viking Roofspec are 65mm x 100mm, 100mm x 100mm. These are alternative solutions and do not comply with [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1.

 Note, overflows can be smaller refer [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1, fig 63.

 Available in a variety of shapes and sizes to suit pipes from 60mm to 200mm.

### 2.5 CLAMP RING ROOF DRAINS OR OVERFLOWS

 80mm, 100mm or 150mm clamp sealed drains and overflows

 Available with a clamping ring and grate or without.

## 3. EXECUTION

 **Conditions**

 Refer to Viking Roofspec Technical Literature for detailed information and call 0800 729 799 for technical assistance.

### 3.1 GENERALLY

###  All work and materials to comply with current Viking **Butylclad** or **Epiclad** technical literature and standard details; NZBC and E2/AS1.

### 3.2 STORAGE

 Take delivery of Viking membrane in rolls undamaged and include for site handling facilities where required. Provide dry storage for all products. Stack off the ground on a level surface and with accessories.

### 3.3 WEATHER

 Lay membrane in fair weather, with ambient air temperature no less than 7°C.

 **Application - preparation**

### 3.4 PRELIMINARY WORK

 Ensure that preliminary work, including formation of falls, flashing rebates, grooves, ducts, provision of battens and fillets and fixing of vents and outlets to levels, is complete and properly constructed to enable the system to work as intended. The substrate to be smooth, clean, dry and stable.

 Check with the BCA to confirm requirements in addition to the NZBC.

### 3.5 ACCEPTANCE OF SUBSTRATE

 Confirm that the substrate, including fillets, outlets and projections, meets design specification, and Viking Roofspec conditions. Ensure the falls meet a minimum of [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1.

### 3.7 CONCRETE SUBSTRATE

 Install to requirements of current Viking Roofspec Membrane Concrete Substrate Checklist. Ensure concrete substrate has been allowed to cure for at least 28 days before commencing application. If using a curing compound or sealer ensure compatibility with Viking membrane components prior to installation and follow the manufacturer’s instructions. The relative humidity of concrete substrates must be 75% or less before membrane application. Prepare the surface to leave smooth, clean, dry and free of debris.

 Contact Viking Roofspec on 0800 729 799 for recommended options.

3.8 PLYWOOD SUBSTRATE

 Install to requirements of current Viking Roofspec **Epiclad** or **Butylclad** Plywood Substrate Checklist. Plywood to be;

- a minimum of 17mm thick and complying with [AS/NZS 2269.0](http://www.masterspec.co.nz/redirect.aspx?pl=1046)

 - minimum CD structural grade with the sanded C side upwards

 - H3.2 treated (CCA) and kiln dried.

 Lay plywood with staggered joints (brick bond) with all edges of the sheets fully supported. Do not use tongue and groove plywood.

 Leave a 3mm gap between all sheets.

 Fix with 10 gauge x 50mm stainless steel countersunk head screws. Fix at 50mm from the corners, 150mm centres on edges and 200mm centres on intermediate supports.

 Provide 20mm timber corner fillets at the base of all upstands.

 Chamfer all external edges with a minimum radius of 5mm where the membrane is to be wrapped over.

 Provide falls to a minimum of those stated in [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1, 8.5.1, - 1:30 for roofs, 1:40 for decks and 1:100 for gutters. Some BCA's require membrane falls greater than Code, check with the BCA and research the particular membrane roofing proposed and amend this basic clause accordingly.

 Plywood and the timber substructure to have a maximum moisture content of 20% when the membrane is adhered.

 Amend the above clause if the plywood substrate is specified elsewhere, such as in 4337 PLYWOOD ROOFING AND DECKING. Do not use hardboard or MDF board. Refer to Plywood Manufacturers span tables for alternative solutions using thicker plywood or purpose-made plywood flooring products.

 WARNING: Do not use light oil solvent based preservative (LOSP).

 All membranes have a propensity to 'tent' above sheet joins due to lively nature of plywood. If the roof is going to be seen or will be used as a visual feature, refer to Viking Roofspec Technical Consultant about the option of changing the substrate specification to the same as that of Dec-K-ing where the plywood sheets are butt-jointed and sealed with a bead of Gorilla Grip. The positioning of expansion joints in the plywood should be based on every 50m², of substrate, with location to be agreed with the project administrator.

 Butylclad and Epiclad are acceptable solutions and the minimum falls laid out in [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1 apply, namely, 2° for roofs and 1.5° for decks.

 Viking Roofspec does not recommend fixing of tiles on any membrane.

 **Application - laying**

### 3.6 GENERAL

 Install to current application standards as detailed in Viking Roofspec Technical Literature and Viking **Epiclad**/**Butylclad** Applicators Manual. Tape all plywood joints with 25mm wide PVC tape.

3.7 PRIME

 Dilute the membrane adhesive at a ratio of 1:1 with BMA solvent, to create a primer. Apply the primer evenly to the entire surface and allow to dry.

 Modify this clause to suit the project specified. Refer to Viking Roofspec Technical Literature for membrane installation details.

### 3.8 POSITION

 Membrane to be unrolled onto the prepared substrate and allowed to relax for 20 minutes prior to installation. Position the first length of sheet running across the fall of the deck starting from the lowest side of the substrate. Allow adequate material is allowed for edge details, and for vertical terminations to finish, per E2/AS1.

 Modify this clause to suit the project specified.

### 3.9 APPLY ADHESIVE

 Fold the sheet as required. Apply proper adhesive to both the exposed membrane and the exposed substrate, one half at a time. Do not thin adhesive with solvent.

### 3.10 LAY SHEETS

 When the adhesive is tack dry roll the sheet onto the substrate. Unfold the sheet and adhere to substrate working progressively from the centre towards the edge of the sheet. Do not allow the membrane to become stretched or under tension. Smooth out wrinkles with hands and sweep the laid surface with a soft bristle broom. Repeat the process for the other half of the sheet. Mark 76mm lap width on adhered sheet. Lay the next sheet with leading edge over the adhered sheet up to the marked line and repeat process.

3.11 LAP JOINS

 Clean membrane area to be lapped, using BMA solvent. Apply HP250 lap primer to the lower sheet edge to be lapped. Apply the adhesive side of the 76mm laptape to the primed surface. Do not remove the plastic backing of the laptape. Roll the plastic backed laptape, covering the entire area to bond the laptape to the lower sheet. Prime the edge on the underside of the next sheet. When primer is dry, drop top sheet edge over the laptaped area. Remove the plastic backing from the laptape. Roll the membrane lap again; covering the entire area to ensure the laptape is bonded to both surfaces and flat.

### 3.12 CONSTRUCTION JOINTS

 Tape construction joints with minimum 25mm PVC self adhesive tape.

 Not suitable for expansion joints.

3.13 INSPECT

 Inspect and test all membrane laps and details upon completion.

### 3.14 PENETRATIONS & JUNCTIONS

 Form and finish upstands, downturns, penetrations, outlets and vents to conform to current Viking Roofspec Standard Details. Confirm installation of all required flashings and terminations, to leave membrane watertight upon project completion.

 Where metal flashings and sleeves are shown in the detailing, specify under PRODUCTS.

 Modify this clause to suit the project specified.

### 3.15 VENTING – ROOF/DECK CAVITIES

###  Provide adequate ventilation per E2/AS1. If applying roof mounted proprietary vents, install a minimum one Viking roof vent for the first 40m² of flat roof area and one vent per 90m² thereafter. Check that the cavity is cross ventilated to allow air movement across the entire cavity.

 Modify this clause to suit the project specified. Refer to Viking Roofspec Technical Literature for venting requirements over concrete, ply and other substrates as required

 **Finishing**

### 3.16 FOOT TRAFFIC

 Keep foot traffic to a minimum after laying the membrane. Lay protection as required for foot traffic or later works.

 Traffic concentration points would include roof hatches, access doors, rooftop ladders and walkways. Traffic of once a month or more would be sufficient to justify walkway protection. Viking Roofspec supply protective walkway pads and rolls.

### 3.17 ACCESS BOARDS

 Provide access boards for later operations and remove when no longer needed.

### 3.18 ACCEPTANCE

 Inspect the completed work. Protect and maintain roofing until completion of the contract works.

### 3.19 SUBSEQUENT WORK

 Make good any damage. Repair to specification.

 **Completion**

### 3.20 CLEAN UP

 Clean up as the work proceeds.

### 3.21 LEAVE

 Leave work to the standard required by following procedures.

### 3.22 REMOVE

 Remove debris, unused materials and elements from the site.

## 4. SELECTIONS

### 4.1 **BUTYLCLAD** RUBBER MEMBRANE

 Location: ~

 Substrate: ~

 Brand/type: Viking **Butylclad**

 Size: ~

 Colour: ~

 Accessories: ~

 Dimension/colour options available: 1.0mm thickness, 900mm roll width, 25 m roll length, grey or black

 1.0mm thickness, 1.35 m roll width, 25 m roll length, grey or black

 1.5mm thickness, 1.35 m roll width, 20 m roll length, grey or black

 Accessories: Viking sump

 Viking Scupper

 Walkway mats

 Viking Gravel/ Leaf Grates

 Roof outlets: - Surefix Roof Outlets, available with a clamping ring and grate

 or without

 - roof drainage outlets, with grill or dome,

 Plastic or spun aluminium (Jetson) vent.

### 4.2 **EPICLAD** EPDM RUBBER MEMBRANE

 Location: ~

 Substrate: ~

 Brand/type: Viking **Epiclad**

 Size: ~

 Colour: Black

 Accessories: ~