

## = HORIZONTAL = ALPHA RAIL

high performance aluminium weatherboard system





The Building Agency is the exclusive distributor of a cultivated selection of well-respected brand name cladding and roofing products and systems.

The Building Agency's focus is to ensure correct and comprehensive selections from our product and system ranges and to assist with design, specification and delivery of high performance buildings.

The Building Agency introduces our newly developed - Aliclad Max System

Performance and aesthetics find a perfect balance in the latest contemporary aluminium cladding system designed in New Zealand for our local conditions.

The tough New Zealand climate calls for exterior products that can perform in all weather conditions, meet the most stringent code and standards, and bring elegance and architectural integrity.

AliClad Max System, designed by The Building Agency, is a premium aluminium weatherboard system that has had every detail and feature designed, tuned and resolved. Backed by decades of local experience and international product knowledge, AliClad Max System offers architects, builders and developers a robust and beautifully finished product, supported on an easy-to-install fixing system engineered to perform.

Designed for large-scale commercial projects with a residential application. Designed for:

WEATHER-TIGHTNESS: The system has been designed in line with NZBC and been tested to be E2 via NZS4284:2008.

STRUCTURE: The AliClad Max System is designed for buildings in wind zones from Low to Extra High Wind loadings and engineered to be fixed at maximum span distances for easier application and reduced project costs.

FIRE PROTECTION: Aluminium is defined as non-combustible under the NZBC C clause and when correctly specified the support system forms a limited / non-combustible wall assembly. AliClad Max System is tested for buildings over 25m in total height by a full-scale system fire performance test to BR135 and BS8414.

FINISH AND AESTHETICS: Sublimated woodgrains, Flat and matt powdercoat options, Anodised, Anodised-look paint finishes, and horizontal and vertical profile alignments achieve both classic and contemporary designs with ease.





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**Detail Number** 

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AC-H-AR-DL.2





## COMPLIANCE STATEMENT

AliClad Max System is an extruded aluminium cladding system that can be installed horizontally or vertically, comprised of 2.2mm thick interlocking weatherboards in multiple design profile options and an accompanying flashing system. The system has been designed up to extra high wind zone in accordance with NZS3604 and engineered to be fixed at increased span distances to provide simple, strong, and safe installations.

This compliance statement covers AliClad Max System on

20mm Drained & Ventilated cavities.

Allowance must be made for unhindered thermal expansion and contraction. AliClad Max System weatherboards must be cut to length allowing

a 1 mm gap per metre of board and the fixing holes must be oversized to accommodate potential movement.

## NZBC Clause B1 Structure B1.3.1, B1.3.2, B1.3.3(a,f,h,j,q), B1.3.4

AliClad Max System structural analysis was undertaken with capacities determined using and theoretical analysis. Span tables for 20mm cavities have been developed to determine the required cladding fixing, batten/rail fixing and screws to main structure fixing spacing. The AliClad Max System cladding system has been designed to withstand up to

±2.40 kPa (ULS). When constructed in accordance with the structural and installation guidelines as per Appendix A, AliClad Max System will meet NZBC Clause B1.

## NZBC Clause E2 External Moisture E2.3.2, E2.3.5, E.2.3.7

AliClad Max System is intended to be part of a rainscreen cladding system where the panels form the outermost water shedding layer. The cladding line is expected to deflect most of the water hitting the façade. The weather resistant line is located at the back of the rainscreen cavity that is typically constructed with a flexible building wrap or rigid air barrier compliant with NZBC E2/AS1: Table 23.

Where water does penetrate the cladding line, the cavity between the cladding and the structural wall is expected to prevent water being able to migrate onto the structural wall and allow water to drain down. The cavity also allows ventilation which aids in the drying of any residual water and drying of the structural wall.

## NZBC C3 Fire Performance C3.5, C3.6, C3.7a

AliClad Max System is manufactured from solid aluminium. As per MBIE Guidance (MBIE 2817 Fire Performance of External Wall Cladding Systems) that for buildings categorised as low risk (<10m high & >1m away from relevant boundary.) There are no requirements for fire testing protocols P1 to P5 and therefore all products are suitable for use in this application.

Where consideration of fire safety is required due to proximity of relevant boundaries, AliClad Max System can contribute to a building's performance when specified on one of the applicable non-combustible support systems available.

## NZBC Clause B2 Durability B2.3.1b, B2.3.2

AliClad Max System material is 6063-T5 grade aluminium and by its nature is inherently durable. Aluminium is a reactive metal that quickly forms a stable oxide layer upon contact with the atmosphere which seals the raw aluminium from further oxidation. Therefore, aluminium is fundamentally durable. Aluminium supports are suitable to be used in all New Zealand exposure/atmospheric zones.

In addition, the AliClad Max System is finished using premium powder coating systems, applied locally.

### **Timber and Plastic Battens and Fixings**

On Low-Risk buildings where fire requirements allow, a timber or HDPE cavity packer batten system may be used. Where timber is used it must be at a minimum of H3.1 treatment. If applicable a suitable bond breaker must be utilised to ensure no contact between cladding, flashings, and treated battens. Fixings for AliClad Max System must achieve >35mm structural embedment into main structure.

Refer to Appendix A Fixing Table 1

### **Aluminium Battens and Fixings**

Cladding rails and fixings are also manufactured from aluminium and stainless steel, both materials are recognised as sufficiently durable and should remain serviceable throughout the expected serviceability of the cladding system. Fixings of aluminium rails must achieve >45mm embedment into main structure

Refer to Appendix A Fixing Tables 2 & 4

## **Galvanised Support and Battens**

To meet the durability requirements, mild steel support and battens need to be protected against corrosion. Support frames must have a minimum wall thickness of 1.15BMT. Support frames are to be coated with Zincalume steel AZ150. The Building Agency only specify Zincalume coatings for buildings with Exposure Zone of B and C to achieve the durability requirement specified in NZBC Clause B2. In addition, as outlined on NZBC E2/AS1 Table 20, hidden elements coated with AZ150 can achieve 50-year durability. Fixings of galvanised support battens rails must achieve >35mm embedment into main structure.

Refer to Appendix A Fixing Tables 3 & 5

## Design Responsibility

It is expected that the architect/specifier's design intent and specifications (including specified materials, & compatibility where items are subject to material run-off affecting durability) where applicable have been reviewed against the New Zealand Building Code. AliClad Max System, when correctly specified will comply to or contribute to compliance to the following NZBC Clauses and their listed performance clauses as listed.





## appendix a - span tables

Table 4: Horizontally Aligned - Installed on AlphaRail20						
WIND ZONE	ALICLAD MAX TYPE					
	V136	V200	S150	S200	S125/75	
	MAXIMUM ALLOWABLE SPAN (mm)					
LOW 00m/s-32m/s   <0.6kPa	1200	1200	1200	1200	1200	
MEDIUM 32m/s-37m/s   >0.66kPa & <0.88kPa	900	800	800	800	800	
HIGH 37m/s-44m/s   >0.88kPa & <1.25kPa	600	600	600	600	600	
VERY HIGH 44m/s-50m/s   >1.25kPa & <1.61kPa	500	400	400	400	400	
EXTRA HIGH 50m/s-55m/s   >1.61kPa & <1.9kPa	400	400	400	400	400	
SPECIFIC ENGINEERING DESIGN >55m/s   >1.9kPa	SED	SED	SED	SED	SED	

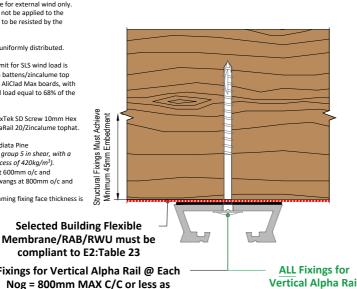
- 1. C4 Evo TBS680 Flange Head Screw TX30 (≥ 45mm minimum embedment, Ø4mm Pre-drill, 3\*D Edge Distance)
- 2. AlphaRail20 20mm Aluminium cavity battens, fixed at every stud at 600mm o/c
- 3. Wind Zone Classifications ULS From NZS3604, considered in Positive(+) Pressure and Negative(-) Suction

## \* Design Assumptions:

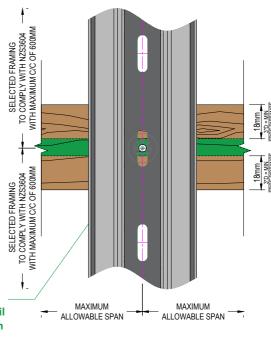
- The wind pressures are for external wind only Internal pressures will not be applied to the cladding and assumed to be resisted by the
- 2. Load on each panel is uniformly distributed.
- 3. The span/deflection limit for SLS wind load is 250mm for aluminium battens/zincalume top hats and L/175 for the AliClad Max boards, with the serviceability wind load equal to 68% of the ULS wind load.
- 4. SS304 10g x 19mm HexTek SD Screw 10mm Hex (AliClad board to AlphaRail 20/Zincalume tophat.
- 5. Timber is assumed Radiata Pine (Group J4 for withdrawal, group 5 in shear, with a characeristic density in excess of 420kg/m³).
- Timber studs at 600mm o/c and timber nogs/dwangs at 800mm o/c and
- 6. For Edge Distances Framing fixing face thickness is assumed as 45mm

compliant to E2:Table 23 Fixings for Vertical Alpha Rail @ Each Nog = 800mm MAX C/C or less as appropriate to site wind zone & bracing requirements in accordance with

NZS3604



Vertical Alpha Rail pre-drilled Ø4mm before fixing







## PARTS LIST

## **CLADDING PROFILES**

ACV136 - AliClad Max V136, 136x25 V Shiplap Weatherboard, 5.8m. ACV200 - AliClad Max V200, 200x25 V Shiplap Weatherboard, 5.8m. ACS150 - AliClad Max S150, 150x25 Shadow Groove Weatherboard, 5.8m. ACS200 - AliClad Max S200, 200x25 Shadow Groove Weatherboard, 5.8m.

ACS125/75 - AliClad Max S200-125/75, 200x25 Shadow Groove Weatherboard with 75mm & 125mm board look, 5.8m.

## 2 PIECE BASE CLIPS

ACHMDB-58 AliClad Max - H Mould Base, 5.8m.

ACJMDB-58 AliClad Max - J-Mould Base, 5.8m.
ACJMDF-58 AliClad Max - J-Mould Face, 5.8m, Selected Finish.
ACINTB-58 AliClad Max - Internal Corner Base, 5.8m, Selected Finish.

ACEXTB-58 AliClad Max - External Corner Base, 5.8m.

ACJMDBC-58 AliClad Max - Bottom of Cladding Base, 5.8m, Selected Finish.

### 2 PIECE FACES & TRIMS

ACINTF - AliClad Max - Internal Corner Face, 5.8m.

- AliClad Max - Window Sill Face, - to suit WANZ supported window, 5.8m, Selected Finish. ACWNS

ACWNSP - AliClad Max - Window Sill Face - to suit Punched Window, 5.8m, Selected Finish.

ACJMDF - AliClad Max - J Mould Face, 5.8m, Selected Finish. ACHMDF - AliClad Max - H Mould Face, 5.8m, Selected Finish ACEXTF - AliClad Max - External Corner Face, 5.8m, Selected Finish.

## **JUNCTION ELEMENTS**

ACCLZ-58 AliClad Max - Clamp Zed, 5.8m, Selected Finish. ACCLC-58 AliClad Max - Clamp Channel, 5.8m, Mill Finish. ACSTR-58 AliClad Max - Starter Rail, 5.8m, Mill Finish. ACJMC-58 AliClad Max - Jamb Clip, 5.8m, Mill Finish. ACJMF-58 AliClad Max - Jamb Flashing, 5.8m, Selected Finish.

### MECHANICAL DRAINAGE SYSTEM

ACJMT-01RIGHT AliClad Max - Type 1a Jamb Tray Right ACJMT-01LEFT AliClad Max - Type 1b Jamb Tray Left ACJMT-02RIGHT AliClad Max - Type 2a Jamb Tray Right ACJMT-02LEFT AliClad Max - Type 2b Jamb Tray Left

## **ALPHA RAIL SUPPORT SYSTEM PROFILES**

AR-CLIP100 Alpha Rail Packer Clip 10mm, 50mm. Alpha Rail Packer Clip 5mm, 50mm. AR-CUPSO AR-CLIP30 Alpha Rail Packer Clip 3mm, 50mm. AR-CLIP16 Alpha Rail Packer Clip 1.6mm, 50mm. AR-RAIL20H Alpha Rail Vertical Rail 20mm, 5.8m.

AliClad Max Parts List

AR-RAIL20V Alpha Rail Horizontal Rail 20mm, Drained, 5.8m.

Detail Number

AC-H-AR-PL

Version

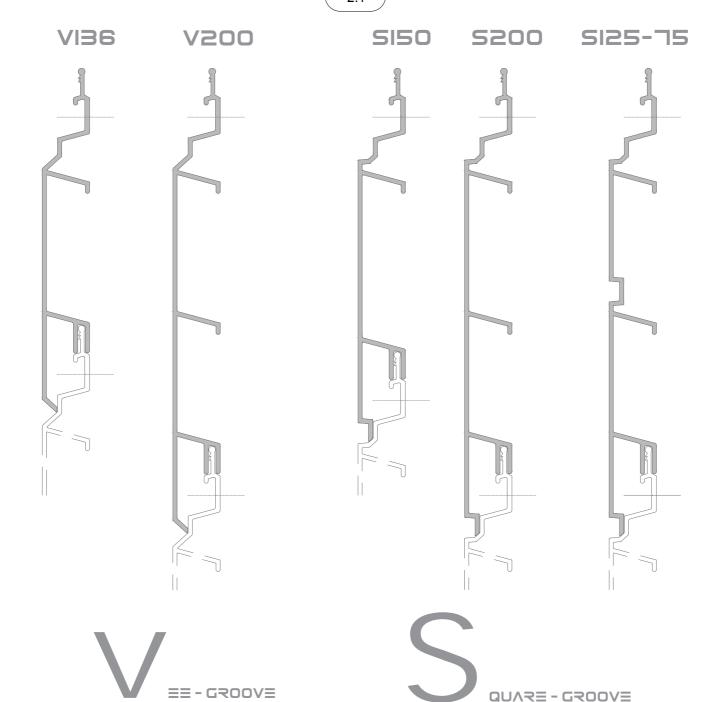
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## **CLADDING PROFILES**

HIGH PERFORMANCE ALUMINIUM WEATHERBOARD SYSTEM

2.1



Extruded Profiles - Cladding

Detail Number

AC-H-AR-PRO-01
Version

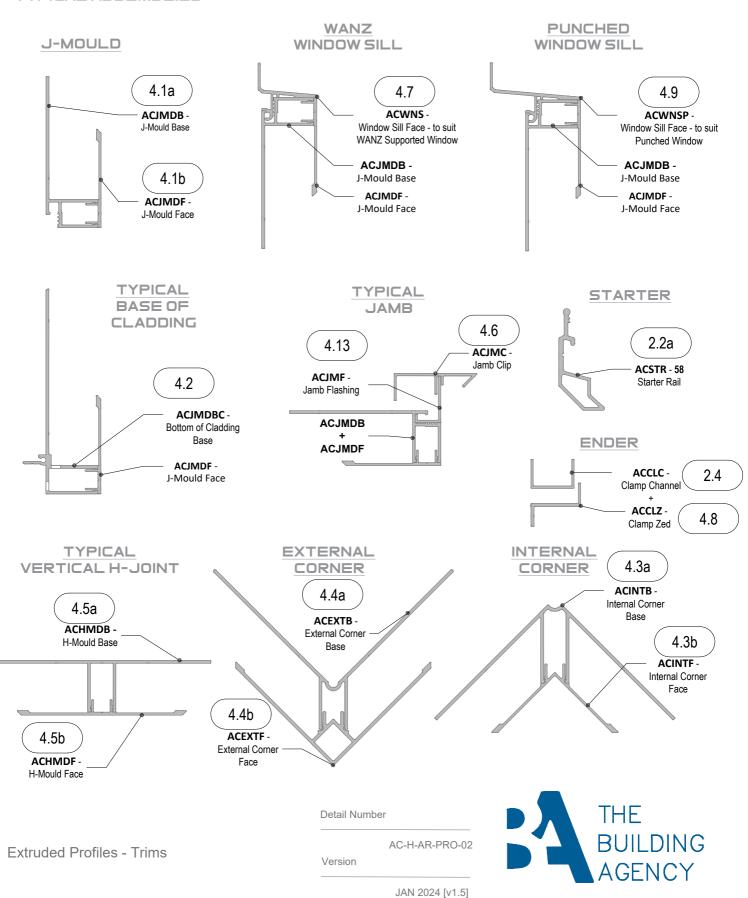
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THE BUILDING AGENCY

## Vricryd Myx

## TRIMS - PROFILES

TYPICAL ASSEMBLIES

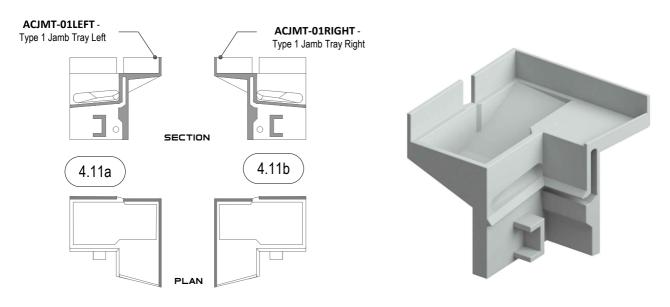




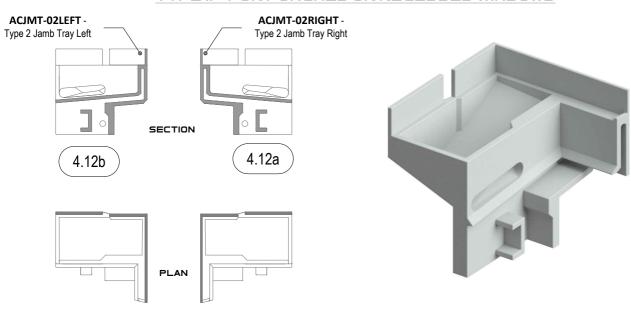
## MECHANICAL DRAINAGE SYSTEM

PROPRIETARY JAMB-TO-SILL DRAINAGE CLIPS - AVAILABLE IN WHITE, GREY AND BLACK.

## TYPE I - FOR WINDOWS USING WANZ BAR SUPPORT



## TYPE II - FOR PUNCHED OR RECESSED WINDOWS



Mechanical Drainage System

Detail Number

AC-V-AR-ACC-01

Version

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3.1d

3.1c

3.1b

3.1a

3.1

3.1

**1LPHA CLIP IOMM**Order Code: AR-Clip100

**1LPHA CLIP 5MM**Order Code: AR-Clip50

✓ Code: AR-Clip30

**1LPHA CLIP I.6MM**Order Code: AR-Clip16

**1LPHA RAIL 20MM - 5.8LM**Order Code: AR-Rail20V

**1LPHA RAIL 20MM - 5.8LM**Order Code: AR-Rail20H

Detail Number

AC-V-AR-ACC-02

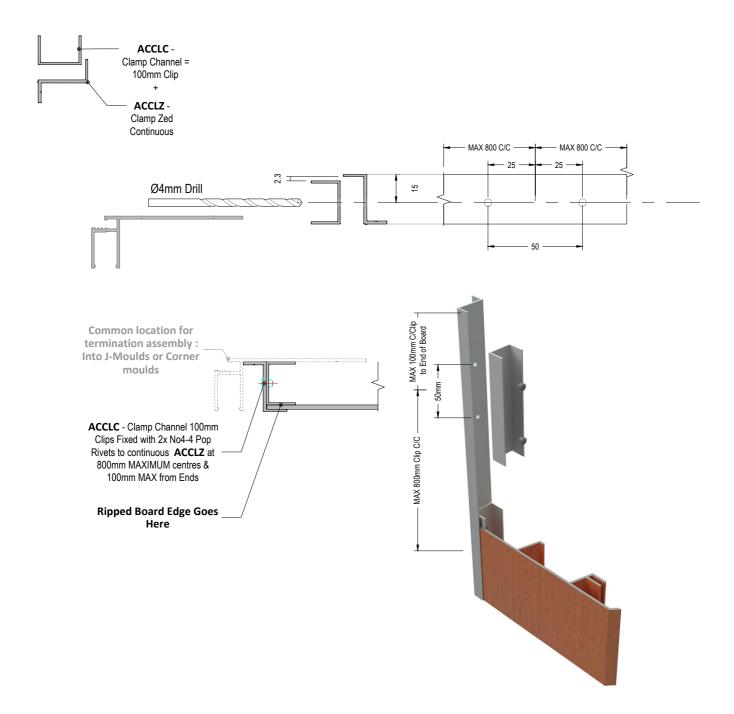
Version

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## PROCESSING - RIPPED WEATHERBOARD TERMINATION



**General Processing** 

Detail Number

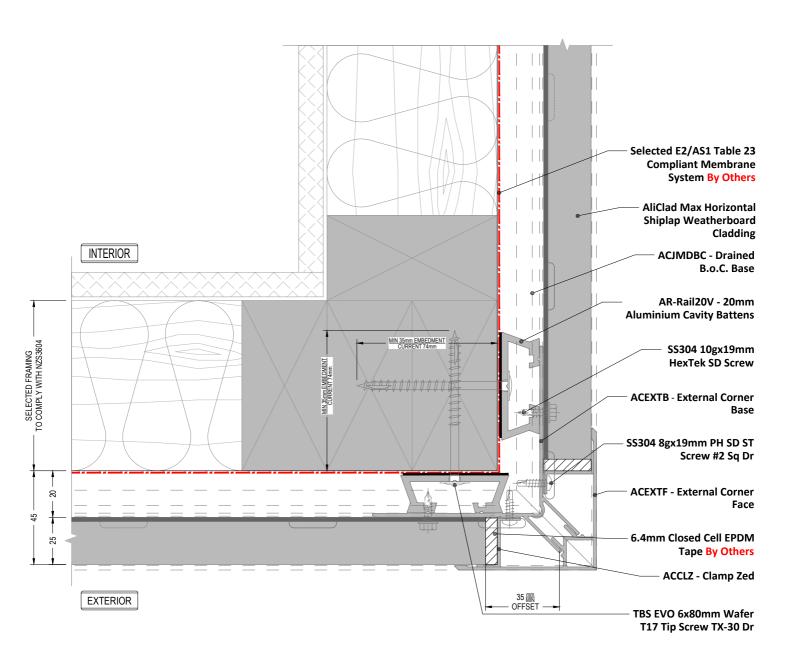
AC-GP-1

Version

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## Vrichyd Mvx



**External Corner** 

Detail Number

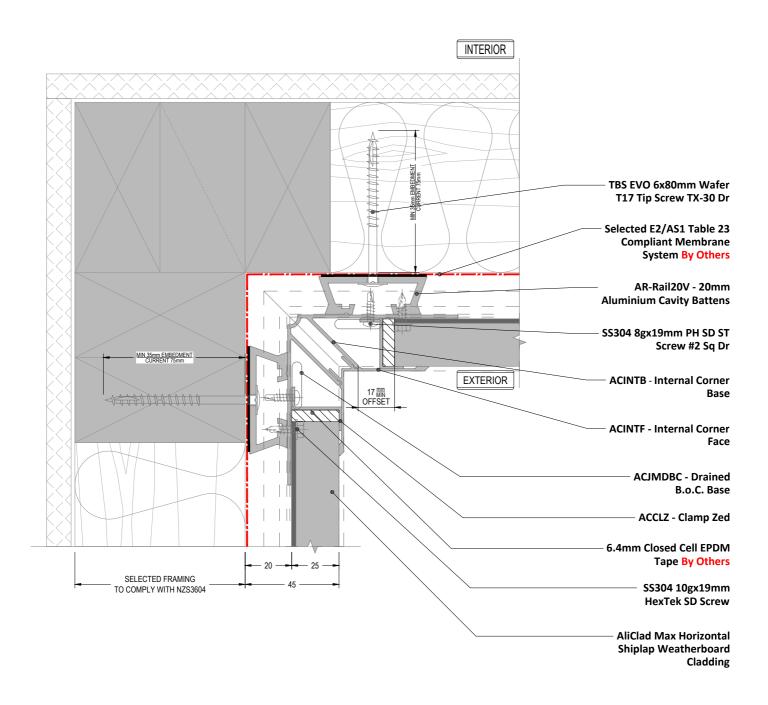
AC-H-AR-1.1

Version

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## Vrichvd Mvx



Internal Corner

Detail Number

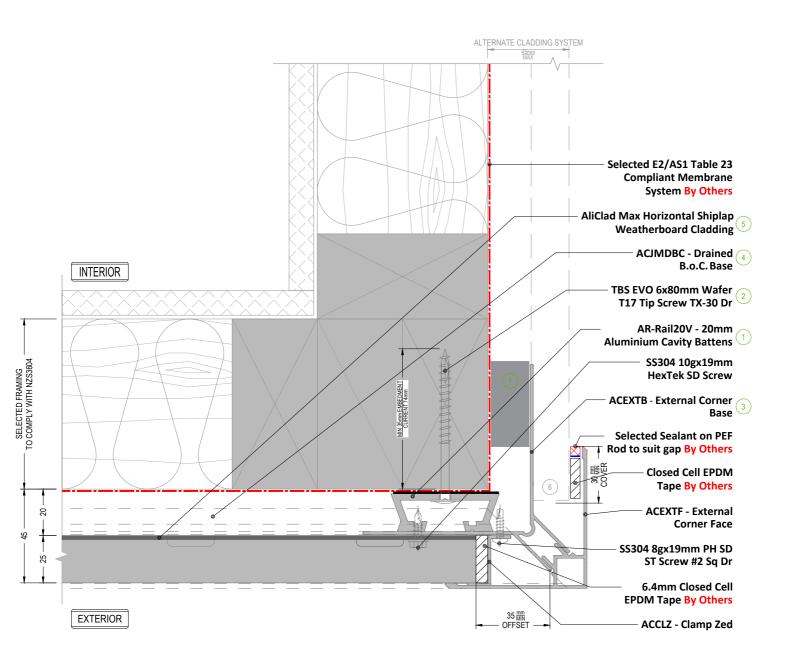
AC-H-AR-1.2

Version

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## Vrichvd Mvx



NOTE
ACJMDBC - Drained B.O.C.
Base Shown in dashed lines

Ext Cnr SML Cladding Type

SEQUENCE OF INSTALLATION

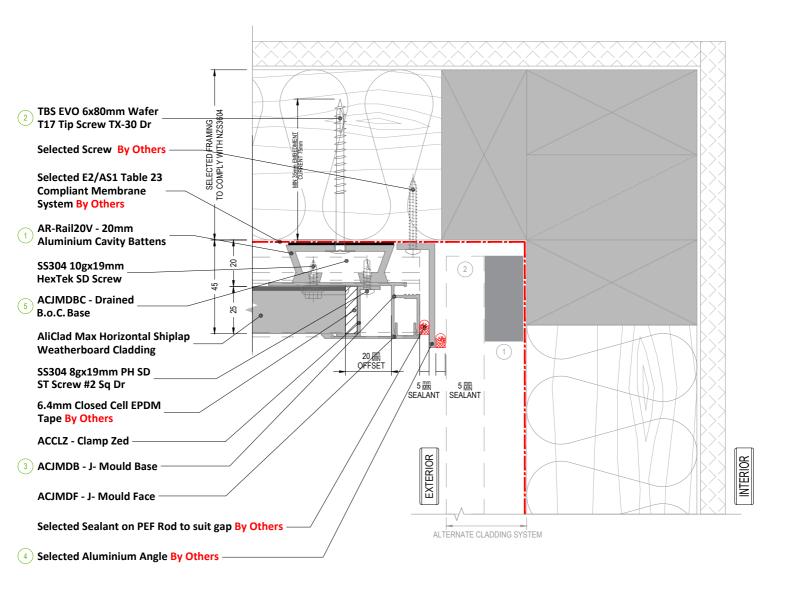
1 AR-Rail20V - 20mm Aluminium Cavity Battens
2 (TBS EVO 6x80mm Wafer T17), 3 External Corner Base), 4 Drained B.O.C Base
5 (Aliclad Max Horizontal Shiplap Weatherboard Cladding) 6 (Alternate Cladding Exterior)

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BUILDING

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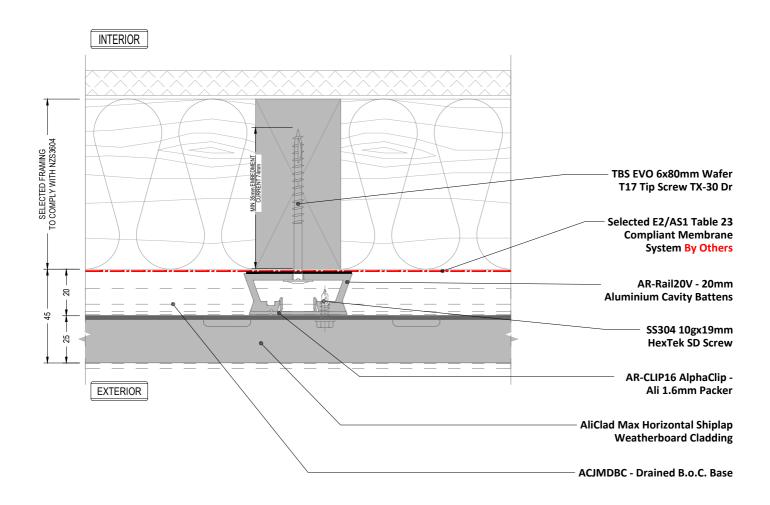
ACJMDBC - Drained B.O.C.
Base Shown in dashed lines

NOTE 2

Flashings and Angles are not included in the system

Int Cnr SML Cladding Type





Vertical Joint - Typical

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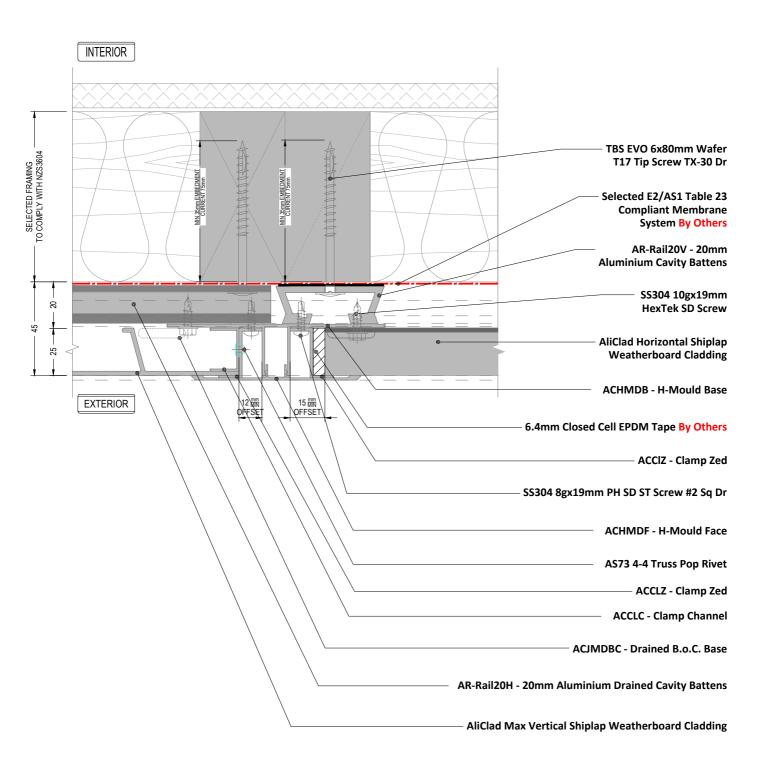
Detail Number

AC-H-AR-2.1

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Vert. Joint Orientation Change

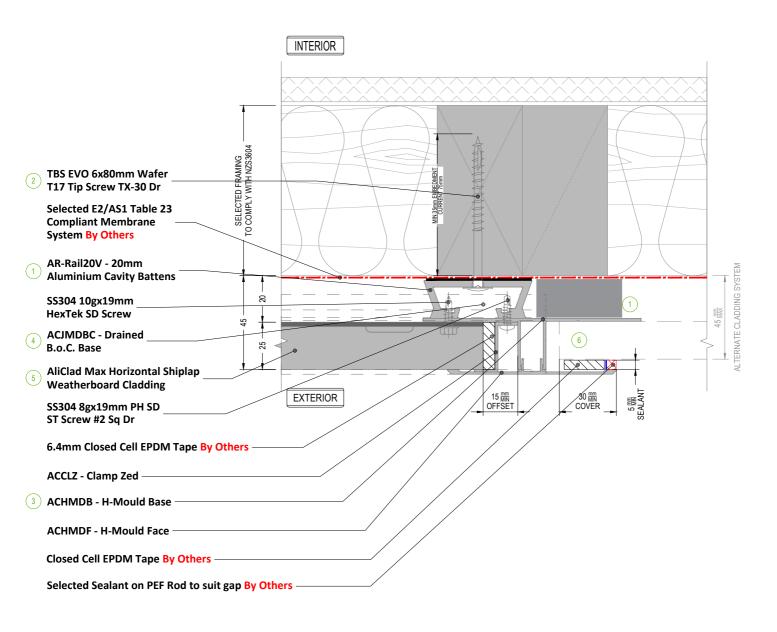
Detail Number

AC-H-AR-2.2

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NOTE 1
ACJMDBC - Drained B.O.C.
Base Shown in dashed lines
NOTE 2
Additional Framing is required at junction of cladding types to ensure adequate fixing

Vert. Joint SML Cladding Type

SEQUENCE OF INSTALLATION

1 (AR-Rai/20V - 20mm Aluminium Cavity Battens), 1 (Alternate Support Structure)

2 (TBS EVO 6x80mm Wafer T17), 3 (ACHMDB - H-Mould Base), 4 (Drained B.O.C Base)

5 (Aliclad Max Horizontal Shiplap Weatherboard Cladding) 6 (Alternate Cladding Exterior)

THE

BUILDING

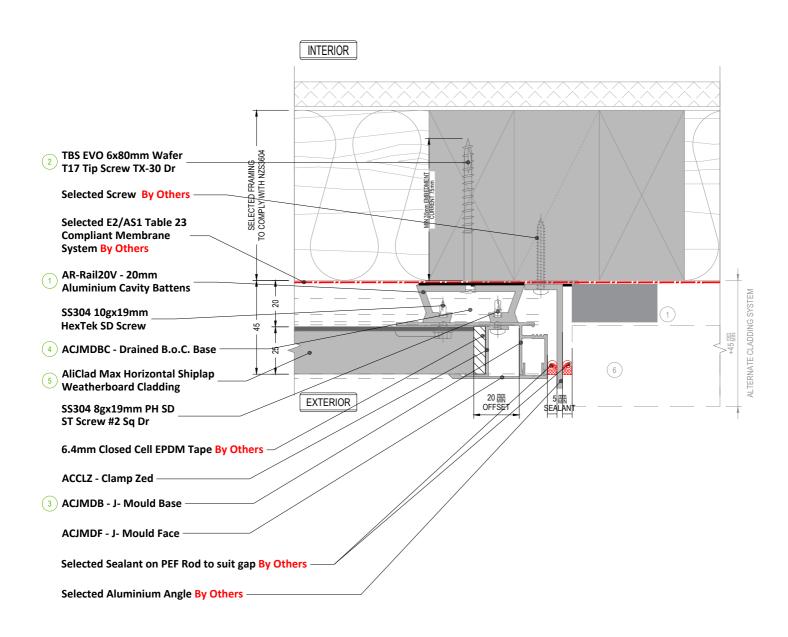
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MATERIALS + SYSTEMS + SOLUTIONS

## VrictVd WVX



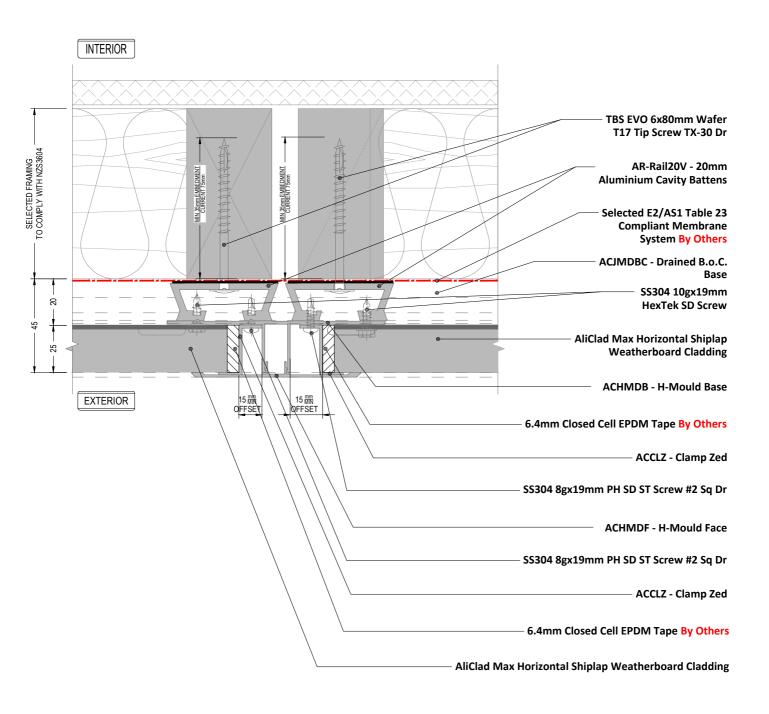
ACJMDBC - Drained B.O.C. Base Shown in dashed lines NOTE 2 Additional Framing is required at junction of cladding types to ensure adequate fixing NOTE 3 Flashings and Angles are not included in the system

Vert. Joint LRG Cladding Type

SEQUENCE OF INSTALLATION AR-Rail20V - 20mm Aluminium Cavity Battens (1) (Alternate Support Structure) TBS EVO 6x80mm Wafer T17 ) (3) (ACJMDB - J-Mould Base) (4) (Drained B.O.C Base) Aliclad Max Horizontal Shiplap Weatherboard Cladding (6) (Alternate Cladding Exterior THE Detail Number AC-H-AR-2.4

MATERIALS . SYSTEMS . SOLUTIONS

Version



NOTE 1

ACJMDBC - Drained B.O.C. Base Shown in dashed lines

NOTE 2

Additional Framing is required at junction of cladding types to ensure adequate fixing

Vertical Joint - Typical

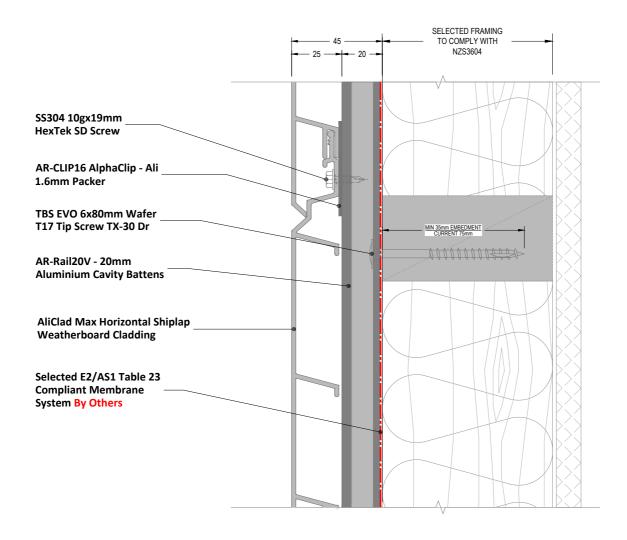
Detail Number

AC-H-AR-2.5

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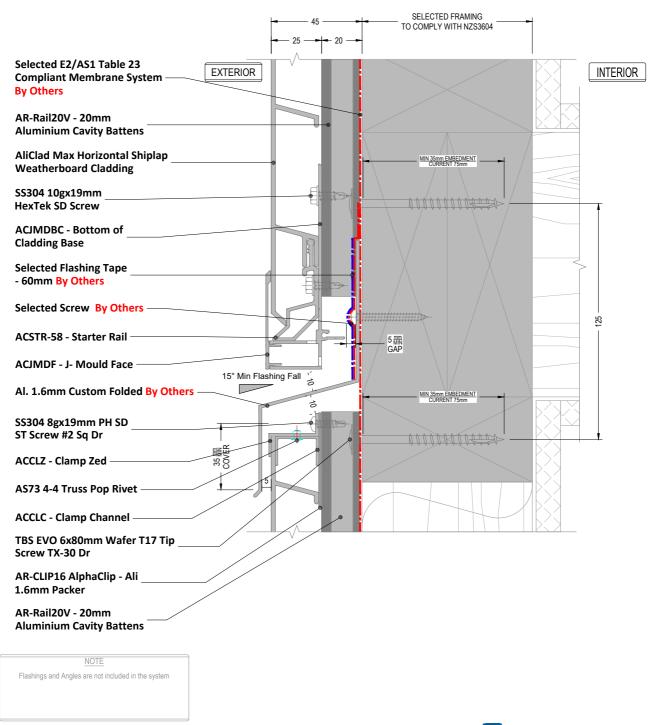
Hori. Joint\_Typical

Detail Number

AC-H-AR-3.1
Version

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Interstorey Joint

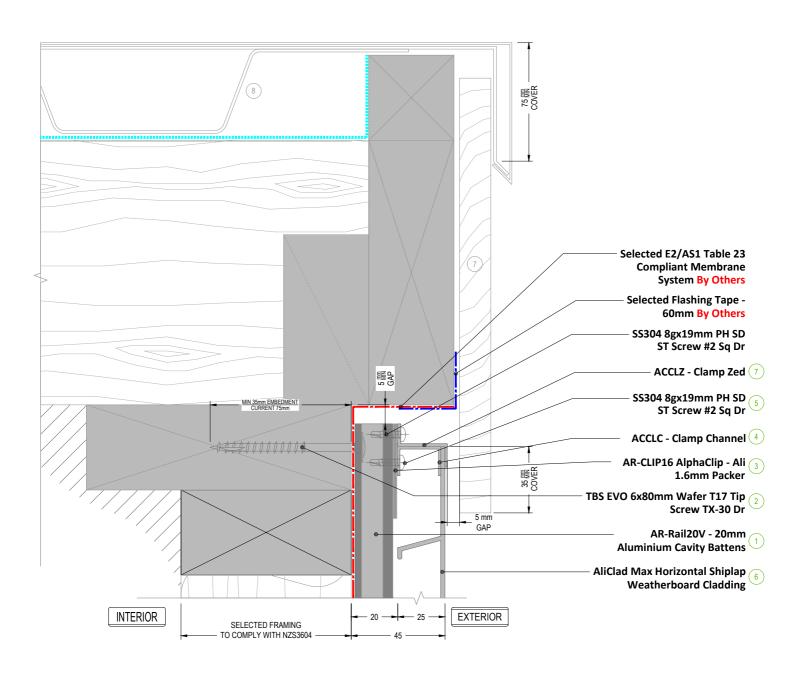
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AC-H-AR-3.2

Version

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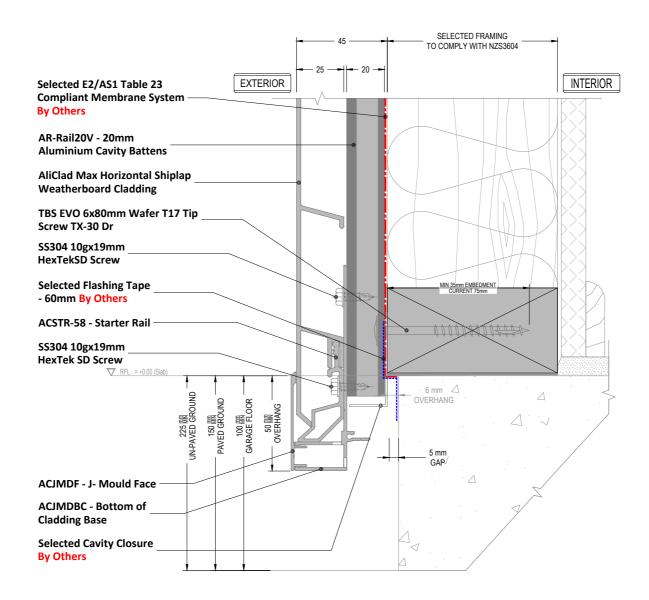
ACJMDBC - Drained B.O.C. Base Shown in dashed lines NOTE 2

Additional Framing is required at junction of cladding types to ensure adequate fixing

**TOP Cladding Parapet** 



## Vrichvd Wvx



NOTE

Cavity Closure are not included in the system

BTM Cladding G.L

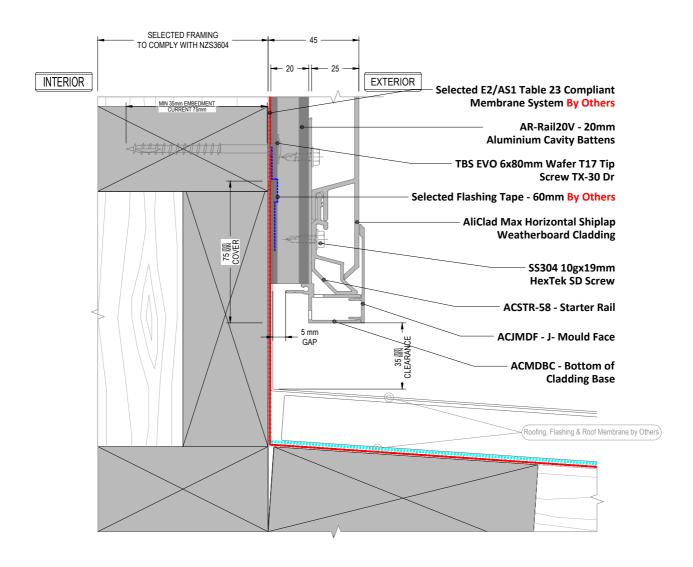
Detail Number

AC-H-AR-4.2

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BTM Cladding\_ Apron Roof

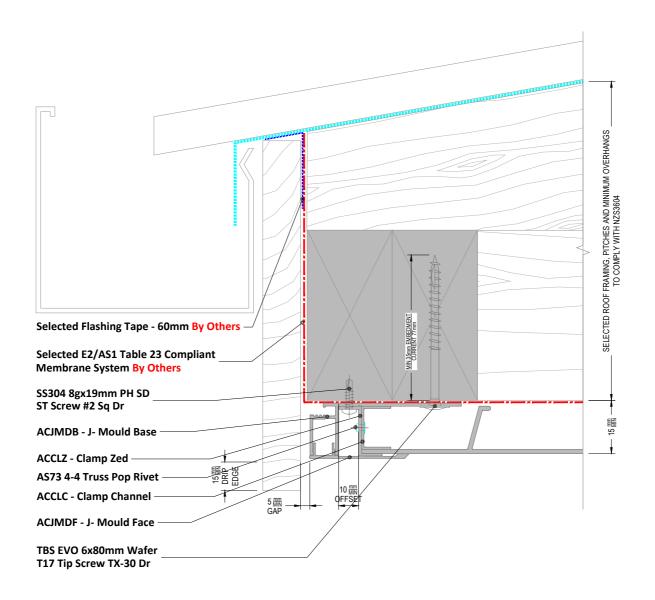
Detail Number

AC-H-AR-4.4

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JAN 2024 [v1.6]





### NOTE

Weathering membrane under soffit is not required, but is recommendable for air barrier performance when a rigid wind barrier is not in use.

-By Others

Top Cladding\_Barge/Fascia Board

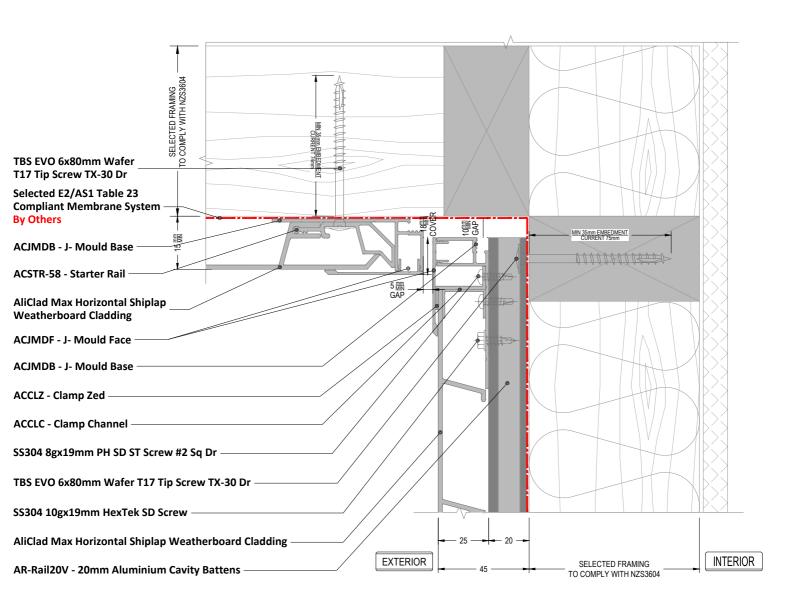
Detail Number

AC-H-AR-4.8

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NOTE

Weathering membrane under soffit is not required, but is recommendable for air barrier performance when a rigid wind barrier is not in use.

-By Others

Wall BLW\_Soffit <90°

Detail Number

AC-H-AR-5.1

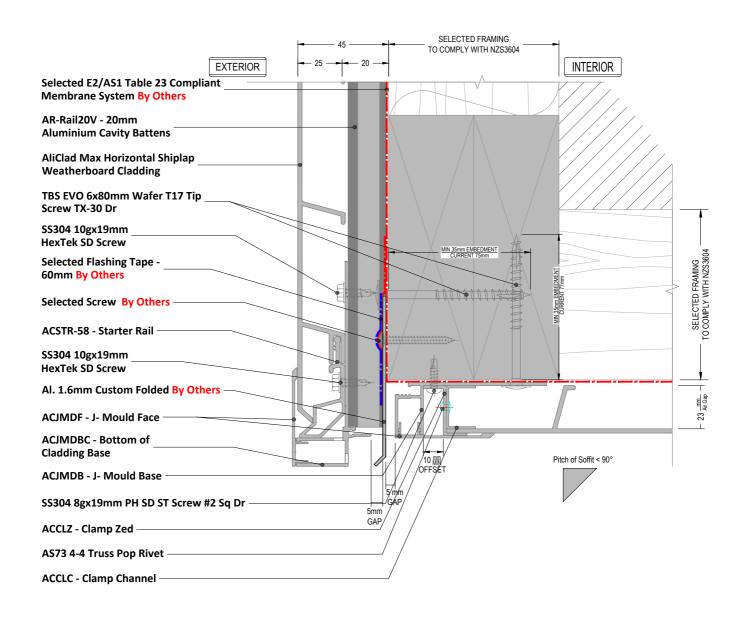
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MATERIALS - SYSTEMS - SOLUTIONS

BUILDING

## Vrictor Wyx



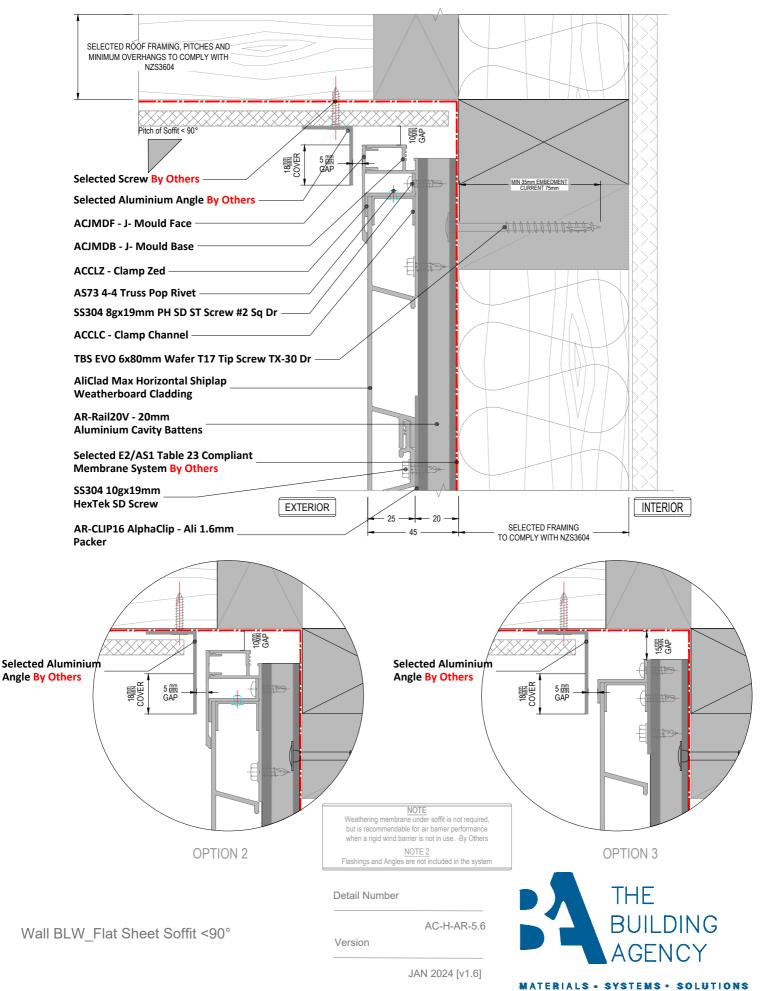
Weathering membrane under soffit is not required, but is recommendable for air barrier perfo when a rigid wind barrier is not in use. -By Others

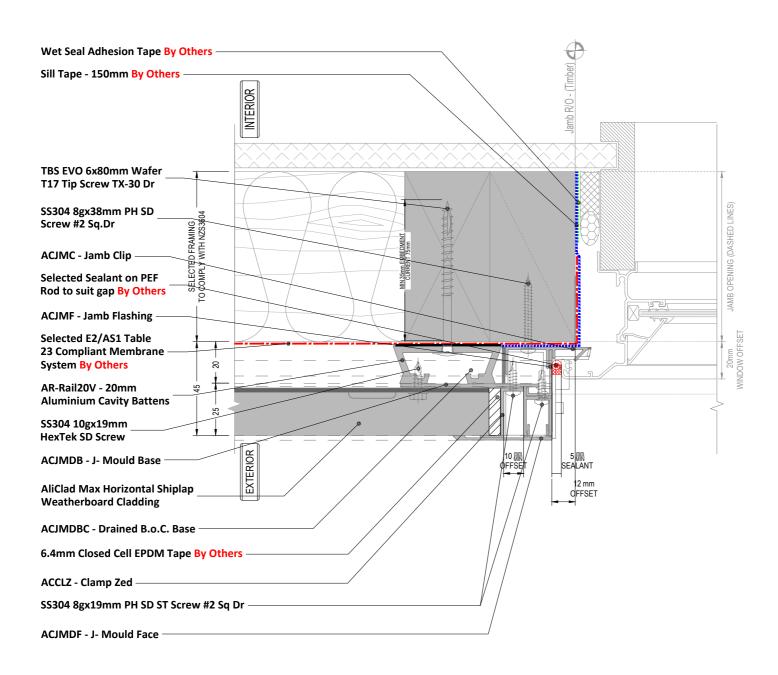
NOTE 2

Wall ABV Soffit <90°

**Detail Number** AC-H-AR-5.2 Version JAN 2024 [v1.6]







Window Jamb Recessed

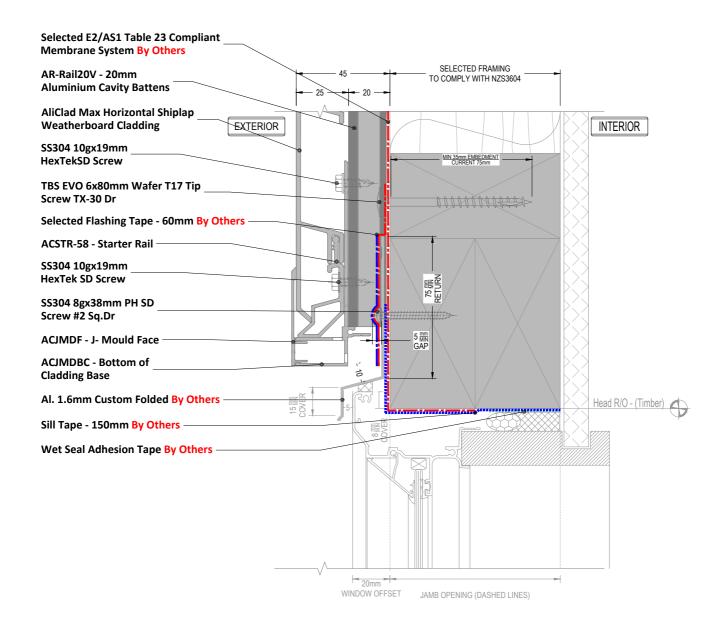
Detail Number

AC-H-AR-7.1

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NO.

Refer to drawing "7.1" for Sill/Jamb Junction

NOTE 2

Flashings and Angles are not included in the system

Window Head Recessed

Detail Number

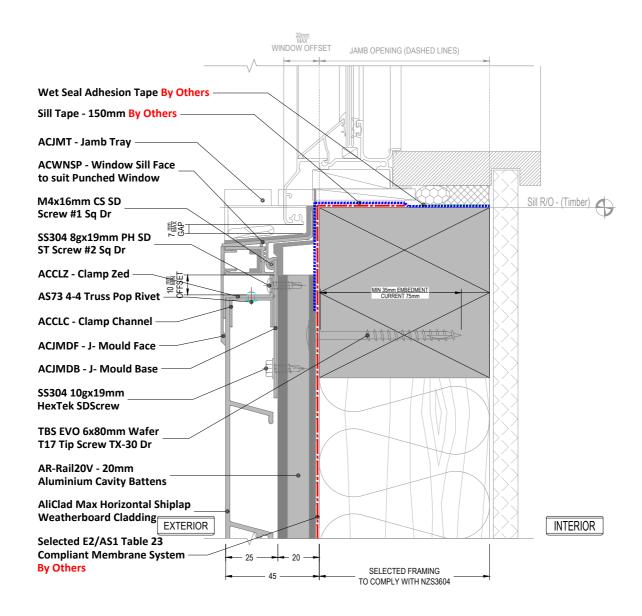
AC-H-AR-7.2

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## Vrichvd Wvx



NOTE

Refer to drawing "7.1" for Sill/Jamb Junction

Window Sill Recessed

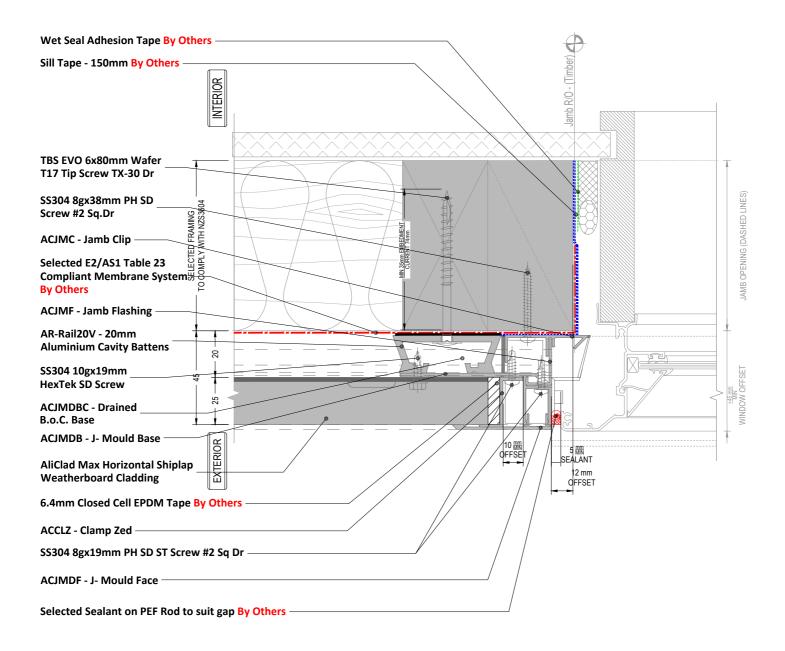
Detail Number

AC-H-AR-7.3

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Window Jamb WANZ/Supported

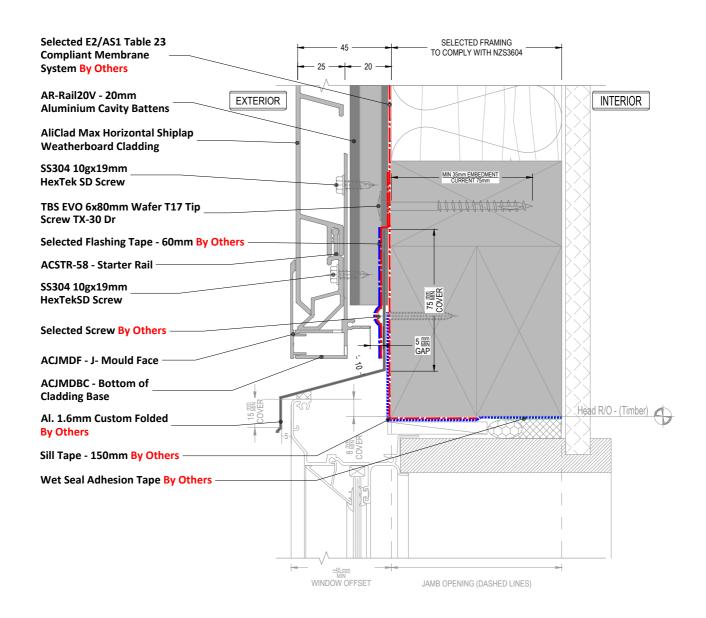
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NOTE

Refer to drawing "7.4" for Sill/Jamb Junction

NOTE 2

Flashings and Angles are not included in the system

Window Head WANZ/Supported

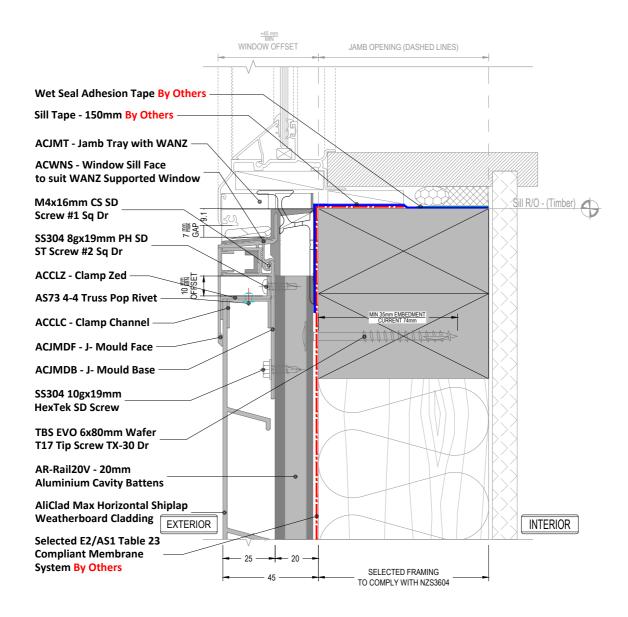
Detail Number

AC-H-AR-7.5

Version

JAN 2024 [v1.6]





NOTE

Refer to drawing "7.4" for Sill/Jamb Junction

Window Sill WANZ/Supported

Detail Number

AC-H-AR-7.6

Version

JAN 2024 [v1.6]

