



North Sawn Timber Ltd

CodeRight Cladding Products
Installation Manual

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1. SCOPE

North Sawn Timber Ltd produce CodeRight Weatherboards, Fascia and Moulding Profiles.

Weatherboard Profiles (Finished sizes)

- 135 x 19mm and 180 x 19mm Rusticated Weatherboards
- 135 x 19mm and 142 x 19mm Bevel Back Weatherboards
- 180 x 19mm and 187 x 19mm Bevel Back Weatherboards
- 135 x 19mm and 180 x 19mm Shiplap Weatherboards.

Fascia Profiles (Finished sizes)

- 135 x 19mm and 180 x 30mm Fascia Boards
- 180 x 19mm and 180 x 30mm Fascia Boards

Finishing Moulding Profiles

- 43 x 10mm Bullnose Scribe
- 60 x 19mm, 40 x 19mm, 30 x 19mm Bullnose Scribe
- 12 x 12mm D4S Finishing Moulding
- 18 x 18mm D4S Finishing Moulding
- 24 x 24mm D4S Finishing Moulding
- 18 x 18mm (with 45 degree chamfer) D4S Finishing Moulding
- 24 x 24mm (with 45 Degree chamfer) D4S Finishing Moulding
- 40 x 30mm Eaves Finishing Moulding
- Rustic Weatherboard Plugs
- 90 x 19mm Weather Grooved Boxed corner (part 1)
- 71 x 19mm Weather Grooved Boxed Corner (part 2)

Profiles of these products are attached as appendix 1 of this document.

All CodeRight products have been treated with LOSP timber treatment to an H3.1 hazard class and are supplied pre-primed.

2. USE OF CODERIGHT WEATHERBOARDS

The North Sawn Timber CodeRight weatherboard system has been designed for use in residential and small commercial buildings.

CodeRight weatherboards are available in a number of profiles including Bevel Back, Rusticated and vertical Shiplap.

The CodeRight weatherboards shall be either *direct fixed* to framing over a wall underlay or fixed to a *drained cavity* as described in the NZBC E2/AS1 paragraph 9.1.8.

Vertical weatherboards are not to be used over a cavity system and can only be used as *direct fixed* over a wall underlay.

CodeRight weatherboards are limited to use in buildings with a risk matrix as outlined in E2/AS1 paragraphs 3.4.1 to 3.4.3. Table 3 shows the risk matrix for weatherboards as follows:

- Over nominal 20mm cavity Bevel Backed and Rusticated weatherboard profiles up to 20.
- Direct Fixed weatherboards in all profiles up to 12.

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 CodeRight cladding products must be installed by a Licenced Building Practitioner (LBP).

Table 1: Dimensions of risk levels

Table 1: Definitions of risk levels Paragraph 3.1.1, Figure 1			
Risk Factor	Score(5)	Risk severity	Comments
A: Wind zone	0	Low risk	Low <i>wind zone</i> as described by NZS 3604
	0	Medium risk	Medium <i>wind zone</i> as described by NZS 3604
	1	High risk	High <i>wind zone</i> as described by NZS 3604
	2	Very high risk	Very High <i>wind zone</i> as described by NZS 3604
	2	Extra high risk	Extra High <i>wind zone</i> as described in NZS 3604 (4)
B: Number of storeys	0	Low risk	One <i>storey</i>
	1	Medium risk	Two <i>storeys</i> in part
	2	High risk	Two <i>storeys</i>
	4	Very high risk	More than two <i>storeys</i>
C: Roof/wall junctions	0	Low risk	Roof-to-wall intersection fully protected (e.g. hip and gable roof with <i>eaves</i>)
	1	Medium risk	Roof-to-wall intersection partly exposed (e.g. hip and gable roof with no <i>eaves</i>)
	3	High risk	Roof-to-wall intersection fully exposed (e.g. <i>parapets</i> , <i>enclosed balustrades</i> or <i>eaves</i> at greater than 90° to vertical with soffit <i>lining</i>)
	5	Very high risk	Roof elements finishing within the boundaries formed by the exterior walls (e.g. lower ends of aprons, <i>chimneys</i> , <i>dormers</i> etc)
D: Eaves width (1)(2)	0	Low risk	Greater than 600 mm for single storey
	1	Medium risk	451–600 mm for single storey, or over 600 mm for two storey
	2	High risk	101–450 mm for single storey, or 451–600 mm for two storey, or greater than 600 mm above two storey
	5	Very high risk	0–100 mm for single storey, or 0–450 mm for two storey, or less than 600 mm above two storey
E: Envelope complexity	0	Low risk	Simple rectangular, L, T or boomerang shape, with single <i>cladding</i> type
	1	Medium risk	Moderately complex, angular or curved shapes (e.g. Y or arrowhead) with no more than two <i>cladding</i> types
	3	High risk	Complex, angular or curved shapes (e.g. Y or arrowhead) with multiple <i>cladding</i> types
	6	Very high risk	As for High risk, but with junctions not covered in C or F of this table (e.g. box windows, pergolas, multi-storey re-entrant shapes etc)
F: Decks(3)	0	Low risk	None, timber slat <i>deck</i> or porch at ground floor level
	2	Medium risk	Fully covered in plan by <i>roof</i> , or timber slat <i>deck</i> attached at first or second floor level
	4	High risk	<i>Enclosed deck</i> exposed in plan or cantilevered at first floor level
	6	Very high risk	<i>Enclosed deck</i> exposed in plan or cantilevered at second floor level or above
NOTES:			
2	(1) <i>Eaves</i> width measured horizontally from external face of <i>wall cladding</i> to outer edge of overhang, including fascias and external gutters/spoutings.		
2	(2) Balustrades and <i>parapets</i> count as 0 mm <i>eaves</i> .		
5	(3) The term <i>deck</i> includes balconies, as described in the Definitions.		
	(4) <i>Buildings</i> in Extra High <i>wind zones</i> require rigid <i>underlays</i> and <i>drained cavities</i> , refer to Table 3.		
	(5) Refer also to Table 2.		

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Table 2: Building envelope risk scores

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Table 2: Building envelope risk scores
Paragraph 3.1.2, Figure 1

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Risk factor	Risk severity								
	LOW	score	MEDIUM	score	HIGH	score	VERY HIGH (1)	score	Subtotals for each risk factor
Wind zone (per NZS 3604)(1)	0		0		1		2		
Number of storeys	0		1		2		4		
Roof/wall intersection design	0		1		3		5		
Eaves width	0		1		2		5		
Envelope complexity	0		1		3		6		
Deck design	0		2		4		6		

(Enter the appropriate risk severity score for each risk factor in the score columns. Transfer these figures across to the right-hand column. Finally, add up the figures in the right-hand column to get the total risk score.)

Total risk score for use in Table 3:

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NOTE: (1) For *buildings* in Extra High *wind zones*, refer to Tables 1 and 3 for rigid *underlay* and *drained cavity* requirements.

Table 3: Suitable wall claddings

Table 3: Suitable wall claddings		Paragraphs 3.1.2, 7.4, 9.1.1, 9.1.7.2, 9.4.1.2, 9.4.1.3, 9.6, 9.6.1, Figure 1	
Amend 5 Aug 2011	Risk Score from Table 2	Suitable wall claddings(1)	
		Direct fixed to framing	Over nominal 20 mm drained cavity
			<i>Claddings on parapets, enclosed balustrades, and in Extra High wind zones shall be installed over drained cavities.(5)(6)</i>
	0 – 6	a) Timber weatherboards – all types b) Fibre cement weatherboards c) Vertical profiled metal – corrugated and symmetrical <i>trapezoidal</i> (3) d) Fibre cement sheet(4) (Jointed finish) e) Plywood sheet	a) <i>Masonry veneer</i> (2) b) <i>Stucco</i> c) Horizontal profiled metal(3) – corrugated and <i>trapezoidal</i> only d) Fibre cement – <i>flush-finished</i> e) <i>EIFS</i>
Amend 5 Aug 2011			
Amend 2 Jul 2005 Amend 5 Aug 2011	7 – 12	a) Bevel-back timber weatherboards b) Vertical timber board and batten c) Vertical profiled metal – corrugated only(3)(6)	a) <i>Masonry veneer</i> (2) b) <i>Stucco</i> c) <i>Horizontal</i> profiled metal – corrugated and <i>trapezoidal</i> only d) Rusticated weatherboards e) Fibre cement weatherboard f) Fibre cement sheet – flush and jointed finish g) Plywood sheet h) <i>EIFS</i>
			Amend 2 Jul 2005
			Amend 5 Aug 2011
Amend 5 Aug 2011	13 – 20	a) Vertical profiled metal – corrugated only(3)(6)	a) <i>Masonry veneer</i> (2) b) <i>Stucco</i> c) Horizontal profiled metal – corrugated and <i>trapezoidal</i> only d) Rusticated weatherboards e) Fibre cement weatherboards f) Fibre cement sheet – flush and jointed finish g) Plywood sheet h) <i>EIFS</i> i) Bevel-back weatherboards
			Amend 2 Jul 2005
Amend 2 Jul 2005	Over 20	a) Redesign the <i>building</i> to achieve a lower score, or b) <i>Specific design</i> <ul style="list-style-type: none"> – The design may need changing to reduce the risk – The <i>building consent authority</i> may require more comprehensive details and documentation providing evidence of <i>weathertightness</i> – The <i>building consent authority</i>, designer or <i>owner</i> may require more inspections – A third party audit of the design may be required. 	
Amend 2 Jul 2005			
Amend 5 Aug 2011	NOTES:	(1) The wall claddings in this table are limited to those covered in this Acceptable Solution. (2) Traditional <i>masonry veneer</i> as per SNZ HB 4236, with minimum 40 mm cavity. (3) Refer Figure 38 for profiles. (4) Except <i>stucco</i> over a fibre cement backing. (5) <i>Claddings</i> in Extra High <i>wind zones</i> require rigid <i>underlays</i> – refer to Paragraph 9.1.7.2 (6) Direct fix vertical corrugated steel is included as cavity construction.	

3. PERFORMANCE REQUIREMENTS

Clause	Performance Requirements	Evidence of compliance	Evidence
B1.3.3(a)	Account shall be taken of all physical conditions likely to affect the stability of buildings, building elements and site work including Self-weight	Acceptable Solution B1/AS1 (part 3.0)	Meets requirements as detailed in acceptable solution
B2.3.1(b)	Building elements must with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the specified intended life of the building if stated or: 15 years if: Those building elements that are moderately difficult to access or replace or: Failure of those building elements to comply with the building code would go undetected during normal use of the building , but would be easily detected during normal maintenance	Acceptable Solution B2/AS1 3.2 Timber 3.2.1(b) NZS 3602 (2004)	Meets requirements of the acceptable solution NZS 3602 (2003) Timber a wood based product used in buildings
E2.3.2	Roofs and exterior walls, must prevent the penetration of water that could cause undue dampness, damage to building elements or both	Acceptable Solution B2/AS1 (9.4)	Meets requirements as detailed in acceptable solution
E2.3.7	Building elements must be constructed in a way that makes due allowance for the following The consequence of failure The effects of uncertainties resulting from construction or from the sequence in which different aspects of construction occur	Acceptable Solution E2/AS1 (9.4)	Meets requirements as detailed in acceptable solution
F2.3.1	The quantities of gas, liquid, radiation and solid particles emitted by materials used in construction of buildings shall not give rise to harmful concentrations at the surface of the material where the material is exposed or in the atmosphere of any space	Flash off as prescribed in Code of Best Practice and AsureQuality Treatment Audit Program	Meets Industry requirements



5. SERVICE LIFESPAN

CodeRight weatherboards have a durability warranty based on the treatment manufactures limited transferable warranty of 25 Years. (The North Sawn Lumber Limited warranty is enclosed, see appendix 1 of this manual)

Under the New Zealand Standards NZS 3602:2003 weatherboards cladding products must have minimum durability of 15 years.

When CodeRight weatherboards are installed as per the instructions contained within this manual and by a LBP or suitably qualified person then service life is expected to be considerably longer.

Service life is subject to correct installation, paint coating of the product, maintenance and care. Full details of covering all the aspects of pre installation care, installation, painting and maintenance are contained within this manual.

6. PRE-INSTALLATION CARE AND SITE PREPARATION

It is important that the CodeRight products be well cared for prior to installation. The CodeRight products are a high quality product manufactured to comply with all relevant NZS standards. To ensure compliance with the warrantee provided the instructions for care and installation as outlined in this document must be adhered with.

On site storage of CodeRight products

If the products are to be stored on site prior to installation they must be stored in the correct manner to avoid damage or exposure to moisture. While the CodeRight products are pre-primed this does not prevent moisture uptake if the product is subject to exposure to the elements. The products must be stored in a dry, well-ventilated area, which is out of direct sunlight and rain. The product must be stacked on a dry surface which is at least 150mm off the ground and must remain covered at all times.

The dunnage strapped to the bottom of the packet is from transport purposed only and is not suitable to use as on site storage if placed directly onto the ground.

CodeRight weatherboards, fascia and finishing profiles are manufactures from kiln dried Radiata Pine, which is a natural hydroscopic product which will absorb moisture in a damp environment. This may cause swelling and change the dimensions of the products; however the product will return to the manufactured dimensions when it dries to its original moisture content. While the products are delivered with a primer coat applied, this will not prevent moisture uptake.

Planning for the correct storage of you CodeRight products prior to delivery to site will avoid future issues.

Handling

- Care should be taken when unloading CodeRight products. The product should be unloaded by hand or if unloaded by mechanical means ensure that there a minimum of 2 well-spaced load points to avoid excessive banding of sag during unloading.
- Always carry CodeRight products on their edge and avoid leaning the products against any vertical surface to avoid bending.

Pre Installation Checks

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

- Where any CodeRight product has been exposed to moisture prior to installation, the moisture content should be checked. If the moisture content is above 16% then the product should not be installed.
- If you cannot check the moisture check the dimensions of the board and compare it to the standard size for the profile selected. Profile sizes are contained within this document.
- If the moisture content exceeds 16% or the product shows signs of swelling **do not install the product.**
- When excessive moisture or swelling is found the product should be put aside and allowed to dry. This is best done by placing the product in fillet, stored as outlined above.
- 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 primer coat has been removed or damaged the effected area should be sanded smooth and a primer coat applied.
- This product is primed with Dulux Ultra prime which is an acrylic primer and similar product should be used for touch-up work.

7. INSTALLATION GUIDELINES

The product 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

Fixing Detail

Nail placement for Bevel Backed Weatherboards is to be a maximum of 24mm above the bottom edge of the weatherboard to ensue that is above the top of the board below. Nails must not penetrate the lap of the lower board.

Boards must be fixed to allow for seasonal movement, with an overlap of 32mm for Bevel Backed Profiles.

Rusticated profiles or profiles with a rebate must have a 25mm overlap with a minimum 2mm gap between the boards at the rebate to allow for seasonal movement.

Nail on an upward angle to prevent water movement down the nail into the wall space. All nails should be punched to a depth of no less than 2mm and a suitable putty type product used to fill the holes immediately.

Nail holes should be pre drilled especially in areas around joins and the end of boards. This is to avoid splitting the product.

Weatherboards should be fixed so that the weather groove on the inwards face of the product matches the weather groove in the lap face of the board underneath. There are a number of different fixing options for differing weatherboard applications. The details for these are contained in table 24 of the NZBC E2/AS1 (next page).

Table 24: Fixing selection for wall claddings

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Joint	Length (mm) x diameter (mm) and type	Minimum framing penetration	Fixing pattern	Requirements
Table 24: Fixing selection for wall claddings				
Refer to NZS 3604 for fixing types where claddings act as structural bracing. Minimum fixing materials for non-structural claddings, shall be galvanised(1) steel for climate zones B, C and D (as outlined in NZS 3604). Where the cladding is a corrosive timber, such as western red cedar or redwood, or is treated with copper based ACQ or CuAz preservatives, use stainless steel(2)				
COMMENT: Some manufacturers may require more durable fixings than those stated below or in NZS 3604 to maintain product warranties.				
Paragraphs 9.4.4.3, 9.4.5.2, 9.5.3.1, 9.7.2.1, 9.8.3.1, 9.9.4.1, Table 18B				
Cavity battens				
Battens to framing	NA	NA	NA	Battens will be fixed by the cladding fixings, which will penetrate the wall framing. Battens will therefore need only temporary fixing until the cladding is fixed.
Stucco plaster				
Rigid backing to framing	60 x 2.5 FH nail	35 mm	150 mm centres to sides and 300 mm centres in middle	
Metal lath to framing	40 x 2.5 FH nail or 40 x 2.8 FH nail	35 mm	150 mm centres	
Fibre cement weatherboards				
Weatherboard DIRECT FIXED	50 x 2.8 fibre cement nail	35 mm	Single fixing 20 mm above lower board, through both thicknesses	
Weatherboard OVER CAVITY	75 x 3.15 fibre cement nail	35 mm	as above	
Timber weatherboards: paint finish DIRECT FIXED				
Horizontal bevel-back	75 x 3.15 JH nail	35 mm	Single fixing 10 mm above top of lower board	
Horizontal rebated bevel-back	60 x 2.8 JH nail	35 mm	as above	
Horizontal rusticated	60 x 2.8 JH nail	35 mm	as above	
Vertical shiplap	60 x 2.8 JH nail	35 mm	Single fixing 10 mm from side lap (40 mm from edge of board)	Dwangs at maximum 480 mm centres.
Board and batten: board	60 x 2.8 JH nail	35 mm	Single fixing in centre or nails clenched over each side	as above
Board and batten: batten	75 x 3.15 JH nail	35 mm	Single fixing in centre of batten	as above
Timber weatherboards: paint finish OVER CAVITY				
Horizontal bevel-back	90 x 4.0 JH nail	35 mm	Single fixing 10 mm above top of lower board	
	75 x 3.15 annular grooved nail	25 mm	Single fixing 10 mm above top of lower board	
Horizontal rebated bevel-back	75 x 3.15 JH nail	35 mm	as above	
LEGEND:				
RH rose head	JH jolt head	FH flat head		
NOTE: Nail lengths are designed for minimum penetration of framing. If thickness of the batten or cladding is varied, length shall be adjusted accordingly.				

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Table 24: Fixing selection for wall claddings (*continued*)

Joint	Length (mm) x diameter (mm) and type	Minimum framing penetration	Fixing pattern	Requirements	
Horizontal rusticated	75 x 3.15 JH nail	35 mm	Single fixing 10 mm above top of lower board		
Timber weatherboards: stained or bare finish					
DIRECT FIXED					
Horizontal bevel-back	65 x 3.2 RH annular grooved nail	30 mm	Single fixing 10 mm above top of lower board		
Horizontal rebated bevel-back	50 x 3.2 RH annular grooved nail	30 mm	as above		
Horizontal rusticated	50 x 3.2 RH annular grooved nail	30 mm	as above		
Vertical shiplap	50 x 3.2 RH annular grooved nail	30 mm	Single fixing 10 mm from side lap (40 mm from edge of board)	<i>Dwangs</i> at maximum 480 mm centres	
Board and batten: board	60 x 3.2 RH annular grooved nail	30 mm	Single fixing in centre of board	as above	
Board and batten: batten	75 x 3.2 RH annular grooved nail	30 mm	as above	as above	
Timber weatherboards: stained or bare finish					
OVER CAVITY					
Horizontal bevel-back	85 x 3.2 RH annular grooved nail	30 mm	Single fixing 10 mm above top of lower board		
Horizontal rebated bevel-back	70 x 3.2 RH annular grooved nail	30 mm	as above		
Horizontal rusticated	70 x 3.2 RH annular grooved nail	30 mm	as above		
Vertical profiled metal: DIRECT FIXED				Refer Paragraph 9.6.6	
Horizontal profiled metal: OVER CAVITY				Refer Paragraph 9.6.6	
Plywood sheet: paint finish DIRECT FIXED					
Plywood to stud or batten	50 x 2.8 FH nail	30 mm	150 mm centres to sides, 300 mm centres in middle		
External cover batten	65 x 3.2 RH annular grooved nail	30 mm	300 mm centres in centre of batten		
Plywood sheet: paint finish OVER CAVITY					
Plywood	60 x 2.8 FH nail	30 mm	150 mm centres to sides, 300 mm centres in middle		
Cover batten	60 x 2.8 JH nail	To cavity battens only	300 mm centres in centre of batten		
Plywood sheet: stained or bare finish DIRECT FIXED					
Plywood to stud or batten	50 x 2.8 FH nail	30 mm	150 mm centres to sides, 300 mm centres in middle		
External cover batten	65 x 3.2 RH annular grooved nail	30 mm	300 mm centres in centre of batten		
LEGEND:					
RH	rose head	JH	jolt head	FH	flat head
NOTE: Nail lengths are designed for minimum penetration of <i>framing</i> . If thickness of the batten or <i>cladding</i> or <i>underlay</i> is varied, length shall be adjusted accordingly.					

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Table 24: Fixing selection for wall claddings (continued)

	Joint	Length (mm) x diameter (mm) and type	Minimum framing penetration	Fixing pattern	Requirements	
	Plywood sheet: stained or bare finish OVER CAVITY					
Amend 5 Aug 2011	Plywood	65 x 3.2 FH nail	30 mm	150 mm centres to sides, 300 mm centres in middle		
	External cover batten	65 x 3.2 RH annular grooved nail	To cavity battens only	300 mm centres in centre of batten		
Amend 5 Aug 2011	Fibre cement sheet: jointed DIRECT FIXED					
Amend 2 Jul 2005	Sheet	40 x 2.8 fibre cement nail	30 mm	150 mm centres to sides, 300 mm centres in middle		
	External cover batten	65 x 3.15 JH nail	30 mm	Single fixing in centre of batten		
Amend 5 Aug 2011	Fibre cement sheet: jointed OVER CAVITY					
Amend 2 Jul 2005	Sheet	60 x 3.15 fibre cement nail	30 mm	150 mm centres to sides, 300 mm centres in middle		
	External cover batten	65 x 3.15 JH nail	To cavity battens only	Single fixing in centre of batten		
Amend 2 Jul 2005	Fibre cement sheet: flush-finish					
	OVER CAVITY	60 x 3.15 fibre cement nail		as above		
	EIFS					
	40 mm polystyrene sheet OVER CAVITY	90 x 4.0 nail	30 mm	as above and with 40 mm plastic washers on external corner fixings		
	LEGEND:					
	RH	rose head	JH	jolt head	FH	flat head
	NOTE: 1. Galvanised nails shall be hot-dipped galvanised; galvanised screws shall be mechanically zinc plated in accordance with AS 3566 Class 4.					
	2. Stainless steel nails shall have annular grooves to provide similar withdrawal resistance to hot-dip galvanised nails.					

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Fixing Details for Installing Weatherboards using Cavity Battens

Cavities must comply with E2/AS1 sections 9.1.8 to 9.1.9.4

There are 2 different cavity systems either:

- Cavity battens fixed by the cladding fixings to the wall frame.
- Claddings are fixed through the cavity battens into the wall frame.

Timber Weatherboard claddings with a drained cavity do not require venting at the top of the wall.

There must be a restriction of air movement between the cavity and:

- The floor, wall and roof framing.
- Attic roof space.
- Subfloor space.

Cavities must be drained to the exterior of the building at the bottom of the cavities.

Where window penetrations are wider than cavity batten spaces allowance must be made for air flow between adjacent by leaving a minimum gap of 10mm between the bottom of the vertical batten and the flashing to the opening.

It is important to note that where a cavity batten is fixed through the cladding the nails used are required to have a minimum fixing penetration into the framing of 35mm, so a longer nail is required. The nail length shall be 35mm plus thickness of batten, plus thickness of cladding board.

When the cavity batten is fixed to the framing it is considered as part of the framing in respect to the fixing of weatherboards.

Cavity battens fixed by the cladding are required to be nailed at 800mm centres.

Cavity battens fixed to the framing are required to be nailed at 300mm centres.

Drained cavity systems are required to be vermin-proofed. Vermin proofing is required above window and door heads and at the base of drained cavities.

Vermin proofing shall:

- Provide holes or slots between 3mm and 5mm.
- Provide an area of opening of 1000mm² per lineal meter of wall cladding.
- Be positioned to allow a minimum drip edge to the wall cladding of
 - a. 10mm at the base of the wall
 - b. 15mm above window and door head flashings.

Vermin proofing must be kept clear and unobstructed to maintain draining and venting of the cavity.

Fixing Detail for Direct Fix weatherboards

Weatherboards can be directly fixed to the framing but the use of this is limited by section 3.3 of the NZBC.

All types of weatherboards can be used where the risk score is between 0 and 6.

Where the building risk score is 7 to 12 **only** bevel backed weatherboards can be used.

Where weatherboards are directly fixed to the framing a wall underlay complying with table 23 of the NZBC sections 9.1.5-9.1.7 shall be installed prior to fixing.

Fixing Details for Vertical Shiplap Weatherboards

Vertical Shiplap Weatherboards are limited to direct fix options, therefore are limited to low risk applications.

They are only suitable for use buildings with a risk score between 0 and 6.

Products used in vertical cladding applications shall be in continuous lengths over a storey height.

Laps of vertical Shiplap Weatherboards shall be fitted with a minimum of a 2mm gap at the overlap between boards.

Vertical weatherboards shall be fixed to dwangs at 480mm maximum centres.

Bottom of Cladding

There are differing requirements for the clearance between cladding and floors.

Wall cladding and concrete slabs

- Weatherboard cladding must finish a minimum clearance of 100mm on a paved surface or 175mm on a non-paved surface.
- Overlap the concrete slab by a minimum of 50mm.
- Direct fix cladding must have a minimum horizontal off-set of 6mm to prevent moisture capillary action.

Wall Cladding on suspended timber floors

- Weatherboards and cladding must overlap the floor structure by no less than 50mm.
- With drained cavities there will be no direct connection between the sub floor spaces and the drained cavities.
- Direct fix cladding must have a minimum horizontal offset of 6mm to prevent moisture capillary action.
- With drained cavity systems care must be taken to ensure air from the subfloor space cannot enter the cavity.

Wall Penetration

Prior to the installation of doors and windows the following must be completed:

- Flexible wall underlay shall be cut and dressed on all sides.
- Flexible flashing tape shall be applied to the head and sill framing.

Windows, doors and other penetration openings shall have a flexible air seal to minimise the risk of air flow carrying moisture into the building wall.

The air seal shall:

- Be between the reveal or the frame and the wrapped opening.
- Installed over aclosed cell polyurethane foam, backing rod or similar product.
- Be made of
 - a. Self-expanding polyurethane foam
 - b. A sealant complying with Type F, class 20LM of ISO 11600 or a low modulus Type II Class A of Federal Specification TT-S-00230C.

Window and Door Heads

When installed the flange forming the window, door facing must overlap the cladding material or the back flashing by a minimum of:

- 10mm on jambs
- 8mm on sills

Direct Fix Weatherboards

When installing direct fix weatherboards, widow and doors shall have a 5mm stand –off from the flange to the weatherboard to allow for air equalisation. The gap is to be sealed or trimmed down the jamb but left open along the sill.

Head flashings must have a 50mm bead of sealant installed between the weatherboard and each end of the head flashing.

Drained Cavity Weatherboard Systems

There is no sill flashing used.

Weatherboard cladding requires a 5mm stand-off to allow for the use of sealant weather seals between the facings and the cladding

Head flashings must:

- Incorporate 10mm turn-ups to stop ends, which terminate at the inside face of the cladding.
- Permit ventilation of the drained cavity.
- In very high wind zones, they must have sealant installed between the underside of the head flashing and the top edge of the window head flange.

Cutting and End Sealing

All cut ends, drill holes, rebates and notches must be resealed immediately with a suitable approved product. End sealing can also be achieved by the application of 2 coats of a quality primer which are allowed to dry between coats.

When products are joined a scarf or splay join is to be used. These must face away from the prevailing weather and corrosion-resistant soaker must be applied.

Nail Selection

The CodeRight weatherboards and other products are all treated to an H3.1 Hazard class using Light Organic Solvent Preservative (LOSP).

Nails can be either Galvanised Steel, Silicone Bronze or Stainless Steel.
Note In sea-spray zones nails must be Stainless Steel.

Hand nailing is recommended as the use of nail guns can cause fibre damage.

Soakers and Flashings

Soakers and flashings can be Galvanised Steel, Aluminium, Stainless Steel (304) or Copper. All these materials are compatible with CodeRight products.

Soakers and flashing must be fixed in accordance with the NZBC. Soakers must have a minimum of 15mm overlap from the corner or join.

NZS 3604 section 4 and E2/AS1 table 20 outline durability for flashings.

Section 9 of E2/AS1 outlines flashing design and fabrication details.

Table 20: Material selection

Material	Exposure(1)(2)(4)(6)		Acceptable Exposure Zones as per NZS 3604 – Section 4 (3)(4)(6)	
	NOTE: Consider all walls as 'Sheltered' for steel based claddings(8)	Type	15 years	50 years for hidden elements(2)(9)
CLADDINGS AND FLASHINGS				
Aluminium, zinc	Hidden(2)		B,C,D,E	B,C,D,E
	Exposed		B,C,D,E	
	Sheltered		B,C,D,E	
Copper, lead, or stainless steel	Hidden(2)		B,C,D,E	B,C,D, E
	Exposed		B,C,D,E	
	Sheltered		B,C,D,E	
Factory painted				
Aluminium-zinc coated or galvanised steel to AS/NZS 2728 (includes pre-painted tiles)	Hidden(9)	Type 4	B,C,D,E	B,C,D
	Hidden(9)	Type 6	B,C,D,E	B,C,D,E
	Exposed(8)	Type 4	B,C,D	
	Exposed(8)	Type 6	B,C,D,E	
	Sheltered	Type 4	B,C	
	Sheltered	Type 6	B,C,D	
Pressed metal tiles aluminium-zinc coated AZ150 to AS/NZS 2728 with post-form factory painting	Exposed	Type 6	B,C,D,E	
	Sheltered	Type 6	B,C,D	
Non-factory painted				
Aluminium-zinc coated steel AZ150 to AS 1397.	Hidden(9)		B,C,D,E	B,C,D
	Exposed(8)		B,C	
	Sheltered		B	
Galvanised steel Z450 to AS 1397	Hidden(9)		B,C,D	B,C
	Exposed(8)		B,C	
	Sheltered		B	
Non-metallic				
Bituminous material, or uPVC	Hidden		B,C,D,E	B,C,D,E
	Exposed (uPVC only)		B,C,D,E	
	Sheltered (uPVC only)		B,C,D,E	
Butyl rubber	Hidden		B,C,D,E	B,C,D,E
	Exposed		B,C,D,E	
	Sheltered		B,C,D,E	
FIXINGS(7)				
Aluminium, bronze, and stainless steel (Types 304 and 316)(10)	Hidden		B,C,D,E	B,C,D,E
	Exposed		B,C,D,E	
	Sheltered		B,C,D,E	
Nails – Hot-dip galvanised steel to AS/NZS 4680	Hidden(5)(9)		B,C,D	B,C
	Exposed		B,C,	
	Sheltered		B	
Screws – galvanised steel, painted or unpainted, to AS 3566: Part 2	Hidden(5)(9)	Class 3	B,C,D,E(3)(4)	B,C,D,E
	Exposed	Class 4	B,C,D	
	Sheltered	Class 4	B,C	

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Table 20: Material selection – continued

Note:

- 1) Refer to manufacturer's information for maintenance requirements in Exposed and Sheltered locations.
- 2) The term "hidden" means concealed behind another element such that no part is visible. Hidden elements require a 50 year *durability* under the NZBC. The term "exposed" means having surfaces exposed to rain washing. The term 'sheltered' means being visible, but not rain washed. For diagrammatic outline, refer NZS 3604 Figure 4.3(a). Exposed and sheltered elements require a 15 year *durability*. Where an element can be categorised as both 'sheltered' and 'exposed', the 'sheltered' condition will apply.
- 3) AS/NZS 2728 lists atmospheric classes derived from ISO 9223 for Australia and New Zealand, determined by exposure to wind-driven sea-spray. NZS 3604 references atmospheric classes B (Low), C (Medium) and D (High). E2/AS1 references atmospheric zones B,C,D,E. For the purposes of *cladding* selection, Zone E (Severe marine classified as breaking surf beach fronts) has been included. Designers must consult metal supplier's information for specific *durability* requirements of sites in Zone E.
- 4) The geographic limits of atmospheric classes in NZS 3604 and AS/NZS 2728 may vary. Table 20 uses the limits outlined in NZS 3604.
- 5) Includes fixings protected by putty and an exterior paint system of primer, undercoat and two top coats of paint.
- 6) Microclimates based on evidence from adjacent structures of corrosion caused by industrial or geothermal atmospheres are outside the scope of this Acceptable Solution.
- 7) Refer to Tables 21 and 22 for compatibility of fixings with metal *claddings*.
- 8) *Roof* only. Coated steel *wall claddings* must be considered as 'sheltered'.
- 9) Hidden steel coated elements in ventilated cavities in zones D and E (exposure to salt air) must be considered as 'sheltered'
- 10) The use of stainless steel fixings is not recommended by steel manufacturers for use with coated steel in severe marine and industrial environments, as they are considered to cause deterioration.

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Diagram 5: Flashings

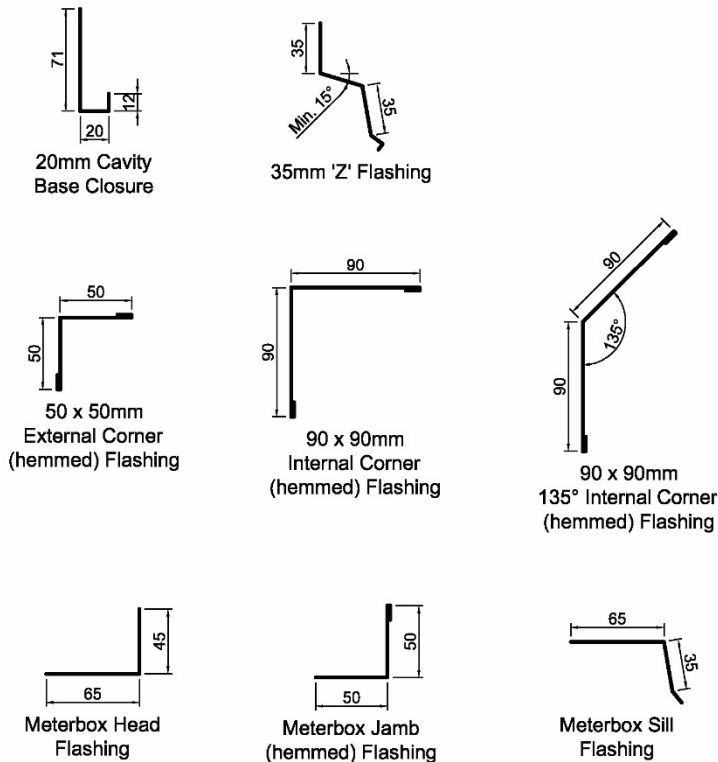
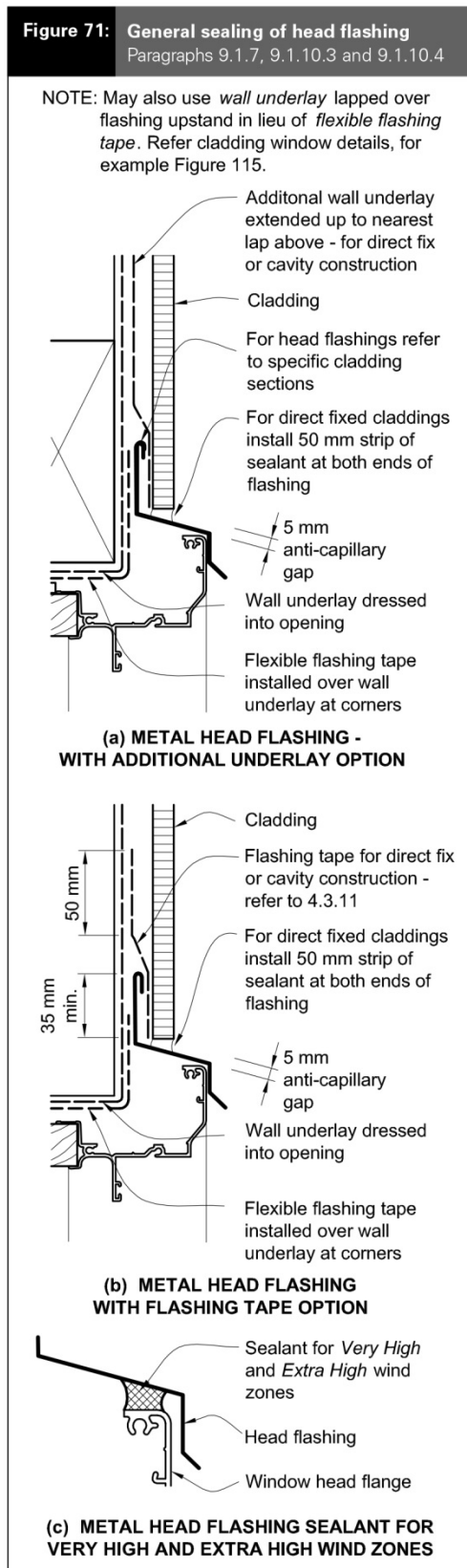


Figure 71: General sealing of head flashing



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Box Corners for External Corners

The CodeRight range includes a profile boxed corner product which is supplied in 2 parts. These products have weather grooves and are machined to size to ensure that when fitted the 2 parts form an even boxed corner profile.

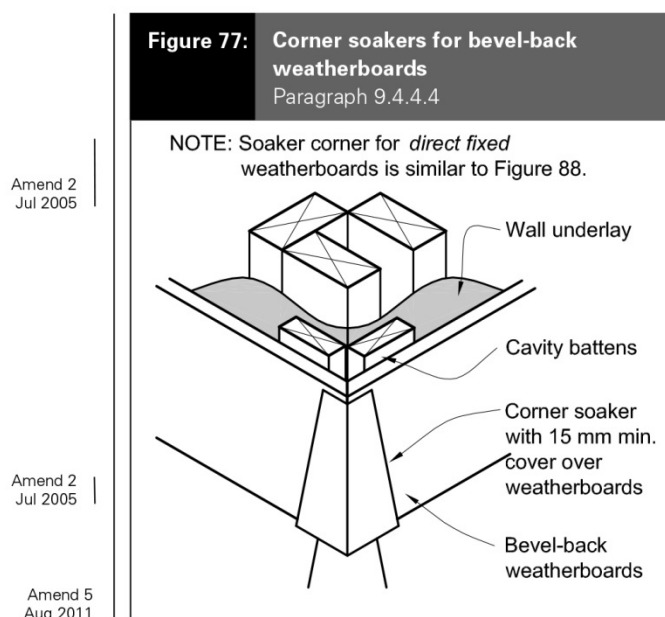
The boxed corner must provide a minimum cover of 50mm from the join or cut end of the weatherboards.

Boxed corners are made weather proof by one of the following methods:

- a. For Rusticated weatherboard profiles a CodeRight plug or scriber can be used.
- b. For Bevel Backed profiles a CodeRight scriber can be used.

There are boxed corner options for Rusticated, Bevel Back and vertical Shiplap weatherboards as shown in the figure 77.

Figure 77: Corner soakers for bevel-back weatherboards



Internal Corners

Internal corners must be made water tight by the use of corrosion resistant flashings which shall be fitted behind the weatherboards on all internal corners

General Inter-Storey Junctions

Inter-storey junctions in cladding over drained cavity systems shall be formed for walls over 2 storeys or 7 meters in Height.

Cavity battens used can run the full height of the wall, however wall over 7 meters or 2 storeys must have an Inter Storey Junction. This is formed to allow for the management of moisture handled by the cavity to be directed to the outside of the building.

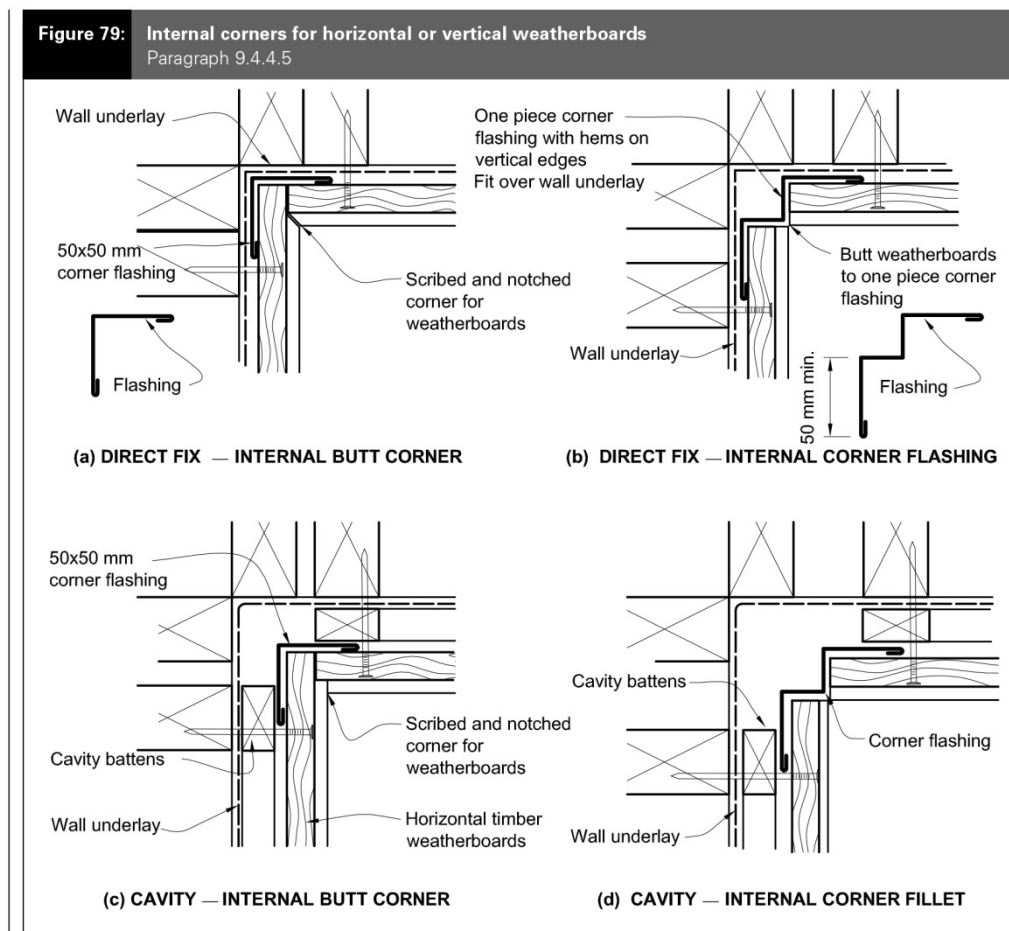
The Junction must have:

- A Minimum 15mm drip edge
- A minimum 5mm capillary gap

Flashing used must have:

- A Minimum 15 degree slope
- A minimum 35mm up stand
- A minimum 35mm cover over the weatherboard

Figure 79: Internal corners for horizontal or vertical weatherboards



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8. PAINTING REQUIREMENTS

CodeRight Weatherboards and cladding products are delivered to site coated with Dulux Ultraprime Machine Primer. This is an oil based primer which has been applied with a paint film which is a minimum of 75 microns thick.

The Manufactures Dulux recommends the following actions be taken prior to commencing painting.

1. To test if the surface primer is sound cut a small X through the existing paint using a sharp blade. Press cellulose tape firmly across the cut then rip off the tape. If the primer or paint lifts it is not sound and the primer must be removed and re-primed using Dulux oil based or acrylic primer.
2. If the test is sound, repeat it at random to test the surface, if sound complete the following steps
3. Fill and sand any nail holes or defects using an exterior grade sealant.
4. Clean off any dust or dirt.
5. Lightly sand the surface where necessary to an even flat finish to provide a key for the new coating (note) fill or sealant can cause a different surface finish on the boards which may show when painted. It is recommended to lightly sand the whole area to be painted to ensure an even finish.
6. Dust off the surfaces removing sanding dust.
7. Apply a single undercoat of a quality undercoat or primer.
8. Once the primer or undercoat is dry (see manufacturers specifications for dry times) coat the product with 2 top coats of quality paint.

Prior to Painting

It must be remembered that timber is a natural product and is hygroscopic which means it will absorb moisture if it has been exposed to moisture.

If there are concerns about exposure to moisture check the moisture content of the product before painting. Products that have been exposed to moisture can swell causing dimensional change. If in doubt do not paint the product.

BRANZ recommend that the moisture content of product to be painted should be 16% or below. If in doubt contact the manufacturer North Sawn Timber on 09 432 7078.

Colour Selection

Dark colours absorb and transfer heat which can lead to movement in the timber. It is recommended that colours are selected from a range which of 45% light reflective value (LRV) or greater.

Weatherboards and cladding products should be painted in accordance with AS/NZS 2311:2009 as well as following the paint manufacturers recommendations and instructions.

9. MAINTENANCE

To ensure you as a building owner enjoy the lasting benefits of the CodeRight cladding system, you have the responsibility to ensure regular maintenance is carried out.

Maintenance should be carried out every 12 months, dependant on the environment. Costal, industrial and inner city environments can be especially hard on products and more regular maintenance may be required.

Maintenance checks should include the following actions.

1. Wash all exterior surfaces using a low pressure wash system to remove dust, dirt and other contaminants.
 - Attention should be given to sheltered areas of the building as these areas do not receive regular wetting by the elements.
 - Do not use high pressure washing systems such as water blasters
 - If the washing does not remove areas of mould 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 prior to applying the cleaning agent.
2. Once the building is clean inspecting all surfaces for areas of damage, wear and tear and paint coating degrade. If paint surface coating is damaged or broken complete the following actions.
 - Remove all damaged paint, sand back if required.
 - Apply a quality primer on any bare timber.
 - Once the primer has dried apply 2 top coats of a quality top cost paint.
3. If you are required to replace or repair any cladding items in order to maintain weather tightness the following should actions should be taken.
 - For small areas of damage or rot, cut out the affected area and fill with a suitable exterior product. Sand back to a smooth even finish and prime and coat as per above.
 - For large areas of deterioration it may require the removal and replacement of a weatherboard or other cladding elements. Once this has been completed prime and coat as per the instructions.
 - Damaged flashings or soaker should be replaced rather than repaired.
4. It is a general rule that buildings should be repainted every 10 years if the initial coating product used was of good quality, delivering a good quality coating finish. In some cases the repainting may be required earlier depending on condition.

10. APPENDIX

Figure 68: General pipe configuration

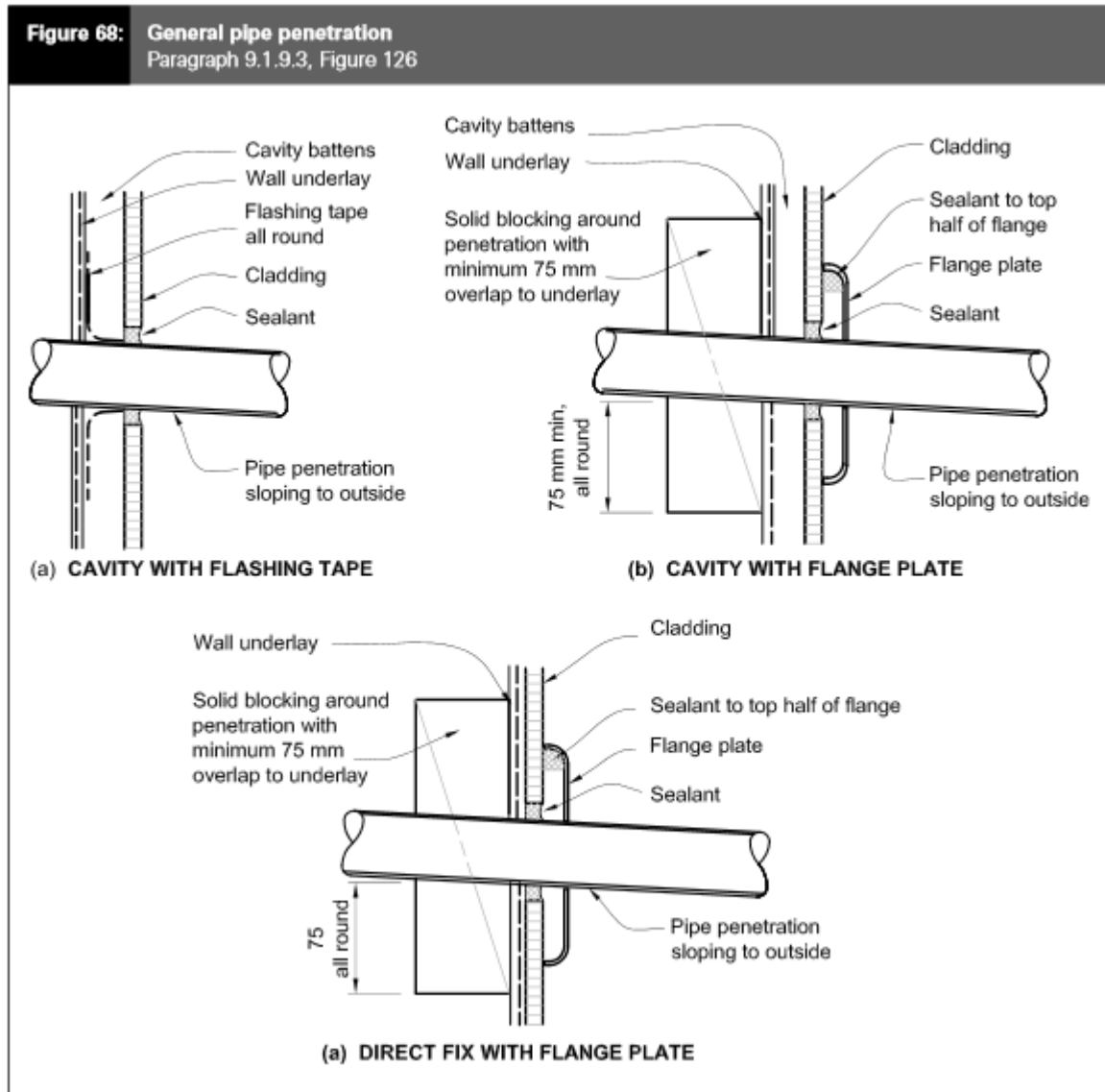


Figure 72A: General window and door opening for direct fixed

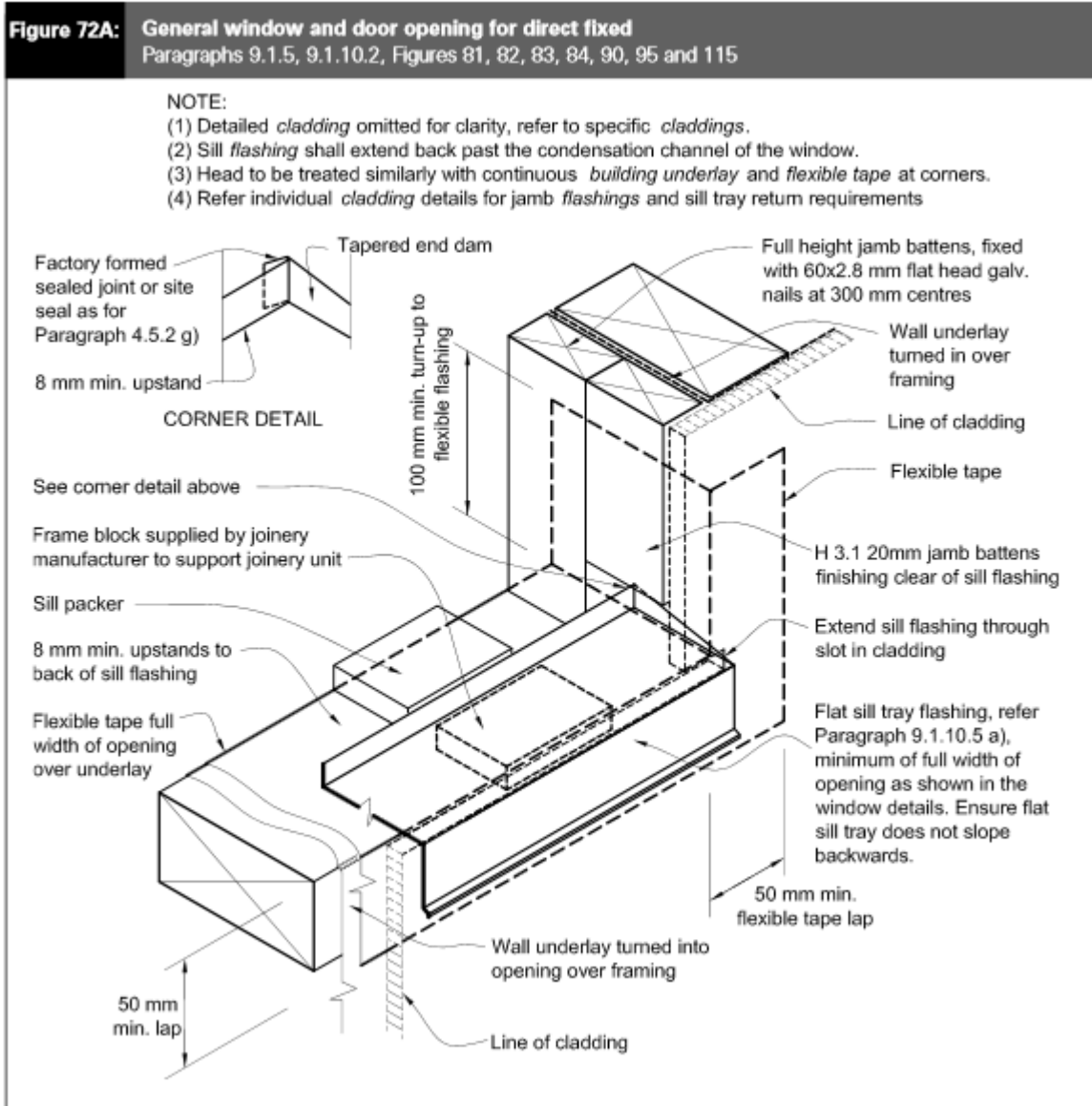


Figure 72B: General window and door opening with drainage cavity

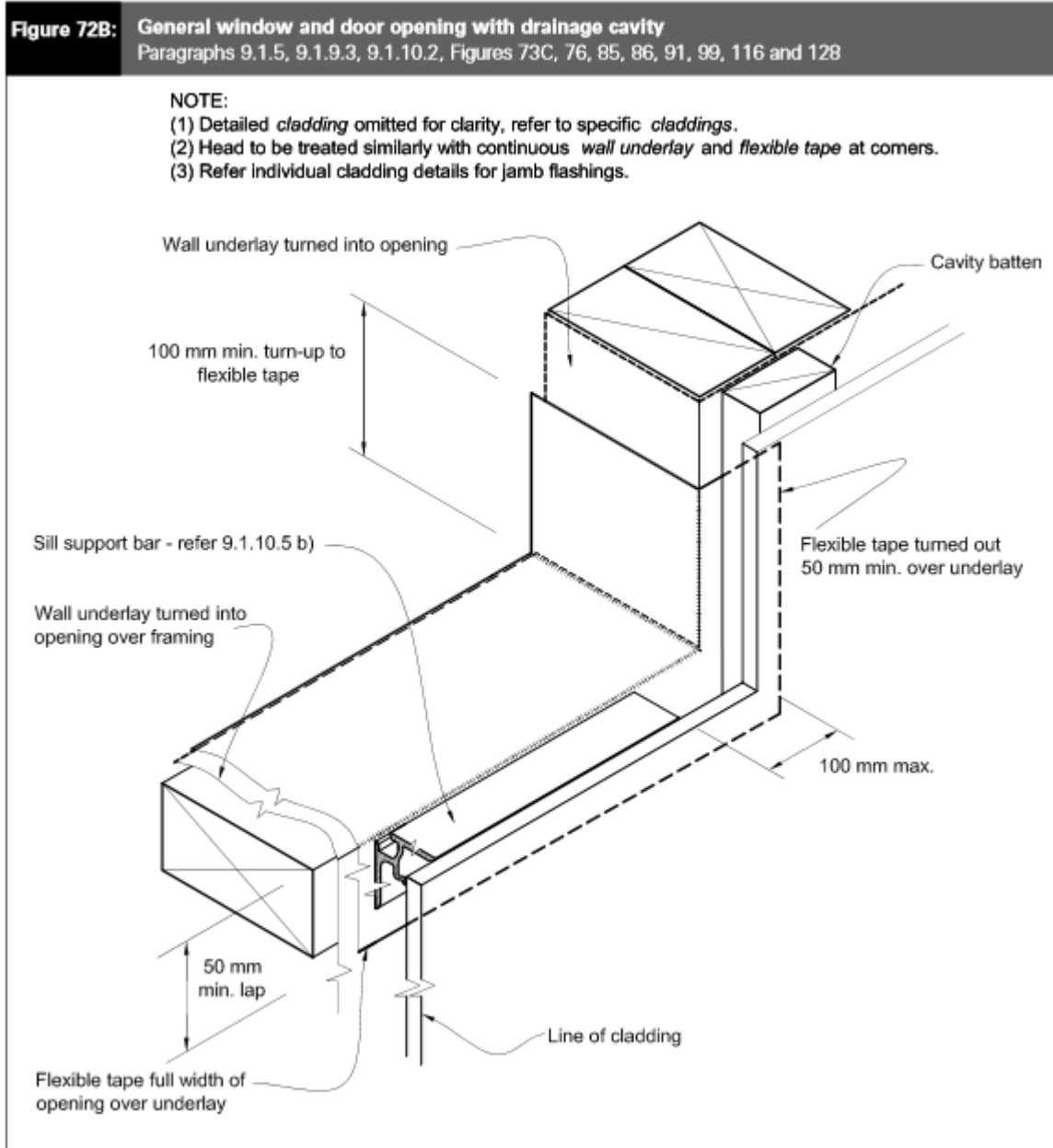
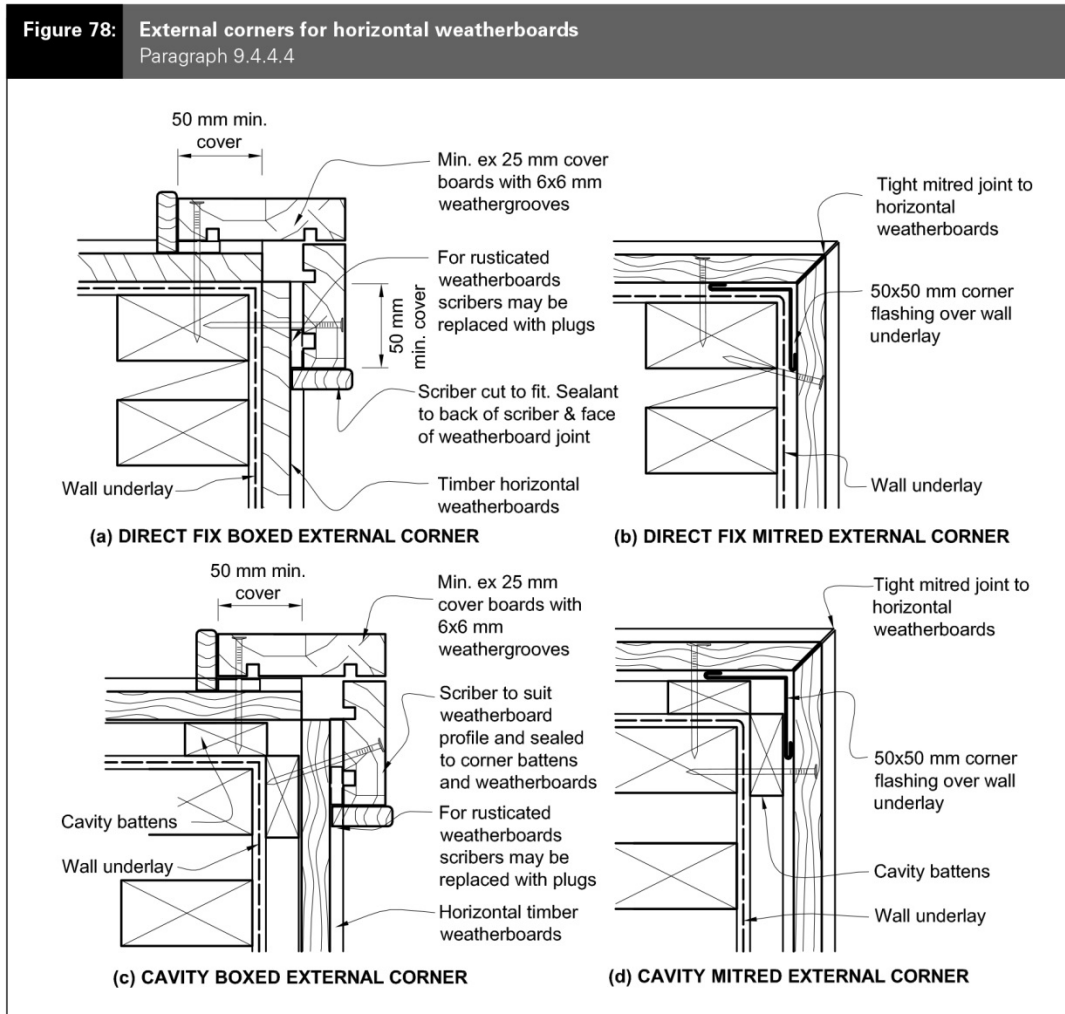


Figure 78: External corners for horizontal weatherboard



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Figure 79: Internal corners for horizontal or vertical weatherboards

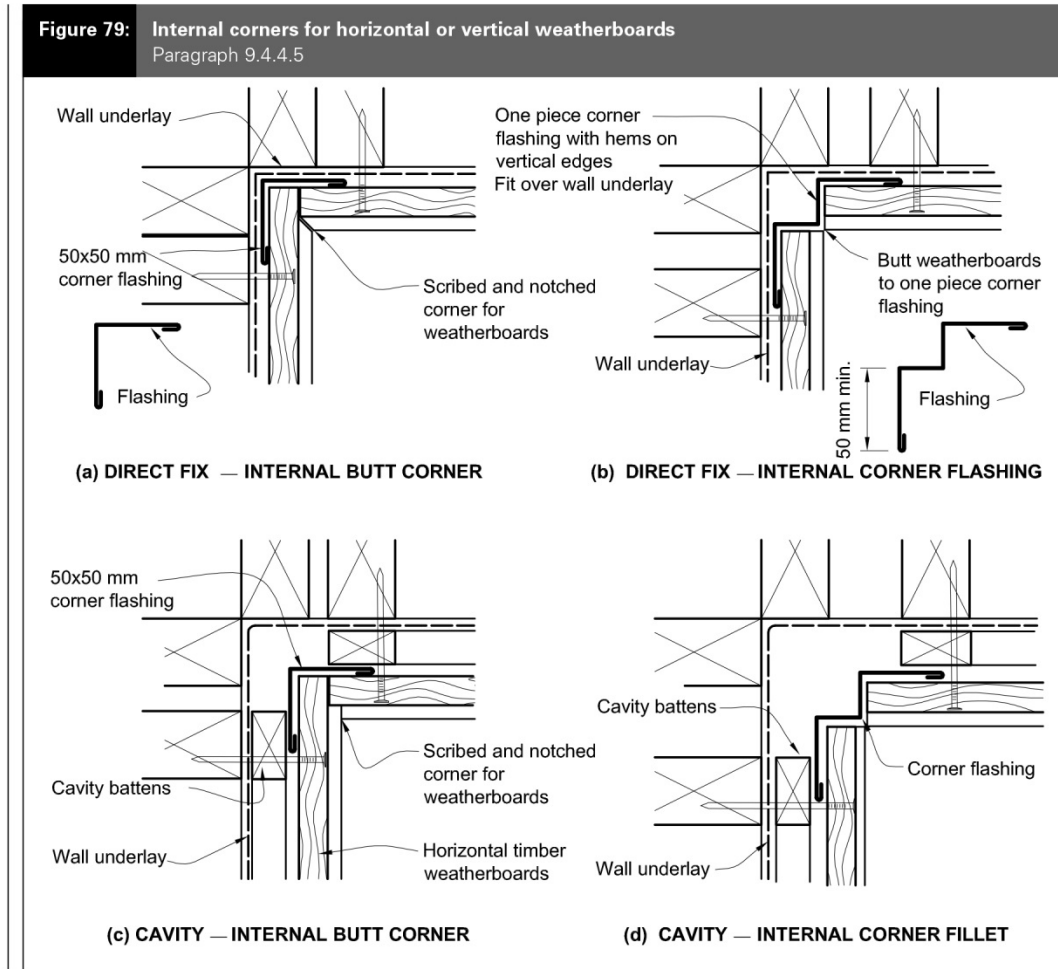
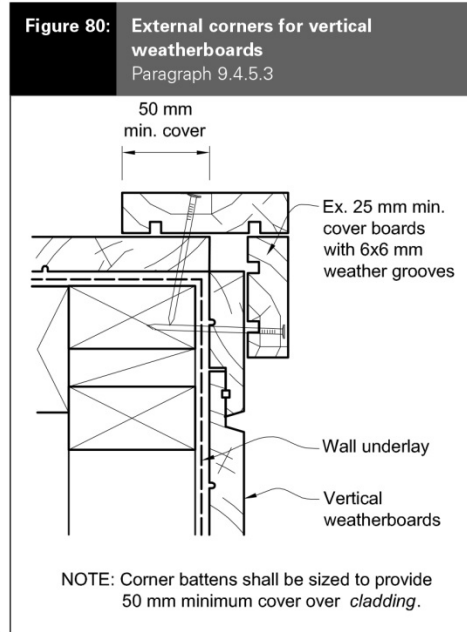
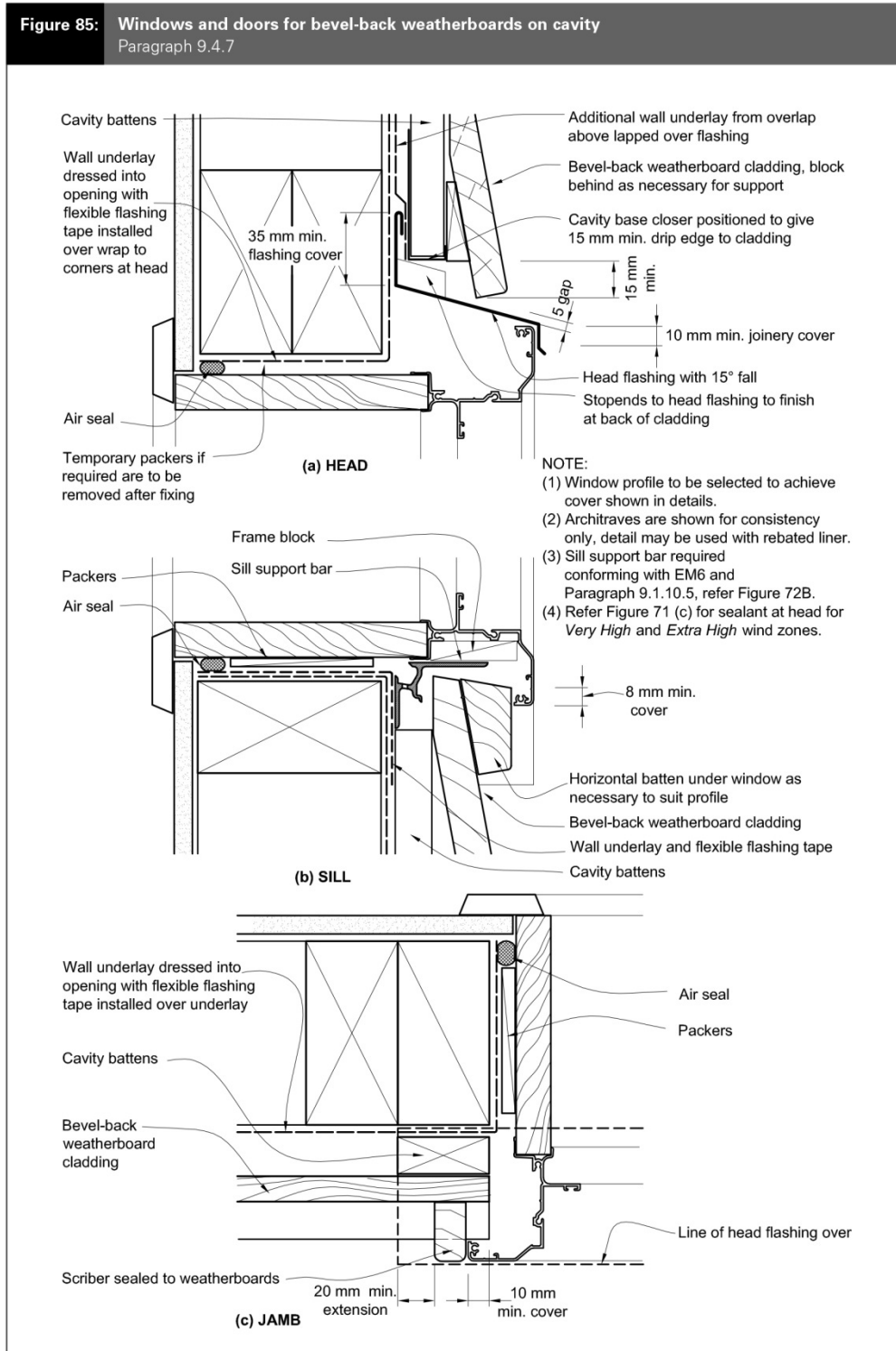


Figure 80: External corners for vertical weatherboards



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Figure 85: Windows and doors for bevel-back weatherboards on cavity



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Figure 86: Windows and doors for rusticated weatherboards on cavity

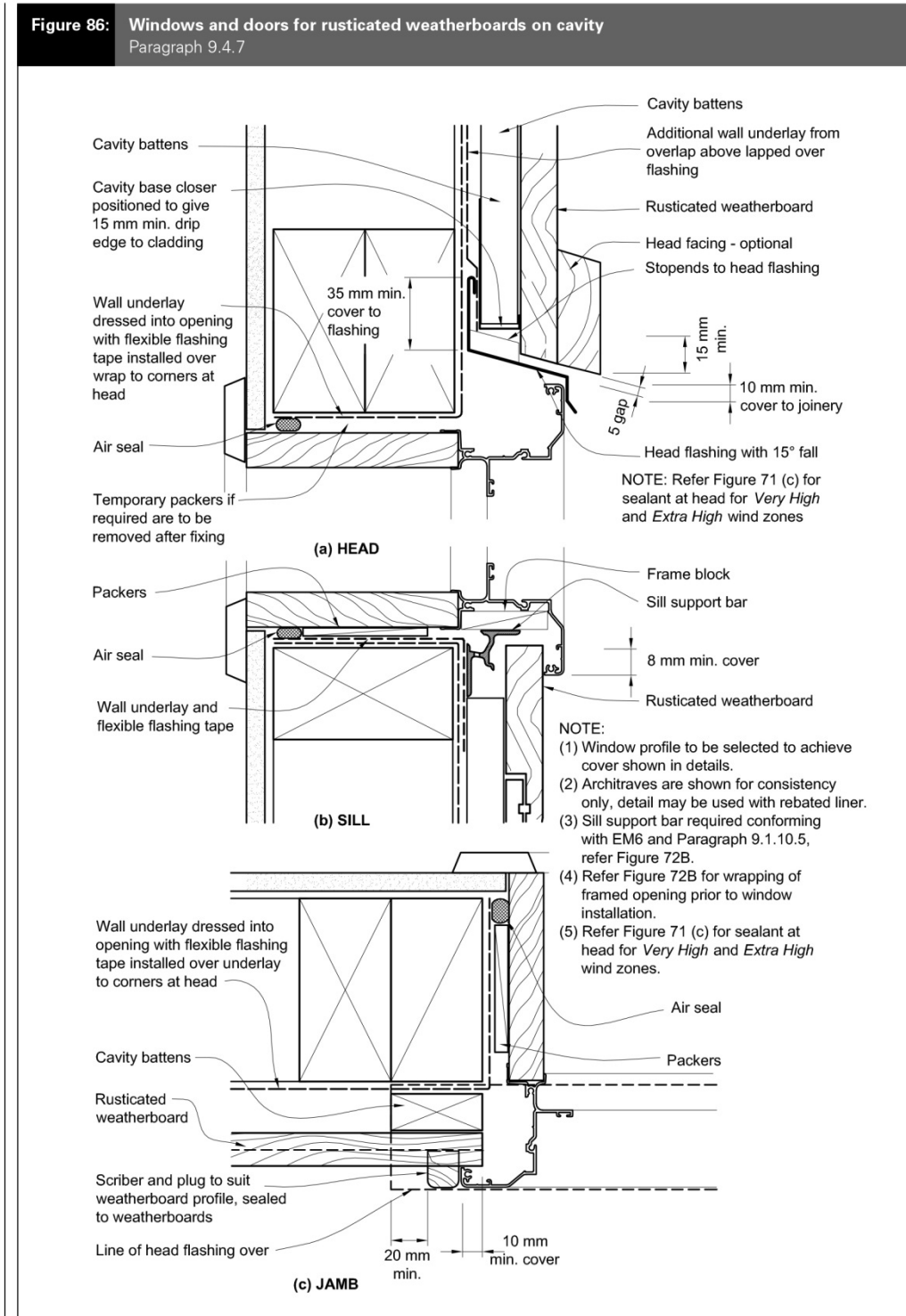
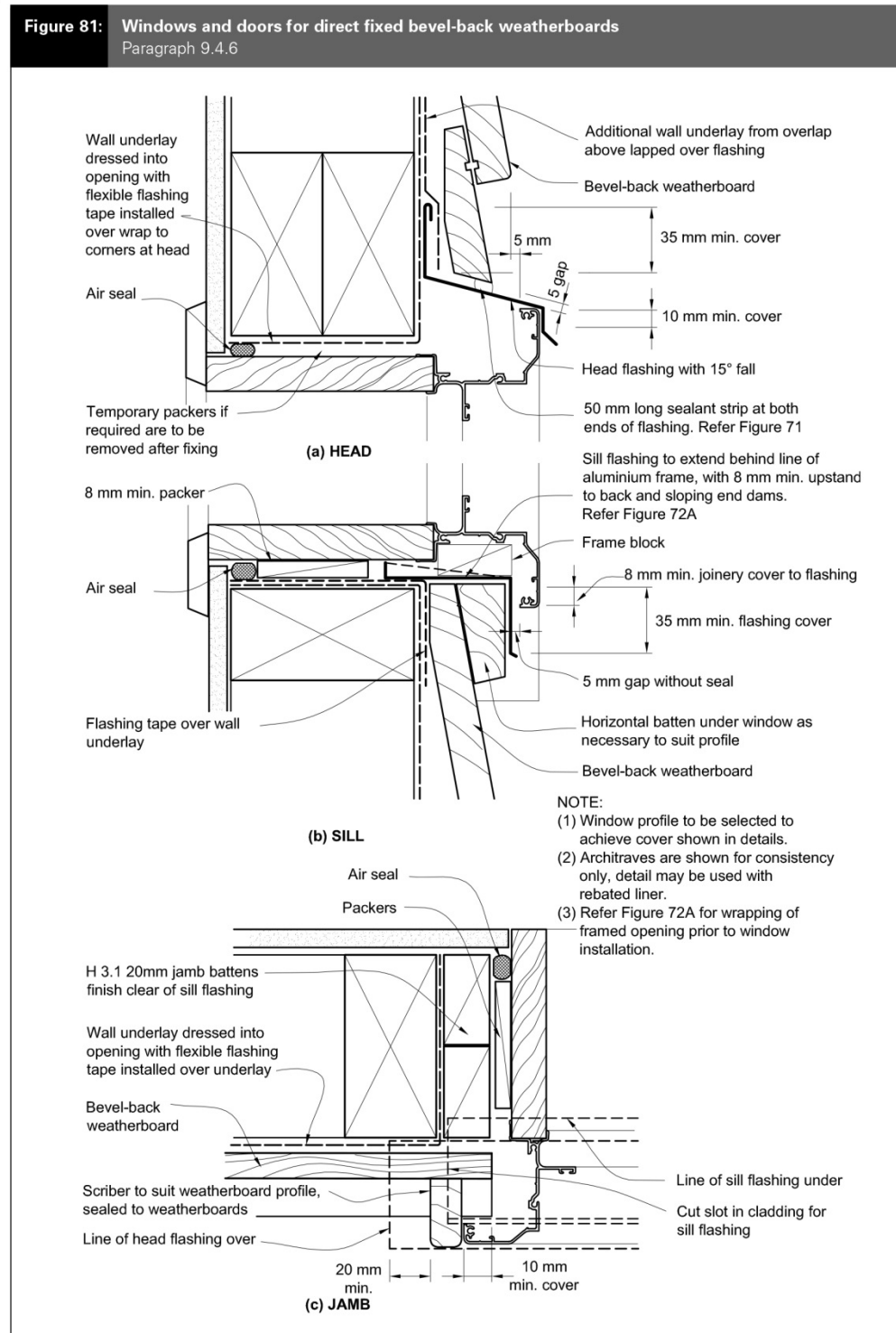


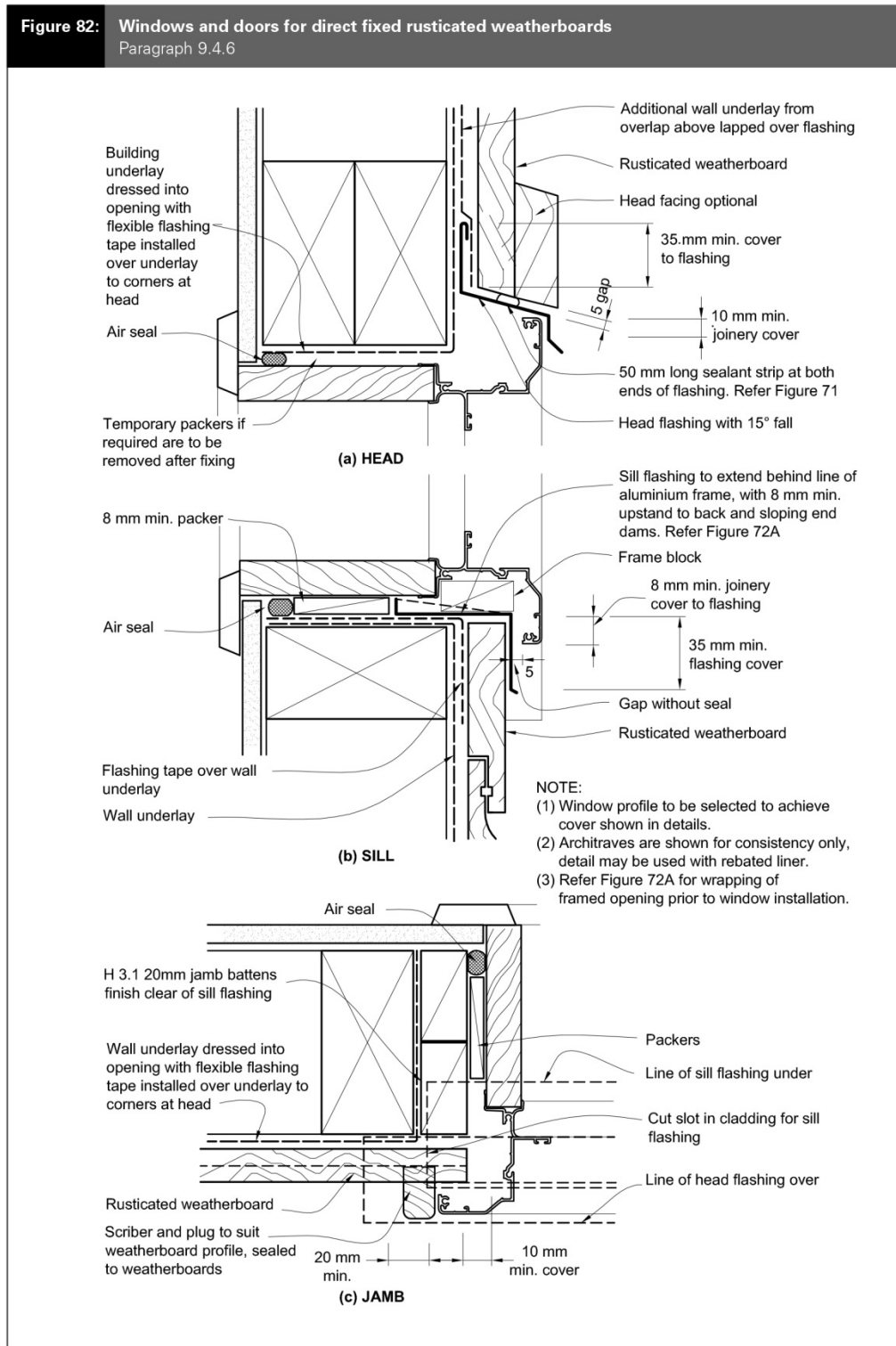
Figure 81: Windows and doors for direct fixed bevel-back weatherboards



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Figure 82: Windows and doors for direct fixed rusticated weatherboards



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Amend 2
 Jul 2005

Figure 83: Windows and doors for direct fixed vertical shiplap weatherboards

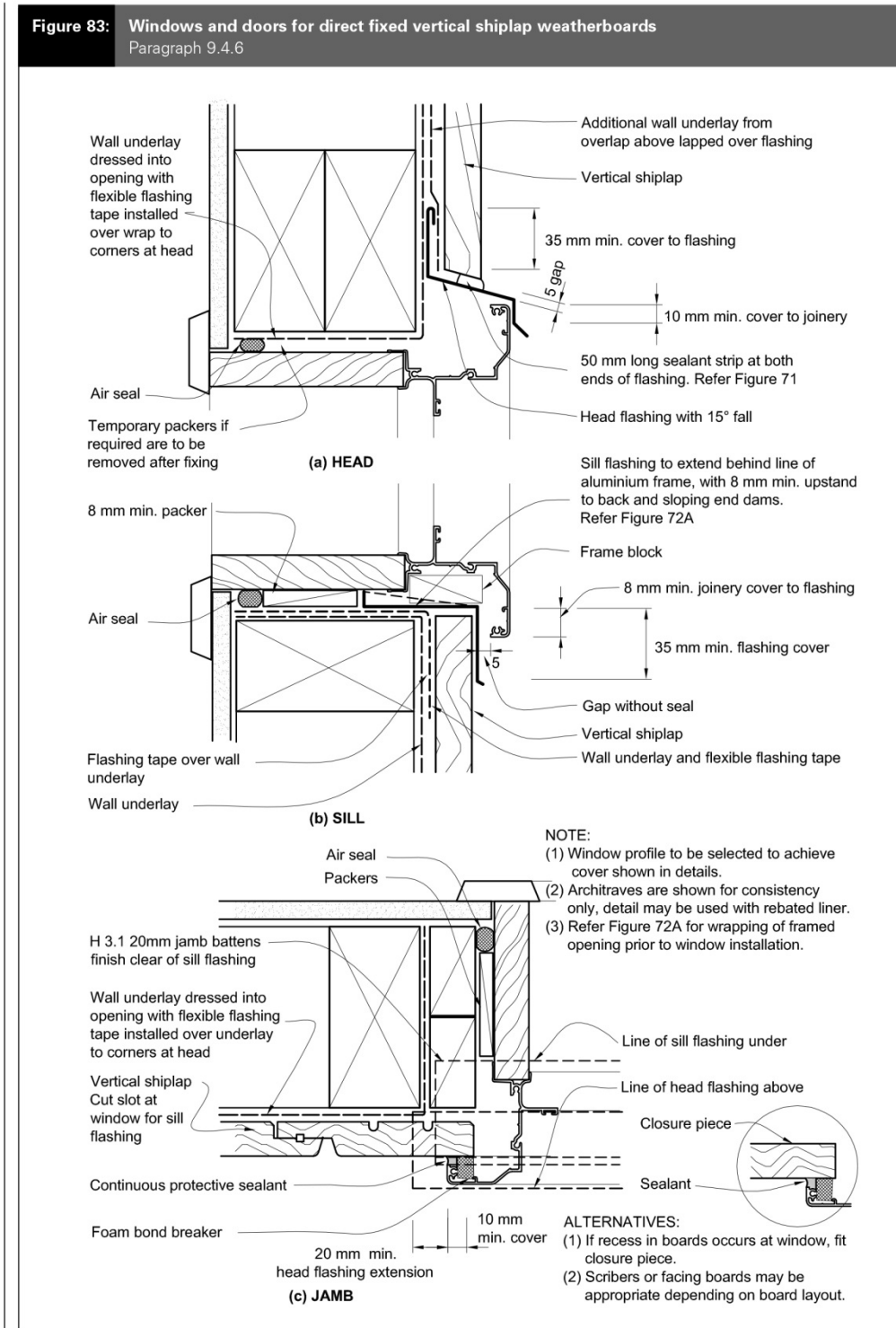


Diagram 1: Inter storey cavity junctions

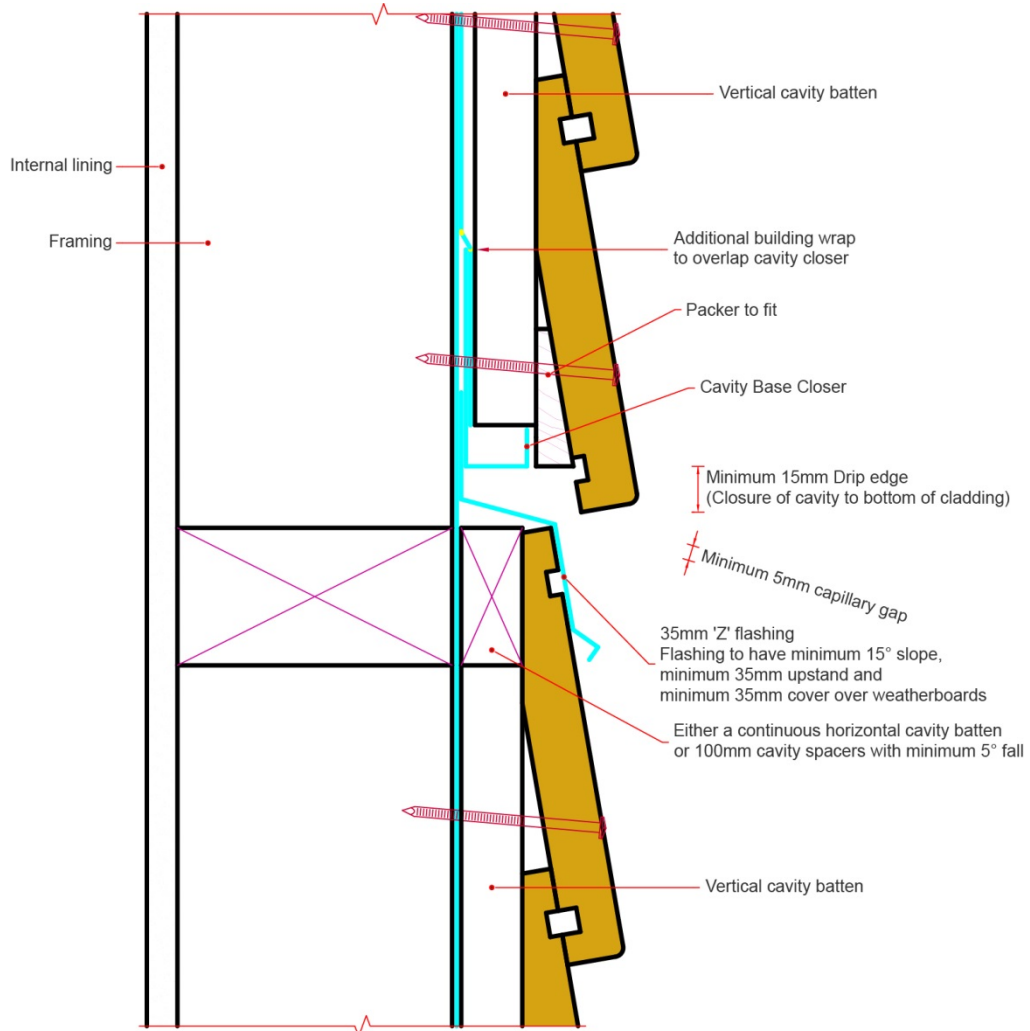


Figure 90: Top plate of wall details no soffit

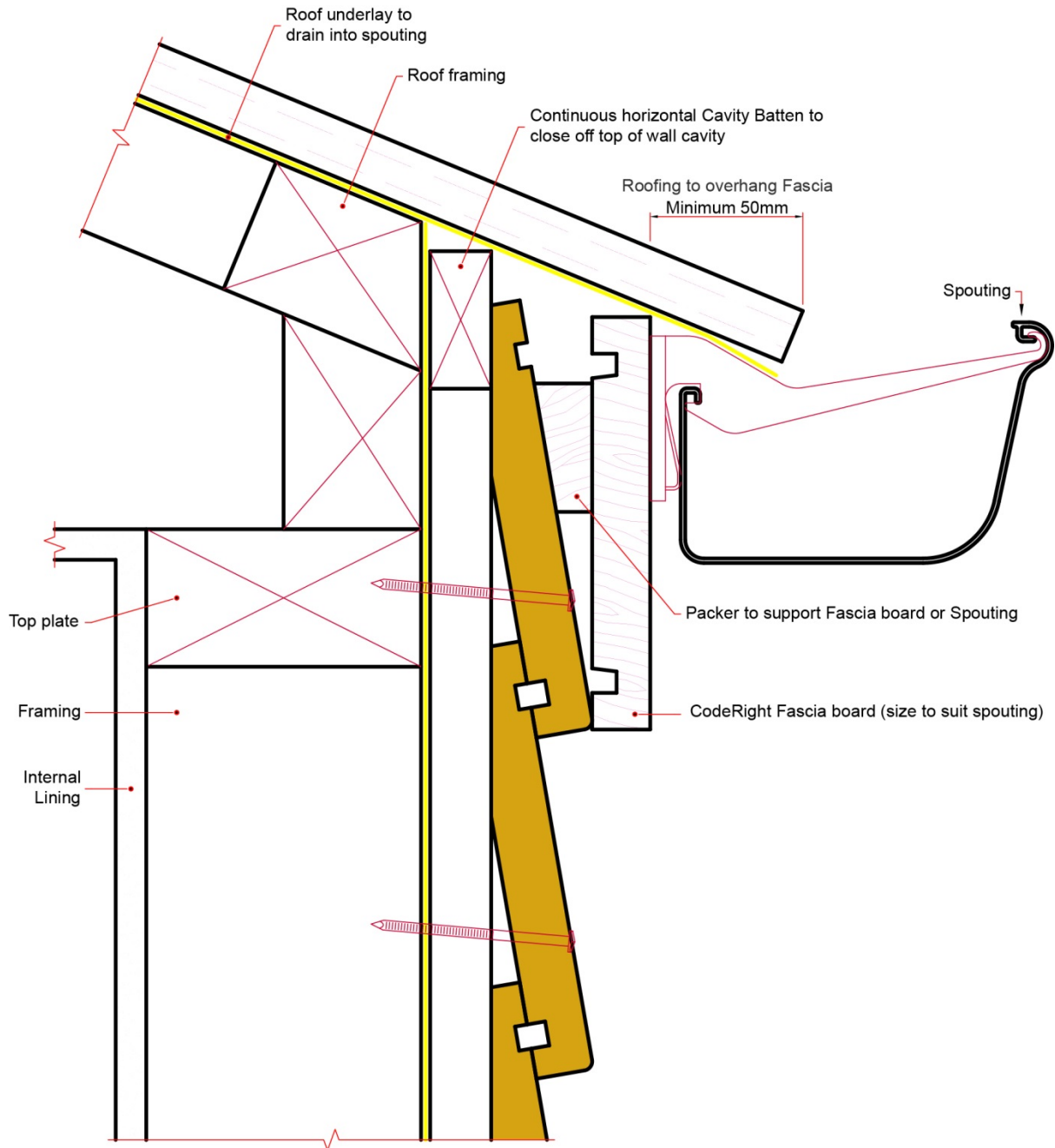


Figure 91: Top plate of wall detail flat soffit

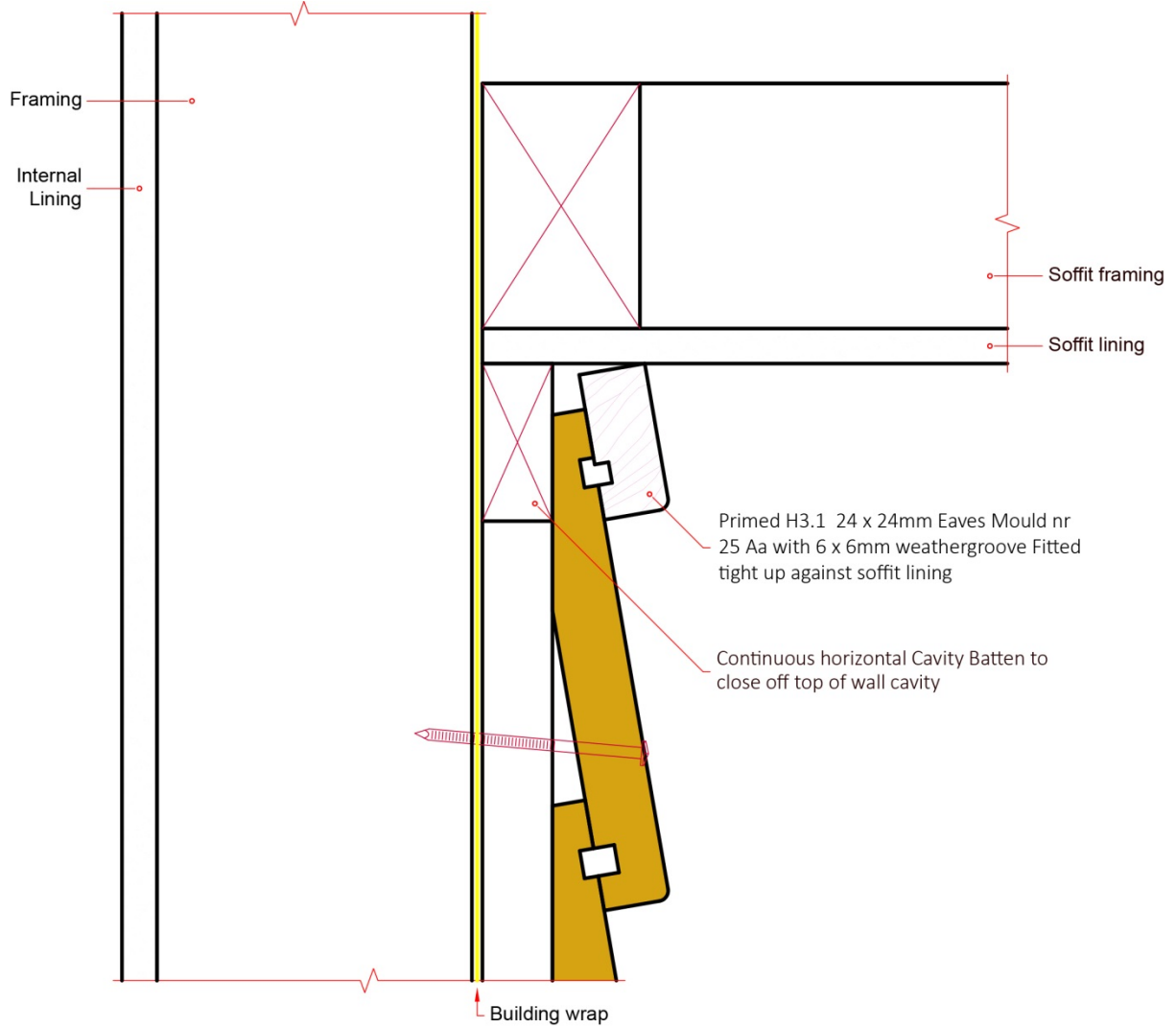
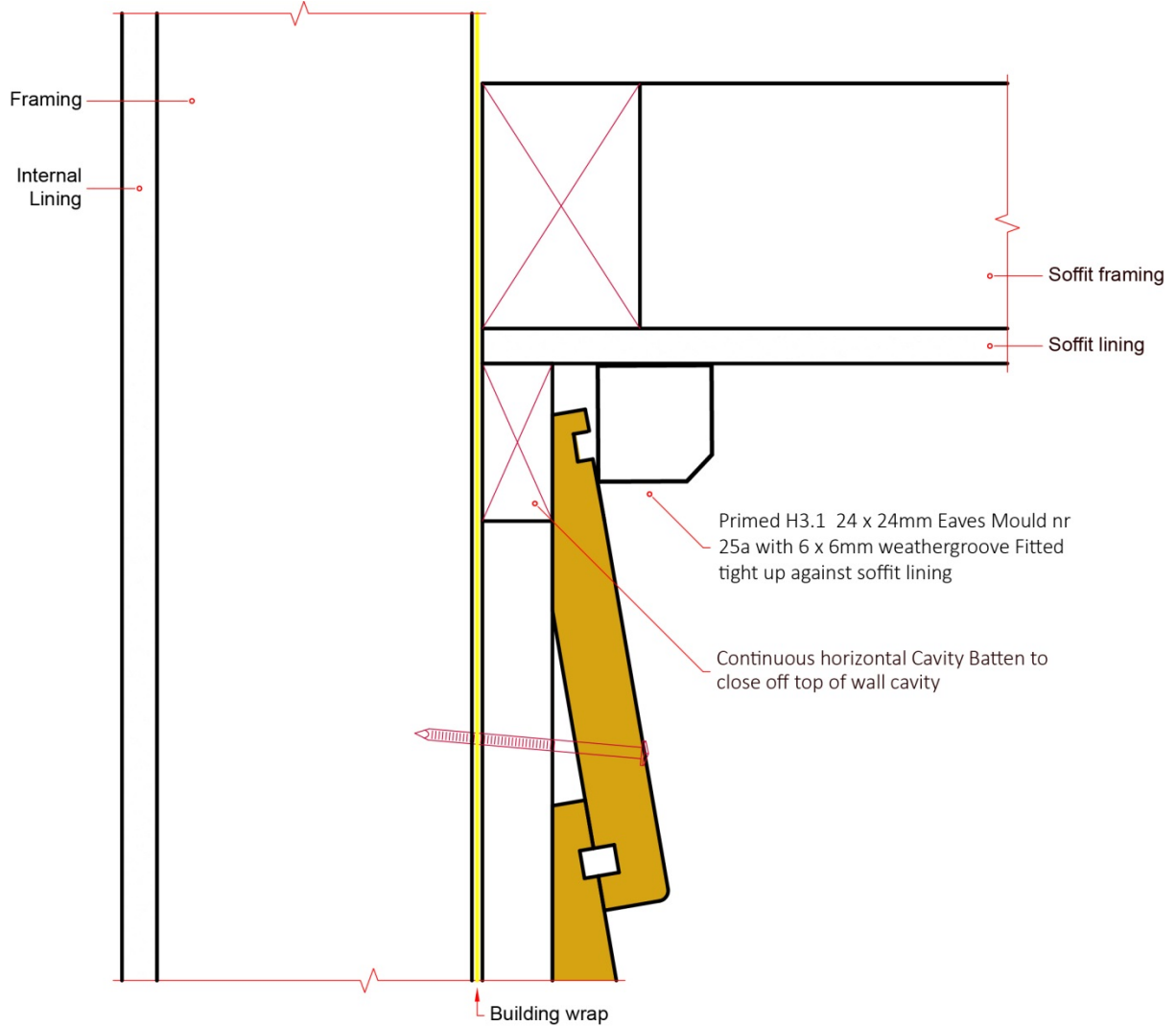


Figure 92: Top plate of wall detail angled soffit



11. WARRANTY

1.1 North Sawn Timber Limited (NST) warrants for a period of 15 years from the date of purchase that its CodeRight Timber Cladding (Products) will be free from production defects and will be resistant to cracking. NST also warrants that CodeRight product comes with a 25 year limited durability guarantee against decay and insect attacks, to the extent set out in NST's product literature current at the time of installation, subject always to the conditions and limits on liability below (Warranty).

1.2 The CodeRight Timber Cladding is produced from NZ pine and treated H3.1 LOSP to provide the 25 year limited warranty for decay and insect attack. Only nr 1 grade qualifies to be sold under the CodeRight brand. No warranties are offered on any grade less than number 1 grade.

2. Conditions of Warranty

2.1 The Warranty is strictly subject to the following conditions:

2.1.1 The Products must be coated with three quality coats of paint, always stored in dry conditions on a flat surface and protected from direct sunlight prior to installation and must be installed by a competent and qualified licensed building practitioner, strictly in accordance with all relevant laws and regulations. Where the CodeRight Timber Cladding Technical Manuals do not provide suitable detail for installation of the Products then installation must be in accordance with best trade practice determined in consultation with the relevant local or regional council or such other appropriate organisation or authority and the designer of the building works.

2.1.2 The Warranty is for the benefit of the original owner of the building where the CodeRight Timber Cladding has been installed. The Warranty is not transferable to subsequent owners of the building.

2.1.3 The Products must be maintained strictly in accordance with the CodeRight Timber Cladding Technical Manuals. Further, all other products including coating and jointing systems applied to, or used in conjunction with, the Products must be applied, installed and maintained strictly in accordance with the relevant manufacturer's instructions and best trade practice.

2.1.4 The building works in which the Products have been incorporated must be designed and constructed in strict compliance with all relevant provisions of the current New Zealand Building Code, regulations and standards, and the building consent relating to the building works.

2.1.5 If any remedial work undertaken in relation to the Warranty involves re-coating of the Products, the customer acknowledges and agrees that there may be slight colour differences between the original and replacement Products due to the effects of weathering and variations in materials over time.

3. Limits on Liability

3.1 NST will not be liable to the customer for any breach of Warranty unless the customer gives NST written notice of any claim for breach of Warranty within 30 days of the defect becoming reasonably apparent.

3.2 In any event, the customer's sole remedy under the Warranty is (at NST's discretion) that NST will either supply replacement Products or rectify the affected Products where such Products are capable of rectification, or pay for the reasonable cost of the replacement or rectification of the affected Products.

3.3 Aside from the remedy described in clause 3.2, NST will not be liable for any other losses or damages (whether direct or indirect) including property damage, personal injury, consequential loss, economic loss or loss of profits, whether arising under statute, contract, tort including negligence, or

howsoever arising. Without limiting the foregoing, NST will not be liable for any claims, damages or defects arising from, or in any way attributable to:

3.3.1 poor workmanship;

3.3.2 poor design or detailing;

3.3.3 incorrect design of the structure;

3.3.4 settlement or structural movement and/or movement of materials to which the Products are attached;

3.3.5 acts of God including, but not limited to, earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions;

3.3.6 efflorescence or performance of paint/coatings applied to the Products;

3.3.7 normal wear and tear; or

3.3.8 growth of mould, mildew, fungi, bacteria, or any organism on the surface of any Products (whether on the exposed or unexposed surfaces).

3.4 All warranties, conditions, liabilities and obligations other than those specified in this Warranty are excluded to the fullest extent permitted by law. The Warranty does not exclude or modify any legal rights a customer may have under the Consumer Guarantees Act 1993. Unless otherwise specified in writing at the time of sale, NST assumes no liability for the Products being fit for any particular purpose under the Building Act 2004, other legislation or at common law.