



BRANZ Appraised

Appraisal No.520 [2013]

BRANZ Appraisals

Technical Assessments of products
for building and construction

BRANZ APPRAISAL No. 520 (2013)

This Appraisal replaces BRANZ
Appraisal No. 520 (2006) issued
3 July 2006.

NOVAFLEX AND POLIBIT ROOF AND DECK WATERPROOFING MEMBRANES

Jaydex International Ltd
PO Box 100 000
North Shore Mail Centre
Auckland

Ph: 09 444 1751
Fax: 09 444 0132



BRANZ
BRANZ Limited
Private Bag 50 908
Porirua City
New Zealand
Tel: +64 4 237 1170
Fax: +64 4 237 1171
www.branz.co.nz



Product

1.1 Novaflex and Polibit Roof and Deck Waterproofing Membranes are waterproofing membranes for nominally flat, pitched and curved roofs, gutters, parapets and decks. The products are installed as double layer systems on roofs with mineral chip or paint finish and on decks with a mineral chip finish and protected by a raised deck system. On concrete roofs and decks the products are installed as a single layer and protected by paving slabs or screed.

1.2 The products are supplied as torch-on, reinforced, polymer-modified bitumen sheets in roll form.



Scope

2.1 Novaflex and Polibit Roof and Deck Waterproofing Membranes have been appraised as roof and deck waterproofing membranes on buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan areas; and,
- with building structures designed and constructed to meet the requirements of the NZBC; and,
- with roof and deck supporting structures of timber framing with substrates of plywood or fibre cement sheet; and,
- with substrates of suspended concrete slabs; and,
- situated in NZS 3604 Wind Zones, up to, and including 'Extra High'; and,
- with decks that have a maximum area of 40 m².

2.2 Novaflex and Polibit Roof and Deck Waterproofing Membranes have also been appraised for use as roof and deck waterproofing membranes on specifically designed buildings within the following scope:

- with building structures designed and constructed to comply with the NZBC; and,
- with roof and deck supporting structures of timber framing with substrates of plywood or fibre cement sheet; and,
- with substrates of suspended concrete slab; and,
- subjected to maximum wind pressures (Refer Paragraph 8.1); and,
- with the weathertightness design of all junctions being the subject of specific design by the designer.

Note: The design of these junctions has not been appraised by BRANZ and is outside the scope of this Appraisal.

2.3 Roofs and decks waterproofed with Novaflex and Polibit Roof and Deck Waterproofing Membranes must be designed and constructed in accordance with the following limitations:

- nominally flat, curved or pitched roofs, and decks constructed to drain water to gutters and drainage outlets complying with the NZBC; and,
- constructed to suitable falls (Refer Paragraph 14.3 and 14.4); and,
- with no integral roof gardens; and,
- no steps in level within the deck area, except into gutters; and,
- no downpipes direct discharge to decks; and,
- with the membranes on decks protected from physical damage and UV light by ceramic or stone tile finishes or timber, resting on approved pedestal support system.

2.4 The design and construction of the substrate and movement and control joints is specific to each building, and therefore is the responsibility of the building designer and building contractor and is outside the scope of this Appraisal.

2.5 The membranes must be installed by Jaydex International Ltd Licensed and Trained Installers.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Novaflex and Polibit Roof and Deck Waterproofing Membranes, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years. Novaflex and Polibit Roof and Deck Waterproofing Membranes meet this requirement. See Paragraph 10.1. Performance B2.3.1 (c), 5 years. Alumaticote, Enviroflect Aluminium, Colour-It, or Aquaseal meets this requirement. See Paragraph 10.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.1 and E2.3.2. Novaflex and Polibit Roof and Deck Waterproofing Membranes meet these requirements. See Paragraphs 14.1 – 14.9.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Novaflex and Polibit Roof and Deck Waterproofing Membranes meet this requirement and will not present a health hazard to people.

3.2 This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance. The membranes are an alternative to the membranes specified in NZBC Acceptable Solution E2/AS1, and an Alternative Solution subject to specific design for other buildings not covered within E2/AS1.

Technical Specification

4.1 Materials supplied by Jaydex International Ltd are as follows:

Novaflex Membrane

- 3.0 or 4.0 mm thick modified bitumen, torch applied sheet waterproofing membrane with a sanded upper surface primarily used as a base layer in a double layer system. They are supplied in 1 m x 10 m rolls.

Novar-WS FLL Membrane

- 4.0 mm thick modified bitumen, torch applied sheet waterproofing membrane with an upper layer of mineral chip (black diamond) and a lower face of thermo-fusible polyolefinic film with a special root resistant reinforcement. It is supplied in 1 m x 10 m rolls.

Polibit Membrane

- 3.0 or 4.0 mm thick modified bitumen, torch applied sheet waterproofing membrane with an upper layer of either sand or mineral chip and a lower face of thermo-fusible polyolefinic film. The sand finished membrane can be used as a base layer of a double layer or as both layers in a double layer finish with UV protection. The mineral finish is used as a cap sheet in a double layer system. They are supplied in 1 m x 10 m rolls.

Bitumen Primer

- Solvent-based cutback bitumen primer for substrates prior to the installation of the membrane. It is available in 20 litre containers.

Nova-Per

- Perforated (199 holes/m²), modified bitumen sheet membrane for use when partially bonded waterproofing system is required. This system allows equalising of pressure in order to avoid blisters, dimensional stability of the waterproofing system and reduction of possible fatigue in the completed membrane caused by cyclic movement or microcracking. It is supplied in 1 m x 30 m rolls.

Enviroflect Aluminium

- Water-based, bituminous aluminium paint for protecting sand finished membranes from UV attack. It is supplied in 5, 10 and 20 litre containers.

Colour-It

- Water-based coating for protecting sand finished membranes. It is supplied in Grey or Red in 10 and 20 litre pails.

Aquaseal Acrylic Glaze

- 100% acrylic polymer paint applied over Colour-It. It is supplied in 4 and 10 litre pails in a range of colours.

Table 1: Membrane Systems

System	Area	Single Layer	Double Layer	Protection Required
Single layer sand finished system	Roof (concrete only)	4.0 mm top layer		Paving slabs or cement screeds
Double layer sand finished system	Roof		3.0 or 4.0 mm base layer with 3.0 or 4.0 mm top layer	Enviroflect Aluminium, Colour-It/ Aquaseal or paving slabs
Double layer mineral finished system	Roof		3.0 or 4.0 mm base layer with 4.0 mm mineral chip top layer	Standard finish of material
Double layer mineral finished system	Deck		3.0 or 4.0 mm base layer with 4.0 mm mineral chip top layer	Ceramic or stone tile finishes or timber on a raised deck system
Single layer sand finished system	Deck (Concrete only)	4.0 mm		Paving slabs on approved pedestals

Handling and Storage

5.1 Handling and storage of all materials whether on or off site is under the control of the Jaydex International Ltd Licensed and Trained Installers. Dry storage must be provided for all products and the rolls of membrane must be stored in an upright position.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Novaflex and Polibit Roof and Deck Waterproofing Membranes. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

7.1 Novaflex and Polibit Roof and Deck Waterproofing Membranes are for use on roofs, gutters, parapets and decks where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas. The products can be used on new or existing buildings. Jaydex International Ltd should be consulted as to the suitability of any existing substrates prior to using Novaflex and Polibit Roof and Deck Waterproofing Membranes.

7.2 The effective control of internal moisture must be considered at the design stage due to the impermeability of the membranes. Refer to BRANZ publication "Good Practice Guide - Membrane Roofing".

7.3 The 3.0 mm or 4.0 mm thick Novaflex membrane is designed for use on roofs, decks and gutters as the first layer of a double layer system and all areas requiring detailing such as upstands, protrusions, rainwater heads and outlets. The Polibit membrane can be used as the top layer of a double layer system, or as a single layer system, see Table 1.

Structure

8.1 Novaflex and Polibit Roof and Deck Waterproofing Membranes fully bonded double layer systems are suitable for use in areas subject to maximum wind pressures of 6 kPa Ultimate Limit State.

Substrates

Plywood

9.1 Plywood must be treated to H3 (CCA treated). **LOSP treated plywood must not be used.** Plywood must comply with NZBC Acceptable Solution E2/AS1 Paragraph 8.5.3 and 8.5.5. Where specific design is used (i.e. outside the scope of E2/AS1) the plywood thickness and fixing size may increase and centres may decrease to meet specific wind loadings. Timber framing must comply with NZS 3604, or where specific engineering design is used, the framing shall be of at least equivalent stiffness to the framing provisions of NZS 3604, or comply with the serviceability criteria of AS/NZS 1170. In all cases, framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and all sheet edges are fully supported.

Concrete

9.2 Concrete substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101.

Existing Construction

9.3 A thorough inspection of the substrate must be made to ensure it is in fit condition and does not contain any materials that will adversely affect the performance of the membrane.

9.4 Repairs must be undertaken, where applicable, to ensure the substrate is sound, the joints are sealed, and the flashings are sound. Plywood substrates must be checked for screw fixings, and if necessary refixed as for new plywood.

Durability

Serviceable Life

10.1 Novaflex and Polibit Roof and Deck Waterproofing Membranes are expected to have a serviceable life of at least 15 years, provided they are designed, used, installed and maintained in accordance with this Appraisal and the Technical Literature.

10.2 Enviroflect Aluminium or Colour-It/Aquaseal is expected to have a serviceable life of at least 5 years provided it is used, installed and maintained in accordance with this Appraisal and the Technical Literature.

Chemical Resistance

10.3 Industrial air pollutants and windborne salt deposits should not significantly affect the durability of the membranes. However, the long term properties of the material may be affected by contact with petroleum-based products such as oils, greases and solvents.

Maintenance

11.1 The membrane roof and systems, including any areas with a UV coating applied, must be regularly (at least annually) checked for damage, rubbish, debris or coating breakdown. Damage, such as small punctures and tears must be repaired and coatings reapplied as recommended by Jaydex International Ltd.

11.2 Special care must be taken when inspecting the membrane roof systems to ensure the continuing prevention of moisture ingress, and repairs must be undertaken where required.

11.3 Drainage outlets must be maintained to operate effectively.

Prevention of Fire Occurring

12.1 Separation or protection must be provided to Novaflex and Polibit Roof Waterproofing Membranes from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

14.1 Roofs and decks must be designed and constructed to shed precipitated moisture. They must also take account of snowfalls in snow prone areas. A means of meeting code compliance with NZBC Clause E2.3.1 is given in the Technical Literature which aligns with details in NZBC Acceptable Solution E2/AS1.

14.2 When installed in accordance with this Appraisal and the Technical Literature, Novaflex and Polibit Roof and Deck Waterproofing Membranes will prevent the penetration of water and will therefore meet code compliance with Clause E2.3.2. The membranes are impervious to water and will give a weathertight roof.

14.3 Roof and deck falls must be built into the substrate and not created with mortar screeds applied over the membrane.

14.4 The minimum fall to roofs is 1 in 30, decks 1 in 40 and gutters are 1 in 100. All falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the membrane.

14.5 Allowance for deflection and settlement of the substrate must be made in the design of the roof to ensure falls are maintained and no ponding of water can occur.

14.6 Novaflex and Polibit Roof and Deck Waterproofing Membranes are impermeable; therefore a means of dissipating construction moisture must be provided in the building design and construction to meet code compliance with Clause E2.3.6.

14.7 Drainage flanges must be used for any outlet and must be fitted with a grate or cage to reduce potential sources of blockages. An overflow must be provided where the roof does not drain to an external gutter or spouting.

14.8 Penetrations and upstands of the membranes must be raised above the level of any possible flooding caused by the blockage of roof drainage.

14.9 The design of details not covered by the Technical Literature is subject to specific weathertightness design and is outside the scope of this Appraisal.

Water Supplies

15.1 Water is not contaminated by Novaflex and Polibit Roof and Deck Waterproofing Membranes.

15.2 The first 25 mm of rainfall from a newly installed Novaflex and Polibit Roof and Deck Waterproofing Membranes roof must be discarded before drinking water collection starts. This is to remove residues which may have developed in the processes involved in the production of a Novaflex and Polibit Roof and Deck Waterproofing Membranes membrane roof.

15.3 Though Novaflex and Polibit Roof and Deck Waterproofing Membranes won't contaminate water, it must be noted that all water collected off roof surfaces made from any material is considered to be non-potable due to possible contamination from other sources. Water collection in this way can only be considered potable if it has been passed through a suitable sterilization system. Sterilization systems such as this have not been assessed and are outside the scope of this Appraisal.

Installation Information

Installation Skill Level Requirement

16.1 Installation of the membranes must be completed by Jaydex International Ltd Licensed and Trained Installers.

16.2 Installation of substrates must be completed by tradespersons with an understanding of roof and deck construction, in accordance with instructions given within the Jaydex International Ltd Technical Literature and this Appraisal.

Preparation of Substrates

17.1 Substrates must be dry, clean and stable before installation commences. Surfaces must be smooth and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents. All surface defects must be filled to achieve an even and uniform surface.

17.2 The relative humidity of concrete substrates must be 75% or less before membrane application. The concrete can be checked for dryness by using a hygrometer, as set out in BRANZ Bulletin No. 424.

17.3 The moisture content of the plywood and timber substructure must be a maximum of 20% and the plywood and fibre cement sheets must be dry at time of membrane application. This will generally require plywood sheets to be covered until just before the membrane is laid, to prevent rain wetting.

17.4 Substrates must be primed with Bitumen Primer and left to dry (4-5 hours) before the membrane is installed.

Membrane Installation

18.1 The membranes must be installed in accordance with the Technical Literature.

18.2 All roof, deck and wall junctions must have a 20 mm x 20 mm wooden fillet installed at the junction. Concrete substrate junctions must have a 20 mm x 20 mm cement mortar fillet installed. All external edges must be chamfered to a 5 mm radius to remove sharp edges.

18.3 The membranes must be unrolled without tension onto the prepared substrate and allowed to 'relax' for at least 30 minutes prior to installation.

18.4 The membranes are installed from the lowest point and each layer is installed across the roof or deck falls allowing a 75 mm side overlap and a 150 mm end overlap. The cap sheet layer of a double layer system must be offset against the base sheet layer.

18.5 Where pedestals are used there must be a separation layer between the pedestals and the finished membrane system.

Inspections

19.1 Critical areas of inspection for waterproofing systems are:

- Construction of substrates, including crack control and installation of bond breakers and movement control joints.
- Moisture content of the substrate prior to the application of the membrane.
- Acceptance of the substrate by the membrane installer prior to application of the membrane.
- Installation of the membrane to Jaydex International Ltd instructions.

Health and Safety

20.1 Safe use and handling procedures for Novaflex and Polibit Roof and Deck Waterproofing Membranes are provided in the Technical Literature. The products must be used in conjunction with the relevant Material Safety Data Sheets for each membrane.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

21.1 The following is a summary of the testing and test reports on Novaflex and Polibit Roof and Deck Waterproofing Membranes:

- Istituto per le Tecnologie della Construzione (ITC) for tensile and elongation, tear resistance, flexibility at low temperature, resistance to static loading, resistance to dynamic loading, dimensional stability, flow resistance at elevated temperatures, adhesion of granules and watertightness.
- ICITE for polyester reinforcement, coating mass, tensile strength, elongation, tear strength, dimensional stability, low temperature flexibility, heat resistance, sliding resistance, watertightness, static and dynamic indentation, fatigue cycling, peel resistance, air pressure and tensile strength of joints.

The above test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

22.1 A durability opinion has been provided by BRANZ technical experts.

22.2 Installation of the membranes has been assessed by BRANZ for practicability of installation and found to be satisfactory.

22.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

23.1 The manufacture of the membranes has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

23.2 BRANZ has taken note of Technical Assessments and certifications covering quality aspects associated with the product.

23.3 The quality of the supply of products to the New Zealand market is the responsibility of Jaydex International Ltd.

23.4 Quality on site is the responsibility of the Jaydex International Ltd Licensed and Trained Installers.

23.5 Designers are responsible for the building design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of Jaydex International Ltd and this Appraisal.

23.6 Building owners are responsible for the maintenance of the membrane systems in accordance with the instructions of Jaydex International Ltd and this Appraisal.

Sources of Information

- AS/NZS 1170: 2002 Structural design actions.
- AS/NZS 2269: 2008 Plywood – structural.
- BRANZ Good Practice Guide – Membrane Roofing, reprint October 2003.
- NZS 3101: 2006 The design of concrete structures.
- NZS 3604: 2011 Timber-framed buildings.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005 (Amendment 5, 1 August 2011).
- New Zealand Building Code Handbook Department of Building and Housing, Third Edition (Amendment 12, 10 October 2011).
- The Building Regulations 1992.



BRANZ

In the opinion of BRANZ, **Novaflex and Polibit Roof and Deck Waterproofing Membranes** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Jaydex International Ltd**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the technical literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. **Jaydex International Ltd:**
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by **Jaydex International Ltd**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Jaydex International Ltd** or any third party.

For BRANZ

C Preston
Chief Executive

Date of issue: 30 August 2013

ROOF SOLUTION SPECIFICATION

JAYDEX DOUBLE SHEET MEMBRANE SYSTEM WITH A MINERAL CHIP FINISH FOR A CONCRETE ROOF

INTRODUCTION

This specification includes the preparation and application of the **Jaydex Polibit Mineral (standard or diamond finish) / Novaflex** double sheet system (ISO9001) to a Concrete Roof. The system is composed of 4mm chip finished membrane torch applied over another plain torch on membrane to create a nominal thickness of 7mm with both membranes possessing strong polyester reinforcement. This strong, thick membrane system is left exposed during its service life and can be pedestrian trafficked for maintenance purposes.

Note: Jaydex (only) supply APP / (Atatic Polypropylene) membranes reinforced with strong Polyester (BRANZ Appraisal No 520).

SUBSTRATE PREPARATION

Concrete shall be correctly formed to falls and adequately cured, all ridges protrusions to be ground flush and all depressions gauge patched with modified sand cement. Concrete to be finished to NZS3114:1980 U2. Only wood or bull float manually to create an even surface finish (no power floats are to be utilised). Fillets 20mm x 20mm minimum shall be installed at all vertical and horizontal junctions. Falls to be as per current E2/AS1 requirements. As this is an alternative system the plans and specifications should be checked by the builder before commencing. If necessary please refer to our concrete substrate guide on www.jaydex.co.nz.

APPLICATION OF MEMBRANE SYSTEM

Primer

One coat of **Jaydex Bitumen Primer** is applied at a spreading rate of approx 8 sqm / litre by brush or roller over total roof area and allowed to dry.

Membrane to Roofs

All internal and external corners and vertical to horizontal transitions shall have plain membrane gusset patches and strips applied before the main membrane application is applied over the total roof gutter area.

Torch down basesheet **Jaydex Novaflex** polyester reinforced membrane over the total preprimed areas. Torch seal all end and side joints to ensure correct closure. The top sheet of **Jaydex Polibit Mineral** is then torched over the base sheet and offset (i.e. base and topsheet laps to not coincide). All joints are torch sealed separately to ensure correct closure.

Membrane to Gutters

Where internal gutters form part of the roof area. **Jaydex Polibit Mineral** is torch applied as the cap top sheet over the underlying plain base sheet, prior to laying the main roof membrane.

DRAINAGE OUTLETS

Jaydex supply side and vertical drain outlets and dual overflow sump units (outlet & overflow function in one unit) of tough light composition and of various aperture sizing. These units incorporate flanges to ensure watertightness and can drain water away through parapets, deck / roof inverts and internal gutters.

MAINTENANCE

- The **Jaydex** Membrane roof / deck system must be regularly checked for damage. Any damage, detected must be correctly repaired and where applicable a recoat carried out over the membrane. All rubbish / debris left lying on the membrane surface must be removed.
- **Jaydex** side and dropper drainage units must be regularly checked with removal of any accumulated rubbish at the inlets. All inlets should have **Jaydex** proprietary grates installed in them.
- **Jaydex** recommend a periodic clean down with water of all exposed membrane roof / deck surfaces in conjunction with a moss inhibitor.

WARRANTY

When **Jaydex** Licensed Contractors apply this membrane system in accordance with this specification a standard warranty will be issued for up to twenty (20) years.

The information contained in this Specification is based on our experience and testing, and represents the latest information available at the date of production. No responsibility is taken for uses to which this information may be put, but we advise that where application of products and processes is in complete conformity with this specification, an appropriate warranty may be available. We reserve the right to update information parameters and formulations at any time without prior notice.



ROOF WATERPROOFING - POLIBIT MINERAL

POLIBIT MINERAL / NOVAFLEX Roof Waterproofing Membrane System

Product description

Polibit Mineral / Novaflex is the obvious choice for the waterproofing of roof areas, as UV protection is implicit in the system and therefore immediate. Polibit Mineral / Novaflex waterproofing systems offer an attractive textured finish that is an increasingly popular alternative to a painted finish, without the need for further coating. This makes the solution a cost-effective and versatile option for most waterproofing projects.

Polibit Mineral is a self-protected membrane. The upper surface is coated with coloured slate chips and self-edge slate free at one side for easy welding overlap. The lower surface is coated with coloured with a thermo-fusible polyolefin film. The waterproofing membrane is UV resistant, and its thermo-dynamic stability makes it perfect for any climate conditions.



Key product benefits

- Resistant to acids and inorganic salts
- Resistant to Ozone (O₃)
- Resistant to low temperatures
- Water Absorption ± 1%.
- Resistant to heat sliding
- Resistant to industrial atmosphere thanks to high chemical inertia
- Can be pedestrian trafficked for easy maintenance

Ideal applications

- Particularly suitable as a top layer in a multi-layer waterproofing system, with compatible membranes, or under-layer of discontinuous roofing
- Perfect for general roofing
- Can be applied to a wide range of substrates such as concrete, masonry, steel, wood, insulation panel, and under heavy protection
- Suitable for potable drinking water (must be coated)
- Not suitable for roof gardens

Alternative systems for roof waterproofing

A Polibit Plain / Novaflex membrane system can also be used for the waterproofing of exposed roof areas, if overcoated with Jaydex Colour It barrier coat followed by two coats of Jaydex Aquaseal an acrylic sealer with optional colour choice. A Polibit Stone Aggregate / Novaflex double sheet waterproofing membrane system can be used where a drainage medium and rounded river stones and/or stone aggregate are manually placed on top of the geotextile cloth to create a long term natural finish to the roof area.



Application and Maintenance

Polibit Mineral / Novaflex is a specialist torch-on waterproofing membrane system and is therefore subject to the Torch on Code of Practice (WMAI).

Broad commercial / residential maintenance guidelines are available. Please contact Jaydex International for more details. Any Coating system needs to be updated every 5 years. All Polibit Mineral / Novaflex and Polibit / Novaflex waterproofing solutions should be cleaned annually.



Novaflex

Novaflex is a plastometric modified bitumen waterproofing membrane (APP) and is an essential part of the Polibit Mineral / Novaflex system. Novaflex is suitable as an underlayer or as an intermediate layer in multi-layer waterproofing systems, with compatible membranes. The upper surface is coated with anti-adhesive amorphous sand. The lower surface is coated with a thermo-fusible polyolefin film. Novaflex is ideal for general roofing, on or under floors and for wall constructions. It is not suitable for roof gardens. The product can be applied on every substrate and is suitable for climate conditions and all situations where a barrier against water is required.

BRANZ Appraisal

Polibit Mineral / Novaflex waterproofing membranes has BRANZ Appraisal (Certificate No.520) within the following scope:



BRANZ Appraisal (Certificate No.520)

- Roof supporting structures of timber framing with substrates of plywood; and substrates of suspended concrete slabs.
- Nominally flat, curved or pitched roofs constructed to drain water to gutters and drainage outlets, complying with the NZBC.
- Constructed to suitable falls. Must not be used on roof gardens.

Compliance

Polibit Mineral / Novaflex complies with the New Zealand Building Code in particular clauses B2, E2 and F2.



Warranty

Polibit Mineral / Novaflex waterproofing membrane systems has been tested to International Standards and has a warranty of 20 years.



Proven effective since 1986

Polibit Mineral / Novaflex has been successfully used on a number of high profile projects including Auckland Hospital, Waikato Hospital, Whangarei Library and the ANZ Centre in Auckland.

"On architecturally designed projects the shape of the structure needs to be the hero not the products that are applied to them. Polibit Mineral / Novaflex blends perfectly to create a seamless finish."

Bob Wilson - Managing Director, Jaydex International



JAYDEX POLIBIT
MINERAL / NOVAFLEX
Roof Waterproofing
Membrane System

4421J - JAYDEX MEMBRANE ROOFING

1. GENERAL

This section relates to the supply and installation of the selected **JAYDEX Polibit** Membrane Roofing system:
Novaflex / Polibit (double sheet mineral chip finish)

1.1 Related Work

Refer to ~ for ~.

1.2 Abbreviations and Definitions

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

WMAI - Waterproofing Membrane Association Inc. (formally Membrane Group NZ Inc.)

2. DOCUMENTS

2.1 Documents

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

NZBC E2/AS1	External moisture
AS/NZS 2269.0	Concrete - Structural - Specifications
WMAI CoPTM	Code of Practice for Torch On Membranes Systems for Roofs and Decks

2.2 Manufacturer / Supplier documents

Manufacturer's and supplier's documents relating to work in this section are:

BRANZ Appraisal 520	- Novaflex and Polibit Roof and Deck Waterproofing Membranes
JAYDEX Specification	- Roof Mineral finish Novaflex Polibit on Concrete
JAYDEX Membrane Waterproofing System Manual	

Manufacturer/supplier contact details:

Company	JAYDEX International Ltd.
Web	www.jaydex.co.nz
Email	sales@jaydex.co.nz
Telephone	0800 JAYDEX (0800 529 339)

3. REQUIREMENTS

3.1 No substitutions

Substitutions are not permitted to any specified **JAYDEX** International Ltd. system, or associated components and products.

3.2 Qualifications

Roofing work to be carried out by licensed Contractors approved by **JAYDEX** International Ltd.

Licensed Contractors may be found at:

Web: www.jaydex.co.nz

Telephone 0800 **JAYDEX** (0800 529 339)

4. WARRANTIES

4.1 Warranty – Manufacturer / Supplier

Provide a **JAYDEX** International Ltd. material performance standard warranty.

20 years: For **JAYDEX** double layer systems

- **JAYDEX** Licensed Contractors to provide this warranty on the manufacturer's standard form
- Commence the warranty from the date of completion of installation
- Refer to the general section 1237 WARRANTIES for additional requirements

4.2 Warranty – Installer / Applicator

Provide an installer / applicator warranty:

5 years: For **JAYDEX** Polibit Membrane Roofing system installation

- **JAYDEX** Licensed Contractor to provide this warranty on the manufacturer's standard form
- Commence the warranty from the date of completion of installation
- Refer to the general section 1237 WARRANTIES for additional requirements

5. PERFORMANCE

5.1 Pre-installation meeting

Convene a meeting between the licensed contractor, contractor, all associated consultants and **JAYDEX** International Ltd. to ensure all parties know what is required for an effective performance of the system.

5.2 Special details

Where a standard detail does not exist, or if a standard detail cannot be applied, an approved alternative must be obtained from **JAYDEX** International Ltd. before proceeding with the installation.

5.3 Test

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

5.4 Performance

Accept responsibility for the weather-tight performance of the completed roofing system.

5.5 Quality Assurance

Maintain quality necessary to assure that work is performed in accordance with this specification and the qualifying requirements of **JAYDEX** International Ltd.

Ensure that **JAYDEX** International Ltd. Quality Control sheets are completed fully and faithfully for each installation area.

6. PRODUCTS MATERIALS

6.1 Primer

JAYDEX Bitumen Primer quick drying bituminous primer is compatible with the waterproofing membrane and formulated to prepare the substrate for optimum bonding of the membrane.

6.2 Base Layer Waterproofing Membrane

Basesheet **JAYDEX Novaflex** non-woven polyester reinforced modified bitumen torch applied basesheet waterproofing membrane all marked with the Manufacturer's mark.

6.3 Cap Sheet

JAYDEX Polibit high dimensional stable spun bonded polyester reinforced modified bitumen torch applied cap sheet waterproofing membrane all marked with the Manufacturers mark.

6.4 Adhesive

JAYDEX Easygum Liquid applied rubber bitumen emulsion adhesive for areas of installation where a torch cannot be safely used or when the membrane system is being installed using the cold applied bonding method.

6.5 Ultra Violet Coating System

Proprietary coating systems to provide UV protection to the membrane roofing system.

COMPONENTS

6.6 Rainwater Outlets

Rainwater outlets as supplied by **JAYDEX** International Ltd.

6.7 Roof Vents

Roof aerators / vents in P.P. Polyolefin supplied by **JAYDEX** International Ltd.

7. EXECUTION CONDITIONS

7.1 Generally

Work and materials to [BRANZ Appraisal 520](#) - **Novaflex** and **Polibit** Roof Waterproofing Membranes, [WMAI CoPTM](#), and JAYDEX International Ltd. documents.

7.2 Storage

Take delivery of rolls undamaged and include for site handling facilities where required. Stack on end, off the ground on a level surface, out of sunlight and above 5°C and with accessories. Do not allow rolls to become crushed.

7.3 Confirm Layout

If not detailed on the drawings, confirm the layout to suit site conditions, and **JAYDEX** International Ltd specification. Placements of plinths, roof vents and or special effects are to be agreed between the Architect and Licensed Membrane Contractor prior to proceeding with the work.

APPLICATION – PREPARATION

7.4 Preliminary Work

Ensure that preliminary work, including formation of falls, flashing rebates, 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. Ensure timber fillets fit neatly and that mitres are neatly formed. This work and the substrate are to be smooth, clean and dry. Identify areas of potential movement and plan for movement joints.

7.5 Acceptance of Substrate

Confirm that the substrate complies with the [NZBC E2/AS1](#) for the relevant substrates and **JAYDEX** International Ltd. documents, including fillets, sumps, outlets and projections, and ensure work of the required standard.

7.6 Concrete Substrate

Ensure concrete substrate has been allowed to cure for at least 28 days and has a moisture content of less than 75% RH before commencing application. Prepare surface, including vacuum cleaning and acid etching/diamond grinding as necessary to leave smooth, clean, dry and free of debris. Make good any cracks with non-shrink grout.

7.7 Turn Downs

Where the membrane is to be turned down at an external corner, chamfer the corner to provide a minimum 5mm radius.

7.8 Upstands

Install fillets minimum 20mm to all upstands and ensure tight and neat fit. Timber fillets H3.1 treated minimum.

7.9 Flashings

Fit membrane flashings to all internal and external corners and upstands and to all penetrations to **JAYDEX** International Ltd. specifications. Neatly mould membrane up all upstands and around all roof penetrations with a tight cove.

7.10 Set-Out

Neatly set out rolls starting at the lowest point of the roof and run perpendicular to the roof pitch. Lay out membrane and allow to relax for 30 minutes prior to laying. In cooler conditions allow additional time for the membrane to fully relax. Any changes to the set out must be approved by **JAYDEX** International Ltd.

APPLICATION – LAYING

7.11 Conditions

Do not lay membrane in wet or misty conditions or below 7°C. Check that the substrate is dry at time of laying. Concrete maximum moisture content 75% RH; plywood maximum moisture content 18%.

7.12 Application – Generally

Install the reinforced modified bitumen torch applied membrane system strictly to **JAYDEX** International Ltd. Installation Procedures.

7.13 Priming

All surfaces to be primed strictly to **JAYDEX** International Ltd. recommendation ensuring an even coverage is achieved. Primed roofs left more than 5 days must be re-primed prior to membrane installation.

7.14 Laying and Jointing

Lay membrane using torch applied bonding unless the location will not allow the application of heat. When cold applied under surface adhesive may be used. Lay in order from sumps, through gutters, valleys, eaves, verges, main roof and upstands to cover flashings.

7.15 Heat Control

Control heat to ensure the membrane is fully bonded to the substrate with all laps properly formed. Ensure full bonding between the **JAYDEX Novaflex** base sheet and **JAYDEX Polibit** cap sheet. Overheating membrane may damage the polyester reinforcement.

7.16 Novaflex Base Sheet

Fully torch to substrate 200mm up and around the roof perimeter. Over the body of the roof fully torch to **JAYDEX** International Ltd. installation instructions. Fully torch weld and seam all laps, 80mm side laps and 120mm end laps. Refer to **JAYDEX** International Ltd. installation specification for base sheet fixing in high and very high wind zones.

7.17 Polibit Cap Sheet

Fully torch to base sheet to **JAYDEX** International Ltd. installation instructions. All side laps 80mm wide and end laps 120mm wide. All laps fully welded and seamed. For double layer systems off set the **Polibit** cap sheets to ensure the basesheet lap joints are centred.

7.18 Box Gutters

Lay membrane in box gutters with the membrane neatly dressed into proprietary preformed sump and downpipe outlets. Fix membrane into downpipes and overflows.

7.19 Weld Joints

Weld joints using heat to **JAYDEX** International Ltd. requirements.

7.20 Penetrations

Form, or mould by torching, with required upstands and downturns and all penetrations to **JAYDEX** International Ltd. details (see drawings on www.jaydex.co.nz).

7.21 Roof Outlets (Scuppers)

Install **JAYDEX** outlets (scuppers) to **JAYDEX** International Ltd. installation details.

7.22 Roof Vents

Install **JAYDEX** top vents for roof space and substrate moisture venting to **JAYDEX** International Ltd. installation details. Placement is the responsibility of the Designer and / or Builder.

7.23 Movement Joints

Install required movement joints to Designer / Engineer details.

7.24 Foot Traffic

Heavy foot traffic is not allowed on the membrane after laying.

7.25 Access Boards

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

COMPLETION

7.26 Clean Up

Clean up as the work proceeds.

7.27 Acceptance

- Arrange for an inspection of the completed work
- Complete **JAYDEX** International Ltd. Quality Control sheets and provide to them for the issuing of the Materials Warranty
- Protect the membrane until completion of the contract works

7.28 Leave

Leave work to the standard required by following procedures.

7.29 Remove

Remove debris, unused materials and elements from the site.

8. SELECTIONS

For further details on selections go to www.jaydex.co.nz.

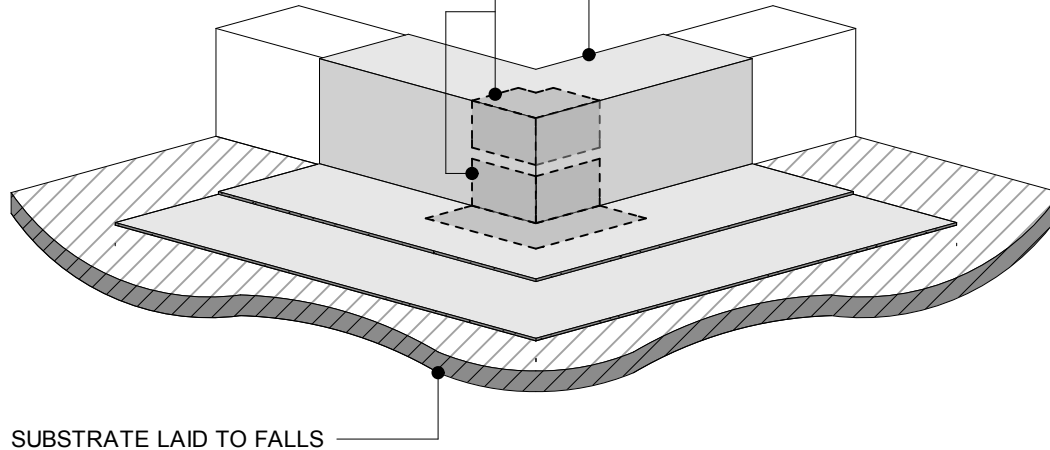
Substitutions are not permitted to the following, unless stated otherwise.

8.1 JAYDEX Waterproofing Membrane – Double Layer, Mineral

Base sheet:	3mm JAYDEX Novaflex
Cap sheet:	4mm JAYDEX Polibit
Type:	mineral

JAYDEX DOUBLE LAYER MEMBRANE SYSTEM WITH JAYDEX POLIBIT CAP SHEET & JAYDEX NOVAFLEX BASE SHEET.

SHAPED SHEET MEMBRANE GUSSET (SHOWN DASHED) PUT IN CORNER FIRST BEFORE THE NEXT OVERLAYS OF MEMBRANE SHEET



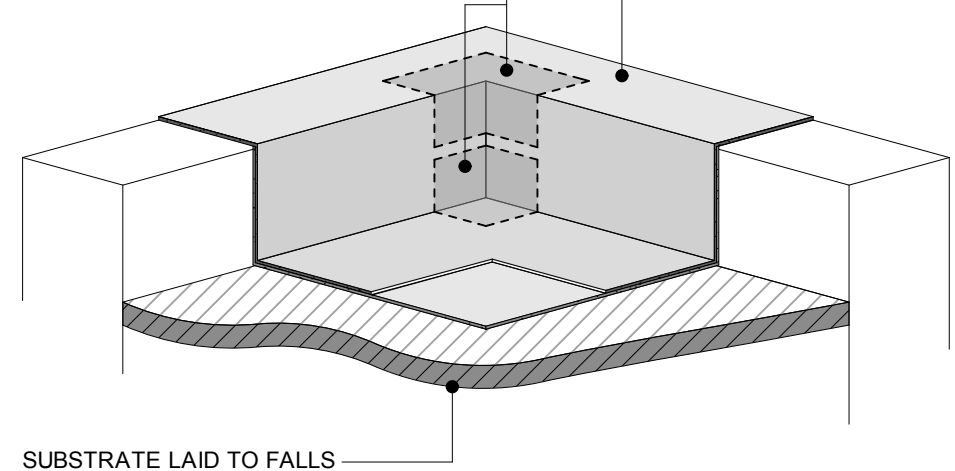
ALL EXTERNAL 3D CORNER JUNCTIONS

NOTE: THESE FIGURES ARE NOT TO SCALE, AND "MEMBRANE SYSTEM USUALLY MEANS TWO SHEETS, BUT COULD BE A SINGLE SHEET MEMBRANE FOLDED OVER THE UNDERLYING GUSSET

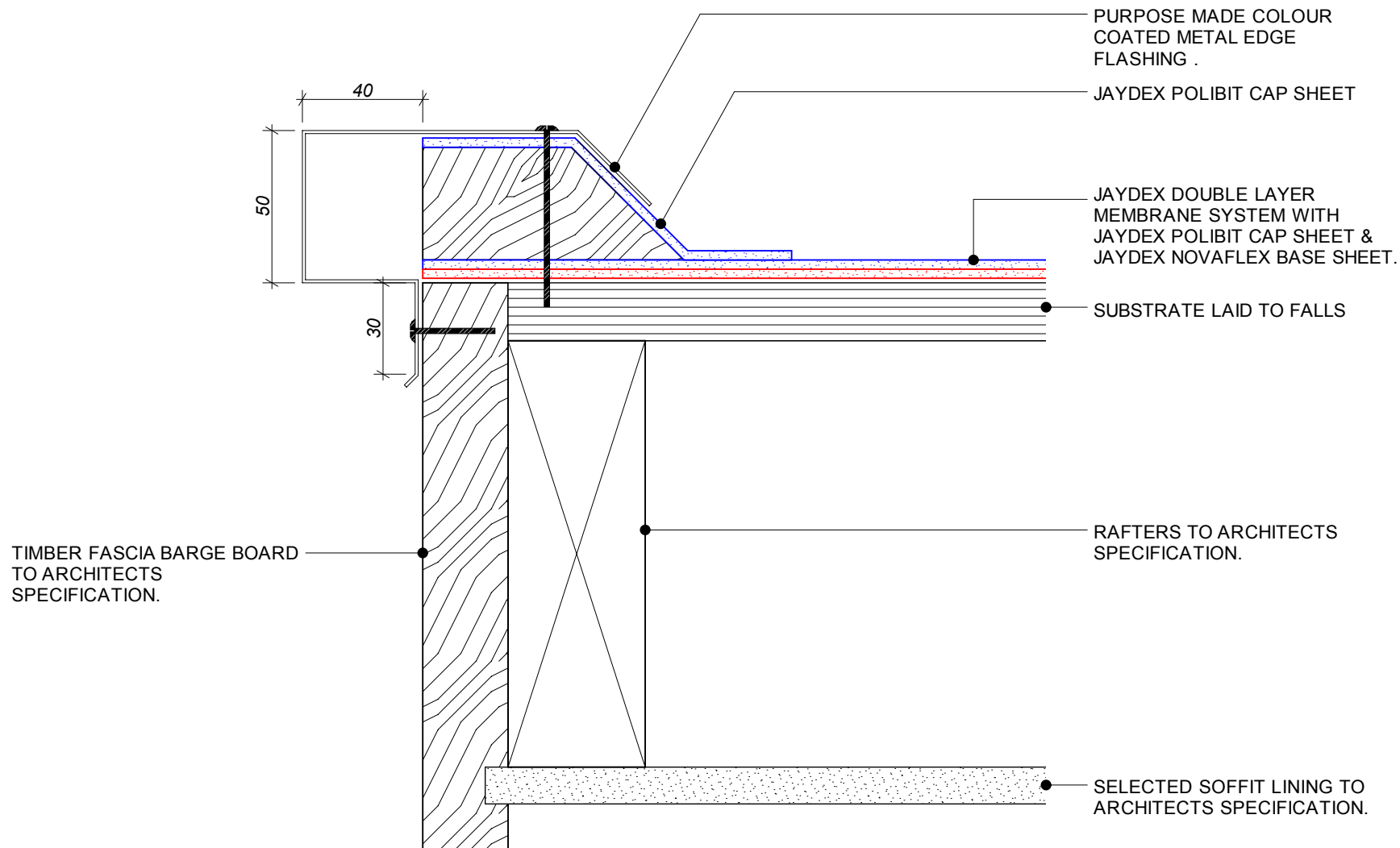
NOTE: THESE FIGURES ARE DIAGRAMMATIC ONLY AND SHOULD BE READ IN CONJUNCTION WITH ALL DETAIL DRAWINGS THAT INVOLVE 3D INTERNAL/ EXTERNAL CORNERS.

JAYDEX DOUBLE LAYER MEMBRANE SYSTEM WITH JAYDEX POLIBIT CAP SHEET & JAYDEX NOVAFLEX BASE SHEET.

SHAPED SHEET MEMBRANE GUSSET (SHOWN DASHED) PUT IN CORNER FIRST BEFORE THE NEXT OVERLAYS OF MEMBRANE SHEET

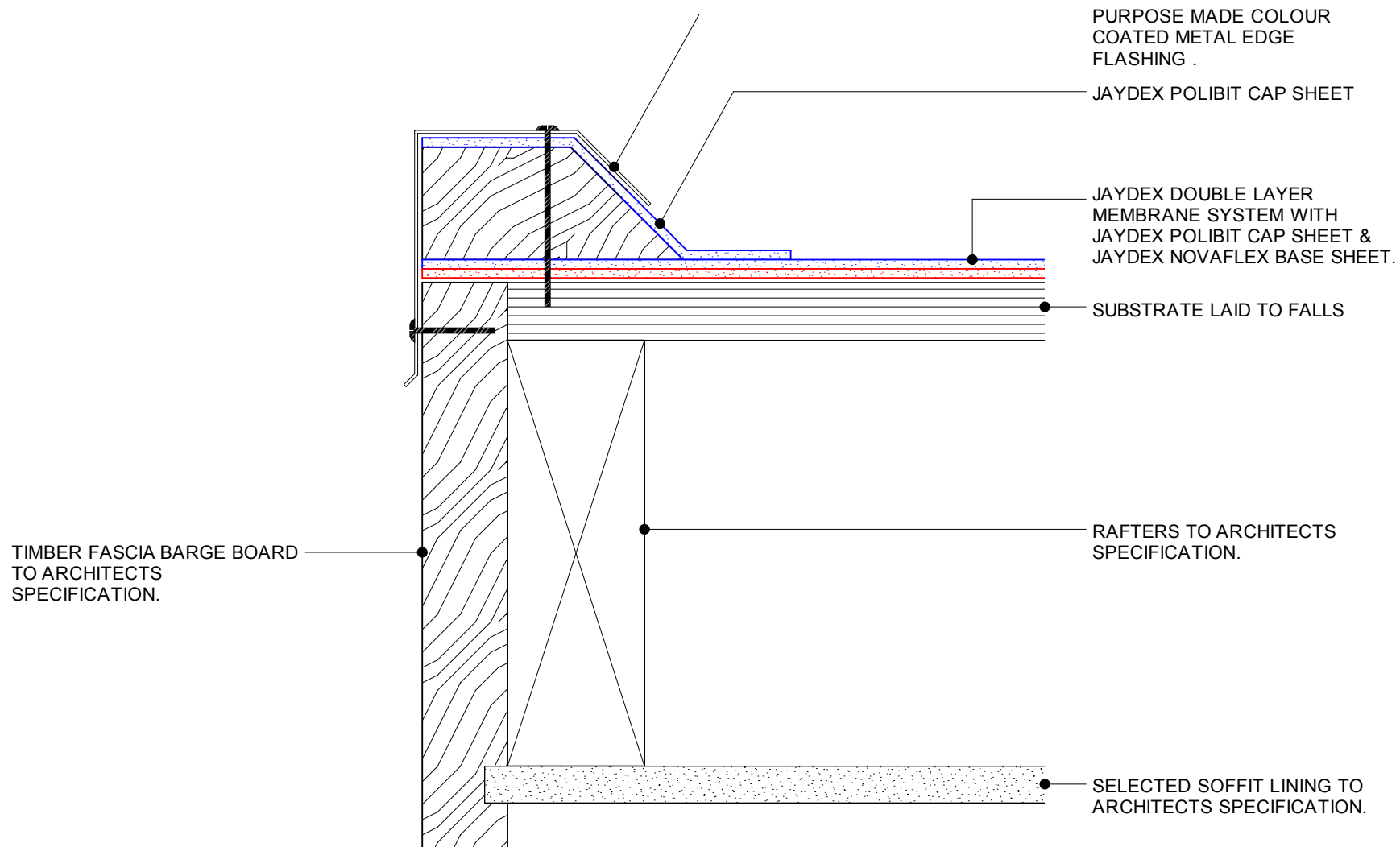


ALL INTERNAL 3D CORNER JUNCTIONS



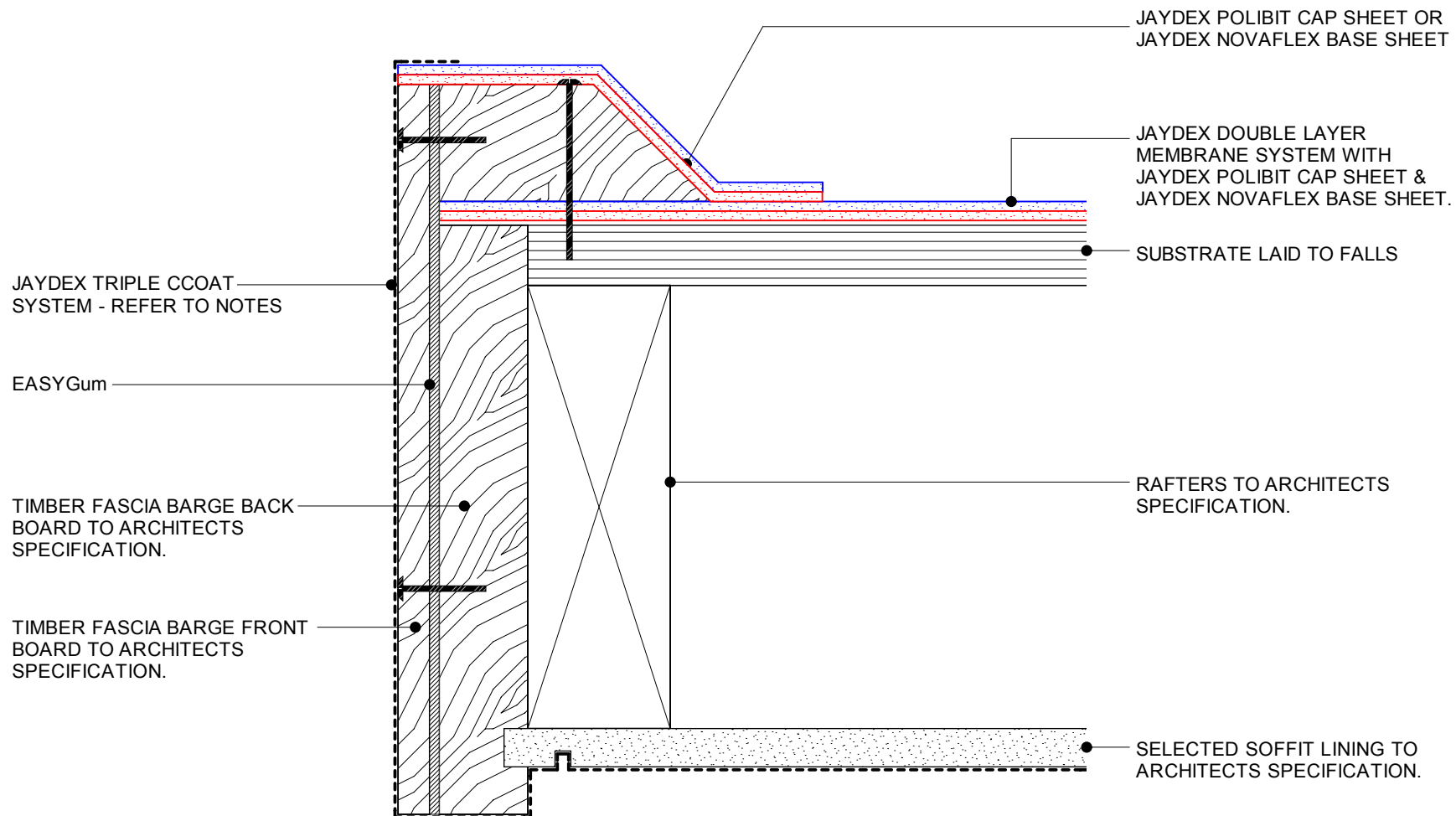
UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	EDGE FLASHING DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.
DATE	JAN 2015	DESIGNED BY	R02
REVISION	WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.		



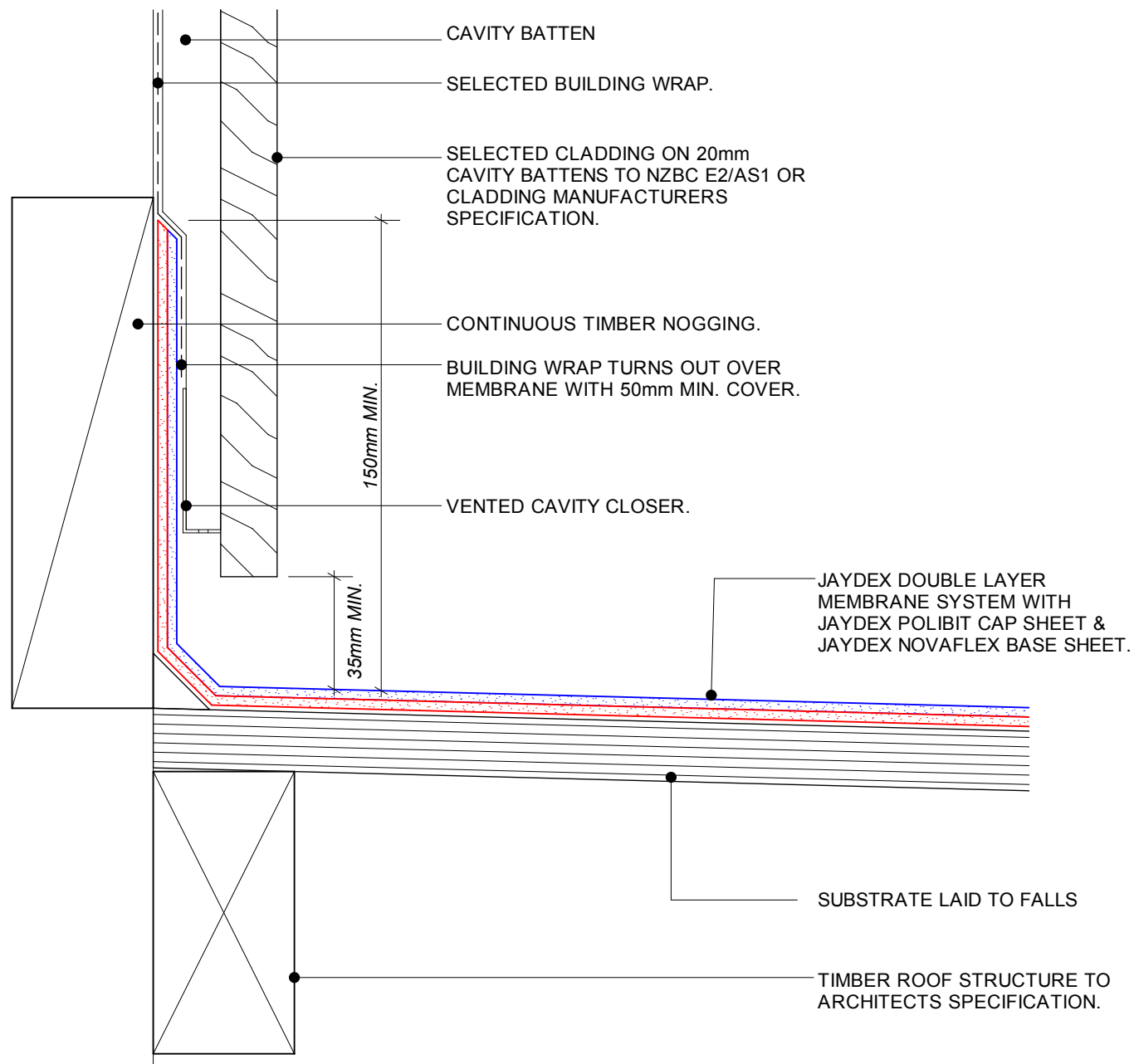
UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	EDGE FLASHING DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	R03
DATE	JAN 2015	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE. WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.	
REVISION			



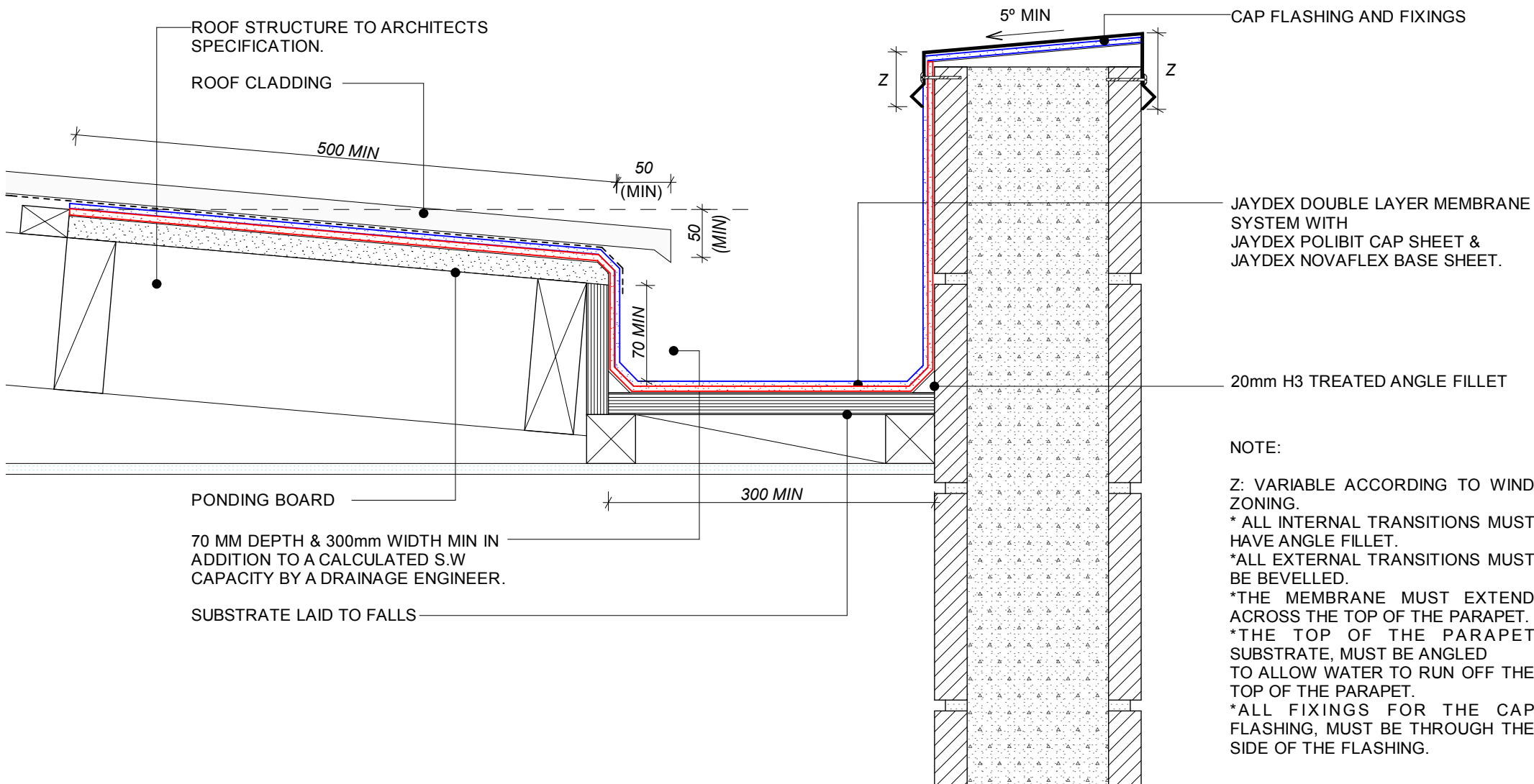
UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	EDGE FLASHING DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.
DATE	JAN 2015	DESIGNED BY	R04
REVISION		WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.	



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	UPSTAND TERMINATION/CLADDING DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.
DATE	JAN 2015	WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.	R05
REVISION		COPYRIGHT ©	



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND

PO BOX 100 000
NORTH SHORE MAIL CENTRE

PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	INTERNAL GUTTER/PARAPET DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DESIGNED BY	
DATE	JAN 2015	APPROVED BY	
REVISION		<small>THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.</small> <small>WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.</small> <small>COPYRIGHT ©</small>	
			R06

NOTES

ALL SHEETS LAID LONGITUDINALLY WHERE PRACTICAL.

ANY CROSS SEAMS TO BE WELL AWAY FROM DRAINAGE OUTLETS

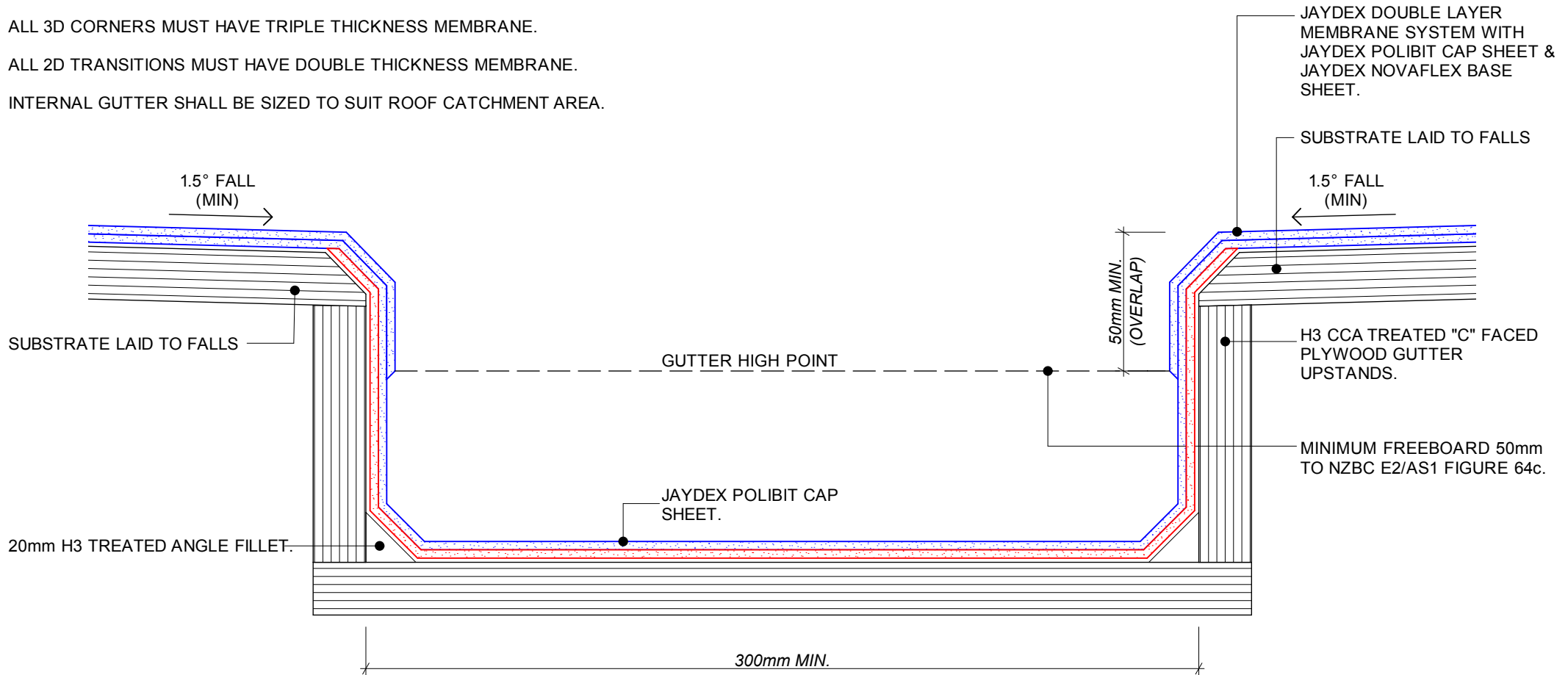
ALL EXTERNAL CORNERS TO BE ARRISED.

ALL INTERNAL CORNERS TO BE FILLETED.

ALL 3D CORNERS MUST HAVE TRIPLE THICKNESS MEMBRANE.

ALL 2D TRANSITIONS MUST HAVE DOUBLE THICKNESS MEMBRANE.

INTERNAL GUTTER SHALL BE SIZED TO SUIT ROOF CATCHMENT AREA.



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

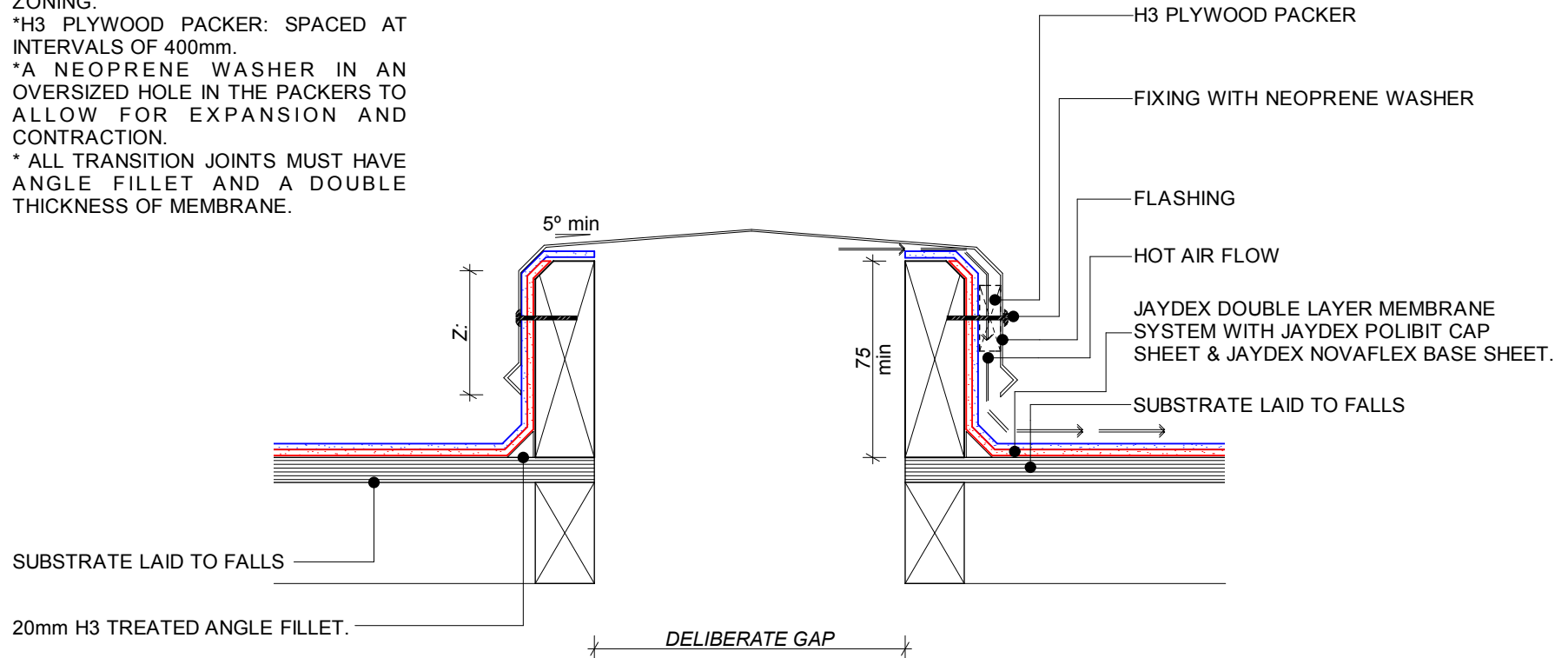
APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH	
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM			
DRAWING NAME	INTERNAL GUTTER DETAIL GUIDE			
SCALE	NTS (A4 SHEET)	REMARKS	R07	
DATE	JAN 2015	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.		
REVISION		WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.		
		COPYRIGHT ©		

Z: VARIABLE ACCORDING TO WIND ZONING.

*H3 PLYWOOD PACKER: SPACED AT INTERVALS OF 400mm.

*A NEOPRENE WASHER IN AN OVERSIZED HOLE IN THE PACKERS TO ALLOW FOR EXPANSION AND CONTRACTION.

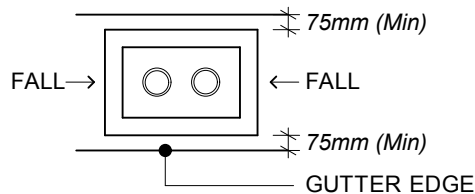
* ALL TRANSITION JOINTS MUST HAVE ANGLE FILLET AND A DOUBLE THICKNESS OF MEMBRANE.



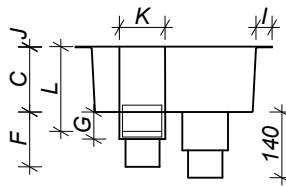
UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	RIDGE VENT/CONSTRUCTION JOINT DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.
DATE	JAN 2015	DESIGNED BY	R08
REVISION		WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.	

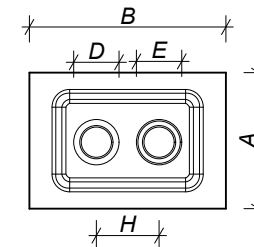
COPYRIGHT ©



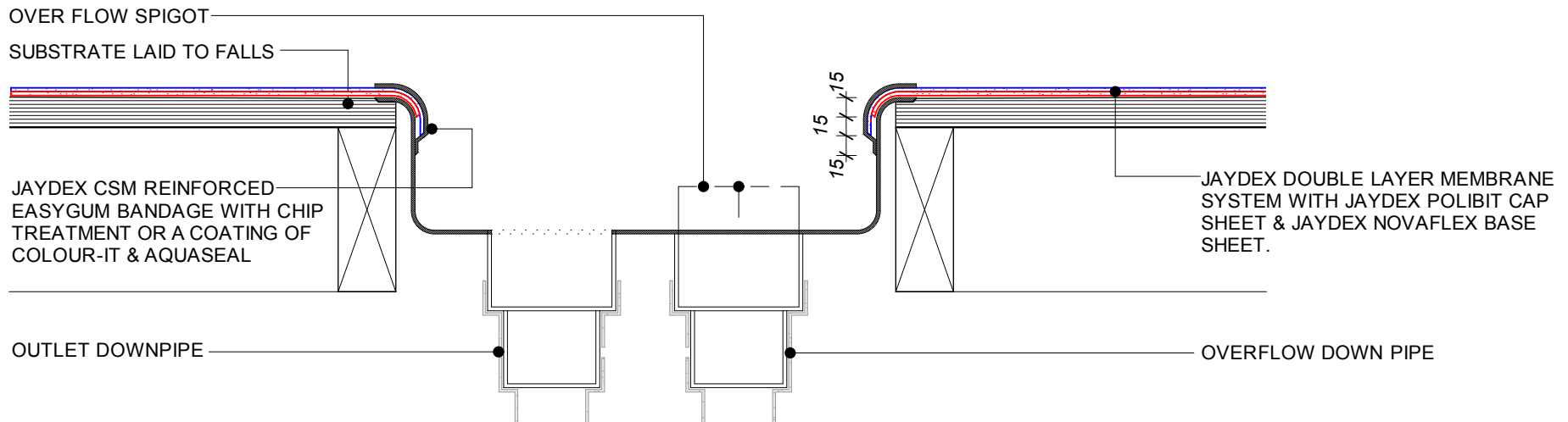
INTERNAL GUTTER
PLAN



DUAL OVERFLOW
ELEVATION



DUAL OVERFLOW PLAN



OVERFLOW DIMENSIONS	DUAL	JAYDEX 75/100
OVERALL WIDTH	A	290
OVERALL LENGHT	B	430
DEPTH	C	100
OVERFLOW O (OD)	D	75/100
MAIN OUTLET O (OD)	E	75/100
OUTLET PIPE LENGTH	F	130
OUTLET PIPE LENGTH	G	60
OUTLET POSITION	H	150
FLANGE WITH	I	30
FLANGE THICKNESS	J	4
OVERFLOW SPIGOT O	K	98
OVERFLOW SPIGOT O	L	165

NOTES:

*FLANGE IS MECHANICALLY FIXED INTO SUBSTRATE RECESS.

*JAYDEX REINFORCED EASY-GUM BANDAGE TO ENCAPSULATE END OF JAYDEX POLIBIT MEMBRANE ON ALL THE INSIDE WALLS OF THE OVER FLOW UNIT AS INDICATED.



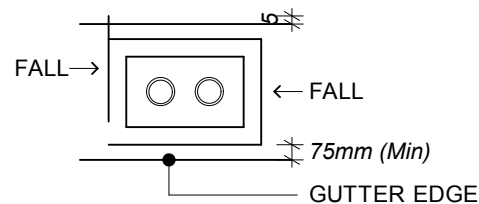
BRANZ Appraised

JAYDEX
INTERNATIONAL · LIMITED

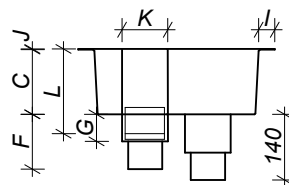
UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE

PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

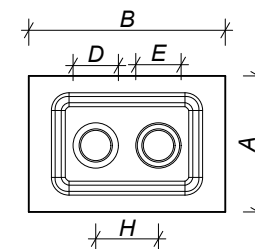
APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	75/100 DUAL OVERFLOW DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DATE	JAN 2015
REVISION	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE TH APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE. WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE. COPYRIGHT ©		
			R09



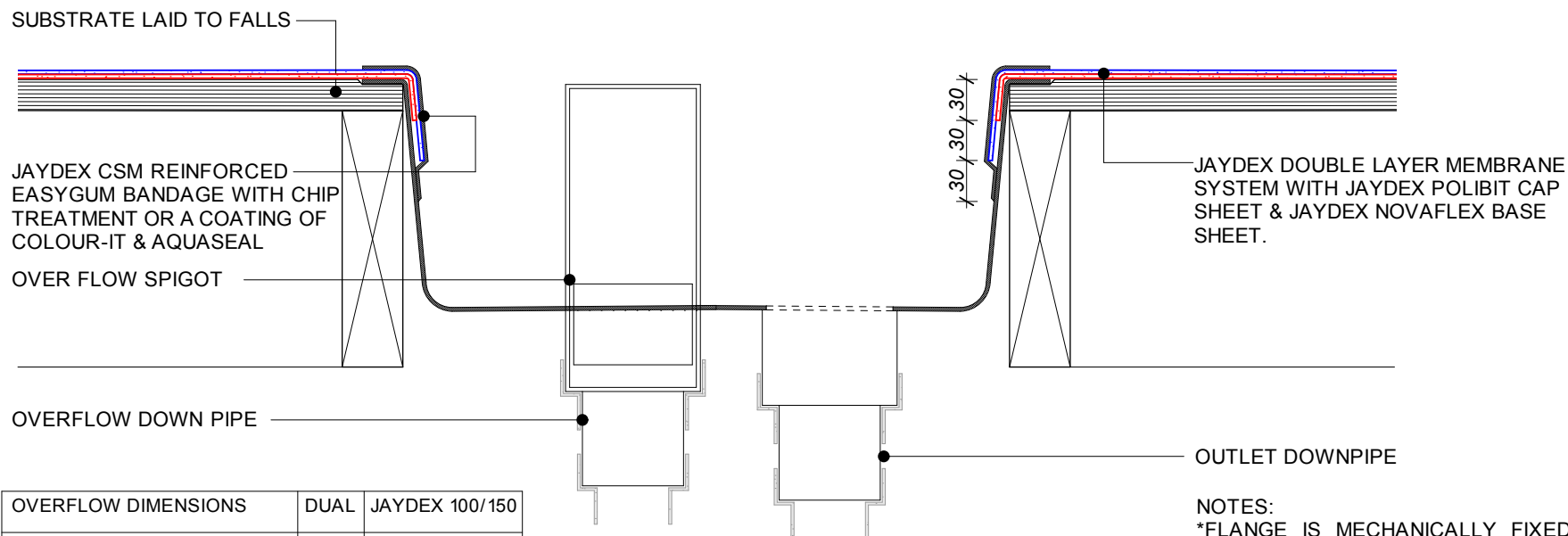
INTERNAL GUTTER
PLAN



DUAL OVERFLOW
ELEVATION



DUAL OVERFLOW PLAN



OVERFLOW DIMENSIONS	DUAL	JAYDEX 100/150
OVERALL WIDTH	A	300
OVERALL LENGTH	B	450
DEPTH	C	200
OVERFLOW O (OD)	D	100/150
MAIN OUTLET O (OD)	E	100/150
OUTLET PIPE LENGTH	F	160
OUTLET PIPE LENGTH	G	80
OUTLET POSITION	H	180
FLANGE WITH	I	30
FLANGE THICKNESS	J	4
OVERFLOW SPIGOT O	K	145
OVERFLOW SPIGOT O	L	260

NOTES:
*FLANGE IS MECHANICALLY FIXED INTO SUBSTRATE RECESS.

*JAYDEX REINFORCED EASY-GUM BANDAGE TO ENCAPSULATE END OF JAYDEX POLIBIT MEMBRANE ON THE INSIDE WALLS OF THE OVER FLOW UNIT AS INDICATED.



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	100/150 DUAL OVERFLOW DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DATE	JAN 2015
REVISION	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE TH APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE. WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.		
DESIGNED BY	R10		

WING NUTS TO LOCK DOWN
CLAMPING RING OVER
MEMBRANE CAP SHEET

SUBSTRATE LAID TO FALLS

RECESS IN SUBSTRATE
FOR OUTLET BODY &
FLANGE

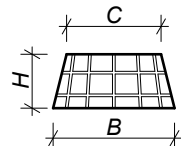
JAYDEX (SUREFIX) CLAMP RING
VERTICAL DRAIN OUTLET

REMOVABLE LEAF GRATE

JAYDEX DOUBLE LAYER MEMBRANE
SYSTEM WITH JAYDEX POLIBIT CAP
SHEET & JAYDEX NOVAFLEX BASE SHEET.

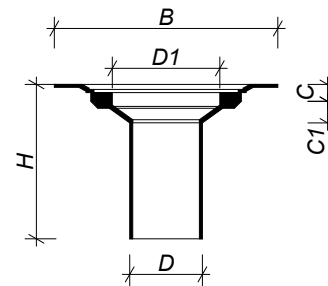
JAYDEX PRIMER

LOCKING RING



ART 24
B 180
H 80
C 60

LEAF GRATE
AND/OR
GRAVEL GRATE



ART	130	132	136
DENOM	80	100	150
B	340	340	340
H	330	330	330
D	80	100	150
D1	170	170	170
C	30	30	30
C1	25	25	25

NOTE:

+ ALL VERTICAL DRAIN OUTLETS MUST
BE RECESSED INTO THE SUBSTRATE,
TO ALLOW WATER TO FLOW FREELY
INTO THE OUTLET AND TO AVOID
WATER PONDING AROUND OUTLET.



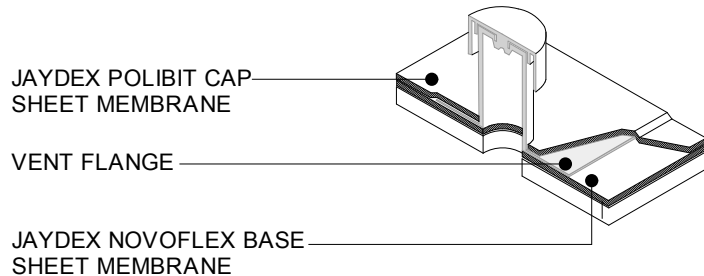
BRANZ Appraised

JAYDEX
INTERNATIONAL · LIMITED

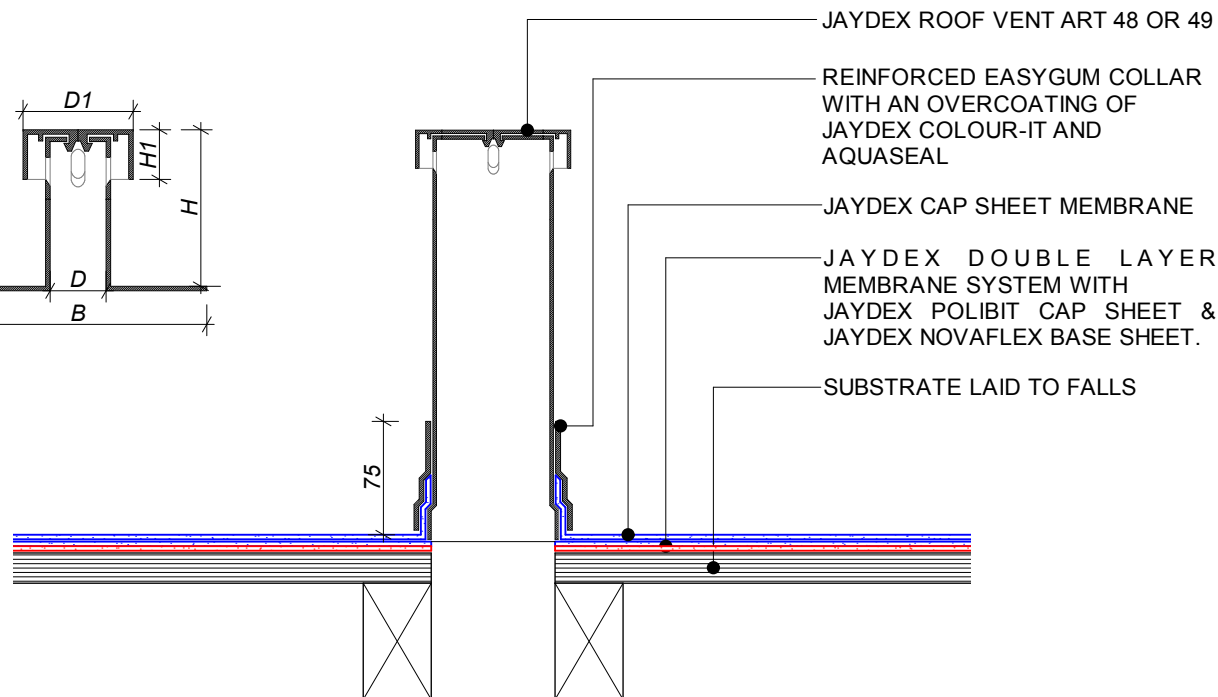
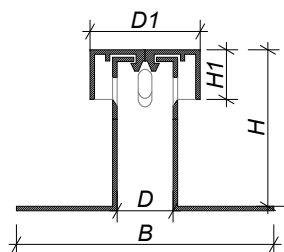
UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE

PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	VERTICAL DRAIN OUTLET DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE. WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.
DATE	JAN 2015	DESIGNED BY	R11
REVISION			

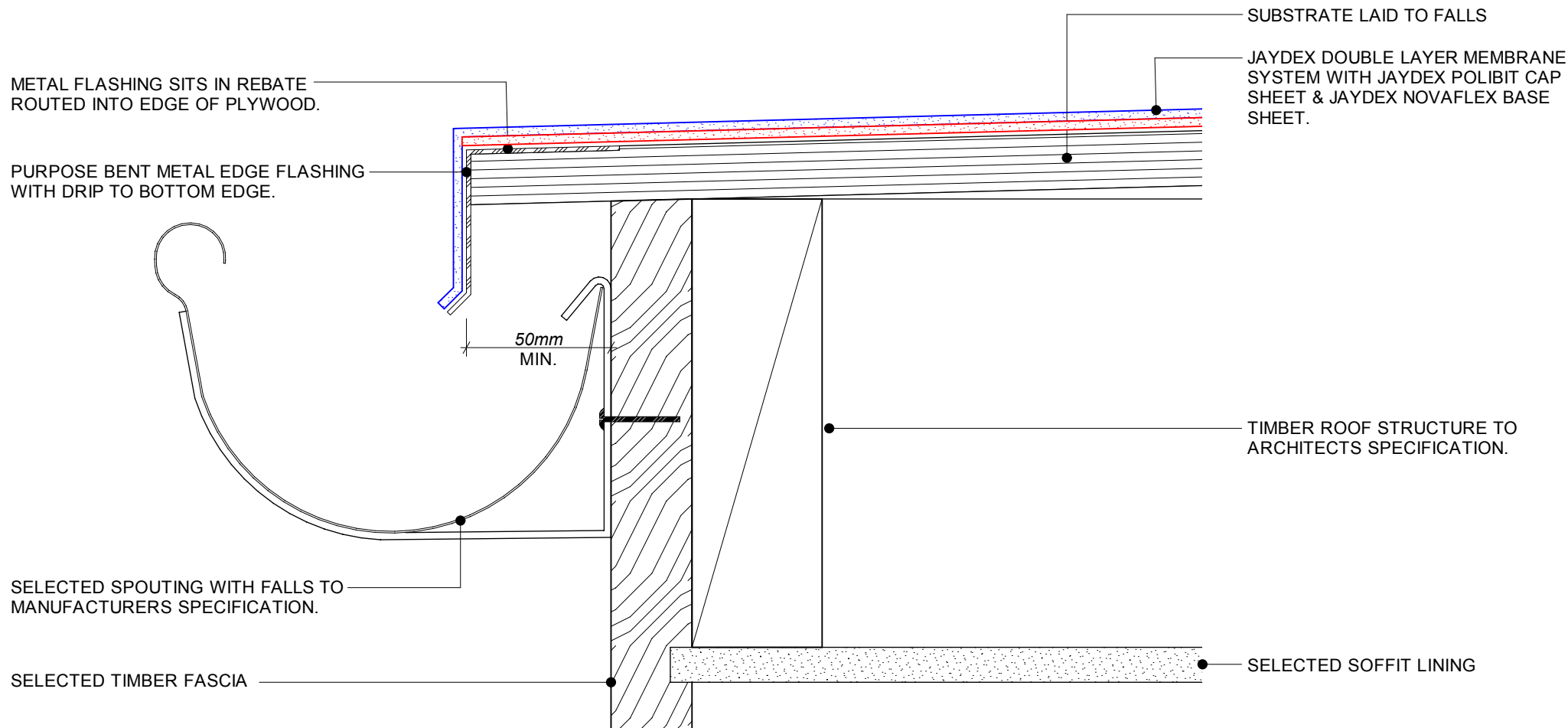


ART	48	49
B	280*280	320*320
D	75	75
H	200	270
H1	80	80
D1	110	110



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	VENT PENETRATION DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE. WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.
DATE	JAN 2015	DESIGNED BY	R12
REVISION			



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH ON MEMBRANE SYSTEM		
DRAWING NAME	SPOUTING GUTTER - METAL DRIP EDGE DETAIL		
SCALE	NTS (A4 SHEET)	APPLICABLE	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE TH APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.
DATE	JAN 2015	DESIGNED BY	
REVISION			WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.
			COPYRIGHT ©

R13

NOTE:

Z: VARIABLE ACCORDING TO WIND ZONING.

* ALL INTERNAL TRANSITIONS MUST HAVE ANGLE FILLET.

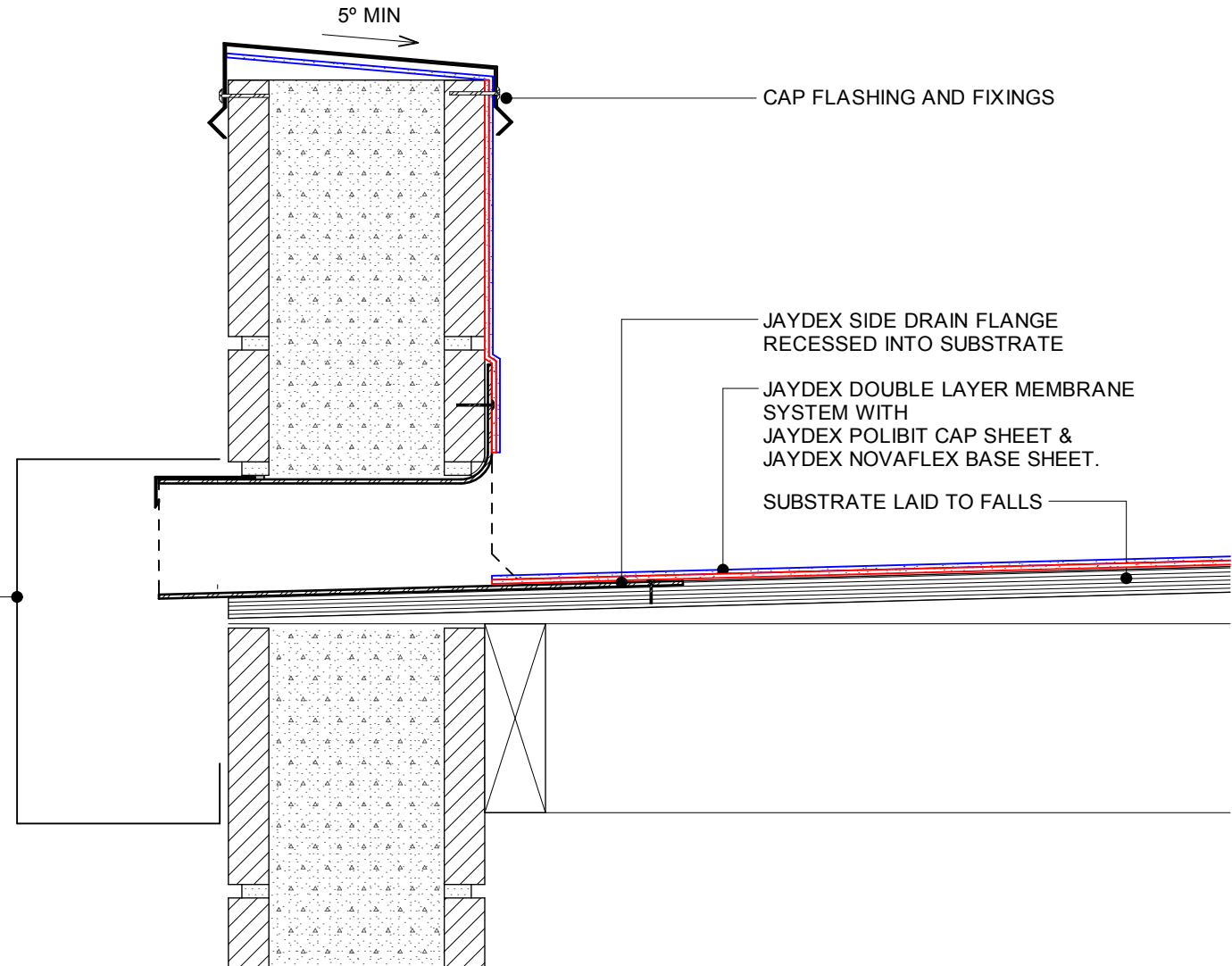
*ALL EXTERNAL TRANSITIONS MUST BE BEVELLED.

*THE MEMBRANE MUST EXTEND ACROSS THE TOP 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.

RAINWATER HEAD



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	SIDE DRAIN OUTLET DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.
DATE	JAN 2015	WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.	R14
REVISION		COPYRIGHT ©	

NOTE:

Z: VARIABLE ACCORDING TO WIND ZONING.

* ALL INTERNAL TRANSITIONS MUST HAVE ANGLE FILLET.

*ALL EXTERNAL TRANSITIONS MUST BE BEVELLED.

*THE MEMBRANE MUST EXTEND ACROSS THE TOP OF THE PARAPET.

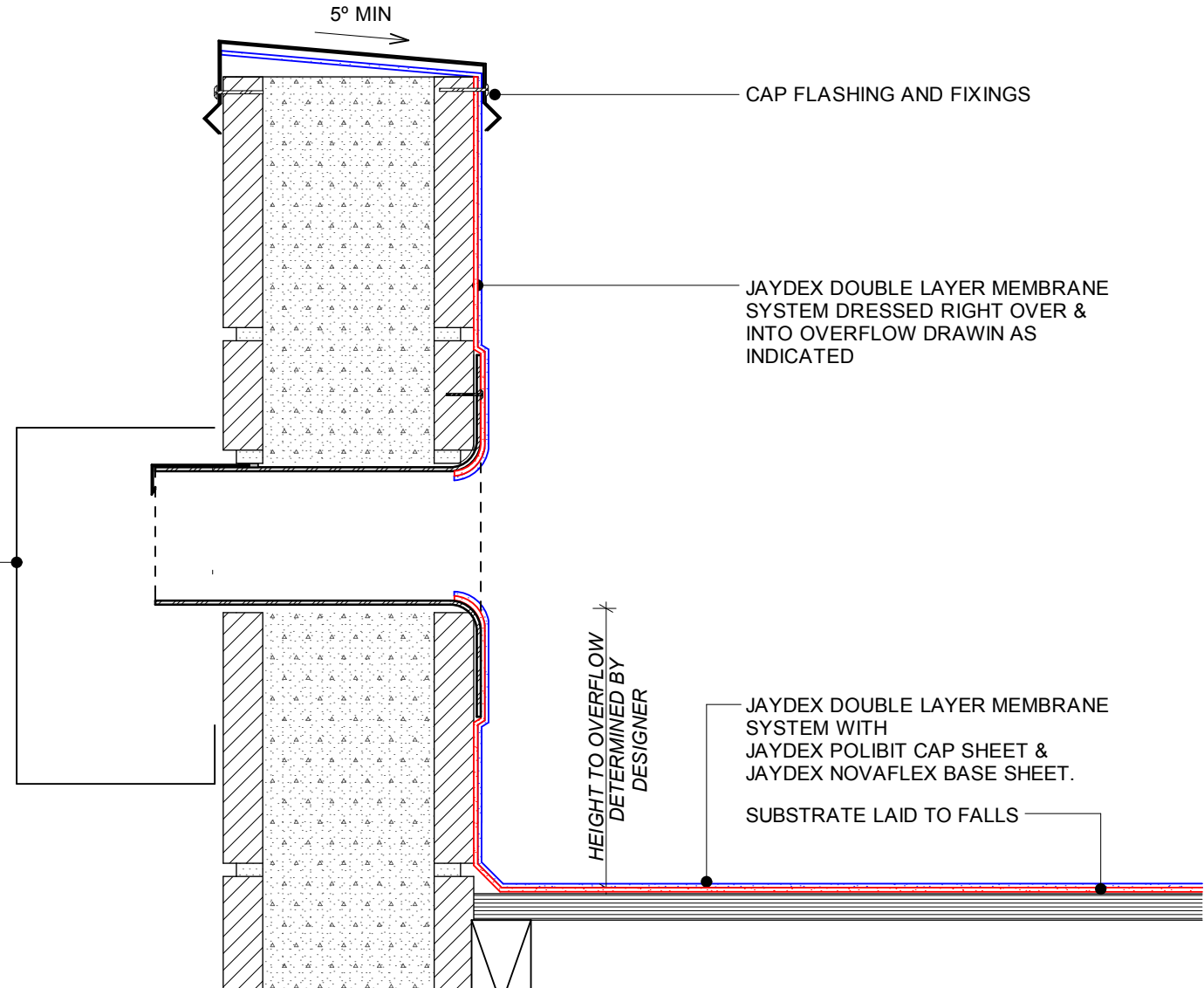
*THE TOP OF THE PARAPET SUBSTRATE, MUST BE ANGLED TO ALLOW WATER TO RUN OFF THE TOP OF THE PARAPET.

*ALL FIXINGS FOR THE CAP FLASHING, MUST BE THROUGH THE SIDE OF THE FLASHING.

RAINWATER HEAD

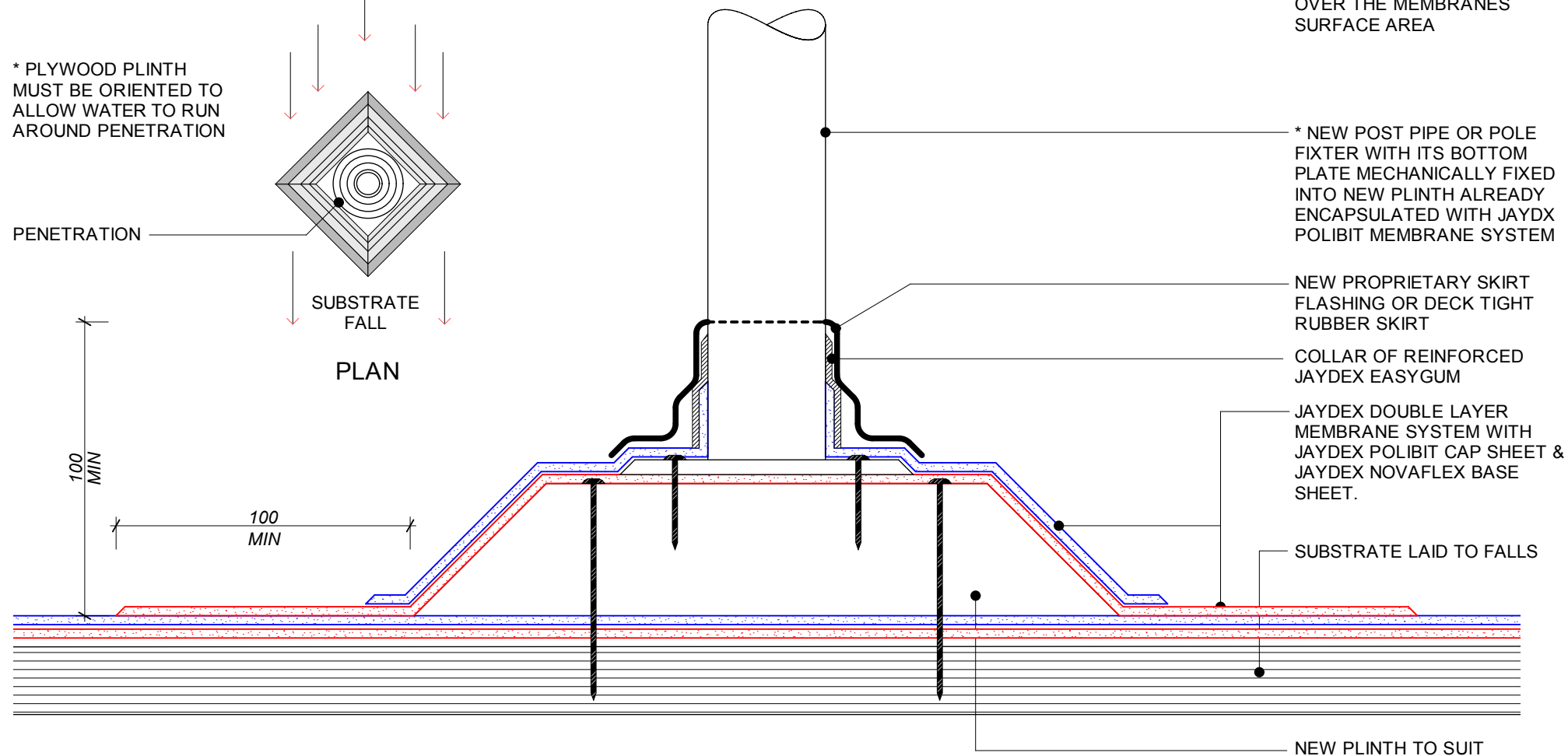
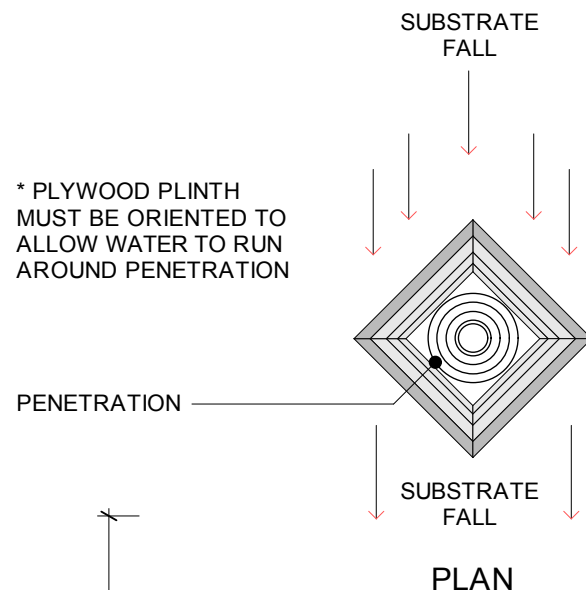
NOTE:

CAN COMBINE JAYDEX OVERFLOW DRAIN WITH JAYDEX RIGHT ANGLE ADAPTER TO SUIT



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	OVERFLOW SIDE DRAIN DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	DISCLAIMER	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE. WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.
DATE	JAN 2015	DESIGNED BY	
REVISION			
			R15



NOTE:
*THE FIXTER ONTO THE PLINTH COULD ALSO BE A BRACKET OR CRADLE REQUIRED TO SUPPORT DUCTING/PIPING OVER THE MEMBRANES SURFACE AREA

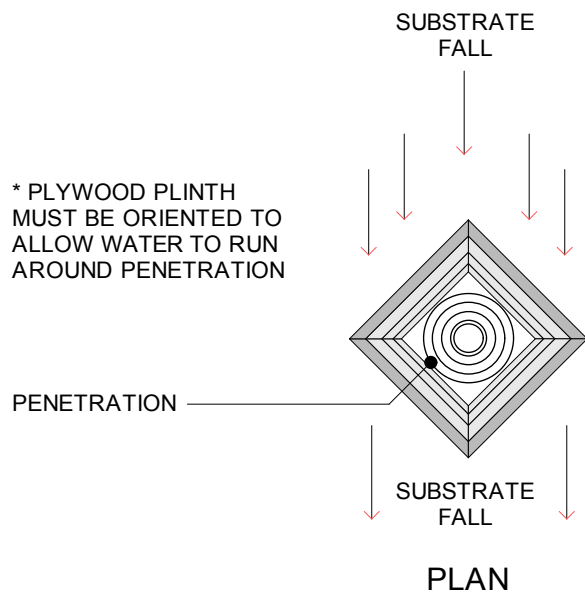


UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	POLE/POST FIXTURE DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	APPROVAL	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS INFORMATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.
DATE	JAN 2015	DESIGNED BY	
REVISION		WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.	
		COPYRIGHT ©	

R16

* PLYWOOD PLINTH MUST BE ORIENTED TO ALLOW WATER TO RUN AROUND PENETRATION



SUBSTRATE LAID TO FALLS

18mm H3 CCA TREATED PLYWOOD PLINTH.

* JAYDEX CAP SHEET TO BE TORCHED AND THE 18mm H3 PLYWOOD PLINTH TO BE IMBEDDED INTO THE MOLTEN BITUMEN. THE 18mm PLYWOOD PLINTH CAN THEN BE ENCAPSULATED WITH ANOTHER JAYDEX CAP SHEET. A HOLE IS THEN CREATED THROUGH THE PLINTH & THE SUBSTRATE. THE PENETRATION (PIPE, POST OR POLE) IS THEN INSTALLED AND SEALED WITH A COLLAR OF REINFORCED JAYDEX EASYGUM AS ILLUSTRATED, FOLLOWED BY AN APRON FLASHING AS ILLUSTRATED

PENETRATION.

1. DECK TIGHT OR
2. PROPRIETY/PREFORMED SKIRT FLASHING.

REINFORCED EASYGUM COLLAR
JAYDEX CAP SHEET MEMBRANE

JAYDEX DOUBLE SHEET MEMBRANE SYSTEM WITH JAYDEX POLIBIT CAP SHEET & JAYDEX NOVAFLEX BASE SHEET.

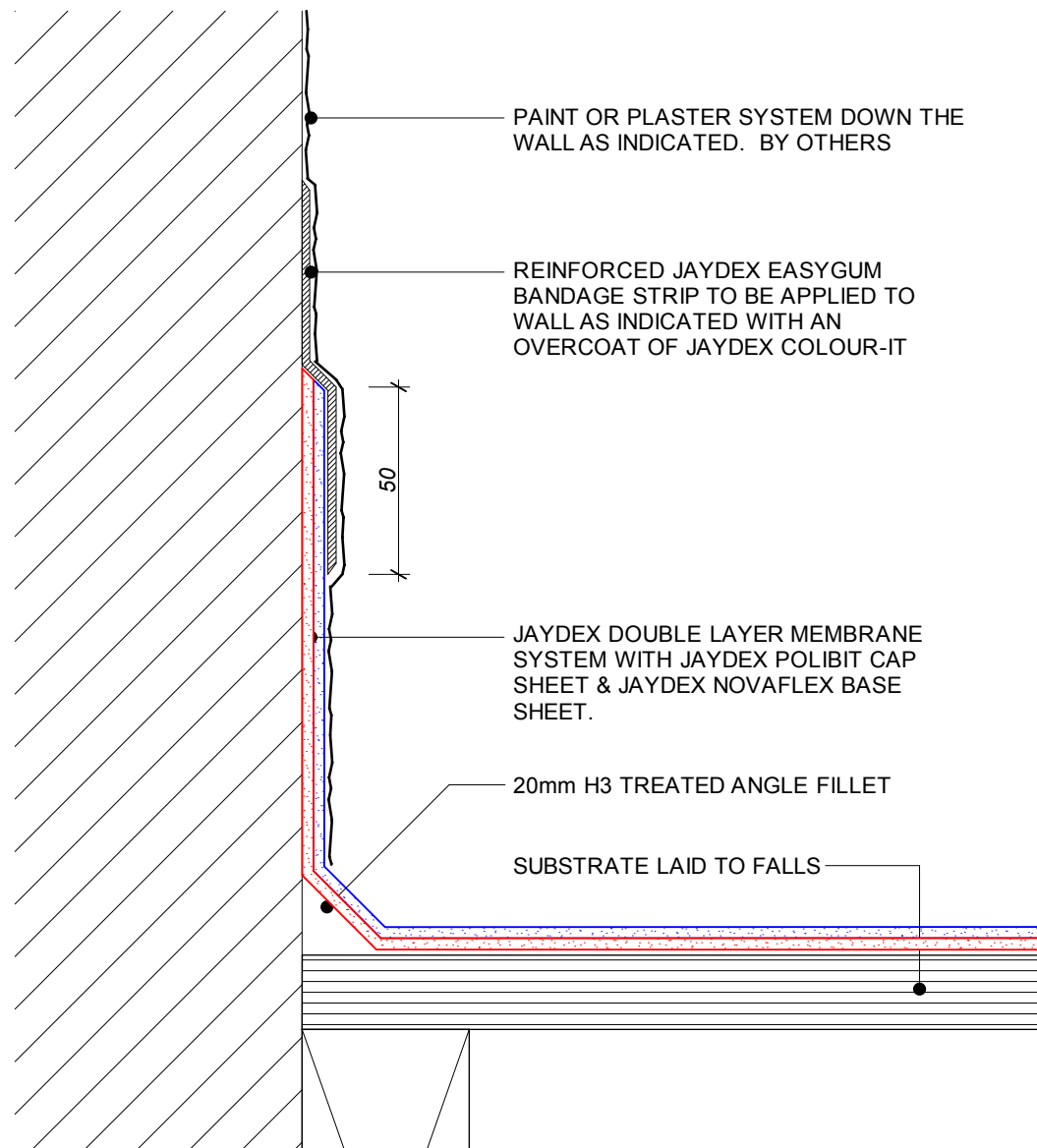
NOTE: PENETRATION TO BE ADEQUATELY SUPPORTED BELOW SUBSTRATE



JAYDEX
INTERNATIONAL · LIMITED

UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	POST/PIPE PENETRATION DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	APPROVAL	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.
DATE	JAN 2015	DESIGNED BY	R17
REVISION		WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.	

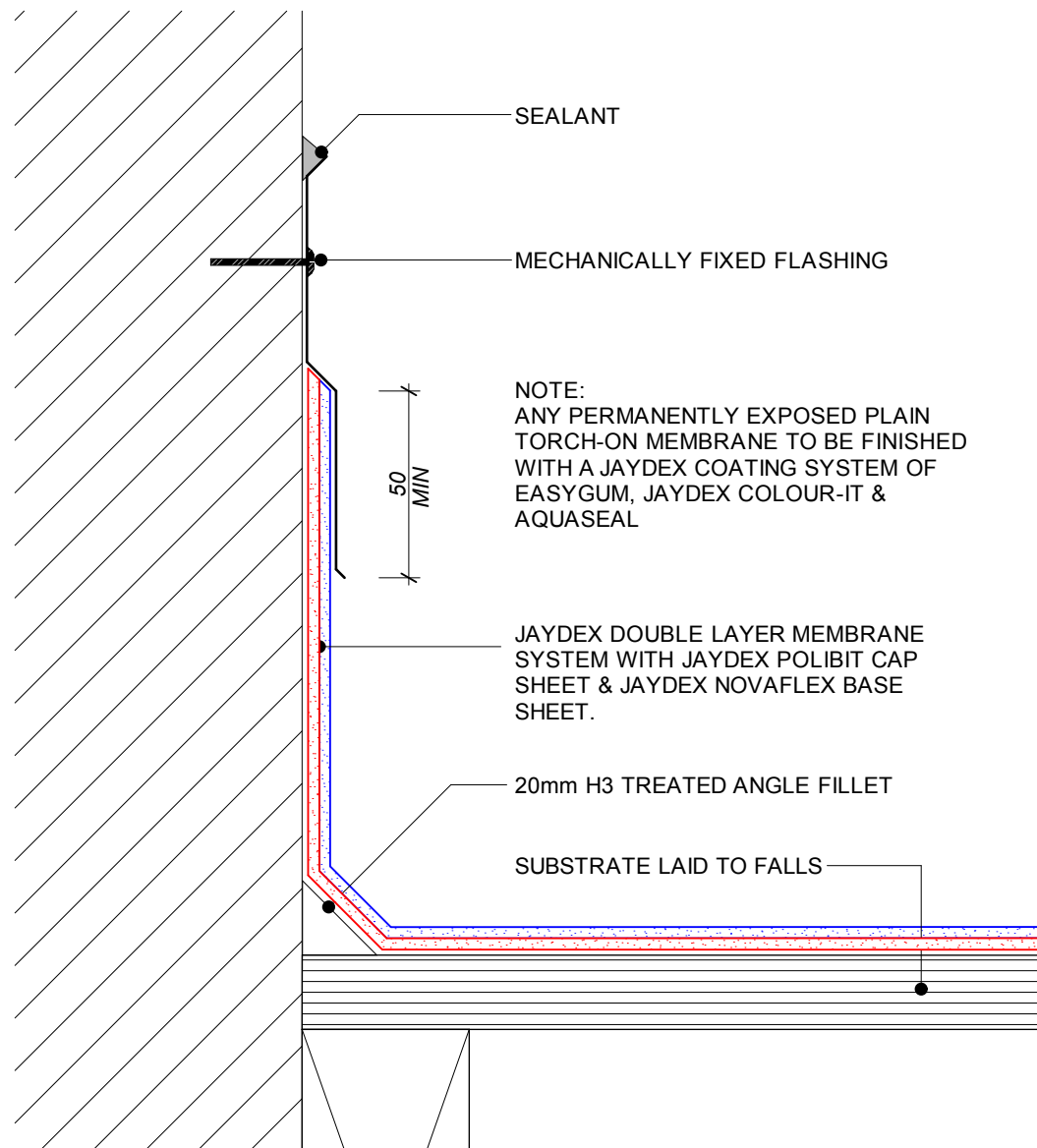


EXPOSED WALL TRANSITION - OPTION 1



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	EXPOSED WALL TRANSITION DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	<div>THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE TH APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.</div> <div>WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.</div>	
DATE	JAN 2015		
DESIGN			
DRAWING NO.	R18		

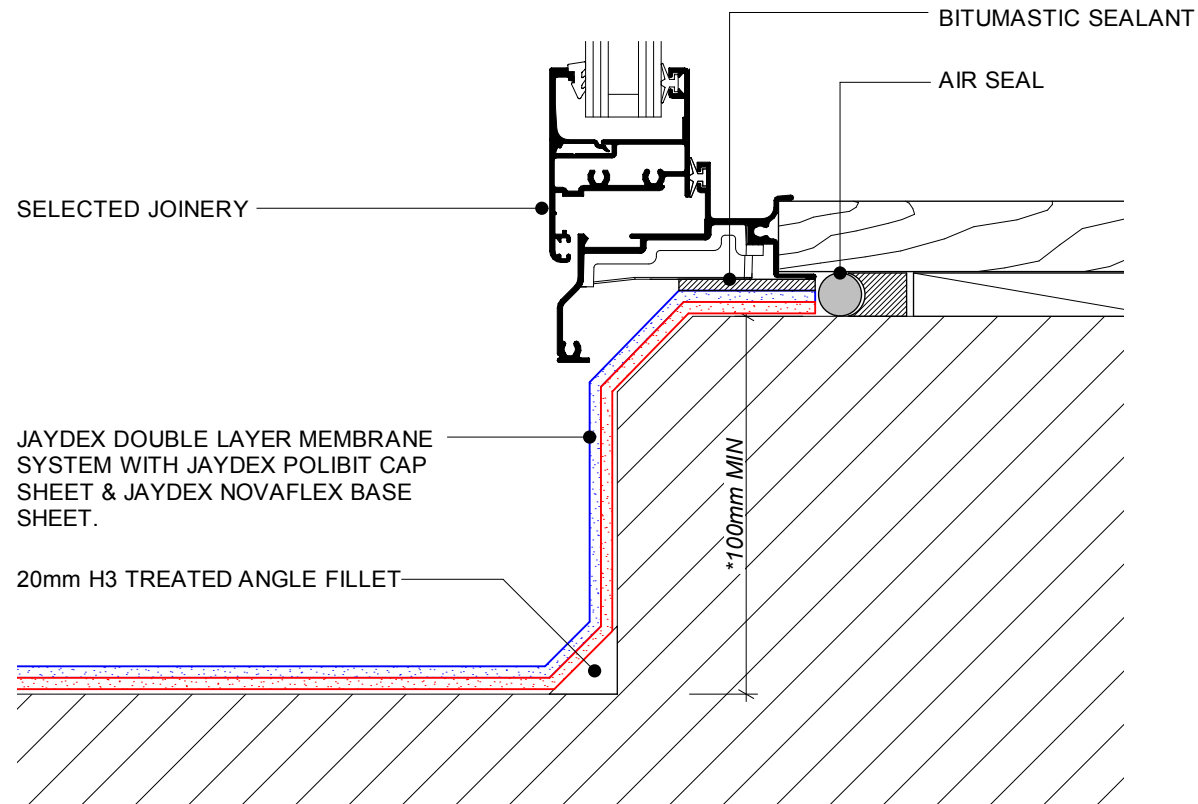


EXPOSED WALL TRANSITION - OPTION 2



UNIT 3C-3 MARKEN PLACE,
GLENFIELD, AUCKLAND
PO BOX 100 000
NORTH SHORE MAIL CENTRE
PHONE: 444 1751 FAX: 444 0132
EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH	
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM			
DRAWING NAME	EXPOSED WALL TRANSITION DETAIL GUIDE			
SCALE	NTS (A4 SHEET)	REMARKS	R19	
DATE	JAN 2015	THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS APPLICATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE.		
REVISION		WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE.		
		COPYRIGHT ©		



NOTE:
 *100mm MIN FROM THE FINISHED
 ROOF HEIGHT TO THE TOP OF THE
 FINISHED INTERNAL FLOOR LEVEL



UNIT 3C-3 MARKEN PLACE,
 GLENFIELD, AUCKLAND
 PO BOX 100 000
 NORTH SHORE MAIL CENTRE
 PHONE: 444 1751 FAX: 444 0132
 EMAIL: sales@jaydex.co.nz

APPLICATION	ROOF SOLUTION	FINISH	MINERAL or COATED FINISH
SYSTEM	POLIBIT/NOVAFLEX DOUBLE LAYER TORCH-ON MEMBRANE SYSTEM		
DRAWING NAME	WINDOW SILL TRANSITION DETAIL GUIDE		
SCALE	NTS (A4 SHEET)	<small> THE DETAILED DRAWINGS AS OUTLINED ARE BASED ON EXPERIENCE AND APPLICATION PROCEDURES AND REPRESENT THE LATEST INFORMATION AVAILABLE. NO RESPONSIBILITY IS TAKEN FOR USES TO WHICH THIS INFORMATION MAY BE PUT, BUT WE ADVISE WHERE THIS INFORMATION IS IN COMPLETE CONFORMITY WITH THE APPROPRIATE SPECIFICATION A WARRANTY MAY BE AVAILABLE. WE RESERVE THE RIGHT TO ALTER OR UPDATE THE INFORMATION AT ANY TIME WITHOUT PRIOR NOTICE. </small>	
DATE	JAN 2015		
REVISION			
DRAWING NO.			R20