



## BRICK VENEERS

# Specifications



Bowers Brick Veneer meets the requirements of AS/NZS 4455 as a masonry brick veneer and complies with and exceeds the 15 year durability requirements as stated in the New Zealand Building Code, B2.

The New Zealand Building Code (NZBC) clause applicable to the construction of brick veneers is E2. E2/AS3 references construction according to the Cement and Concrete Association New Zealand's document CCANZ CP 01 as a means of compliance with the NZBC. Some interpretation of the details is needed as the document is written for concrete wall construction, however the details for the veneer do not change between concrete wall and timber framed construction. When timber framed walls to NZS 3604 are used the veneer details and specifications still apply.

*Some details shown in this document have been reproduced from CCANZ document CP 01.*



## Sizes

### 70 Series:

#### Standard Brick:

220mm x 150mm x 70mm

#### Corner Brick:

220mm x 150mm x 70mm with a 105mm return

Approximately 27 per m<sup>2</sup>.

### 10 Series:

390mm x 190mm x 90mm

Approximately 12.5 per m<sup>2</sup>.

## Average Dry Weight

#### Standard Brick:

4.5kg

#### Corner Brick:

5.2kg

#### Weight per m<sup>2</sup>:

136 kg/m<sup>2</sup> including mortar joints.

#### 10 Series block:

1001's 8.1kg

1017 solids 11.6kg

#### Weight per m<sup>2</sup>:

A maximum of 161 kg/m<sup>2</sup> including mortar joints.

## Compressive Strength

12.5 MPa

## Compatibility

Both Bowers veneer and 10 series are made from standard concrete masonry materials and so are compatible with any typical NZ construction systems as specified in NZS 3604.

## Construction Information

The product is designed to fit within the requirements of NZS 3604, NZS 4210, and CCANZ CP 01 for the construction of brick veneer claddings.

### Maximum height:

4.0m measured as per description in NZS 3604 Cl 1.1.2(o)(iii).

5.5m in a gable end as per the same clause.

### Mortar:

Mortar shall be as per NZS 4210 Cl 2.2 with minimum strength of 12.5 MPa. Premixed bagged mortar is also acceptable provided it meets the same requirements.

### Brick Ties:

As both Bowers veneer and 10 series are less than 180 kg/m<sup>2</sup> brick ties are as follows:

#### Earthquake zone:

Zone 1 (C in NZS 4210)

Type B EL ties

Zones 2,3,4 (A&B in NZS 4210)

Type B EM ties

#### Spacing:

10 Series

600mm horizontal 400mm vertical

Bowers Veneer

600mm horizontal 300mm vertical

Note: Stainless steel ties required when used in Sea Spray Zone.

## Lintels:

Lintels for support over openings shall be sized from Table 18E NZBC E2/AS1 reprinted as follows:

<b>Table 18E: Masonry veneer lintel sizes (minimum)</b> Paragraph 9.2.9						
Span of lintel (m) up to:	Maximum thickness of masonry veneer (mm)					
	70			90		
	Maximum height of veneer supported (mm)					
	350	700	2000	350	700	2000
0.800	60 x 60 x 6 L	60 x 60 x 6 L	60 x 60 x 6 L	60 x 80 x 6 L	60 x 80 x 6 L	80 x 80 x 6 L
2.000	60 x 60 x 6 L	60 x 60 x 6 L	60 x 60 x 6 L	60 x 80 x 6 L	60 x 80 x 6 L	80 x 80 x 6 L
2.500	60 x 60 x 6 L	80 x 80 x 6 L	80 x 80 x 6 L	80 x 80 x 6 L	80 x 80 x 6 L	80 x 80 x 6 L
3.000	80 x 80 x 6 L	80 x 80 x 6 L	125 x 75 x 6 L	80 x 80 x 6 L	80 x 80 x 8 L	90 x 90 x 10 L
3.500	80 x 80 x 6 L	80 x 80 x 6 L	125 x 75 x 6 L	80 x 80 x 8 L	90 x 90 x 10 L	125 x 75 x 10 L
4.000	80 x 80 x 8 L	125 x 75 x 6 L	125 x 75 x 10 L	80 x 80 x 10 L	125 x 75 x 6 L	150 x 90 x 10 L
4.500	125 x 75 x 6 L	125 x 75 x 10 L	—	125 x 75 x 6 L	125 x 75 x 10 L	—
4.800	125 x 75 x 6 L	125 x 75 x 10 L	—	125 x 75 x 6 L	125 x 75 x 10 L	—

Note: Stainless steel angle required when used in Sea Spray Zone.

Note: If connection to framing/blockwork required use M12 coachscrews at maximum spacing of 800mm. For connection to blockwork use M12 chemset bolts at a maximum spacing of 800mm. Again these need to be stainless in the Sea Spray Zone.

## Flashings:

Flashings shall be as per CCANZ CP 01 Section 5.0. (follows)

### “5.0 Flashings”

#### 5.1 Required properties of flashing materials

##### 5.1.1 Durability requirements

All flashings shall comply with the requirements of NZBC B2 Durability.

COMMENT:

The durability requirements for flashings specified in NZBC B2 are:

- a) 50 years, where flashings are:
  - i) completely hidden behind claddings or
  - ii) not accessible, or
- b) 15 years, where flashings are:
  - i) exposed, or
  - ii) accessible.

##### 5.1.2 Environmental requirements

Flashing materials shall be selected according to the relevant exposure conditions as defined in either:

- a) AS/NZS 2728, or
- b) NZBC E2/AS1 Table 20.

COMMENT:

The exposure zone in which a building is located can affect the durability of flashings.

Exposure zones for flashing materials are defined in NZS 3604 Chapter 4, based on the likely exposure to wind-driven sea-salt.

Exposure due to geothermal or industrial gases, as defined in NZS 3604, is outside the scope of this Code of Practice and will require specific design.

##### 5.1.3 Specific conditions of use

Flashing materials shall be selected according to the specific conditions of their use from NZBC E2/AS1 Table 20 to minimise the effects of corrosion.

COMMENT:

The specific location of a material on a building can substantially affect the durability of that material.

In particular, many metals can undergo accelerated corrosion if they are exposed to wind-driven sea-salt in sheltered locations, where they are not exposed to being washed by rainwater.

##### 5.1.4 Surrounding materials

Flashings which are adjacent to other materials shall be selected in accordance with NZBC E2/AS1 Tables 21 and 22.

Uncoated metals shall not be used where carbon deposits or chemical contaminants may accumulate.

COMMENT:

Undesirable effects can occur when some materials are in contact with each other. Examples are corrosion of metals, stress cracking of plastics and staining of glass. Carbon deposits such as soot can cause accelerated corrosion of damp, uncoated metal.

#### 5.2 Acceptable flashing materials

COMMENT:

Additional guidance on flashing materials can be found in the New Zealand Metal Roofing Manufacturers’ Roof and Wall Cladding Code of Practice.

##### 5.2.1 uPVC flashings

uPVC flashings shall be a minimum of 0.75 mm thick and shall comply with the requirements of the following Clauses of AS/NZS 4256: Part 2:

- a) Clause 9.2 Impact resistance,
- b) Clause 9.3 Tensile strength, and
- c) Clause 9.4 Colourfastness and impact resistance following ultraviolet light exposure.

Where uPVC flashings are exposed to the weather, they shall also comply with Section 8 of AS/NZS 4256: Part 2.

uPVC flashings shall have a finish colour with a reflectance of 40% or more.

COMMENT:

Manufacturers of uPVC flashings which have a proven performance in use may be able to show compliance with NZBC B2 Durability as detailed in NZBC B2/VM1.

##### 5.2.2 Metallic flashings

Metallic flashings (aluminium flashings, galvanised steel flashings, aluminium-zinc coated steel flashings, stainless steel flashings, copper flashings, lead sheet flashings and zinc sheet flashings) shall be as specified in NZBC E2/AS1 Paragraphs 4.3.2 to 4.3.8 respectively, except that aluminium flashings shall not be used in contact with fresh cement plaster or green concrete (ie concrete which has cured less than 28 days).

#### 5.3 Fixings

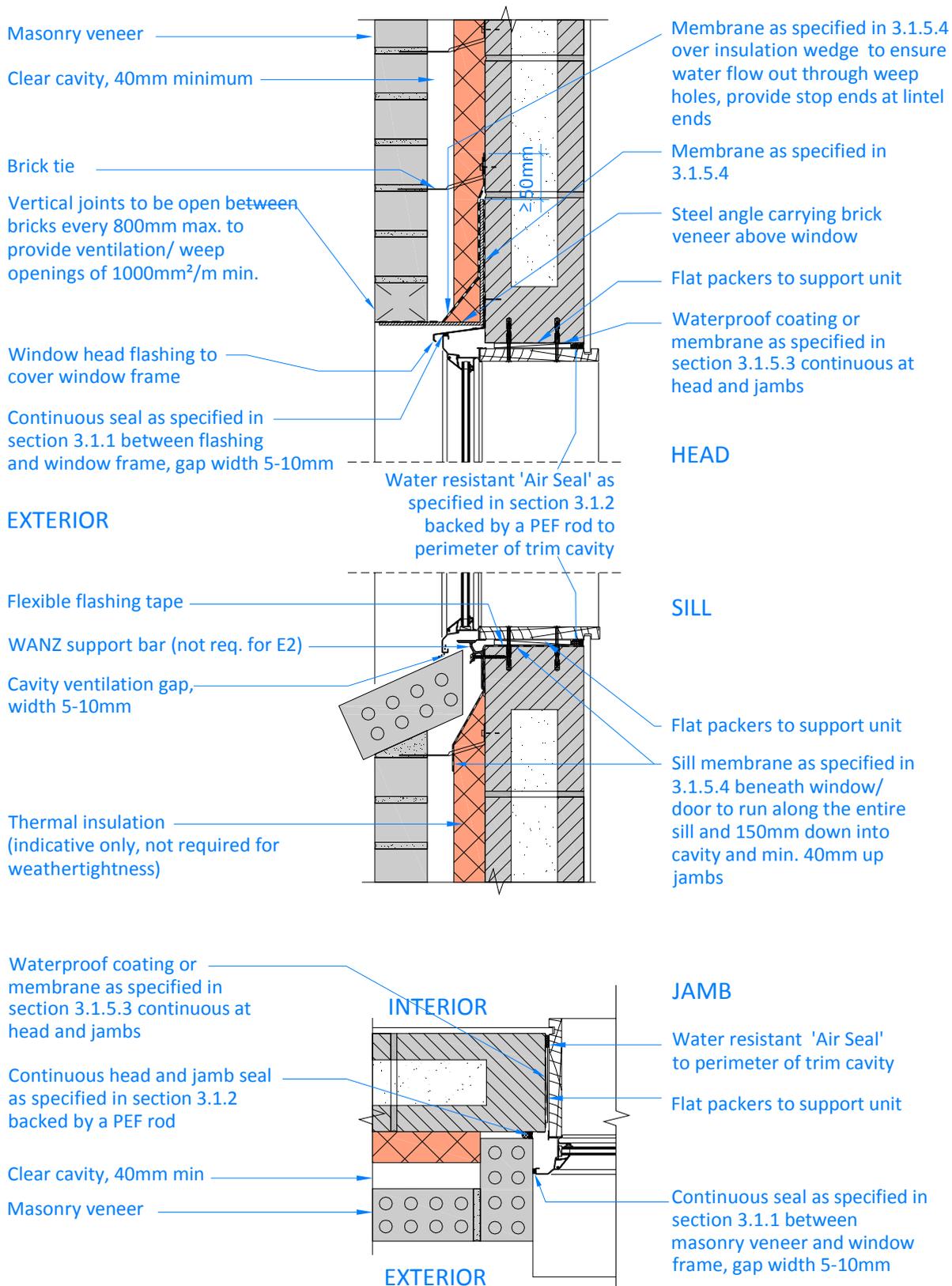
Fixings of metal flashings shall comply with NZBC E2/AS1 Tables 20, 21 and 22. Where fixings that penetrate flashings, self-tapping nails or screws provided with a watertight underlay disc shall be used.

COMMENT: Fixings that penetrate flashings should be avoided wherever possible.

Installation shall be as per following details.

## Window - Head, Sill and Jamb

### Concrete Masonry Wall with Drained Cavity

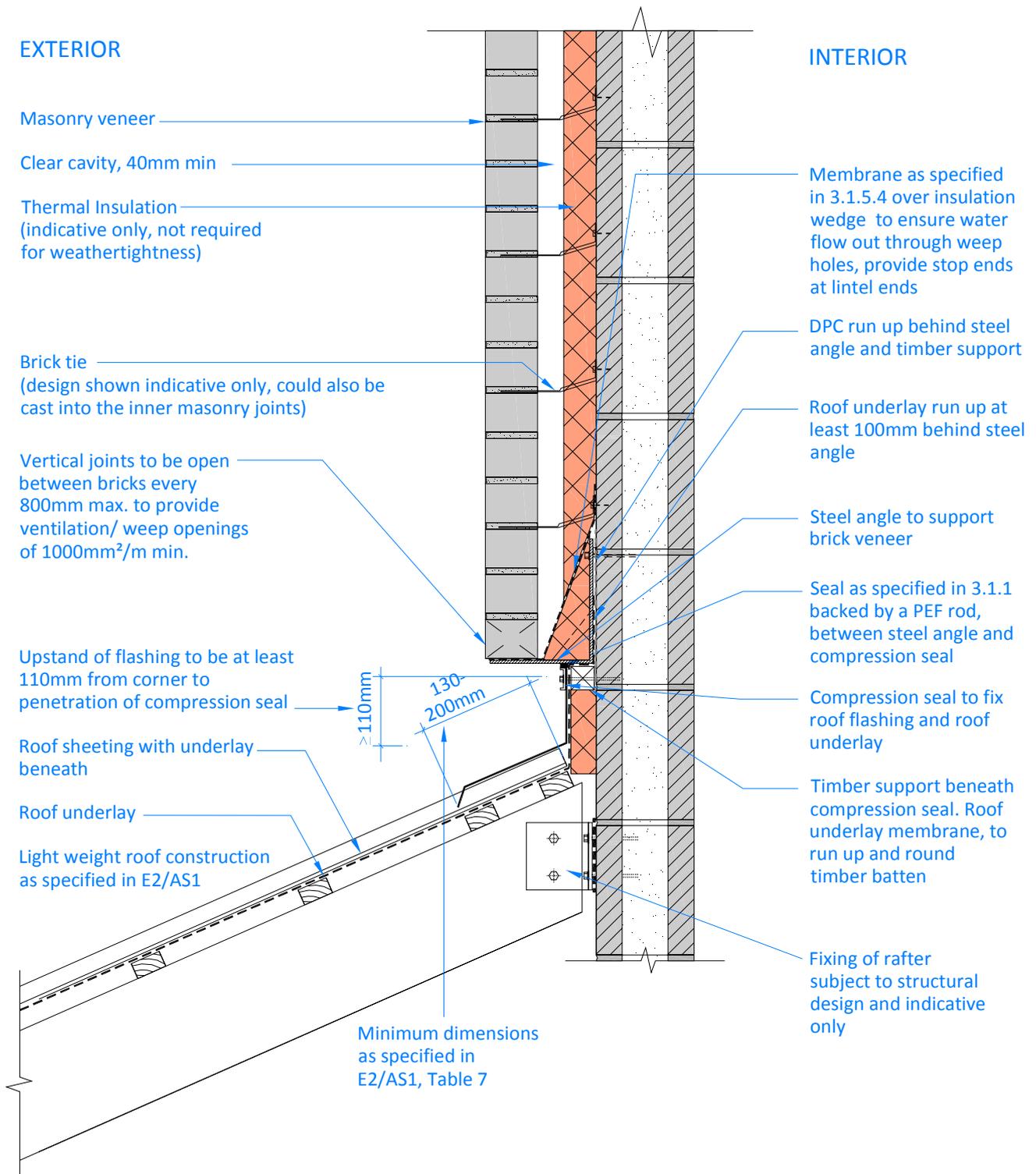


Comment 1: Structural layout is indicative only and subject to individual project design.

Comment 2: Thermal insulation is not required for weathertightness.

# Wall/Pitched Roof Junction: Apron Flashing

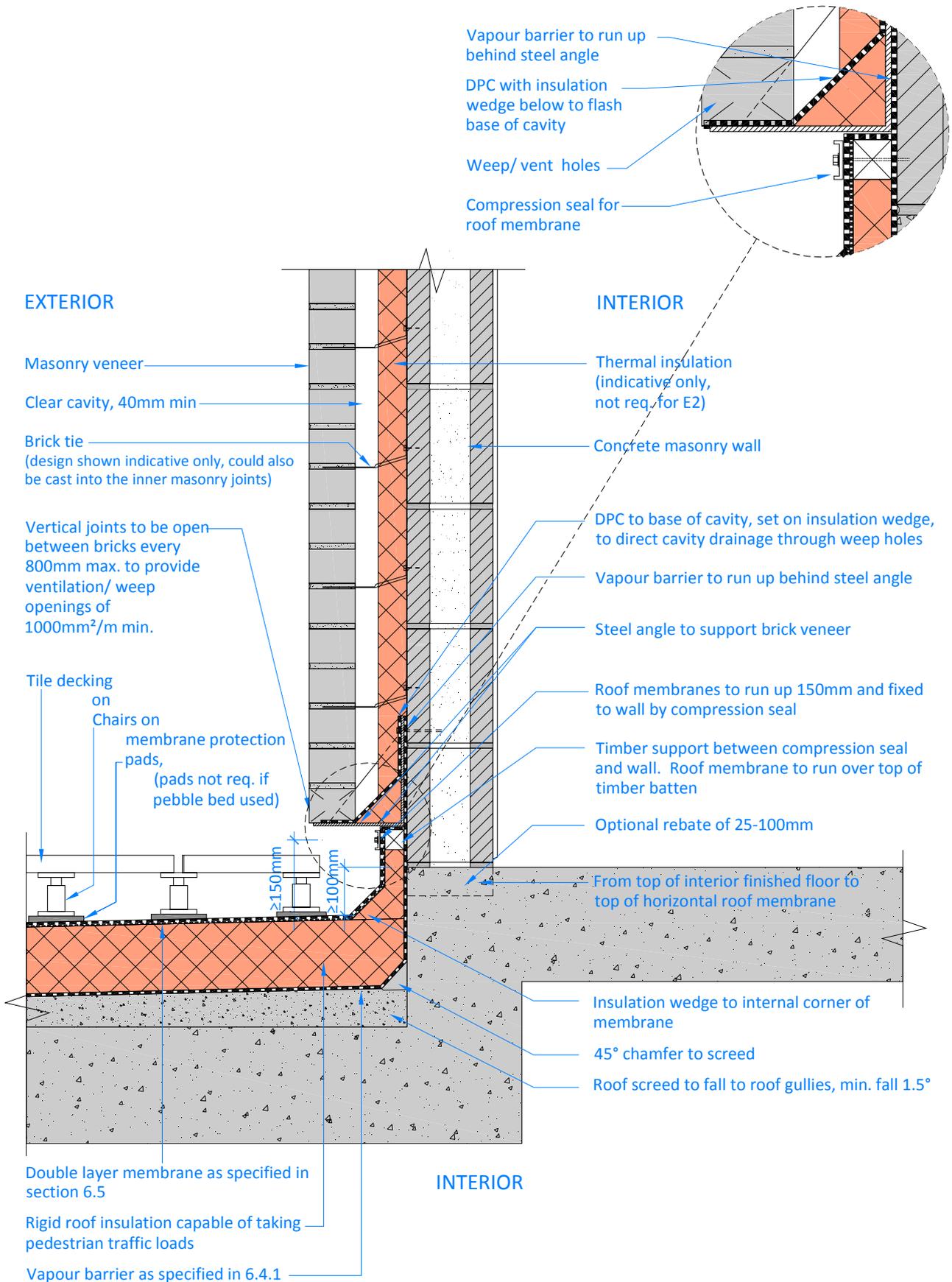
## Concrete Masonry Cavity Wall: Cavity Insulation



Comment: Structural layout is indicative only and subject to individual project design.

# Roof/Deck at Wall: Externally Insulated Roof

## Concrete Masonry Cavity Wall: Cavity Insulation



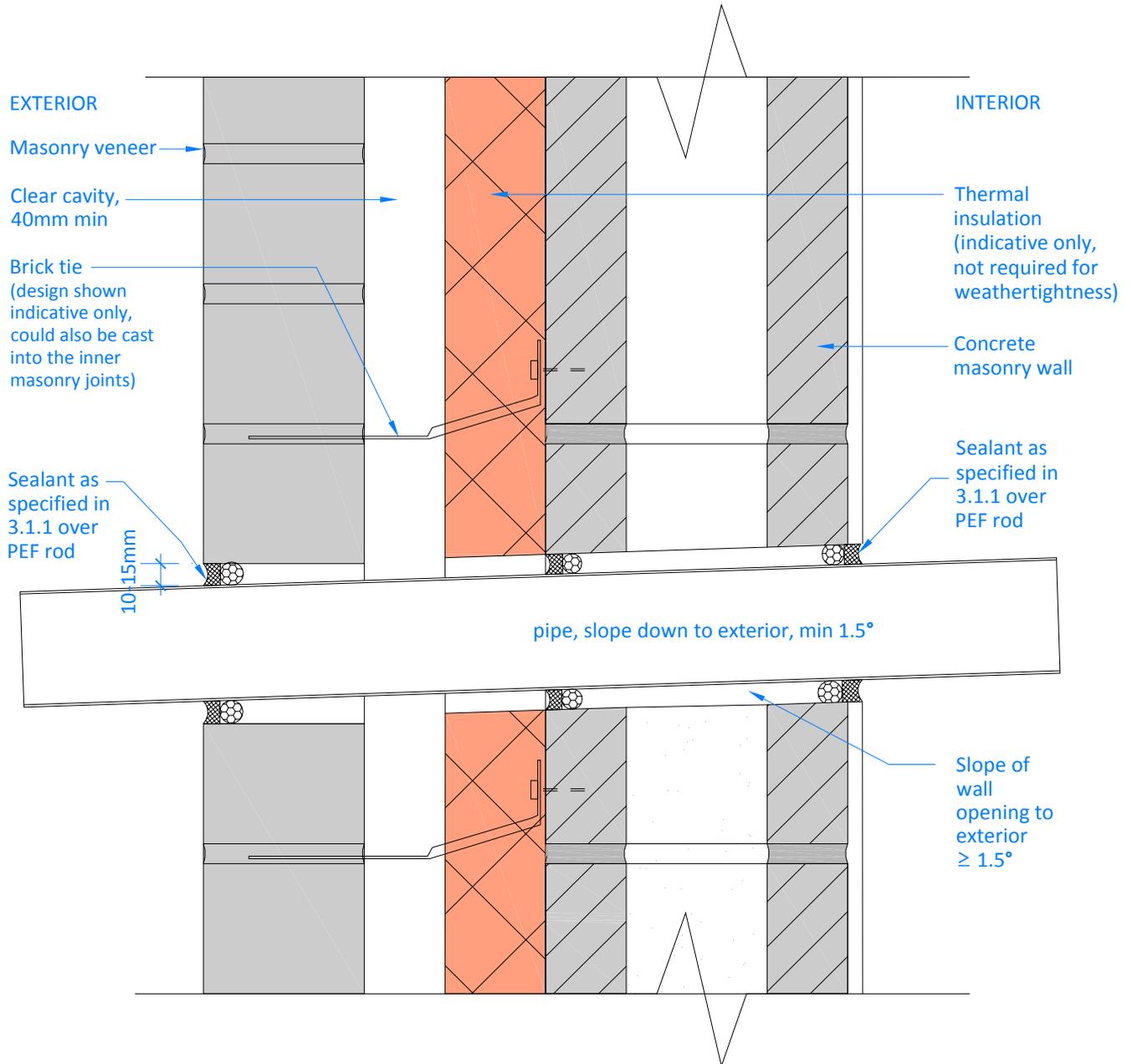
Comment 1: Refer to detail 51 for deck types and setdown requirements  
 Comment 2: Structural layout is indicative only and subject to individual project design.

## Penetrations:

Penetrations shall be as per CCANZ CP 01 following detail.

### Penetration through Wall

#### Concrete Masonry Cavity Wall: Cavity Insulation



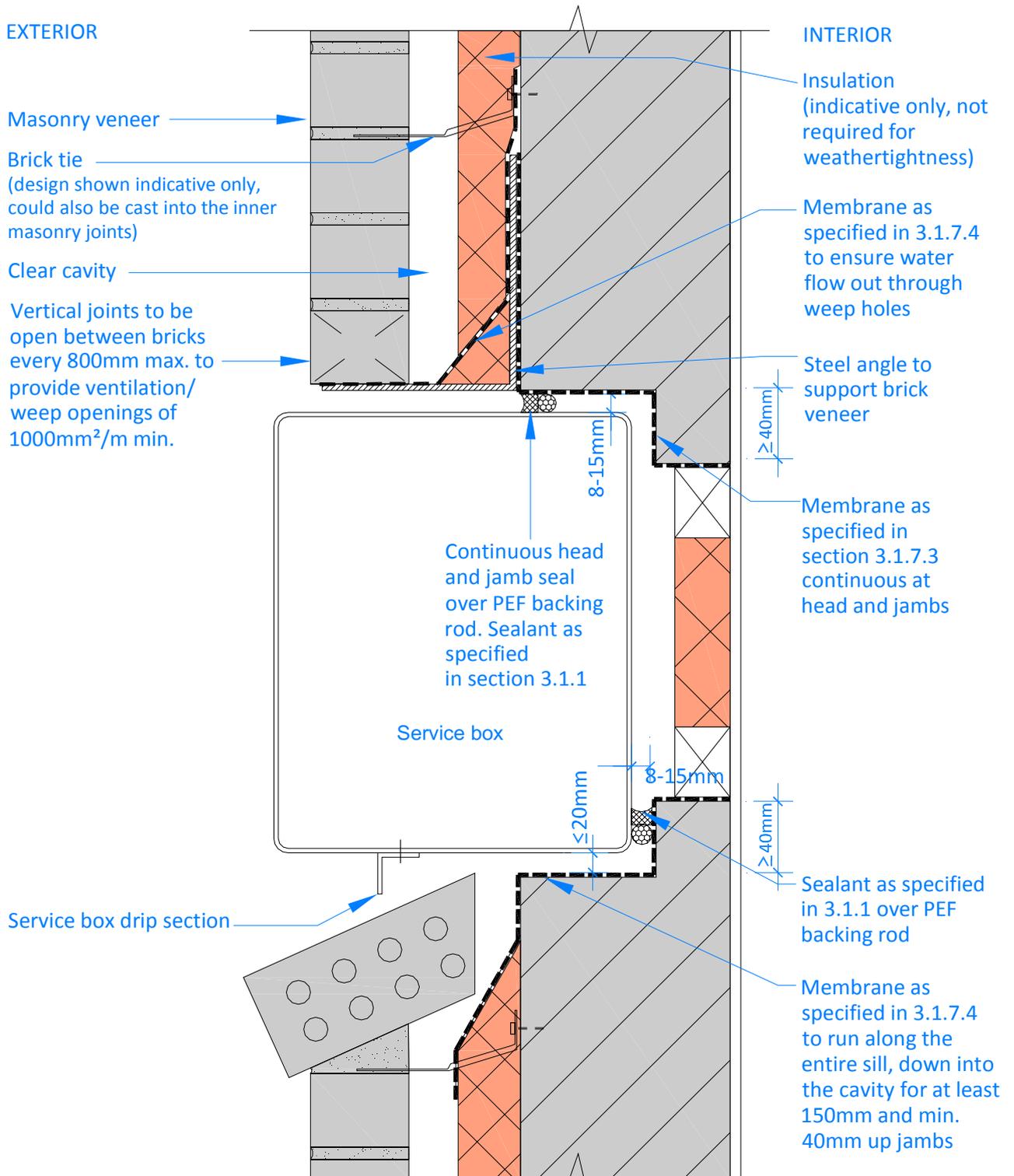
Comment: Structural layout is indicative only and subject to individual project design.

## Service Boxes:

Service boxes shall be installed as per CCANZ CP01 following detail.

### Service Box Set into Wall

Concrete Masonry, Cavity Wall



Comment 1: Structural layout is indicative only and subject to individual project design.

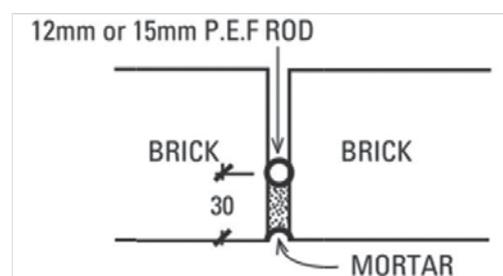
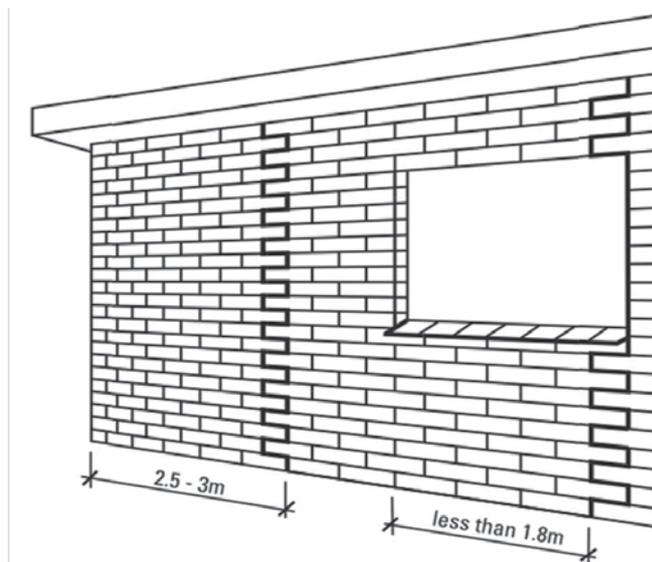
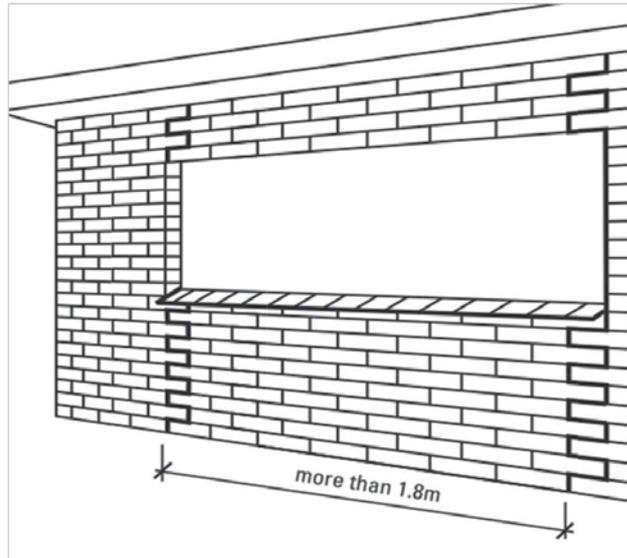
Comment 2: Insulation shown is indicative only, not required for weathertightness.

## Slab Rebates:

To form a drainage cavity a rebate is needed in the concrete slab. This shall be sized to create a minimum 40mm cavity as required by CCANZ CP 01. For Bowers Veneer the rebate shall be a minimum of 110mm wide. For 10 series veneer the rebate shall be a minimum of 130mm wide. If bricks are to project over the edge of the concrete slab the rebate size may be altered accordingly.

## Control Joints:

We recommend the use of Control Joints. Control Joints should be under every window and under each end of windows exceeding 1.8m. Control Joints must be no more than 3m from corners and a maximum of 6m apart. Control Joints may be in a saw tooth line.



## **Finishes**

**Standard edge:** As with all Masonry products, some chipping may occur around the edges.

**Shot Blasted:** This gives a rough exposed face to the product. (Made to Order)

**Colours:** Mist, Mocha, Limestone & Ironsands, are our standard colour range.

*Note:* Colour and texture may vary between brick types and batches. To ensure a uniform finish we recommend that product is laid from the same batch and blend off multiple pallets.

Concrete products may display 'efflorescence' which is a natural occurrence. We have taken all possible steps to minimise this from occurring in our products.

**Sealing:** As with all Masonry products, to enhance the life and durability of the product we recommend the use of a sealer. This is not mandatory. Refer to Sealer Suppliers for application details.

**Laid Product:** Once this product has been laid it is deemed that the quality of the product has been accepted by the customer and the Manufacturer, accepts no responsibility or liability for any substandard workmanship or incorrect installation. The Manufacturer accepts no responsibility or liability for any costs incurred by any party for the installation or take down of this product.

## **Recommendations**

We recommend that this product is installed by a Licensed Building Practitioner, qualified in Brick & Block Laying in accordance with NZS 4210.

**Keep Bricks Dry:** Bricks must be kept covered and dry prior to laying. The laying of wet product increases the chance of efflorescence & shrinkage.

**Frogs:** When the brick has a Frog (recess) in the top edge of the brick, where ever possible lay the Brick with the frog facing down.





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