

# Generation 2

## NZ Timber Cladding Systems



VERSION-V2-30/09/2020

**NATURAL. DURABLE. CLASSIC.**

PROUDLY MADE IN NZ BY



# Generation 2 bevelback weatherboards are proudly 100% New Zealand made.

We pride ourselves on delivering a premium weatherboard to work with and know you are well protected.

- Treatment warranty of 50 years protection.
- Treated with Koppers MicroPro® Wood Treatment Technology.
- Reduced corrosivity allowing the use of corrosion-resistant fasteners including hot-dipped galvanised, stainless steel or other approved fasteners to meet building code requirements
- New Zealand Radiata Pine sourced from renewable plantation forestry. KLC is a Chain of Custody, FSC® Certified Company.
- Eco-friendly with four environmental credentials.
- Weatherboards up to 6.3 metres in length.
- Formaldehyde-free and low volatile organic compounds used in the treating and gluing manufacturing process.
- No odour.
- A two coat, superior alkyd (oil based) priming system.
- Approved for aluminium contact.

# Table of Contents

DISCLAIMER.....	3
<b>1 GENERAL INFORMATION</b>	
1.1 Scope and General Information .....	4
1.2 Product Information .....	4
1.3 Architects/Designers Responsibility.....	6
1.4 On-Site Storage .....	6
1.5 Handling.....	6
<b>2 LIFE SERVICEABILITY .....</b>	<b>7</b>
<b>3 GUIDELINES FOR INSTALLATION</b>	
3.1 Installation Information.....	8
3.2 Splaycut Profiles .....	8
3.3 Pre-Installation Checks.....	9
3.4 Framing.....	9
3.5 Nail Selection.....	9
3.6 Installation .....	10
3.7 Joins and Pipe Penetrations .....	11
3.8 Wall Underlay and Flashing Tapes .....	11
3.9 Windows And Door Openings.....	11
3.10 Flashings.....	12
3.11 Sealants .....	12
3.12 Air Seals.....	12
3.13 Wall Cladding Cavities.....	12
3.14 External and Internal Corner Details.....	13
3.15 External and Internal Box Corner Details.....	13
3.16 Windows and Doors (Aluminium).....	14
3.17 Windows and Door Sills .....	14
3.18 Window and Door Heads.....	14
<b>4 FASCIA INSTALLATION.....</b>	<b>15</b>
<b>5 PAINTING REQUIREMENTS.....</b>	<b>16</b>
<b>6 MAINTENANCE .....</b>	<b>17</b>
<b>7 HEALTH AND SAFETY .....</b>	<b>18</b>
<b>8 DETAILED DRAWINGS.....</b>	<b>19</b>

## DISCLAIMER

The recommendations contained in this document are based on good building practice, but are not an exhaustive statement of all relevant information. The successful performance of the system relies on many factors outside the control of KLC Limited, such as the quality of workmanship and design. KLC Limited will not be responsible for the installation of the products outside of the control of KLC Limited. It is the responsibility of the building designer of the intended project to ensure that the details and recommendations provided are suitable and that the design is executed appropriately.

# 1 General Information

## 1.1 Scope and General Information

The KLC Generation 2 H3.2 range of Splaycut weatherboards, fascia, cavity battens, scribe and finishing boards (D4S) have been designed as a complete system.

Generation 2 H3.2 Splaycut weatherboards can be used for buildings that fall within the scope of NZS 3604/2012 Timber Framed Buildings and Acceptable Solutions E2/AS1. Buildings that have a weathertightness risk score of more than 6 as assessed in E2/AS1 section 3 will require a drained and ventilated cavity.

Including:

- NZS 3617: Profiles of Weatherboards, Fascia Boards and Flooring
- NZS 3602:2003 Timber Wood Based Products
- AS/5068 Finger Joints in Structural Products
- AS/5069 Finger Joints in Non-Structural Products
- NZS 1328.1:1998 Glued Laminated Structural Timber

Meets and Exceeds

- NZS 3640:2003 Preservation of timber and wood-based products

The information contained within this guide are based on good building practice and are not a complete statement of all relevant building practices.

The drawings are as accurate as possible. KLC have specified extra flashing's in some areas that are over and above the requirements of NZBC E2/AS1 External Moisture.

## 1.2 Product Information

KLC Generation 2 H3.2 products are manufactured from short lengths of clear high grade radiata pine that are finger-jointed together using a structural glue to produce an untreated length of 6.3metres (substrate).

The substrate is then treated to H3.2, using the revolutionary wood treatment technology called MicroPro® (MCA). MicroPro® (MCA), Micronized Copper Azole (MCA) preservative system protects wood products from insects, termites and fungal decay and is manufactured by Koppers Performance Chemicals. The preservative contains a mixture of micronised copper carbonate (copper) and tebuconazole (azole). The MicroPro® treatment system is a water-borne, copper-based biocide preservative system with four Environmental Certifications.



These environmental certifications have been awarded to Kopper MicroPro® Wood Treatment Technology



### Scientific Certification Systems

MicroPro® is the first treated wood process to be EPP (Environmentally Preferable Product) certified by Scientific Certification Systems based on a life cycle assessment. As the leader in green building product certification since 1990, SGS was the first company to offer manufacturers a program for verifying the accuracy of environmental claims on products.

# 1 General Information



## Greenguard® Environmental Institute

MicroPro® is environmentally sustainable, this is demonstrated in low leaching of treatment preservatives from the timber, low volatile organic compound (VOCs) emissions and the award of the GREENGUARD Children and Schools' Certification from the Greenguard® Environmental



## Global GreenTag International - GreenRate™

MicroPro® Wood Treatment Technology has received a Global GreenTag GreenRate™ Level A award under Version 4.0 of the Global GreenTag International Product Certification Standard. It is the highest-level achievement for a product under Global GreenTag's GreenRate™ product rating system – declared by the certification body as 'Fit-for-Purpose' and confirmed for Green Building compliance.



## Global GreenTag International - Health Declaration

The GreenTag™ Product Health Declaration proves that Koppers MicroPro® Wood Treatment Technology is safe for human health (and ecosystems) and can be used with absolute peace of mind in workplace and residential building projects. Reducing risks for Building, Design and Procurement Professionals whilst supporting the user and occupant's health and wellbeing compared to products that don't.

The blanks are then kiln dried (KD) to a pre-determined moisture content. The KD H3.2 substrate is then profiled to various Weatherboards, Fascia, Finishing Boards (D4S), box corners and other profiles.

To complement these appearance grade products, a dual coat oil based (alkyd) priming system is applied.

Note: Pre-priming does not waterproof the product and care must be taken to ensure dryness of product before final painting.

When using pre primed weatherboards and fascia ensure top coat painting occurs soon as possible after installation. Refer 4.0 Painting page 18

KLC will not "Warranty" any Generation 2 H3.2 product that have not been stored correctly and installed by a professional Licenced Building Practitioner and as per the NZ Building Code NZS 3604 and painted in accordance with AS/NZS 2311 2017.

KLC Generation 2 exterior cladding systems have been designed for use in residential and small commercial building applications.

KLC Generation 2 H3.2 exterior cladding systems shall be either direct fixed to framing over a wall underlay or fixed to a Generation 2 H3.2 cavity batten, this method is described in the Acceptable Solution E2/AS1 paragraph 9.1.8.

Timber weatherboards are included in the Acceptable Solution E2/AS1, section 3.0.

All types of weatherboard profiles may be used in low risk buildings. Only bevel back, rusticated and vertical shiplap weatherboards should be used in high risk buildings. For information on requirements for rained ventilated cavities refer to the Acceptable Solution E2/ AS1, paragraph 9.1.8.

KLC Generation 2 H3.2 weatherboards are limited to use in buildings with a risk matrix score of 20 or below as outlined in E2/AS1 paragraphs 3.4.1 to 3.4.3 (Weather Tightness Matrix)

Weatherboard cladding systems are an acceptable solution under the terms of the New Zealand Building Code E2/AS1. NZBC E2/AS1 section 1.5 specifies that the design, installation and alteration of cladding is classed as restricted building work.

# 1 General Information

## 1.3 Architects/Designers Responsibility

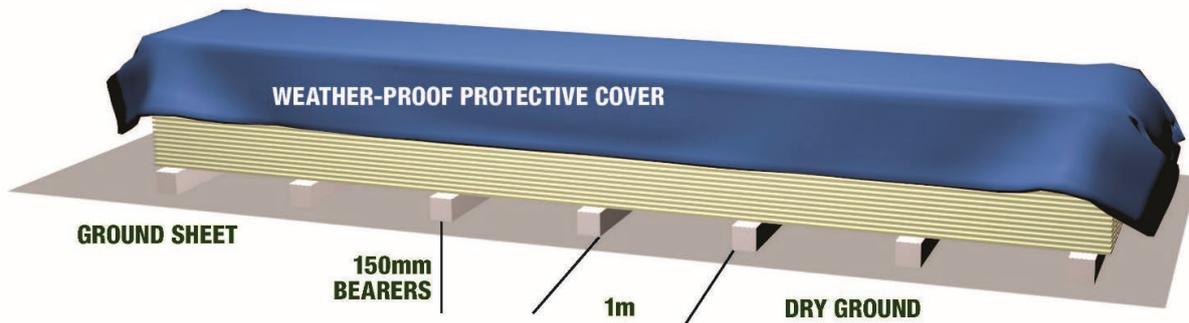
It is the Architects/Designers responsibility to confirm the suitability of these details for his/her particular project and the client.

The Architect/Designer will need to determine the RISK MATRIX that is project specific, that then determines the details required.

Builders that have questions about these details will need to contact the project specific Architect or Designer.

## 1.4 On-Site Storage And Handling– KEEP IT DRY

Correct on-site storage of Generation 2 H3.2 products prior to installation is critical.



Ensure the product is stored on site correctly. Inside, under cover or as per the diagram above if stored outside.

- MUST remain dry at all times prior to installation.
- MUST be stored indoors on a flat surface off the ground, on bearers 150mm above ground, supported every one metre.
- If stored outside, there MUST be a moisture barrier (ground sheet) under the stack and a secondary waterproof cover. Allow for a good air circulation.
- Keep out of direct sunlight and protected from both rain and ground moisture uptake.
- Ensure that the framing and cavity battens are dry prior to installation. The underside of the weatherboard is vulnerable to water ingress. The moisture content must not exceed 15% at time of installation.

Note: Generation 2 H3.2 products are made from kiln dried timber. Timber will absorb moisture in a damp environment and release it in a dry environment. If Generation 2 H3.2 products do absorb moisture prior to installation, dimensional swelling may occur, this will disappear when the timber returns to its original moisture content. If the boards have become wet, check the dimensions of the profile. If the dimensions are larger than the specification leave the boards to dry and regain correct profile specifications before installation.

## 1.5 Handling

- Care should be taken when unloading KLC Generation 2 product. The profiles should be unloaded by hand or with a Hiab forklift, ensure that there is a minimum of 2 well-spaced load points to avoid excessive bending or flexing during unloading.
- Do not tip these products from a truck.
- Avoid scratching the face of the board
- Always carry profile products on their edge to avoid excessive bending.
- Avoid leaning against any vertical surface to avoid any bending. Store in a dry, well ventilated area.

## 2 Life Serviceability

### 2.0 Warranty

KLC Generation 2 weatherboards have a durability warranty based on the Treatment Manufacturer's 50-year limited guarantee.

Under the New Zealand Standards NZS 3602:2003 Timber Wood Based Products, weatherboards and cladding products must have a minimum durability of 15 years.

The life service is subject to correct installation, paint coating of the product, maintenance and care.

When KLC Generation 2 weatherboards are installed according to the instructions contained in this manual and by a Licenced Building Practitioner (LBP) or suitably qualified person, the service life can be expected to be considerably longer.

Full details covering all the aspects of pre-installation care, installation, painting and maintenance are contained within this manual.

# 3 Guidelines for Installation

## 3.1 Installation Information

KLC Generation 2 H3.2 Board and Batten profiles can be used for buildings that fall within the scope of NZS3604 Timber Framed Buildings and Acceptable Solutions E2/AS1.

Although timber weatherboards can be used on buildings that have a maximum Weathertightness Risk Matrix Score of 6. You will need to use Acceptable Solutions E2/AS1 Table 3.0 Page 31 to ascertain the use of direct fix or on a cavity fixing system.

For situations where you wish to use Board and Batten on a higher risk matrix score, you will have to apply to your local Council for an alternative solution.

This would require the Board and Batten profiles to be installed on a 20mm cavity as per E2/AS1 9.1.8 drained cavities Pg 100.

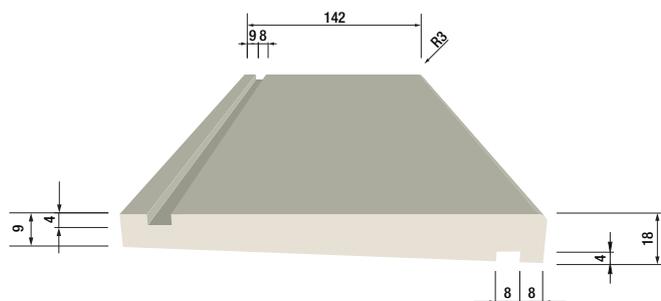
Weatherboard cladding systems are an acceptable solution under the terms of the New Zealand Building Code E2/AS1. NZBC E2/AS1 section 1.5 specifies that the design, installation, and alteration of cladding is classed as restricted building work.

The KLC Generation 2 cladding products must be installed by a Licenced Building Practitioner (LBP)

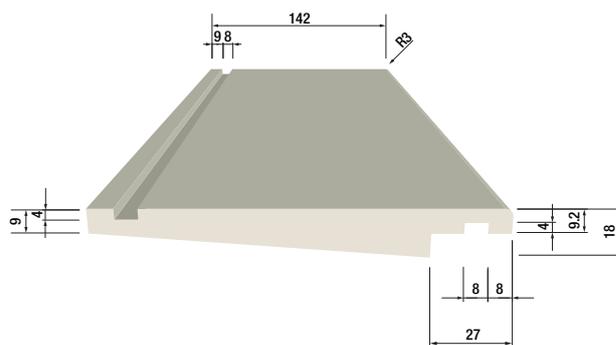
## 3.2 Splaycut Profile Sizes

Finish Grade	Finished Grade	Length
142 x 18 Splay Cut	Finger Jointed	6.3m
142 x 18 Rebated Splay Cut	Finger Jointed	6.3m
187 x 18 Rebated Splay Cut	Finger Jointed	6.3m

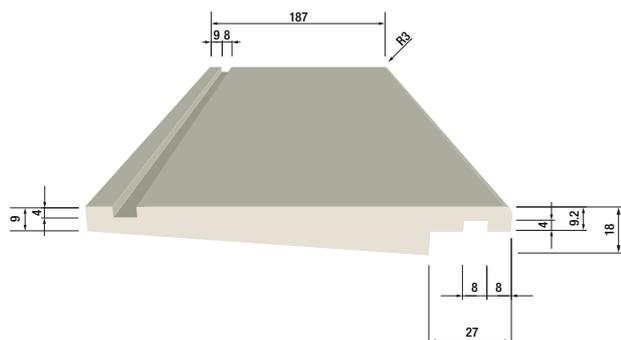
### 142 Splay Cut



### 142 Rebated Splay Cut



### 187 Rebated Splay Cut



The products should be installed by a competent qualified person in accordance with the provisions of the Building Code E2/AS1 (sec 9.4) and NZS 3604 (2011). For further information visit BRANZ Good Practice Guide, Timber Cladding.

# 3 Guidelines for Installation

## 3.3 Pre-Installation Checks

There are many simple checks that should be carried out prior to installation which can avoid issues during installation.

- Where any KLC Generation 2 profile has been exposed to moisture prior to installation, the moisture content should be checked. If the moisture content is above 15% then the product should not be installed until it returns to 15% or less.
- When excessive moisture or swelling is found the profile should be put aside and allowed to dry to its original profiled dimensions. This is best done by placing the product in fillet and stored as outlined above. Filleting allows air movement through the boards for drying.
- Check for any defects or damage caused during delivery or storage.
- Remove any dirt, dust or stones which may be on the product.
- If there are any areas where a primer coat has been removed or damaged, the affected area should be sanded smooth and a primer coat applied.
- This product is primed with a factory applied alkyd (oil based) architectural coating, a similar oil-based undercoat or primer must be used for touch-up work
- If building in “sea spray or geothermal zones”, it is the building designer’s responsibility to ensure all specified fastenings, fittings, and flashings comply with NZS 3604, Section 4 – Durability.

## 3.4 Framing

- The timber framing must comply with NZS3604 – Timber Famed Buildings with maximum of 600mm centres.
- The moisture content of the framing must not exceed 20% at the time of fixing the weatherboard. Excessive moisture content in the timber framing may cause movement in the framing structure thus altering the weatherboard positioning.
- Additional framing may be required at soffit, corners, windows and door opening.

## 3.5 Nail Selection

KLC Generation 2 H3.2 weatherboards are treated using the revolutionary water based micronised copper timber treatment technology called “MicroPro”.

- In most applications both stainless steel and hot dip galvanised steel fixings and fasteners are safe to use with MicroPro® treated exterior products. Compliant to AS/NZS 4680 and to NZBC E2/AS1 Table 24.
- Note In sea-spray and Geothermal zones nails must be Stainless Steel.
- Hand nailing is recommended as the use of nail guns can cause fibre damage to the face and back of the board.

Based on MicroPro® ISANTA fastener corrosion test results, MicroPro® treatment is considered similar to CCA treatment with regard to the effects on fastener material. Therefore, in most applications both stainless steel and hot dip galvanised steel fixings and fasteners are safe to use with MicroPro® treated exterior products. Compliant to AS/NZS 4680 and to NZBC E2/AS1 Table 24.

Nail Option A	Nail Option B
One Nail to Framing (refer E2/AS1 - Table 24)	Structurally Fixed Cavity Batten (Refer BRANZ Bulletin No 582 & Test Report ST0589)
Weatherboard & Cavity Batten Fixing 90 x 3.55mm Jolt Head, Hot Dip Galvanised Nails OR 75 x 3.15mm CSK Annular Grooved, HD Galvanised Nail 75 x 3.15mm CSK Annular Grooved, SS Nail	BATTEN FIXING OPTION 60 x 2.8mm Jolt Head, Hot Dip Galvanised Nail 65 x 2.87mm Power Driver, Hot Dip Galvanised Nail 65 x 2.87mm Power Driver, Annular Grooved SS Nail

## 3 Guidelines for Installation

Splaycut Nail Selection Table

Timber size (mm)	Generation 2 profile	Recommended minimum nail size
142 x 18, 142 x 18 Rebated, 187 x 18 Rebated	Splaycut direct fixed weatherboards	75 x 3.15
85 x 18 & 100 x 18, 100 x 100 cover	External and Internal Box Corners	50 x 2.50
All sizes D4S	Finishing Boards	50 x 2.00
40 x 18	Scriber	50 x 2.00
45 x 20	Cavity Batten	60 x 2.80

### 3.6 Installation

- Installation must be by a Licensed Building Practitioner (LBP), or supervised by an LBP. Please refer to BRANZ Bulletin Number 468, Fixing of Timber Weatherboards or refer to detail drawings contained in this document or online.
- Using a TP (timber packer), position and fix the bottom weatherboard. Ensure there is a minimum of 50mm overlap below the bottom plate or bearer. The purpose of a TP is to provide the accurate layback angle for the bottom board.
- Use 75 x 3.15 JH hot-dipped galvanised or annular grooved stainless steel nails for fixing either directly into the framing or structural batten.
- Leave a 2mm expansion gap in the lap of rebated profiles, ie Rusticated & Splaycut to allow for expansion and contraction.
- Boards must be single nail fixed to allow for seasonal movement, with an overlap of 32mm.
- Single nail all weatherboard profiles, regardless of size. Nailing boards together will likely result in split boards. Hand nailing is recommended as nail guns can cause damage to the surface of the board. If a nail gun is used, a non-marking attachment should be used to avoid damage to the surface.
- Nails must have a minimum penetration of 35mm into the wall framing or structural batten.
- Pre-drill all boards 50mm from the end to avoid end splitting.
- Nail holes should be pre-drilled especially in areas around joins and the end of boards. This is to avoid splitting the product.
- Location of the nails is to be a maximum overall distance of 42mm from the bottom edge of the board. 32mm minimum overlap and 10mm to the nail fixing point. Aligning the weather grooves.
- Nails should be applied at an upward angle of 10degrees to avoid water entering through the fixing point.
- All nails should be punched to a depth of no less than 2mm.
- As soon as nails are punched below the surface of the weatherboard, they must be filled with an exterior grade filler immediately to prevent moisture uptake in the weatherboards.
- The top board may need to be cut to suit the soffit.

**IMPORTANT NOTE:** Timber weatherboards are designed to accommodate thermal, seismic and moisture related movement in the board laps. Each weatherboard is single nailed so that the weatherboards can expand, contract and move independently of each other. KLC does not recommend the use of any sealant/glue being used by the painters under the lap of each board, this inhibits the natural and ongoing movement of the weatherboard.

## 3 Guidelines for Installation

### 3.7 Joins and Pipe Penetrations

It is an industry recommendation that all forms of timber treated products, when cut, have a cut-end treatment applied (e.g. a zinc naphthenate-based product like Reseal Clear or Protim) which restores the treated envelope. This refers to MCA, CCA and LOSP treated products.

KLC's manufacturing and tested treating process and the inclusion of the two coat oil based priming system being applied to all of the Generation 2 profiles, KLC recommends that all during the installation process, cut ends, drill holes, rebates and notches must be re- sealed/primed immediately with a suitably approved product.

KLC recommends following best building practices and industry recommendations which includes the use and application of end seal treatment product or alternatively 2 coats of an oil based primer being brush applied.

KLC recommends the use of Koppers "Protim Reseal".

End sealing can be achieved by the application of 2 coats of brush-applied, quality Alkyd (oil based) primer allowed to dry between coats.

#### Joining Weatherboards

Avoid joining Generation 2 H3.2 weatherboards whenever possible, but if unavoidable use a 45-degree scarf joint directly over studs or Generation 2 H3.2 FJ Cavity Batten. Care must be taken to angle mitre joints away from the prevailing weather, and or use Flat Soakers. Alternatively, a butt joint is acceptable using flat soakers.

Face the overlapping board away from the prevailing weather direction using one fixing through the overlapping board (pre-drill the hole to avoid splitting). Re-prime the cut ends.

Nails should be driven and punched below the surface to allow for filling. Prime then fill with an exterior grade wood filler immediately after nailing.

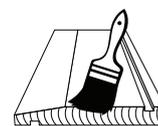


Apply two coats of an Alkyd (oil based) primer or end sealer.

#### Pipe Penetrations

Pipes to have a 5° Slope to the outside.

A flexible flashing tape with a minimum Of 10mm coverage around the outside. Install as per the manufacturer's instructions



Apply two coats of an Alkyd (oil based) primer or end sealer.

### 3.8 Wall Underlay and Flashing Tapes

Use only underlays that meet the requirements of E2/AS1 Table 23

### 3.9 Windows and Door Openings

Refer Drawings: WINDOWS – DF D1.5, D1.7, D1.8, CF D2.5, D2.6, D2.7

Refer Drawings: DOORS – DF D1.3, D1.4, D1.6 CF D2.3, D2.4

Refer Drawings: METER BOX – D1.13, D1.14, D1.15, CF D2.11, D2.12, D2.13

## 3 Guidelines for Installation

### 3.10 Flashings

Refer to NZS3604 section 4 and E2/AS1 Table 20 for durability requirements and E2/AS1 section 9 for flashing design and fabrication details.

### 3.11 Sealants

All sealants must be suitable for exterior use and while they will assist with providing weathertightness at laps and joins they must not be relied on to provide total protection.

### 3.12 Air Seals

Air seals are a barrier that prevent air flowing into the building. Air seals are required where a hole or penetration through the external cladding occurs – windows, doors, pipes, meter boxes etc. See E2AS1 for complete building air seal requirements.

A foam backing rod of a suitable diameter must be installed in the gap, a sealant to the perimeter that forms a waterproof air seal prior to applying the sealant.

Backing rods and sealants must be used in accordance with the manufacturer's instructions.

### 3.13 Wall Cladding Cavities

If the weathertightness risk score is higher than 6 a drained and ventilated cavity will be required between the underlay and Generation 2 weatherboards.

If a cavity is required, structurally fix Generation 2 treated cavity battens to the framing in accordance with BRANZ Bulletin. 582. Cavity construction, including flashing and vermin proofing, must be in accordance with the requirements as set out in E2/AS1 and NZS4229.

Structurally Fixed Cavity Batten (Refer BRANZ Bulletin No 582 & Test Report ST0589).

## 3 Guidelines for Installation

### 3.14 External and Internal Corner Details

Using 50x2.5mm JH hot dipped galvanised or annular grooved stainless-steel nails, fix the Generation 2 Box Corner two-piece box corner profiles over the Generation 2 weatherboards. Use two nails at each fixing point. There must be a minimum 50mm cover on both faces of the corner.

Fixings must be located 35-40mm above the lower edge of the overlapping board on every fourth board for every 142mm wide weatherboard, every third for the 180x18 weatherboard. For nails near the ends of the corner boards pre-drill the nail holes.

Install a Generation 2 scribe over the weatherboards against the corner boards. Pre-drill holes and using 60x2.8mm (40x18 scribe) or 50x205mm (40x10 scribe) JH hot dipped galvanised or annular grooved stainless-steel nails, fix the scribe firmly against the box corner. Nail at 450mm centres.



Re-prime the cut ends with two coats of and alkyd (oil based) primer, allowing to dry between coats.

Nails must be hand driven and punched below the surface to allow for filling. Prime then fill with an exterior grade wood filler immediately after nailing.

### 3.15 External and Internal Box Corner Details

Internal corners, direct or cavity fix, must have a flashing behind the cladding that provides a minimum 50mm cover to both faces of the corner. Refer to E2/AS1 for full details. Using 50x2.5mm JH hot-dipped galvanised or annular grooved stainless-steel nails, fix the Generation 2 two piece prefabricated internal box corner over the Generation 2 weatherboards. Use two nails at each fixing point. The Generation 2 internal box corner provides 100mm cover on both faces of the corner.

Fixings must be located 35-40mm above the lower edge of the overlapping board on every fourth board for every 142mm wide weatherboard, every third for the 180x18 weatherboard. For nails near the ends of the corner boards pre-drill the nail holes.

Fit a pre-cut Generation 2 scribe over the weatherboards against the corner boards. Pre-drill holes and using 60x2.8mm (40x18 scribe) or 50x205mm (40x10 scribe) JH hot dipped galvanised or annular grooved stainless-steel nails, fix the scribe firmly against the box corner. Nail at 450mm centres.



Re-prime the cut ends with two coats of and alkyd (oil based) primer, allowing to dry between coats.

## 3 Guidelines for Installation

### 3.16 Windows and Doors (Aluminium)

Window and door openings are a high weathertightness risk area and require particular attention to ensure weathertightness is achieved. All window and door openings must be constructed and trimmed in accordance with E2/AS1. All flashings, air seals, underlay and flexible flashing tapes must be in place. For flashing details refer to NZS3604 section 4 and E2/AS1 table 20 for durability requirements and E2/AS1 for flashing design and fabrication details.

As recommended in E2/AS1, window and door suppliers are responsible for head flashings. All windows must comply with NZS4211 including consideration of building location.

### 3.17 Window and Door Sills

The Generation 2 weatherboard system requires a full width sill tray for direct fixed windows and doors, which meets the requirements of E2/AS1.

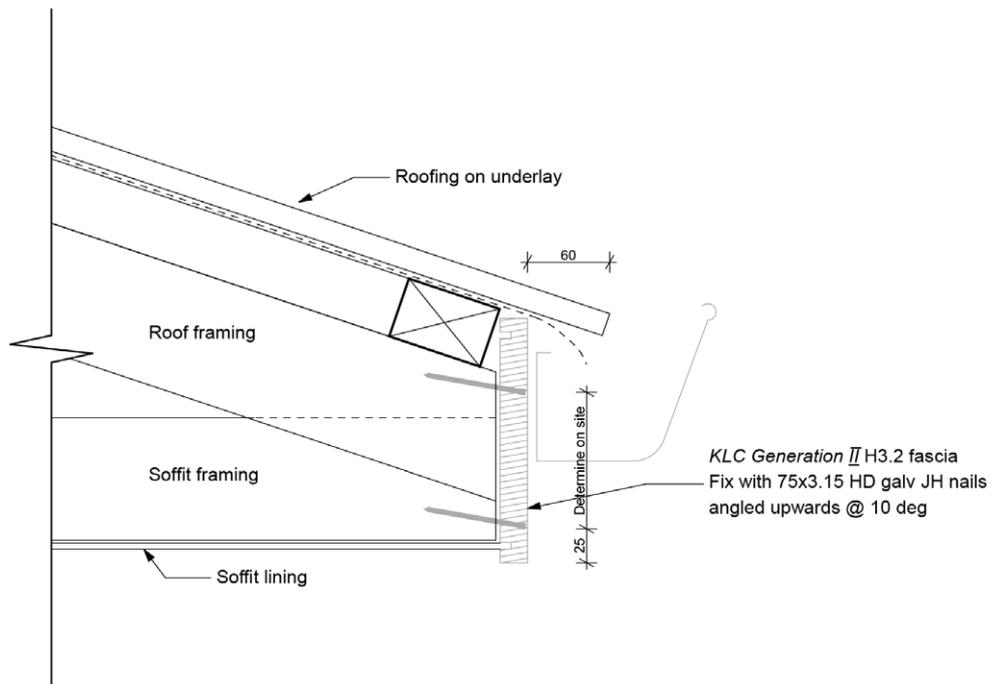
In a cavity fix application, all doors and windows with a trim opening wider than 600mm require an appropriate sill support bar conforming to EMS, paragraph 9.1.10.5

### 3.18 Window and Door Heads

Direct and cavity fixed aluminium windows and doors require a flashing that meets the requirements of E2/AS1. The flashing must be fitted behind the cladding with a 5mm gap between the bottom edge of the cladding and the horizontal surface of the flashing.

## 4 Fascia Installation

As an alternative to nail fixing, fascia can be screwed onto rafter ends as wide as is practical with wide head (10mm) Stainless steel screws, slightly countersunk. Screws should be a min. 75mm long.



## 5 Painting

KLC Generation 2 H3.2 products have a premium factory applied alkyd primer and undercoat applied in two separate coats.

All painting must be carried out in a good tradesman-like manner and in accordance with AS/NZS 2311 2017. Please also refer to “BRANZ Good Practice Guide to Exterior Coating”.

If boards have been exposed for longer than 4 weeks, some dimensional swelling or distortion of the board may have occurred during unprotected exposure to the elements. Also, some sanding and re-priming may be required.

1. The moisture content of the boards before painting. Equilibrium Moisture Content (EMC) should be at 15% or less. Use a correctly calibrated moisture meter to check.
2. Once installed, remove any dirt and surface contamination by sanding and dusting down. Spot-prime any exposed timber with two coats of oil primer. Spot-prime the filled nail holes. Any sealants used should be of a flexible exterior grade and suitable for over coating with acrylic paint
3. Once undercoated, simply apply two coats of 100% premium acrylic low gloss house paint to the manufacturer's specification, at a rate of 12-14m<sup>2</sup>/L.
4. Once applied, the two topcoats should have a combined thickness of no less than 50 microns. The Painter must adhere to the topcoat paint manufacturer's spread rate.
5. The onus is on the painter to ensure that the primed surface remains well adhered to the timber substrate and is a suitable base for the subsequent topcoats. This is particularly important where the boards have been exposed for longer than 4 weeks before top coating. Painters should refer to the AS/NZ 2311:2017 guide to painting buildings. NOTE: The KLC warranty will be void if dark colours with a Light Reflectance Value (LRV) less than 45 are used.
6. Darker colours will absorb heat from the sun and may cause excessive movement, distortion, splitting and possible resin bleed. Light colours reflect the sun's heat. Therefore, only light colours with a light reflective value (LRV) of greater than or equal to 45% may be used. Refer paint colour charts for details.

### Top Coat Light Reflectance Values as recommended by KLC



The significance of Light Reflectance Values is now being recognized by the building industry. When paint is exposed to sunlight it absorbs and reflects radiant heat (as well as UV light).

It's not only radiant heat warming up the paint film that is the problem. Damage is caused by temperature changes (i.e. from hot sun, cold to cloudy sky) causing the paint film to go through a process of heating up then cooling down again resulting in changes in dimensional stability of the timber substrate. Increases in the core temperature of the timber substrate can also cause resins to mobilise and leach through the paint film. This is known as resin bleed.

Light paint colours with a high light reflectance (and therefore a high LRV over 45) allow less free radicals to be released, which means the paint film and substrate will last longer. Correspondingly dark colours with a lower light reflectance allow more heat to be absorbed, therefore causing more damage to the surface and resulting in reduced life for the paint film.

### Resene Cool Colour Technology

- Resene Cool Colour technology reduces the amount of Infra-red heat absorption only into the substrate (it does not have an effect on Visible light nor Ultra Violet which equates to 49% of Sunlight energy)
- Resene Cool Colour technology works best for Darker colours where Black tinter is used in the colour
- When using Resene Cool Colour the surface will still remain warm/hot to touch however less heat is being absorbed thru into substrate
- LRV's are only a measure of visible colour, not heat absorption which is better measured by TSR (Total Solar Reflectance) therefore LRV's are not altered when using Resene Cool Colours as the colour is the same (albeit that a Resene Cool Colour will perform like a colour with a higher LRV)
- Resene advise customers that the use of Resene Cool Colour technology does not alter the LRV of the colour therefore Suppliers/Manufacturers of substrates own guidelines on colour choice should always be followed unless that Supplier/Manufacturer advises otherwise.

## 6 Maintenance

It is the responsibility of the home owner to ensure that annual maintenance is carried out.

Maintenance should be carried out every 12 months. In some cases, where a home is coastal this may be required more regularly eg. 6 monthly.

### Maintenance Checklist

1. Wash all exterior surfaces using a low pressure wash system to remove dust, dirt and other contaminants.
  - Do not use a high pressure washing system eg water blaster.
  - If the washing does not remove stubborn areas of mold or dirt use a soft brush or broom and an appropriate cleaning agent to remove these deposits. Check with the paint manufacturer and read the directions on the product to apply the cleaning agent.
2. Once the building is clean and the surfaces have been inspected for damage, wear and tear and paint coating degrade then repairs and must be undertaken immediately.

If the paint surface has been damaged, then:

- Remove all damaged paint, sand back if required
- Apply a quality primer on any bare timber
- Once the primer has dried apply a base coat and then 2 top coats of a quality top coat paint.
- It is a general rule that timber weatherboard homes should be repainted every 10 years if the initial coating product use was of

## 7 Health and Safety

Health and safety precautions should be adhered to when working with all wood products. Machine tools should be fitted with dust extractors and work areas should be kept clean.

If dust levels exceed Work Safe New Zealand Standards, the wearing of a dust mask (AS/NZS 1715 & AS/NZS 1716) and protective eyewear (AS/NZS1336 & AS/NZS 1337) is recommended.

Storage and work areas should be adequately ventilated

## 8 Detailed Drawings

### DRAWINGS DIRECTORY

#### Direct Fix

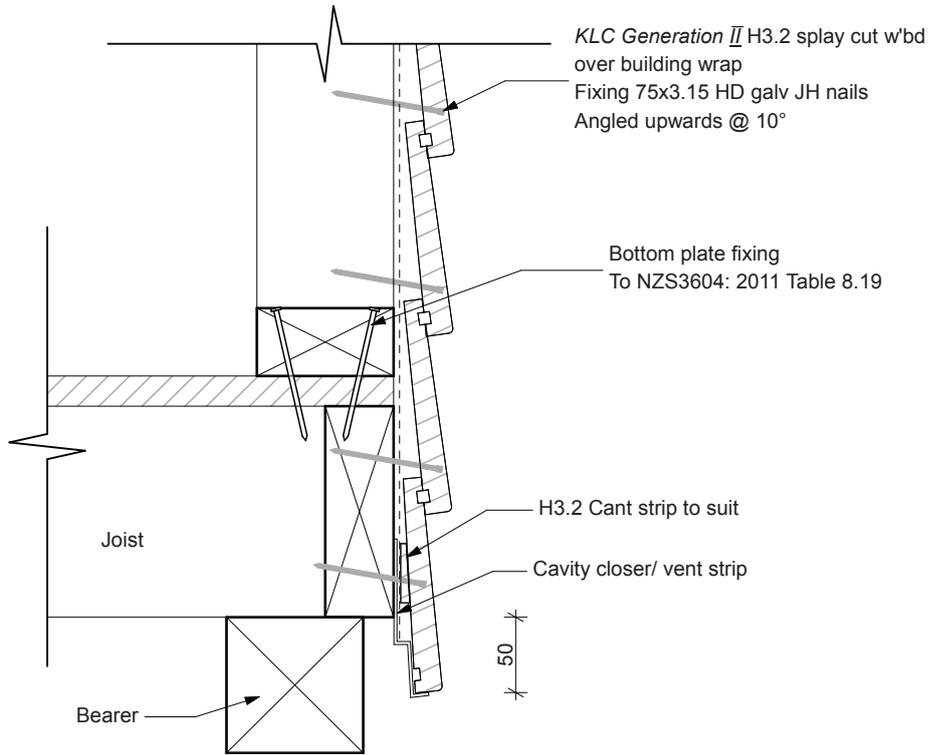
D1.1	Foundation, Timber Floor	20
D1.2	Foundation, Concrete Floor	20
D1.3	Sill Timber Floor	21
D1.4	Sill Concrete Floor	21
D1.5	Window Head	22
D1.6	Door Jamb	22
D1.7	Window Sill	23
D1.8	Window Jamb	23
D1.9	Soffit Junction	24
D1.10	External Box Corner	24
D1.11	Internal Box Corner	25
D1.12	Scribe Fit Internal Corner	25
D1.13	Meter Box Head	26
D1.14	Meter Box Jamb	26
D1.15	Meter Box Sill	27
D1.16	Pipe Penetration	27
D1.17	Apron	28
D1.18	Parapet	28
D3.1	Splay Cut Direct Fixing	36

#### Cavity Fix

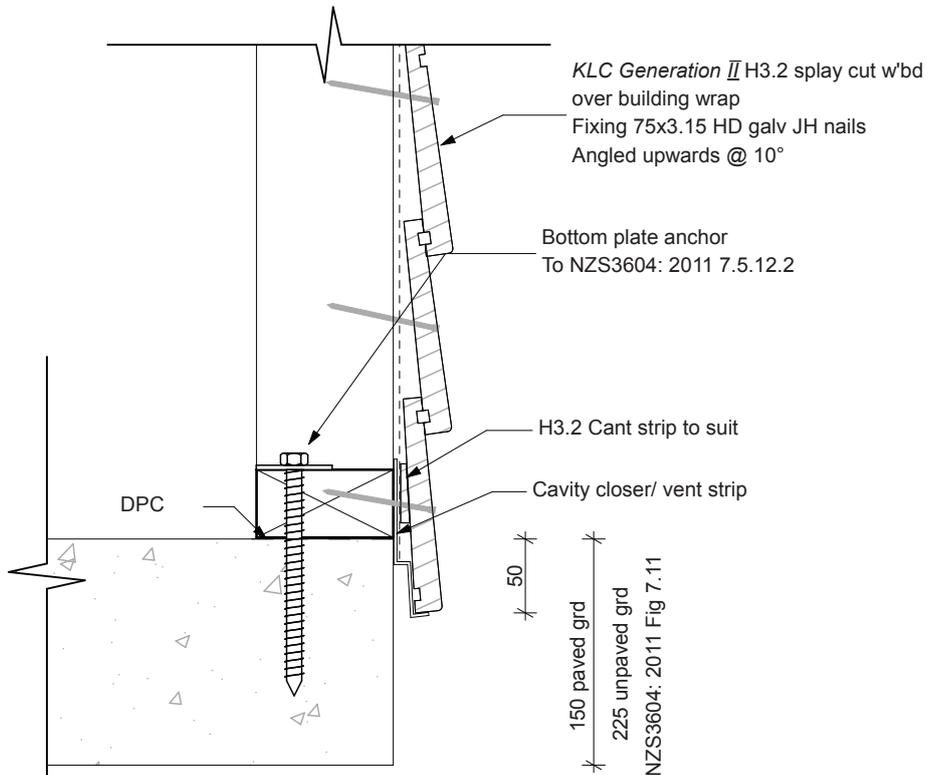
D2.1	Foundation, Timber Floor	29
D2.2	Concrete Floor	29
D2.3	Door Sill, Timber Floor	30
D2.4	Door Sill, Concrete Floor	30
D2.5	Window Head	31
D2.6	Window Jamb	31
D2.7	Window Sill	32
D2.8	Soffit Junction	32
D2.9	External Box Corner	33
D2.10	Internal Box Corner	33
D2.11	Meter Box Head	34
D2.12	Meter Box Jamb	34
D2.13	Meter Box Sill	35
D2.14	Nil Soffit	35
D3.2	Splay Cut Direct Fixing	36
D3.6	Finishing Detail	37

# 8 Detailed Drawings

## D1.1 Foundation, Direct Fix, Timber Floor

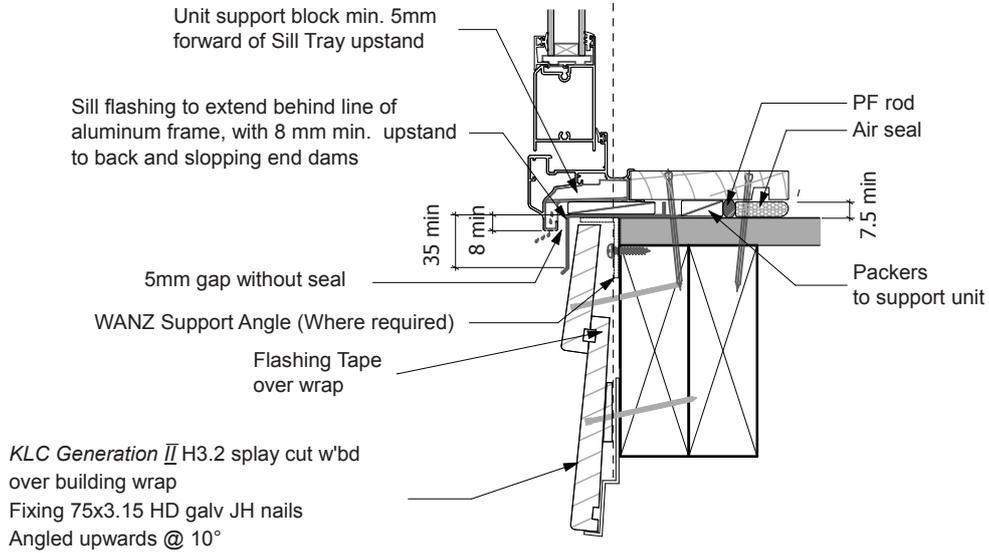


## D1.2 Foundation, Direct Fix, Concrete Floor

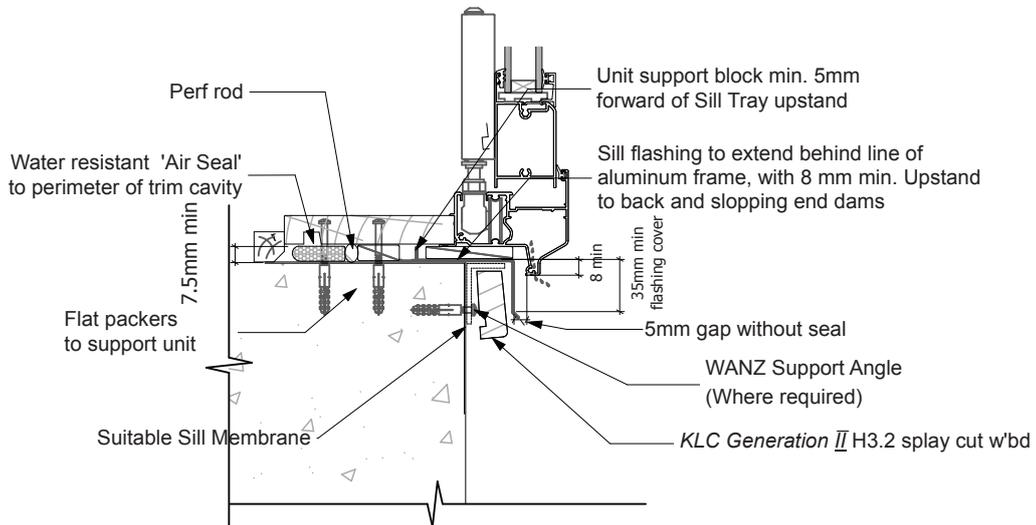


# 8 Detailed Drawings

## D1.3 Sill, Direct Fix, Timber Floor

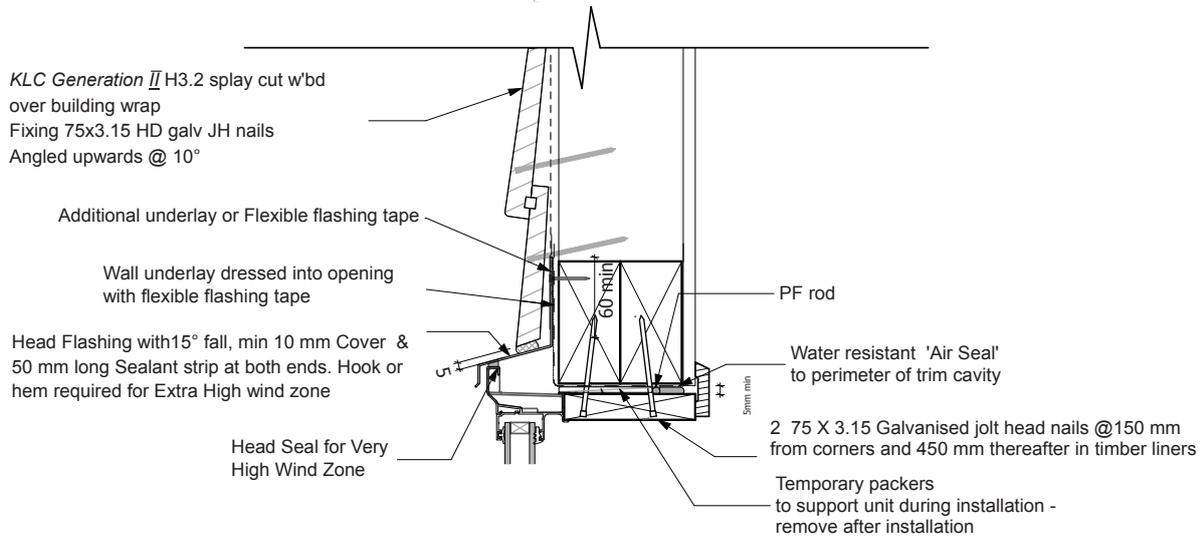


## D1.4 Sill, Direct Fix, Concrete Floor



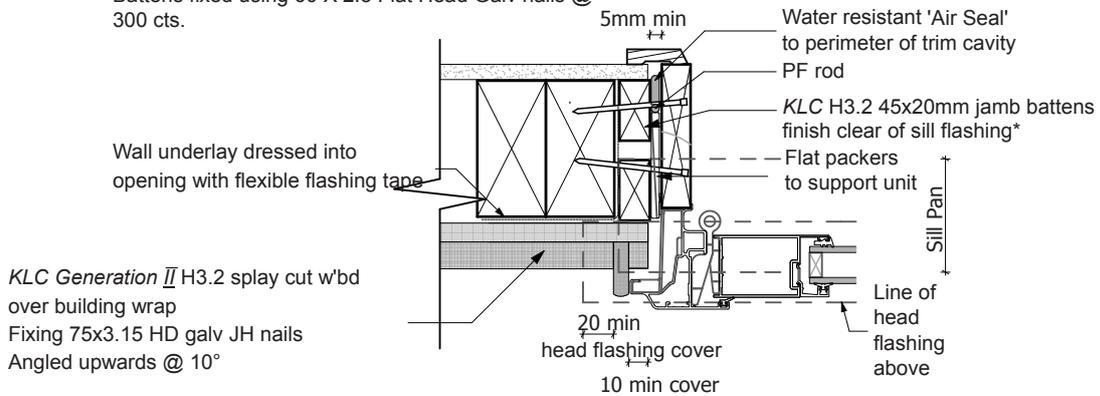
# 8 Detailed Drawings

## D1.5 Window Head, Direct Fix



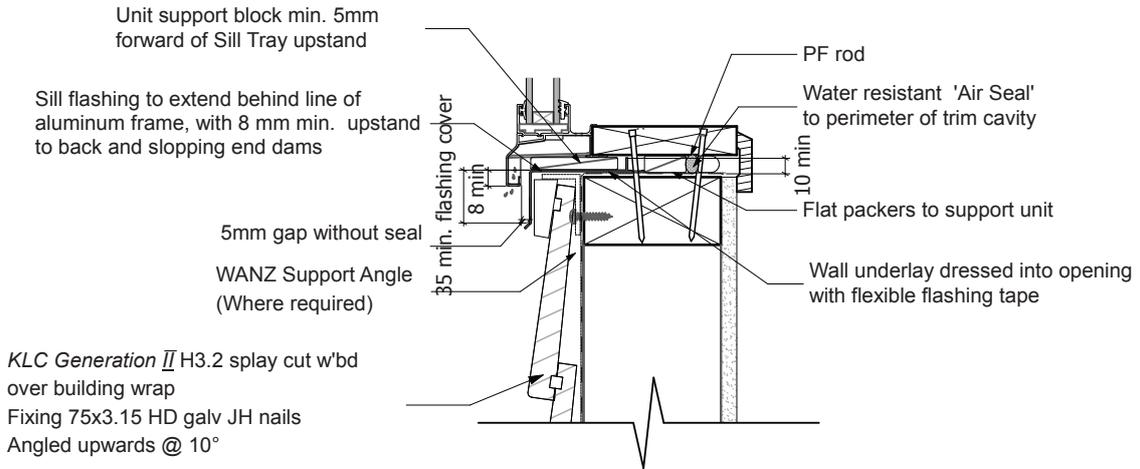
## D1.6 Door Jamb, Direct Fix

\* = Where battens do not cover full face of trim opening ensure that each batten is flush to the edge.  
Battens fixed using 60 X 2.8 Flat Head Galv nails @ 300 cts.

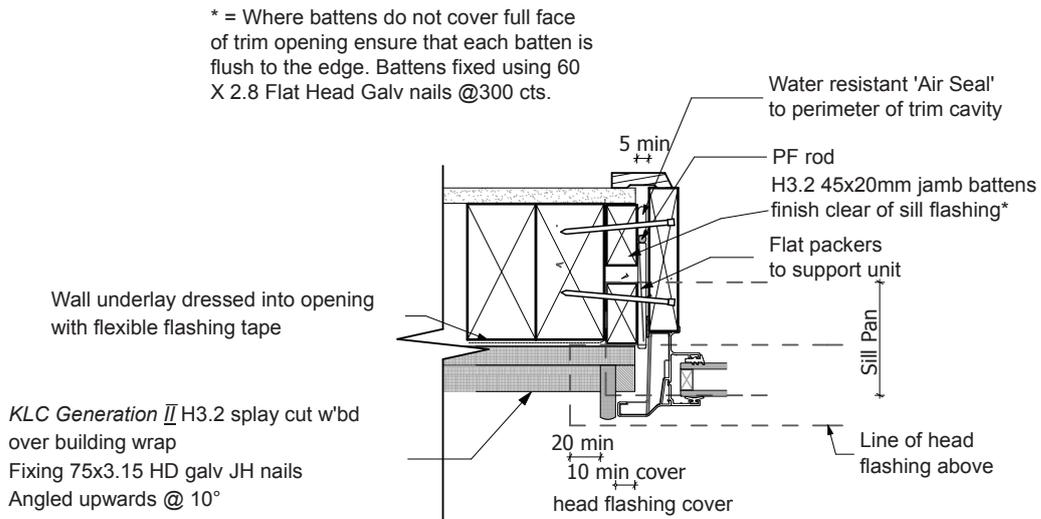


# 8 Detailed Drawings

## D1.7 Window Sill, Direct Fix

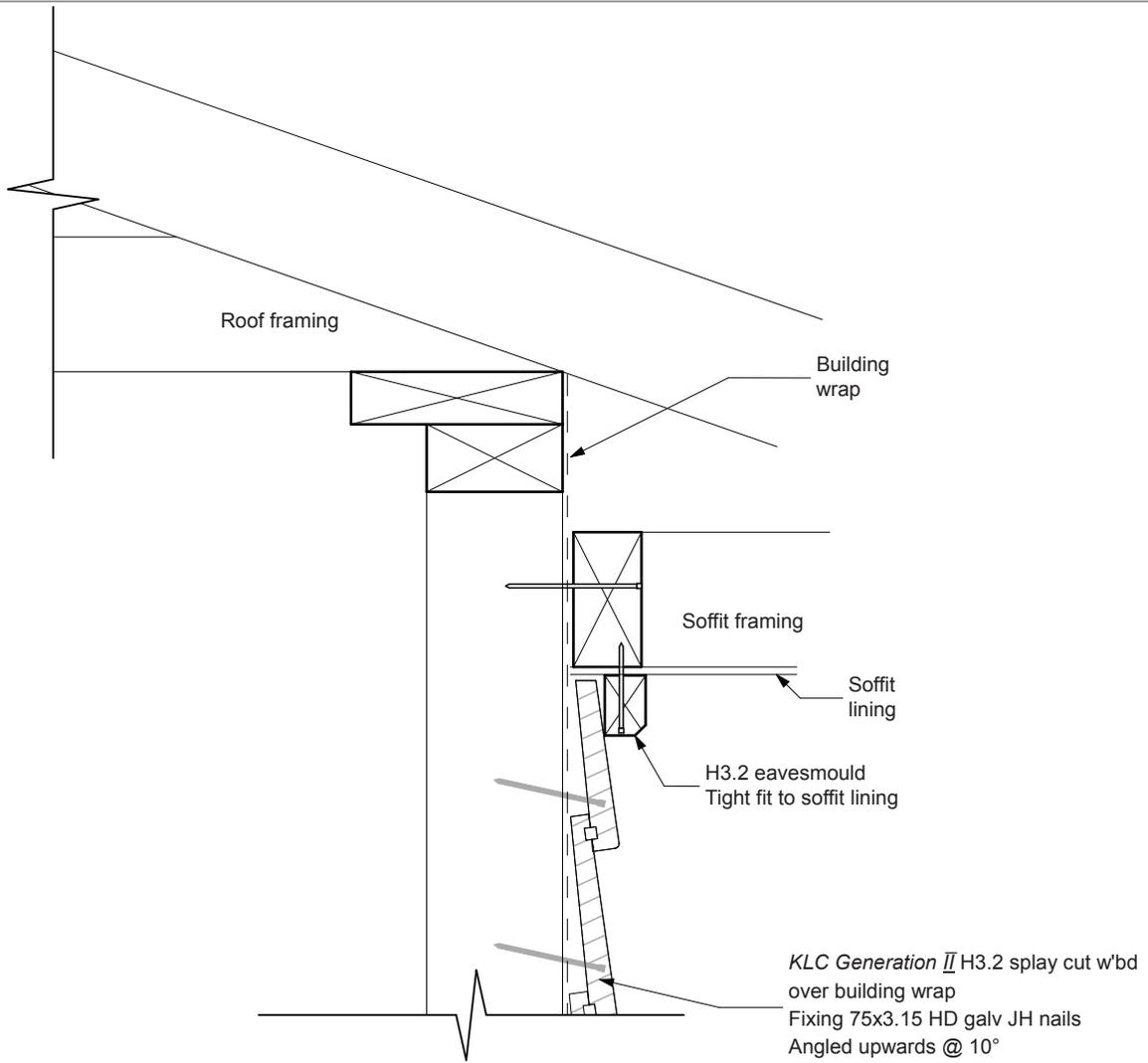


## D1.8 Window Jamb, Direct Fix

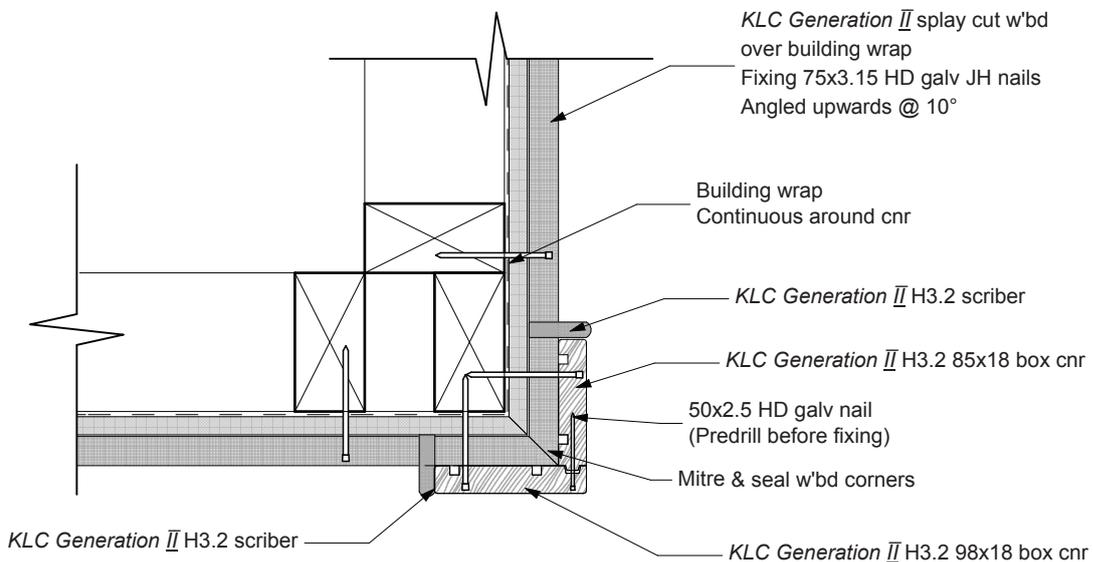


# 8 Detailed Drawings

## D1.9 Soffit Junction, Direct Fix

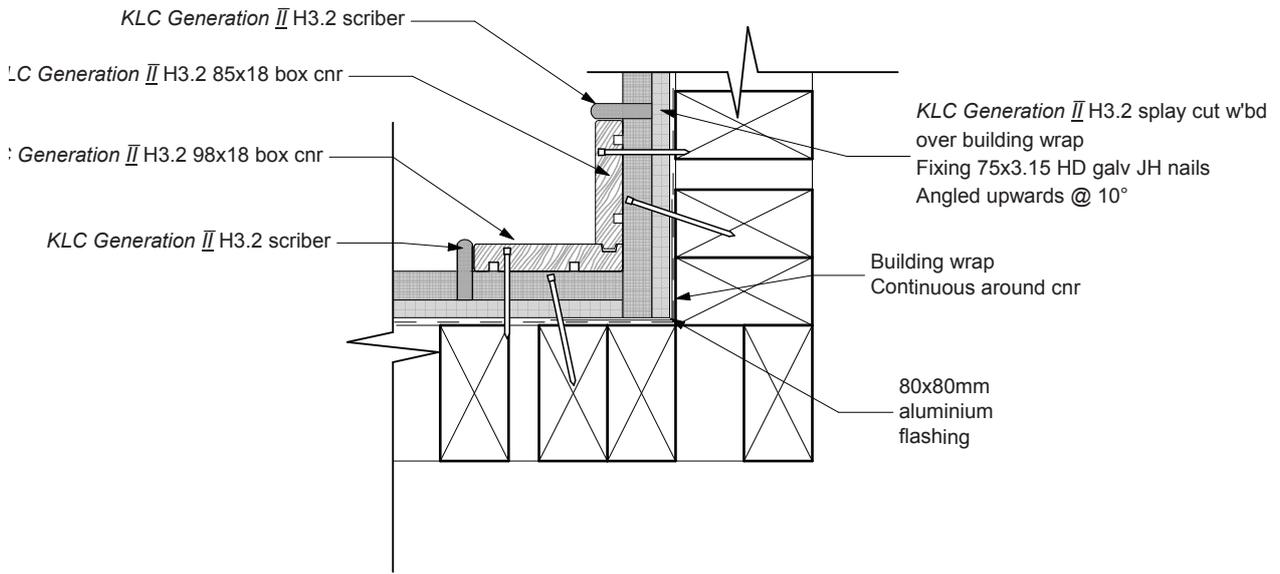


## D1.10 External Box Corner, Direct Fix

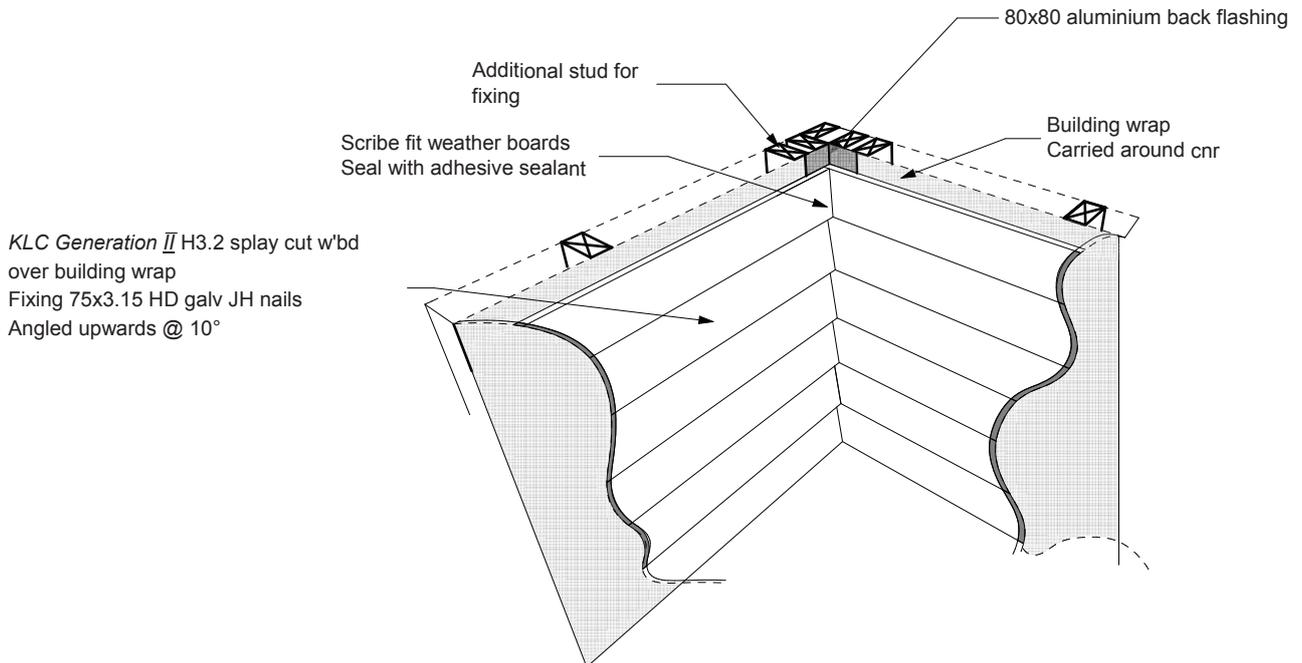


# 8 Detailed Drawings

## D1.11 Internal Box Corner, Direct Fix

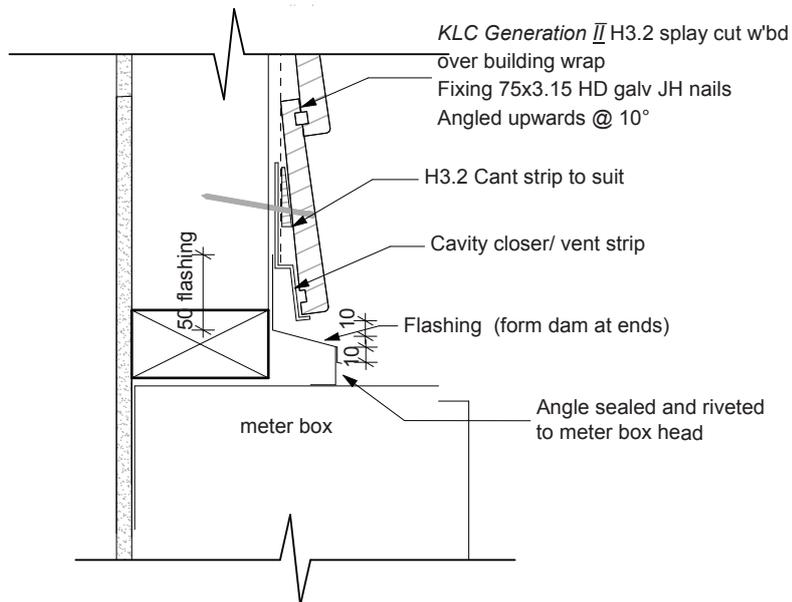


## D1.12 Scribe Fit Internal Corner, Direct Fix

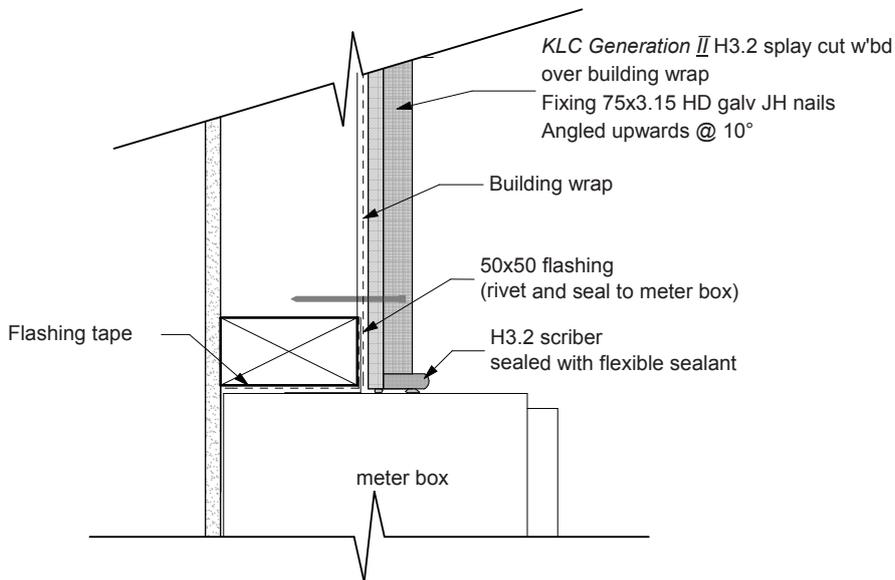


# 8 Detailed Drawings

## D1.13 Meter Box Head, Direct Fix

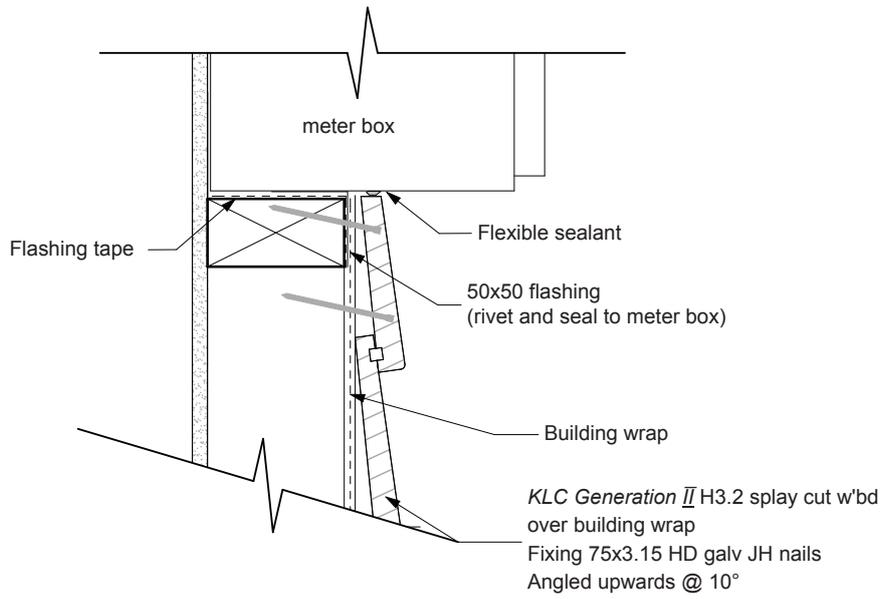


## D1.14 Meter Box Jamb, Direct Fix

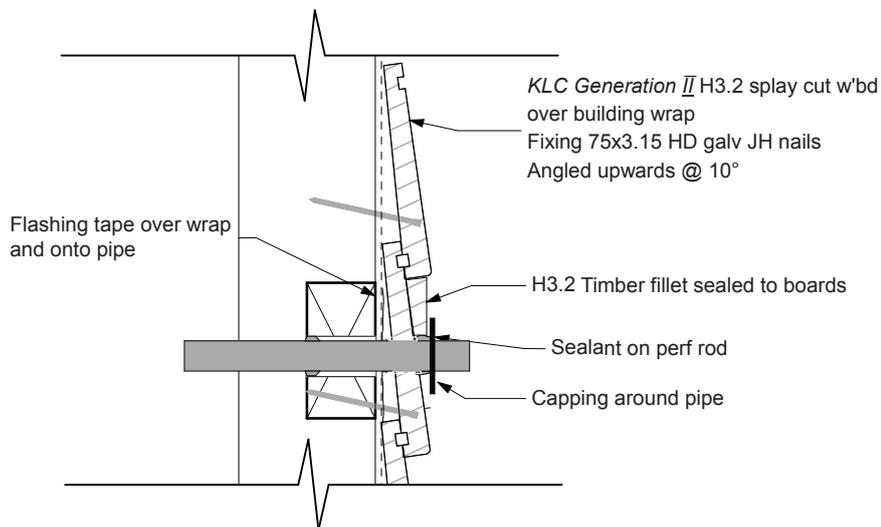


# 8 Detailed Drawings

## D1.15 Meter Box Sill, Direct Fix

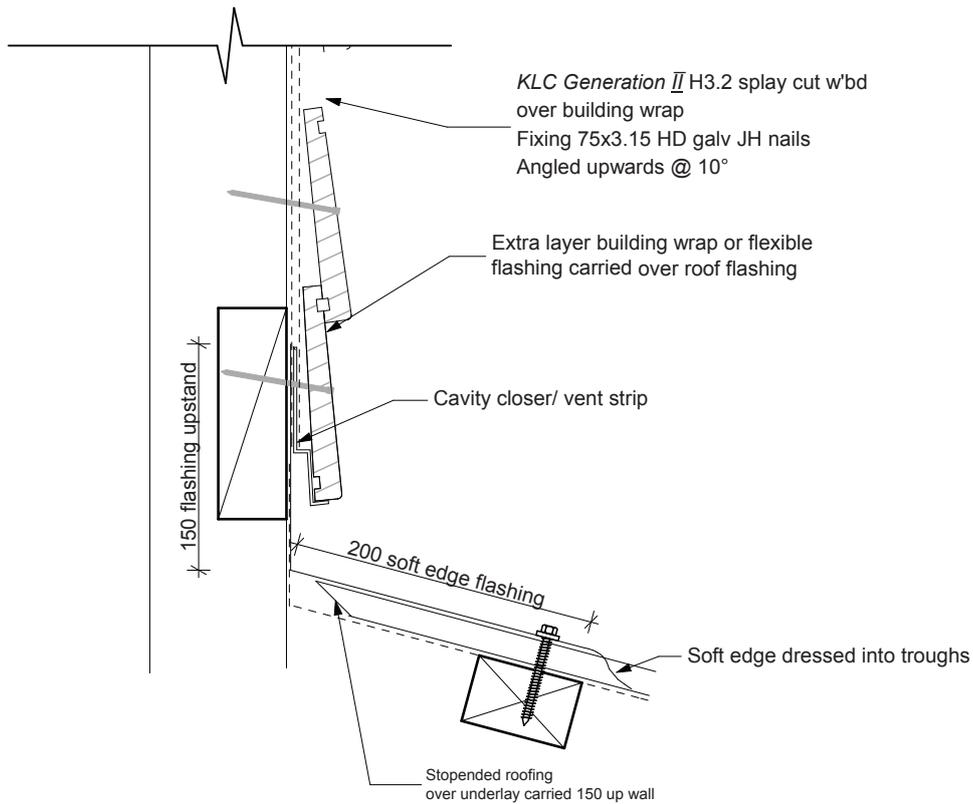


## D1.16 Pipe Penetration, Direct Fix

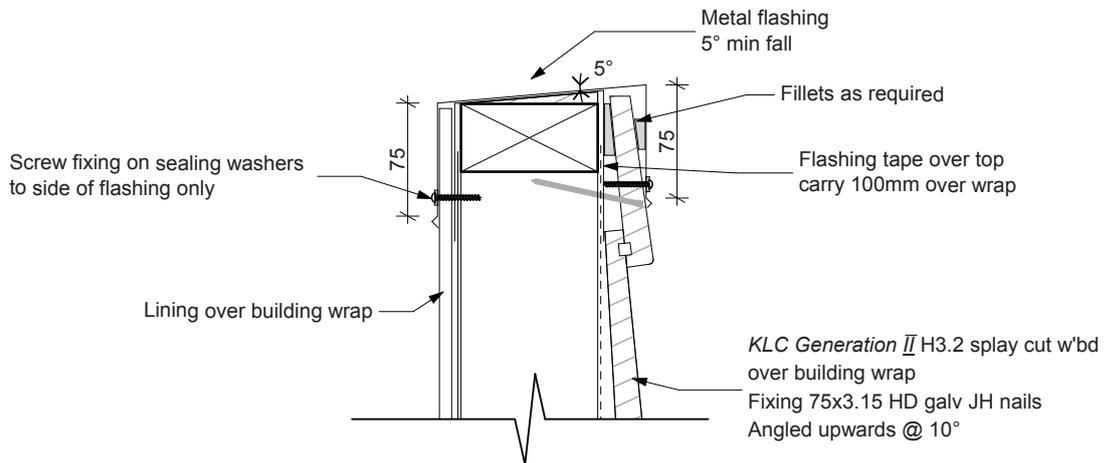


# 8 Detailed Drawings

## D1.17 Apron

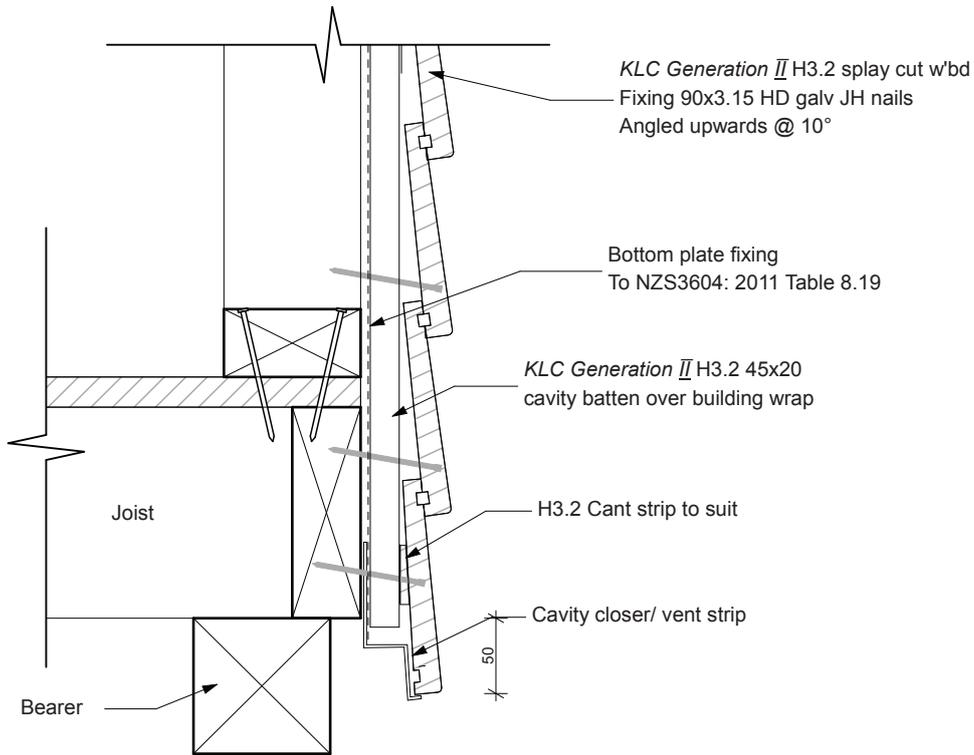


## D1.18 Parapet

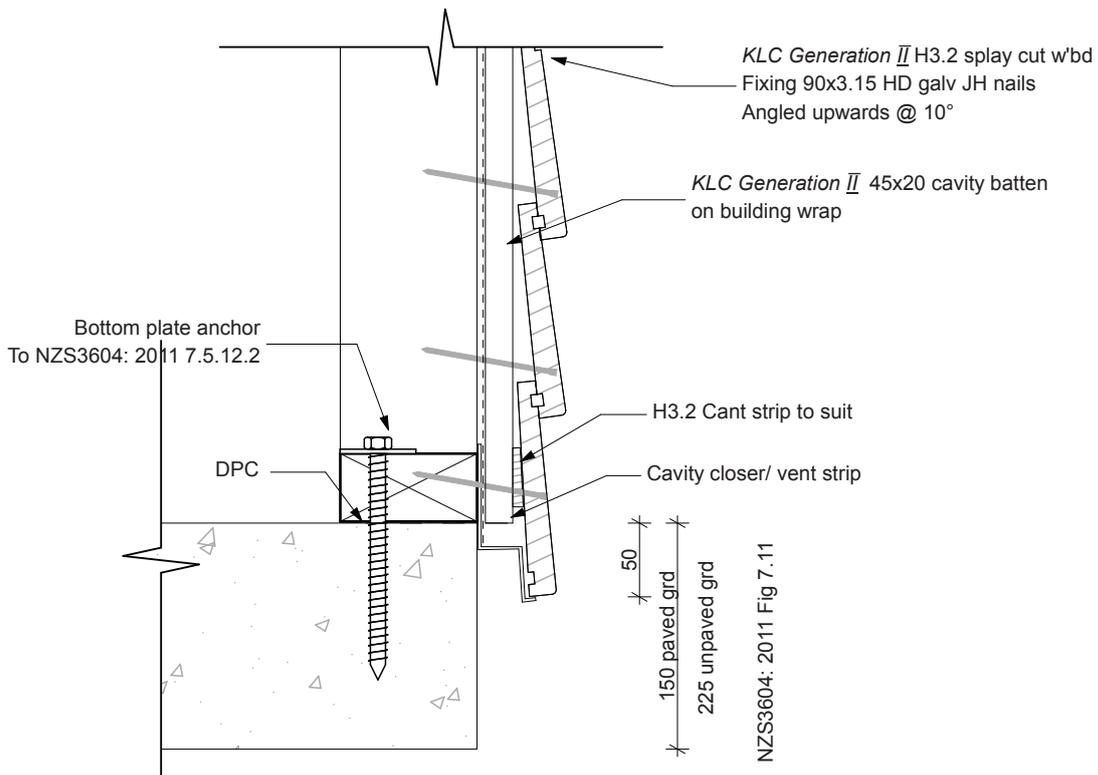


# 8 Detailed Drawings

## D2.1 Foundation, Timber Floor, Cavity Fix

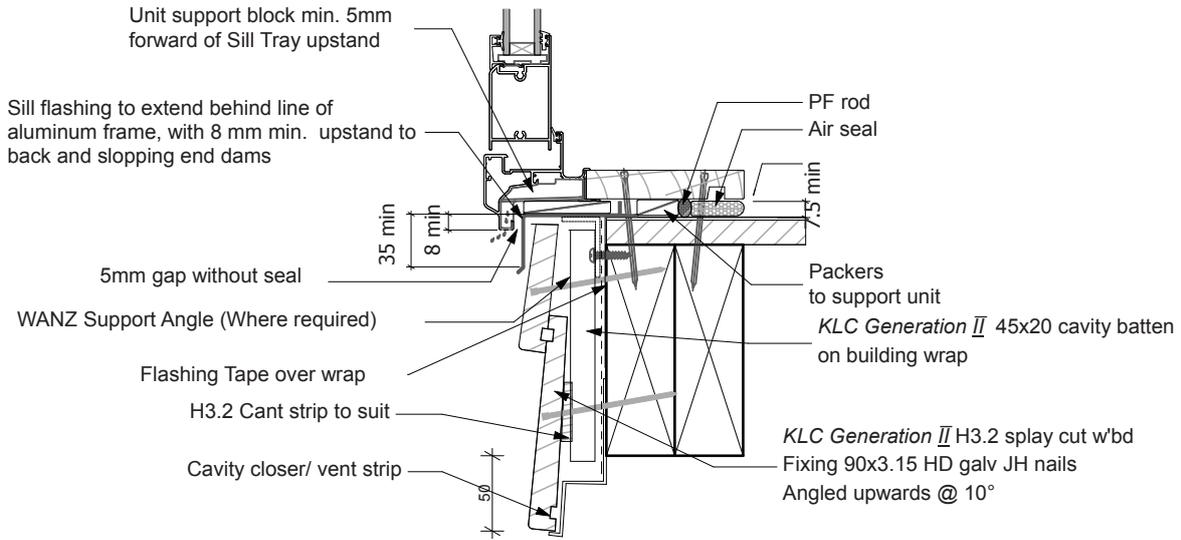


## D2.2 Foundation, Concrete Floor, Cavity Fix

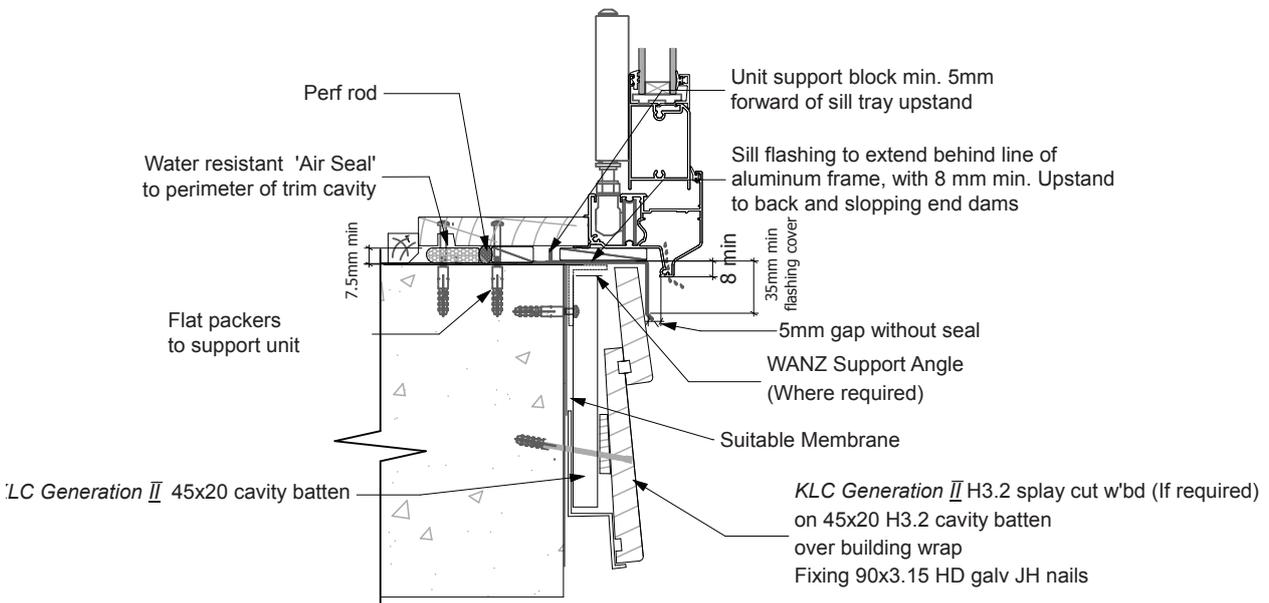


# 8 Detailed Drawings

## D2.3 Door Sill, Timber Floor, Cavity Fix



## D2.4 Door Sill, Concrete Floor, Cavity Fix



# 8 Detailed Drawings

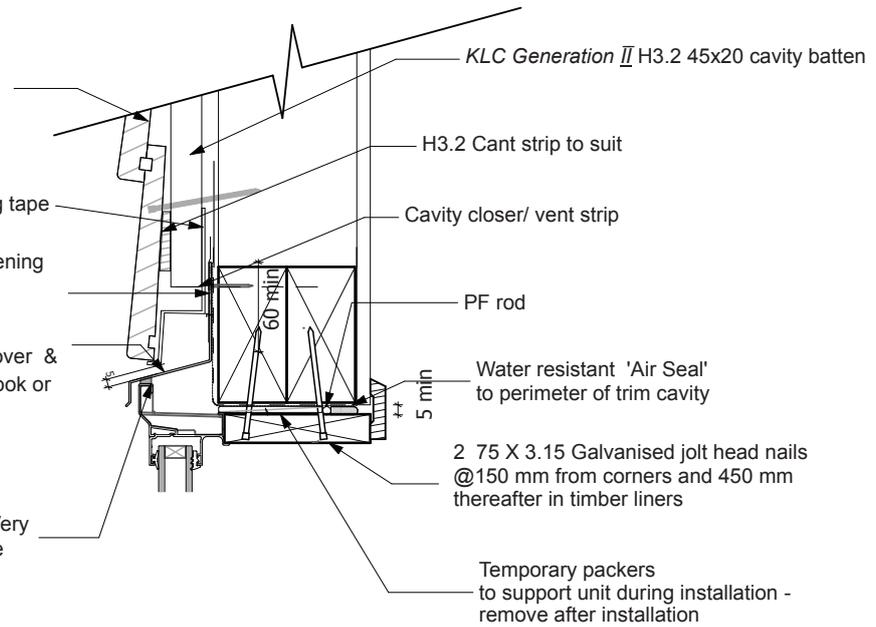
## D2.5 Window Head, Cavity Fix

KLC Generation II H3.2 splay cut w'bd  
on cavity batten  
over building wrap  
Fixing 90x3.15 HD galv JH nails  
Angled upwards @ 10°

Additional underlay or Flexible flashing tape  
Wall underlay dressed into opening  
with flexible flashing tape

Head Flashing with 15° fall, min 10 mm Cover &  
50 mm long Sealant strip at both ends. Hook or  
hem required for Extra High wind zone

Head Seal for Very  
High Wind Zone

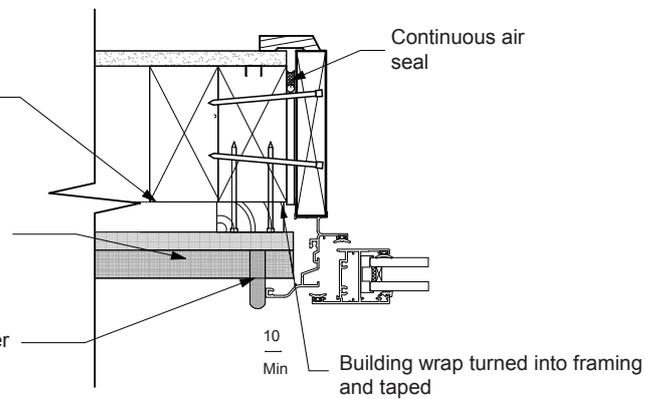


## D2.6 Window Jamb, Cavity Fix

KLC Generation II H3.2 45x20  
cavity batten on building wrap

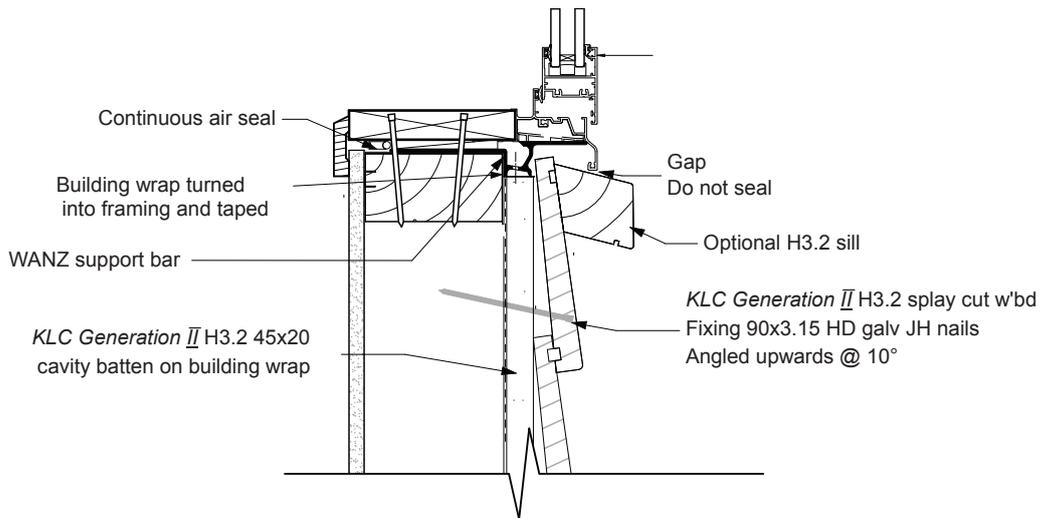
KLC Generation II H3.2 splay cut w'bd  
Fixing 90x3.15 HD galv JH nails  
Angled upwards @ 10°

KLC Generation II H3.2 scriber

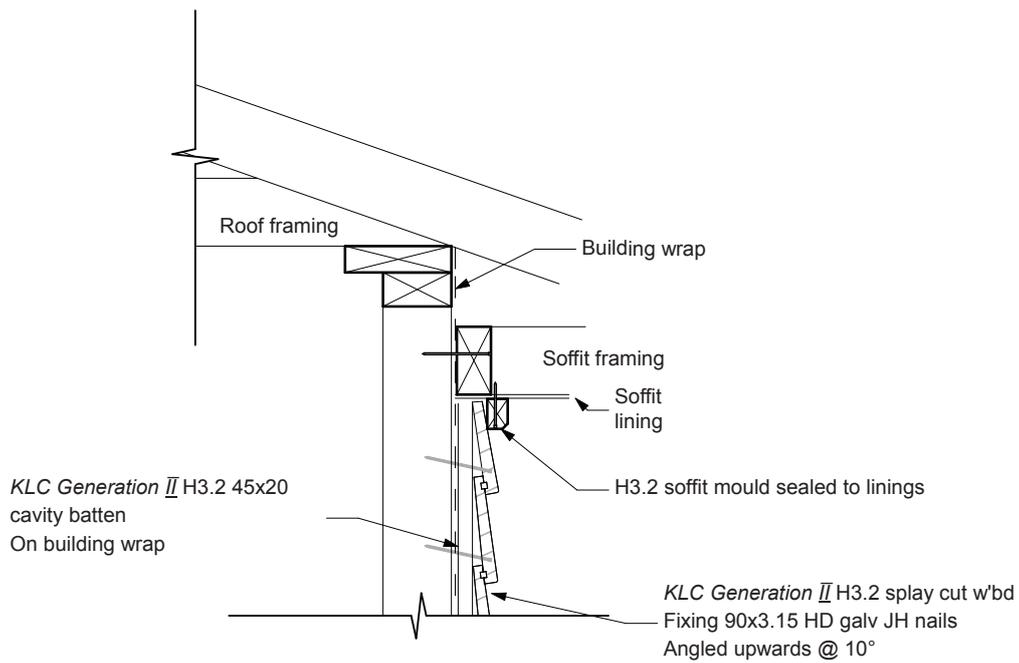


# 8 Detailed Drawings

## D2.7 Window Sill, Cavity Fix

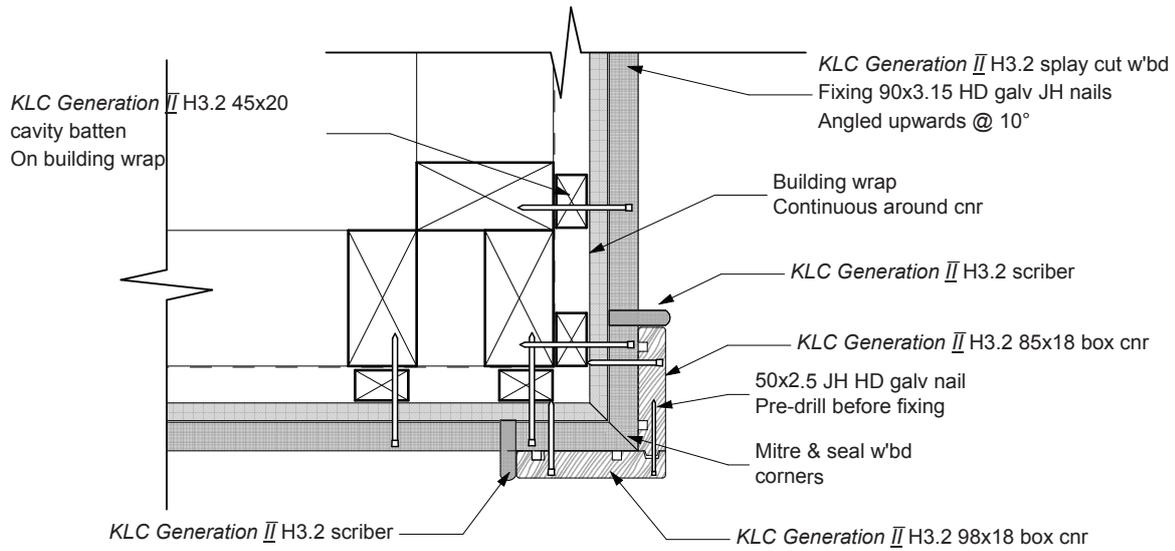


## D2.8 Soffit Junction, Cavity Fix

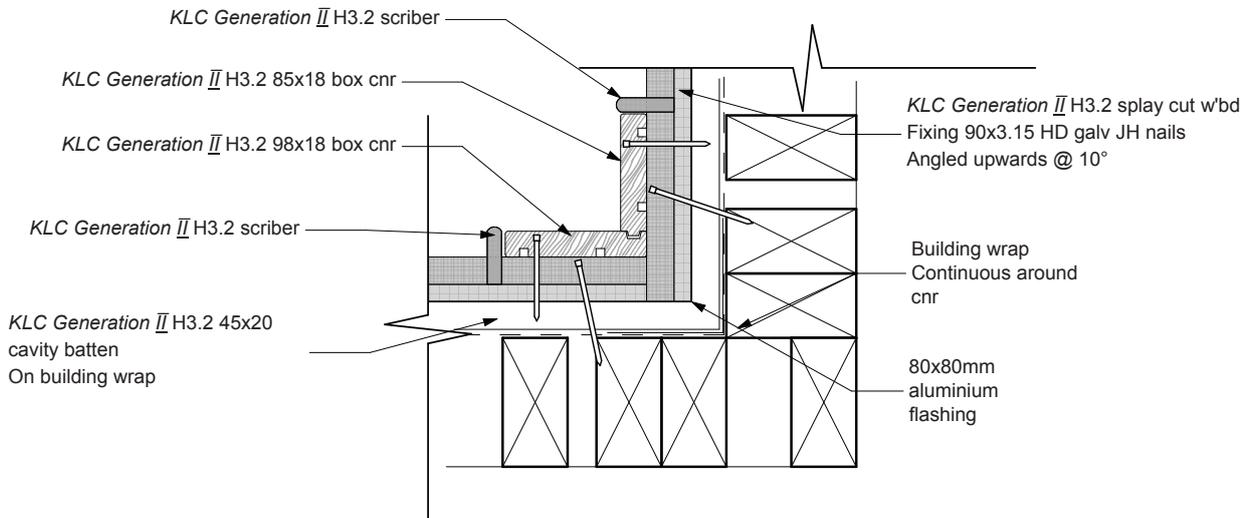


# 8 Detailed Drawings

## D2.9 External Box Corner, Cavity Fix

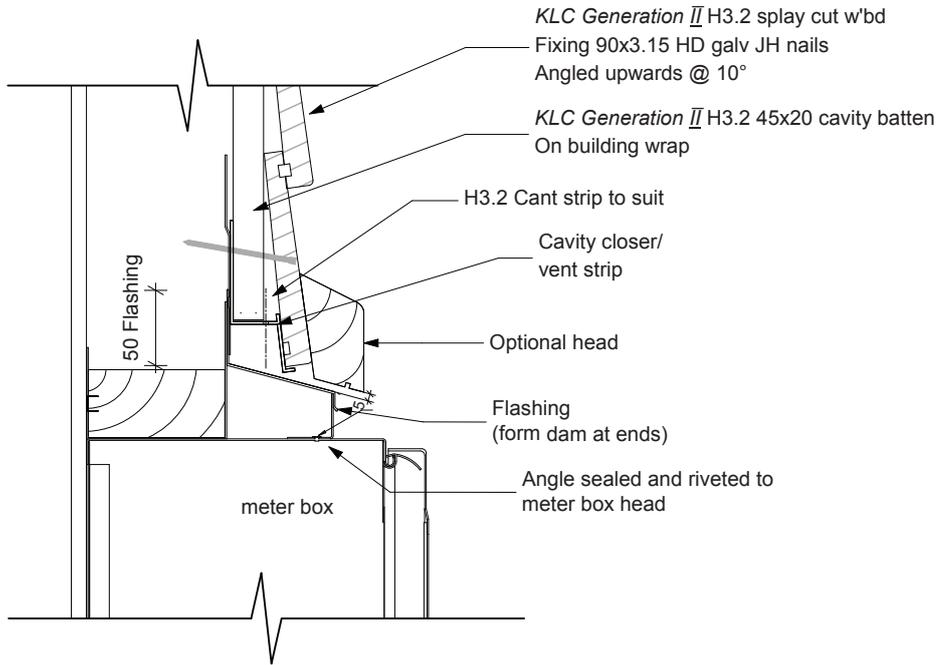


## D2.10 Internal Box Corner, Cavity Fix

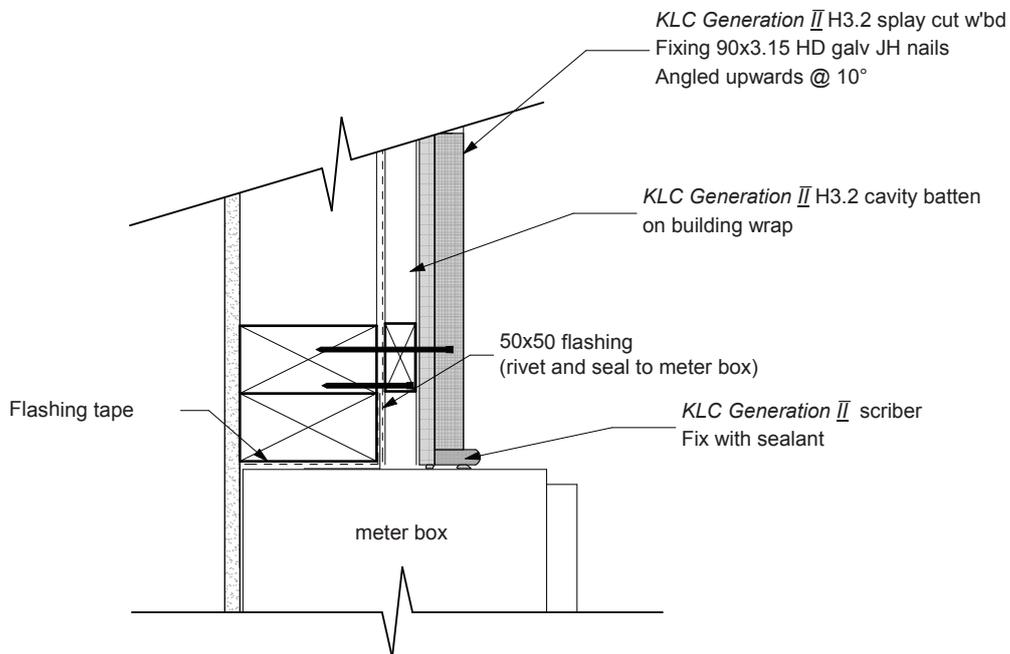


# 8 Detailed Drawings

## D2.11 Meter Box Head, Cavity Fix

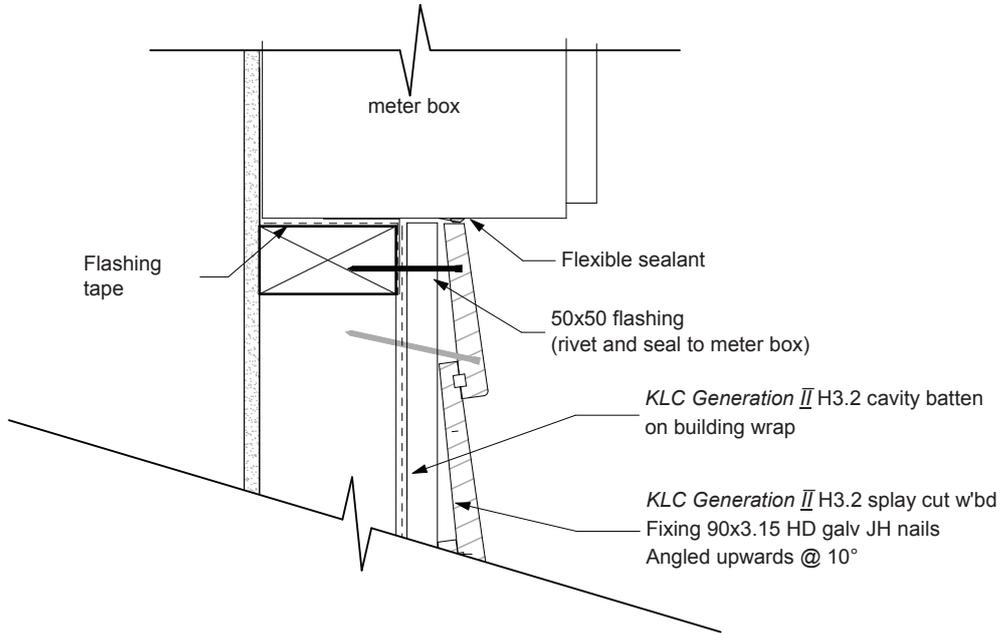


## D2.12 Meter Box Jamb, Cavity Fix

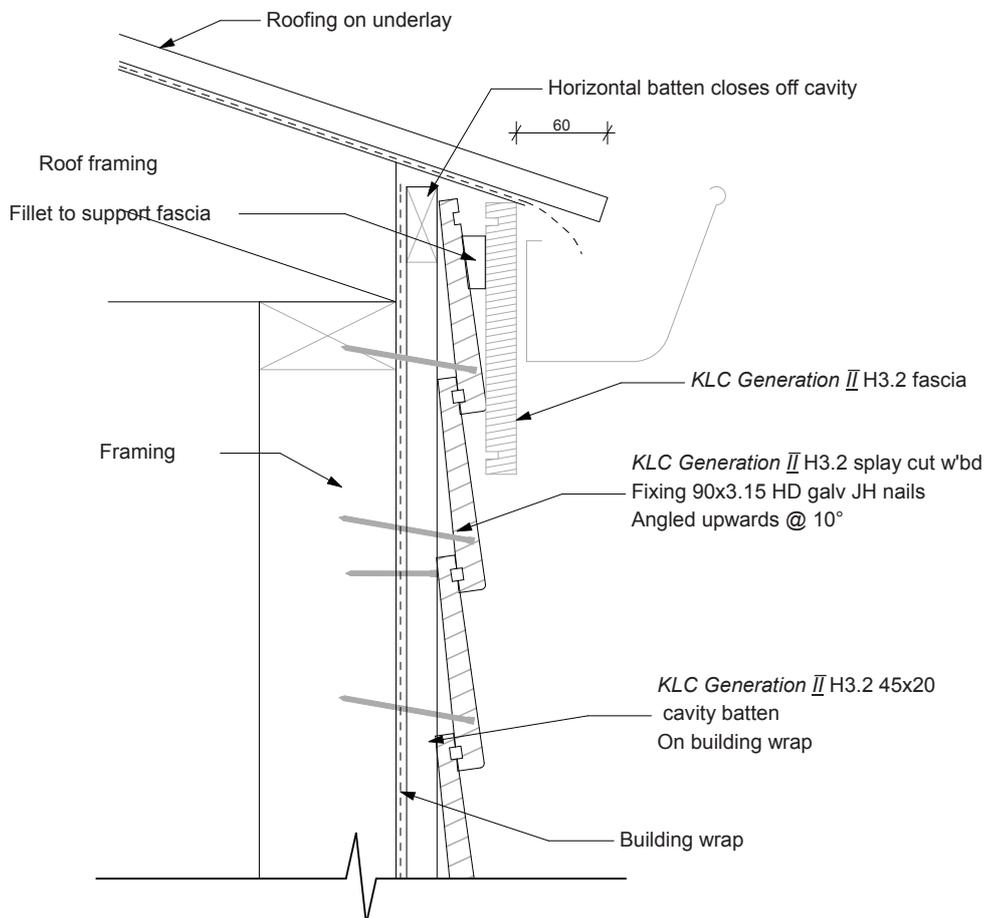


# 8 Detailed Drawings

## D2.13 Meter Box Sill, Cavity Fix

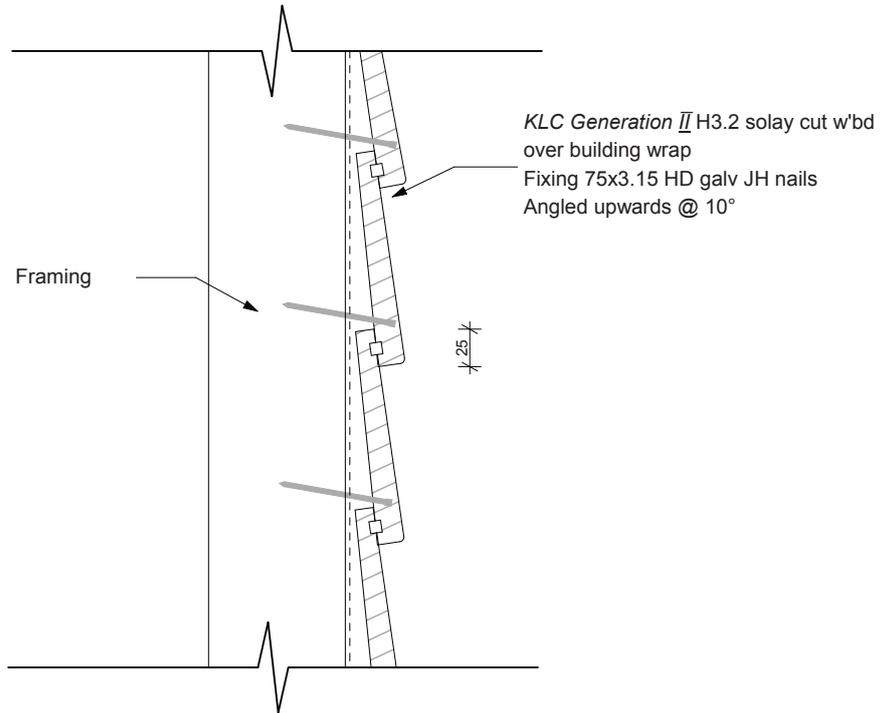


## D2.14 Nil Soffit, Cavity Fix

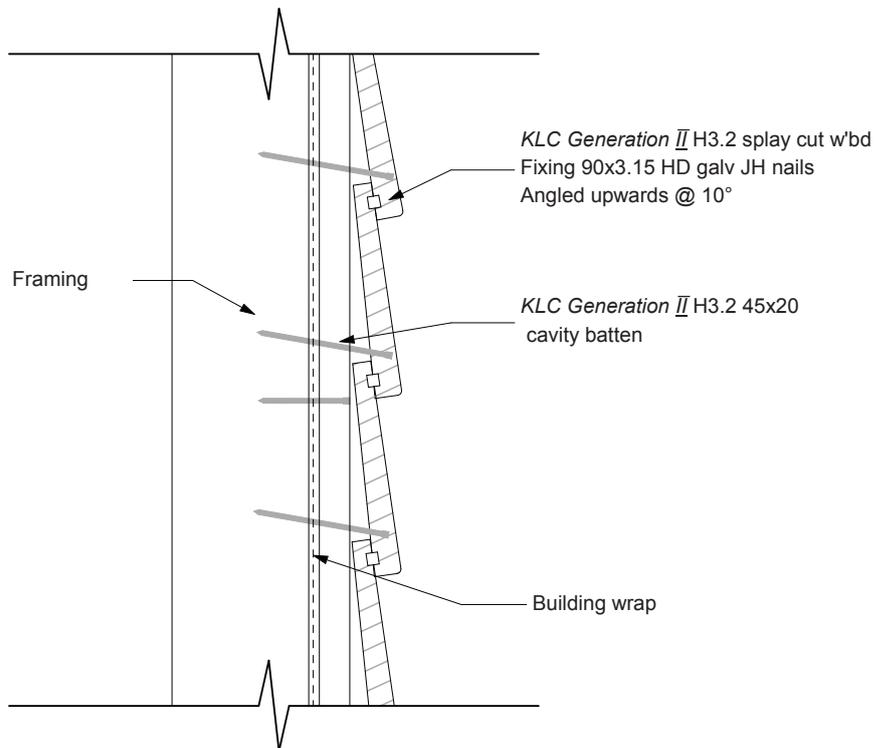


# 8 Detailed Drawings

## D3.1 Direct Fixing



## D3.2 Cavity Fixing



# 8 Detailed Drawings

## D3.6 Fixing Detail

