ALUMINIUM FACADE SYSTEMS
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ProClad LINEAR ALUMINIUM

# F3P1 [vol. 1] / H2P2 [vol. 2] ProClad™ LINEAR Empire Pre-Finished, Solid Aluminium, Extruded Cladding Panel System: Weatherproofing Performance Solution Report (Vertical application rainscreen system with Siniat weather board behind panels) [BCA 2022]

ATELIER JV

Date: 08/02/24
Revision: 2
Report Number: P22047_RPT_CN02_F3P1

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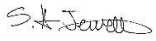
| DOCUMENT CONTROL | | | | | |
|---|---|---|---|---|---|
| **Revision** | **Date** | **Description** | **Prepared by** | **Reviewed by** | **Approved by** |
| 0 | 16/02/23 | First Draft | SAJ | SAJ | S A Jewell  16/02/23 |
| 1 | 20/02/23 | Issued for Certmark approval | SAJ | SAJ | S A Jewell  20/02/23 |
| 2 | 08/02/24 | Updated to NCC 2022 and Issued for Certmark approval | SAJ | SAJ | S A Jewell  0802/24 |

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# 1 Executive Summary

ProClad™ LINEAR is a cladding panel system comprising non-combustible pre-finished solid aluminium extruded, secret fix, interlocking weatherboard style cladding panels. Manufacturer, Aluminium Façade Systems (AFS) have developed the ProClad™ LINEAR aluminium panels into a cladding system, pre-certified for use on a variety of buildings to create a solution for new build projects as well as re-cladding and renovation projects.

Atelier JV have been engaged by AFS to provide Façade Design input and advice; develop the cladding system details; schedule materials and components; and establish the design, manufacture, supply, install and maintenance requirements for inclusion in the product Technical Manual in order for the ProClad™ LINEAR cladding system to meet the requirements of the NCC with respect to waterproofing F3P1 [vol. 1] / H2P2 [vol. 2] requirements under a Performance Solution route to compliance.

The building's Facade must demonstrate compliance with the relevant Australian Standards in order to meet compliance with the minimum waterproofing requirements of the National Construction Code (NCC) 2022 Volume One or Volume Two, Building Code of Australia (BCA).

The BCA through Performance Requirement F3P1 [vol. 1] / H2P2 [vol. 2] requires that:

"A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause:

(a) unhealthy or dangerous conditions, or loss of amenity for occupants; and

(b) undue dampness or deterioration of building elements."

F3P1 [vol. 1] / H2P2 [vol. 2] has a Verification Method in both volumes of the NCC (Volume 1 F3V1 / NCC Volume 2 H2V1), however these verification methods are limited to low risk buildings having a risk score of 20 or less, when the sum of all risk factor scores are determined in accordance with Table F3V1 [vol. 1] / H2V1a [vol. 2]; and not subjected to an ultimate limit state wind pressure of more than 2.5 kPa, and require physical testing in accordance with the F3V1 / H2V1 test methods defined in the NCC.

Due to the building risk limitations of this verification method and the limitations on the assessment of the long term consequences of detailing design decisions provided by relying solely on a physical test method, and as there are no applicable Deemed-to-Satisfy requirements that would satisfy F3P1 [vol. 1] / H2P2 [vol. 2] for a building façade or cladding system weatherproofing, a Performance Solution has been developed to demonstrate compliance with the BCA for weatherproofing.

Performance Solution:

In order to ensure that the Performance Solution meets these BCA requirements, individual façade materials and components have been selected / specified from manufacturers products that are able to provide the necessary cladding details robust enough to achieve adequate weatherproofing performance.

Appropriate Façade Engineering detailing has been backed up with NATA accredited test results that prove adequate performance. The following test report refers:

- Ian Bennie & Associates AS/NZS 4284 Test Report No. 2021-030-S1 dated February 2022

Water penetration performance requirements for the cladding are related to the design wind pressures that the facades will see during the building's design life and relate to the building's geometry, location, surrounding terrain and topography and other factors. Accurate assessment of these façade wind pressures in accordance with AS/NZS 1170.2 for each elevation and cladding location on the façade is the responsibility of the design team for the project. Once these pressures have been accurately assessed, they can be compared to the Ultimate, Serviceability, Water Penetration and Air Infiltration pressures in the AS/NZS 4284 Test Report. Provided the



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building's project specific wind pressures are all lower than the corresponding pressures that achieved a pass in the AS/NZS 4284 Test and the building's project specific cladding façade dimensions meet the limits of dimensional applicability, when compared to the test mock up dimensions as defined within AS/NZS 4284, then this F3P1 [vol. 1] / H2P2 [vol. 2] Performance Solution is applicable.

There is normally a variety of external wall cladding and glazing systems that form part of the building's weather resistant envelope. This F3P1 [vol. 1] / H2P2 [vol. 2] Performance Solution has only been developed to cover the ProClad™ LINEAR cladding system. In addition, the junction between the different façade elements will vary and has not been covered by the testing. The other external wall cladding and glazing systems on the building also need to be covered in an appropriate F3P1 [vol. 1] / H2P2 [vol. 2] Verification Method or Performance Solution and this is the responsibility of the project design consultants and/or contractors and is separate to this report.

To demonstrate compliance with the BCA under this Performance Solution the Assessment Methods; Evidence of Suitably and Expert Judgement have been used.

**Evidence of Suitably:**

- ProClad™ LINEAR cladding system detail drawings, general notes and specifications demonstrate weather resistant detailing of cladding intersections to a level suitable for a building's performance requirements, to be suitably developed by the project design and construction team to meet the project specific needs, following the ProClad™ LINEAR cladding system requirements.
- ProClad™ LINEAR cladding system has been tested and passed all parts of AS/NZS 4284 *Testing of building facades* at a NATA accredited laboratory.
- Products, materials and systems are in accordance with relevant Australian Standards and show performance that meets or exceeds the weatherproofing design requirements to the limits listed in the AS/NZS 4284 Test.
- Where not specifically included in the AS/NZS 4284 Test recognised façade design principles have been followed and industry design and construction guidance has been used to determine the appropriate details to be applied.

**Expert Judgement:**

Expert Judgement has been provided by accredited professionals with relevant knowledge and experience in designing, assessment and overseeing the construction of weather resistant walls and facades.

Simon Jewell, Director of Atelier JV has over 25 years' experience in the construction industry is a key part of Western Australia's Façade Engineering discipline.

**Compliance:**

This report references the outcomes of the Façade Engineering design advice leading to the F3P1 [vol. 1] / H2P2 [vol. 2] waterproofing compliant cladding system detailing and provided those details, notes, specification items, materials and components and practices are incorporated in the design documentation of the building consultant and contractor teams, provides an F3P1 [vol. 1] / H2P2 [vol. 2] compliant cladding solution.

Compliance with the BCA Performance Requirement F3P1 [vol. 1] / H2P2 [vol. 2] is therefore achieved as the cladding system has been designed and reviewed by an appropriately qualified expert professional, using materials and systems which have been designed and tested to Australian Standards.



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# 2 Performance Based Design Brief

## 2.1 Background

ProClad™ LINEAR is a cladding panel system comprising non-combustible pre-finished solid aluminium extruded, secret fix, interlocking weatherboard style cladding panels. Manufacturer, Aluminium Façade Systems (AFS) have developed the ProClad™ LINEAR aluminium panels into a cladding system, pre-certified for use on a variety of buildings to create a solution for new build projects as well as re-cladding and renovation projects.

With the appropriate, project specific, Façade Engineering design engineering checks and certification applied, ProClad™ LINEAR is intended to be available for use on all classes of building (Class 1 to 10 and buildings with Multiple Classification) and for buildings of any height.

ProClad™ LINEAR is intended to be available for use in any wind region within Australia, provided the wind pressures calculated for the building façade in accordance with AS/NZS 1170.2 (including all local pressure factors to be applied) are lower than the pressures tested in the AFS AS/NZS 4284 cladding prototype test.

## 2.2 Introduction

Atelier JV have been engaged by AFS to provide Façade Design input and advice; develop the cladding system details; schedule materials and components; and establish the design, manufacture, supply, install and maintenance requirements for inclusion in the product Technical Manual in order for the ProClad™ LINEAR cladding system to meet the requirements of the NCC with respect to waterproofing F3P1 [vol. 1] / H2P2 [vol. 2] requirements under a Performance Solution route to compliance.

Atelier JV's scope was to provide Façade Design input and advice in order for the ProClad™ LINEAR cladding panel system to meet the requirements of the NCC with respect to waterproofing and comply with the requirements of section F3P1 [vol. 1] / H2P2 [vol. 2] of the BCA [NCC: 2022].

This Façade design advice has then been incorporated in the design detail documentation of the ProClad™ LINEAR cladding panel system Technical Manual and specification notes added to the manual to instruct the project designers, consultants and fabrication and construction teams, in order for the building projects to satisfy their waterproofing requirements when the ProClad™ LINEAR cladding panel system is used in the correct way.

Building design and construction teams for any building project are required to demonstrate that the individual components of the proposed building's facade and their interfaces comply with the relevant parts of the Building Code of Australia (BCA) 2022 Volume One and / or BCA 2022 Volume Two (as appropriate to the relevant class of building), forming part of the National Construction Code (NCC) in order to provide a complete weather envelope for the building. This includes the preparation of performance-based design solutions in conjunction with the selection of pre-tested systems compliant with verification methods and/or deemed to satisfy clauses as listed in the BCA.

The aim of this performance based design solution is to provide building design and construction teams with a pre-certified performance solution for the ProClad™ LINEAR cladding element of their facade. As there are no applicable Deemed-to-Satisfy requirements that would satisfy F3P1 [vol. 1] / H2P2 [vol. 2] of the BCA [NCC: 2022] for a building façade or cladding system weatherproofing, a Performance Solution has been developed to demonstrate compliance with the BCA for weatherproofing.

This report has been prepared based on the Performance Solution Process Guidance Document and the Development of Performance Based Design Solutions - Weatherproofing (PBDS 1-001-F) and issued by the Australian Building Code Board. This report only addresses the performance based design solutions documented within relative to the weatherproofing.

## 2.3 Objectives, Scope and Limitations



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The Scope of this report is to cover the F3P1 [vol. 1] / H2P2 [vol. 2] of the BCA [NCC: 2022] waterproofing performance requirement of the BCA where Deemed to Satisfy solutions do not exist.

The BCA design objective relative to the external walls is to produce functional buildings that safeguard occupants from illness or injury and protect the building from damage caused by external moisture entering the building.

Scope Covered by this Report:

- Façade elements that are not covered by DTS solutions in the BCA.
- Review of the AS/NZS 4284 Test Report completed for the ProClad™ LINEAR cladding panel system and incorporation of the details and concepts that achieved a pass in that test into the system Technical Manual and details.
- Detailing of junctions, interfaces and variations within the ProClad™ LINEAR cladding system extents to meet appropriately robust waterproofing performance requirements.
- Development of general notes instructions, specifications and requirements for designers, fabricators, contractors and sub-contractors to follow for inclusion in the ProClad™ LINEAR cladding panel system Technical Manual in order to provide adequate information to produce and maintain a weatherproof façade.
- Collation of the work produced to document the ProClad™ LINEAR cladding panel system as a weatherproof façade into this Performance Solution design report to demonstrate and record the method of BCA compliance.

**Table 2.1: Performance Solutions**

| Performance Solution # | BCA Rqt. | Performance Requirement | DTS Provision | Proposed Performance Solution |
|---|---|---|---|---|
| 1 | F3P1<br><br>Volume One<br><br>NCC: 2022 | Weatherproofing:<br><br>A roof and external wall (including openings around windows and doors) mustprevent the penetration of water that could cause—<br><br>- Unhealthy or dangerous conditions, or loss of amenity for occupants;and<br>- Undue dampness or deterioration of building elements.<br><br>F1.0(a): There are no DTS provisions for external walls | Performance Requirements F3P1 are satisfied for a metal wall cladding if it is designed and constructed in accordance with AS 1562.1. | AS/NZS 4284 testing<br><br>Façade Engineering detailing and specification advice<br><br>Façade Shop Detailer inclusion of the Façade Engineering detailing advice into the product Technical Manual<br><br>Inclusion of design, detailing, fabrication, material, supply, handling, QA, installation and maintenance requirements into the product Technical Manual |
| 2 | H2P2<br><br>Volume Two | Weatherproofing:<br><br>A roof and external wall (including openings around windows and | Performance Requirements H2P2 are satisfied for a metal wall cladding if it is | AS/NZS 4284 testing |



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| Performance Solution # | BCA Rqt. | Performance Requirement | DTS Provision | Proposed Performance Solution |
|---|---|---|---|---|
| | NCC: 2022 | doors) mustprevent the penetration of water that could cause—<br>✓ Unhealthy or dangerous conditions, or loss of amenity for occupants;and<br>✓ Undue dampness or deterioration of building elements. | designed and constructed in accordance with AS 1562.1. | Façade Engineering detailing and specification advice<br><br>Façade Shop Detailer inclusion of the Façade Engineering detailing advice into the product Technical Manual<br><br>Inclusion of design, detailing, fabrication, material, supply, handling, QA, installation and maintenance requirements into the product Technical Manual |

The following are not covered by this report and do not form part of the scope of work:

- ✓ Cladding which F3P1 [NCC Vol. 1] does not apply to:
  - a) a Class 7 or 8 building where in the particular case there is no necessity for compliance; or
  - b) a garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes; or
  - c) an open spectator stand or open-deck carpark.
- ✓ Cladding which H2P2 [NCC Vol. 2] does not apply to:
  - a) a Class 10 building except where its construction contributes to the weatherproofing of the Class 1 building.
- ✓ ProClad™ LINEAR cladding panels not detailed, specified, fabricated, installed or maintained in accordance with this report and the AFS Technical Manual.
- ✓ Cladding other than the ProClad™ LINEAR cladding panel system.
- ✓ Interfaces with adjacent cladding, glazing, landscaping, structure, or other building or site elements.
- ✓ Glazing systems or interfaces.
- ✓ ProClad™ LINEAR cladding panels used in a roof situation or horizontal orientation other than a soffit or a parapet of limited width.
- ✓ ProClad™ LINEAR cladding panels used in sloped façade with an angle of inclination facing the sky (of any pitch other than vertical or pitched facing the ground).

## 2.4 Stakeholders

Key members of the team in the creation of this report are as follows:

**Table 2.3: Stakeholders**

| Role | Organisation |
|---|---|
| Manufacturer and Client | Aluminium Facade Systems |



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| Role | Organisation |
|---|---|
| | (backed and serviced nationally by Alspec) |
| Façade Engineer | Atelier JV |

## 2.5 Documentation

The relevant documentation reviewed in the preparation, and forming Part of this Performance Solution includes the following:

- Ian Bennie & Associates AS/NZS 4284 Test Report No. 2021-030-S1 dated February 2022
- ProClad LINEAR Brochure_A_v1
- ProClad™ LINEAR Technical Manual Issue C_June 2022
- Updated details for inclusion in the ProClad™ LINEAR Technical Manual (refer to Appendix A of this report)
- ProClad™ LINEAR Tech Data Sheet

## 2.6 Cladding System Description

ProClad™ LINEAR is a cladding panel system comprising non-combustible pre-finished solid aluminium extruded, secret fix, interlocking weatherboard style cladding panels, manufactured by Aluminium Façade Systems (AFS), backed by Alspec.

Extruded cladding panels are attached to a cladding sub-frame of top hats using clip in secret fix detailing. The cladding sub-frame top hats are attached to the external wall structure. Cross batten top hats are employed where the external wall structure does not suit the top hat orientation. Behind the top hats is a sealed commercial grade, rigid air barrier building weather defence board membrane (Siniat) located immediately in front of the insulation layer of the wall construction. The cladding panels form a clip jointed rain screen in front of the rigid weather barrier board behind. Their detailing protects the board from the majority of direct rain water and crates a pressure equalized zone behind the panels that enables the water to drain freely out of the bottom of the cladding system.

The cladding system is a clip jointed panelised rain screen system with a weather defence board behind the cladding. Weatherproofing performance in this report is based on the following products, materials and components:

- ProClad™ LINEAR Empire cladding panels:
  - P50025, VC01S – 180mm Empire panels
  - Non-combustible pre-finished aluminium, extruded cladding panels,
  - Manufactured by Aluminium Façade Systems (AFS), backed by Alspec.
  - Vertical application of Empire extrusion only (as tested in the AS/NZS 4284 test)
- Cladding sub-frame of top hats.
- Cross batten top hats are employed where the external wall structure does not suit the top hat orientation or required build-out depth.
- Weather board:
  - Siniat Weather Defence board, rigid air barrier
  - Fully sealed (tape + sealant),
  - Located immediately in front of the insulation layer of the wall construction.
- SINIAT Weather Defence Joint Tape
- Weather board Sealant: Selleys Fireblock XT Sealant
- Cladding Sealants:
  - Alspec 100% Neutral Cure Silicone – Weather Seal



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- ADMIL Prosil 41 LM High Performance 100% Neutral Cure Silicone – Weather Seal
- ADMIL SupaSeal PU Low Modulus Isocyanate Free Polyurethane Sealant – Bonding of stiffening angles

## 2.7 Legislation

### 2.7.1 Compliance with National Construction Code (NCC)

As detailed within the relevant Commonwealth legislation, buildings are required to comply with the National Construction Code (NCC) Series, Volume One and/or Volume Two Building Code of Australia (BCA) in force at the time of application for Building License approval. The applicable version of the BCA for this Performance Solution assessment at the date of issue of this report is BCA 2022 (BCA).

BCA Clause A2G1 states:

1. Compliance with the NCC is achieved by complying with—
   a. The Governing Requirements of the NCC; and
   b. The Performance Requirements.

To achieve compliance with the Performance Requirements of the BCA, Clause A2G1 stipulates that:

Performance Requirements are satisfied by one of the following:

a) A Performance Solution.
b) A Deemed-to-Satisfy Solution.
c) A combination of (a) and (b).

No BCA deemed-to-satisfy provisions exist to satisfy the BCA performance requirement F3P1 that concerns penetration of water to external walls, subsequently an alternative solution is required to demonstrate compliance with the BCA.

Accordingly, in relation to the proposed external wall weatherproofing solution that forms part of this application, it is proposed to achieve compliance with the Performance Requirements of the BCA in accordance with Clause A2G1(1) using a Performance Solution.

#### 2.7.1.1 Assessment Method

Clause A2G2 details the how a Performance Solution may be achieved. These methods include evidence of compliance pursuant to testing, verification methods, comparison with Deemed-to- Satisfy or through Expert Judgement. In relation to the facade weatherproofing including interfaces and penetrations, this assessment primarily utilizes:

- Evidence of Suitability pursuant to BCA Clause A2G2(2)(a)
- Expert Judgement pursuant to BCA Clause A2G2(2)(c)

#### 2.7.1.2 Performance Requirements

The applicable Performance Requirements are as detailed in F3P1 [vol. 1] / H2P2 [vol. 2] of the BCA [NCC: 2022].

F3P1 [vol. 1] & H2P2 [vol. 2] stipulate:

A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause—

- Unhealthy or dangerous conditions, or loss of amenity for occupants; and



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- Undue dampness or deterioration of building elements.

## 2.8 Assessment Process

The Performance Solution that makes up this report relates to the treatment of weatherproofing to the ProClad™ LINEAR cladding panel system element of the façade of a building. The structure of the Performance Solutions is based around the two Assessment Methods being utilized; Evidence of Suitability and Expert Judgement provisions on the basis that no unusual or experimentative façade solutions have been employed in this cladding system and that good practice construction detailing has been employed for the proposed façade solutions, it has been decided that Verification Method testing in accordance with F3V1 [vol. 1] / H2V1 [vol. 2] of the BCA [NCC: 2022] is not the appropriate means to compliance due to the limitations of such a test, and hence a performance review has been used instead.

### 2.8.1 Evidence of Suitability

Evidence of Suitability has been determined on the basis of the following:

- ProClad™ LINEAR cladding system detail drawings, general notes and specifications demonstrate weather resistant detailing of cladding intersections to a level suitable for a building's performance requirements, provided the following occurs:
  - Design and documentation detailing of the cladding is in accordance with the details provided in Section 6 of the ProClad™ LINEAR Technical Manual that are referenced in this report.
  - Design and documentation detailing of the cladding is in accordance with the general notes, design, fabrication, material supply, installation and maintenance included in Sections 5 and 7 of the ProClad™ LINEAR Technical Manual as referenced in this report.
  - Accurate assessment of the cladding façade wind pressures in accordance with AS/NZS 1170.2 for each elevation and cladding location on the façade is undertaken. This is the responsibility of the design and/or construction team for the project.
  - Once these pressures have been accurately assessed, they are then compared to the Ultimate, Serviceability, Water Penetration and Air Infiltration pressures in the AS/NZS 4284 Test Report:
    - Ian Bennie & Associates AS/NZS 4284 Test Report No. 2021-030-S1 dated February 2022
  - A check is performed to ensure that the building's project specific wind pressures are all lower than the corresponding pressures that achieved a pass in the AS/NZS 4284 Test.
  - The building's project specific cladding façade dimensions meet the limits of dimensional applicability, when compared to the test mock up dimensions as defined within AS/NZS 4284.
- ProClad™ LINEAR cladding system has been tested and passed all parts of AS/NZS 4284 Testing of building facades at a NATA accredited laboratory [Ian Bennie & Associates AS/NZS 4284 Test Report No. 2021-030-S1 dated February 2022 refers] to the following pressures:
  - Serviceability limit state wind pressures: +2500 Pa and – 2500 Pa
  - Ultimate limit state wind pressures: +3750 Pa and – 3750 Pa
  - Water penetration wind pressures:
    - Max. Static: 750 Pa
    - Max. Cyclic: 750 to 1500 Pa
  - Air infiltration: 0.7 L/m2/s
- Products, materials and systems are in accordance with relevant Australian Standards and show performance that meets or exceeds the weatherproofing design requirements to the limits listed in the AS/NZS 4284 Test.
- Where not specifically included in the AS/NZS 4284 Test recognised façade design principles have been followed and industry design and construction guidance has been used to determine the appropriate details to be applied.

### 2.8.2 Expert Judgement



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The detailing and specification of the ProClad™ LINEAR cladding system has been produced and reviewed by accredited professionals with established experience in design, documentation and construction of weatherproof façades. Façade Engineer, Simon Jewell of Atelier JV provides the Expert Judgement required to complete this Performance Solution. Simon Jewell's experience and Qualifications are summarised below:

- Simon Jewell, Director and Façade Engineer at the specialist Façade Engineering consultancy of Atelier JV. Simon has over 25 years' experience in Façade Engineering.
- He has been actively and continuously engaged in Professional Façade, Structural, Civil and Heritage Engineering since 1997, upon graduating from the University of Leeds, UK, where he earned a Masters Degree in Architectural Engineering at the Civil Engineering Department.
- Simon is a registered engineer with Engineers Australia and holds Chartered Professional Engineer status with that organisation (MIEAust #3682713), within the Structural, and Heritage and Conservation colleges.
- Simon is listed in the National Engineering Register (NER).
- Simon's registration with Engineers Australia has been active since 04 November 2015 and his Chartered Status was granted on 07 May 2021.
- Simon is a registered engineer with the Institute of Structural Engineers, UK and holds Chartered Professional Engineer status with that organisation (MIStructE CEng #024402978).
- Simon is listed in the Chartered Engineer's Register, UK (CEng).
- Simon's registration with the Institute of Structural Engineers has been active since 1993 and his Chartered Status was granted on 15 September 2005.
- Simon is also a Registered Building Practitioner in the state of Victoria in the Structural field – Civil (EC 38144) since 22 December 2011.
- Simon has been Director of Atelier JV since starting the practice in 2012, providing structural, civil, façade, heritage and forensic engineering and other design services.
- Prior to 2012, Simon was continuously employed as a Structural Engineer for a number of design consultancy firms with national and international presence, the most recent of which being BG&E (2003 – 2004, & 2008 – 2012).
- Simon has remained up to date with current engineering practices throughout his career and has continued ongoing professional development and training as required by the Structural Engineering college of Engineers Australia.
- Simon actively upholds the Engineers Australia Code of Ethics.

## 2.9 Acceptance Criteria

The proposed ProClad™ LINEAR cladding system for building envelpes will be deemed acceptable if it can be demonstrated that it will prevent the penetration of water to the inner surface that could cause:

- Unhealthy or dangerous conditions, or loss of amenity for occupants;and
- Undue dampness or deterioration of building elements.



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# 3 Performance Solution 1 & 2 – ProClad™ LINEAR cladding system F3P1 [vol. 1] & H2P2 [vol. 2]

The following outlines the scope and evaluation method of the proposed performance based design solution for the ProClad™ LINEAR cladding system.

**Table 3.1. Scope and Evaluation Method**

| Description of Solution | Category |
|---|---|
| DTS Provision | F3P1 [vol. 1]: F3D5 Performance Requirements F3P1 are satisfied for a metal wall cladding if it is designed and constructed in accordance with AS 1562.1.<br><br>H2P2 [vol. 2]: Performance Requirements H2P2 are satisfied for a metal wall cladding if it is designed and constructed in accordance with AS 1562.1. |
| Relevant Performance Requirements | F3P1 [vol. 1] / H2P2 [vol. 2] of the BCA [NCC: 2022]<br><br>Weatherproofing performance |
| BCA Compliance Approach | The compliance approach adopted is: Formulating a Performance Solution that-<br><br>(i) Complies with the Performance Requirements |
| BCA Assessment Method | Method of meeting the performance solution is A2.1(1) – identification of Performance Requirements of Part F3 [vol. 1] / Part H2 [vol. 2] of the BCA [NCC: 2022] and relevant requirements from other Sections or Parts.<br><br>BCA Clauses:<br><br>A2G2(2)(a) Evidence of Suitability with reference to A5G3(1)(f) alternate documentary evidence; and<br><br>BCA Clause A2G2(2)(c) Expert Judgement |
| Analytical Tool | The proposed methodology applicable to this Performance Solution includes an absolute approach using qualitative analysis and comparing that to AS/NZS 4284 test results for the system. |
| Acceptance Criteria | The proposed design of the external wall system for the cladding system will be deemed acceptable if it can be demonstrated that it will prevent the penetration of water to the inner surface that could cause:<br><br>- Unhealthy or dangerous conditions, or loss of amenity for occupants; and<br>- Undue dampness or deterioration of building elements. |

## 3.1 Outcomes and Results

The assessment is primarily based on the selection of materials and systems incorporated into the system detail drawings, specifications, Technical Manual and product requirements demonstrating that consideration of weatherproofing has been taken into account through the system detailing process. This assessment has been supported by AS/NZS 4284 testing and the expert opinion and review of experienced, qualified professionals. The following sections examine the weatherproofing details of the proposed ProClad™ LINEAR cladding system, its connections and ancillary parts.



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### 3.1.1 Façade Design Criteria

All façade systems chosen must meet the following design criteria:

#### Wind Loads

Determine wind loads in accordance with AS1170.2 Code requirements or through a wind tunnel test.

Permissible wind speeds shall be determined in accordance with AS/NZS 1170.2 Clause C3.2: The permissible stress gust wind speed may be obtained by dividing the wind speed given in the standard by the square root of 1.5.

Serviceability limit states shall be determined in accordance with AS/NZS 1170.0 Appendix C.

If a wind tunnel test is to be carried out utilize the principals of Appendix A and Appendix B of AS1170.0 and test in accordance with international best practice for wind tunnel testing. Testing should meet or exceed the requirements of the Australasian Wind Engineering Society QAM-1-1994 and the ASCE Manual of Practice No. 67 for Wind Tunnel Testing of Buildings and Structures and be conducted by a NATA accredited test laboratory.

#### Deflection Limits

Limit deflection of facade elements under serviceability limit state loads in accordance with the recommendations in Appendix C of AS/NZS 1170.0. The deflection shall be recovered fully where the loads are removed.

#### Movement & Tolerances

The installed work, including fasteners and framing, shall accommodate all short and long-term movements and deflections in the base-building, substrates to which the work is fixed, and within the work, including thermal movements, without failure in structural or weatherproofing performance or the transfer of loads from the base-building to the work of this trade.

#### Thermal movements

The installed work shall accommodate all thermal movements due to temperature variations by joints, brackets and fasteners with suitable capability.

Thermal movement shall take place freely in the plane of the cladding system, and shall not cause stressing or induced loading in the installed work, or buckling, failure of joints or other damage.

The cladding system is to accommodate thermal movements for ambient and surface temperature ranges associated with internal and external environments as applicable to the façade element.

### 3.1.2 ProClad™ LINEAR cladding system Weatherproofing Generally

The detail for the weatherproofing of this ProClad™ LINEAR cladding system façade has been detailed to include a pre-finished aluminium extruded interlocking cladding panel rain screens system with a commercial grade rigid air barrier whether defence board system behind it to prevent water ingress.

The rear of the cavity behind the cladding is protected by the second weather line of defence being the rigid air barrier weather defence board building membrane. This prevents any condensation or water ingress past the cladding line from entering the building and prevents condensation build up within the façade.

The detailing of the SA HB 39:2015 has been used as reference for the completion of the details together with cladding manufacturers recommended details, Master Builders Association Waterproofing Guides and the details of the AS/NZS 4284 test in order to meet the F3P1 [vol. 1] & H2P2 [vol. 2] weatherproofing requirements of the BCA.

The Experience of the Expert Judgement author of this Performance Solution through working with a variety of cladding and façade systems and witnessing both laboratory water penetration testing and site water testing



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(typically to AAMA 501.2-15) has been used to complete the detailing of the ProClad™ LINEAR cladding system in order to meet the F3P1 [vol. 1] & H2P2 [vol. 2] weatherproofing requirements of the BCA.

# 4 Conclusion

Based on the content of this Performance Solution report, the Expert Judgement, comparison to known, performing alternatives, alignment with industry best practice and guidance, and the AS/NZS 4284 testing conducted on the ProClad™ LINEAR cladding system it is considered that compliance with the BCA performance requirement F3P1 [vol. 1] & H2P2 [vol. 2] [BCA: 2022] is achieved. All project development of the cladding system is to stay within the requirements of the ProClad™ LINEAR cladding Technical Manual input included in the Appendices of this report. The ProClad™ LINEAR cladding system has been designed using sound weatherproofing details and solutions that have proven demonstrated, adequate performance.

On this basis we deem the ProClad™ LINEAR cladding interlocking panel rainscreen with Siniat weather defence board system to be compliant with F3P1 [vol. 1] & H2P2 [vol. 2] [BCA: 2022].

The relevant façade cladding construction that this F3P1 [vol. 1] & H2P2 [vol. 2] weatherproofing performance report and certificate relates to is as follows:

- ProClad™ LINEAR Empire cladding panels:
  - P50025, VC01S – 180mm Empire panels
  - Non-combustible pre-finished aluminium, extruded cladding panels,
  - Manufactured by Aluminium Façade Systems (AFS), backed by Alspec.
  - Vertical application of Empire extrusion only (as tested in the AS/NZS 4284 test)
- Cladding sub-frame of top hats.
- Cross batten top hats are employed where the external wall structure does not suit the top hat orientation or required build-out depth.
- Weather board:
  - Siniat Weather Defence board, rigid air barrier
  - Fully sealed (tape + sealant),
  - Located immediately in front of the insulation layer of the wall construction.
- SINIAT Weather Defence Joint Tape
- Weather board Sealant: Selleys Fireblock XT Sealant
- Cladding Sealants:
  - Alspec 100% Neutral Cure Silicone – Weather Seal
  - ADMIL Prosil 41 LM High Performance 100% Neutral Cure Silicone – Weather Seal
  - ADMIL SupaSeal PU Low Modulus Isocyanate Free Polyurethane Sealant – Bonding of stiffening angles



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## 5 Document List

Assessment of the F3P1 performance for this project has been based on the following documents:

Drawings List (Refer Appendix A):

| | | |
|---|---|---|
| 8.11 | Empire Vertical Detail | Feb-23 |
| 8.13 | Empire Vertical - Plan Detail | Feb-23 |
| 8.15 | Empire Vertical - External Cut Corner Detail | Feb-23 |
| 8.17 | Empire Vertical - External Corner Detail | Feb-23 |
| 8.21 | Empire Vertical - Internal Corner Detail | Feb-23 |
| 8.22 | Empire Vertical - Window Head Section Detail | Feb-23 |
| 8.23 | Empire Vertical - Window Sill Section Detail | Feb-23 |
| 8.24 | Empire Vertical - Window Jamb Plan Detail | Feb-23 |
| 8.28 | Empire Vertical - Sill Section Detail | Feb-23 |

ProClad™ LINEAR Specification Notes and Maintenance Requirements (Refer Appendix B):

- General Notes - Design, Fabrication and Installation Requirements:
  - General Notes - Design and Specification Requirements
  - General Notes - Fabrication and Product / Material Supply Requirements
  - General Notes – Installation Requirements
- Care & Maintenance

ProClad™ LINEAR Documentation (Refer Appendix C):

- Product component part requirements
- Ian Bennie & Associates AS/NZS 4284 Test Report No. 2021-030-S1 dated February 2022
- ProClad LINEAR Brochure_A_v1
- ProClad™ LINEAR Tech Data Sheet



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## Appendix A: Cladding Details that form the Basis of this Performance Solution



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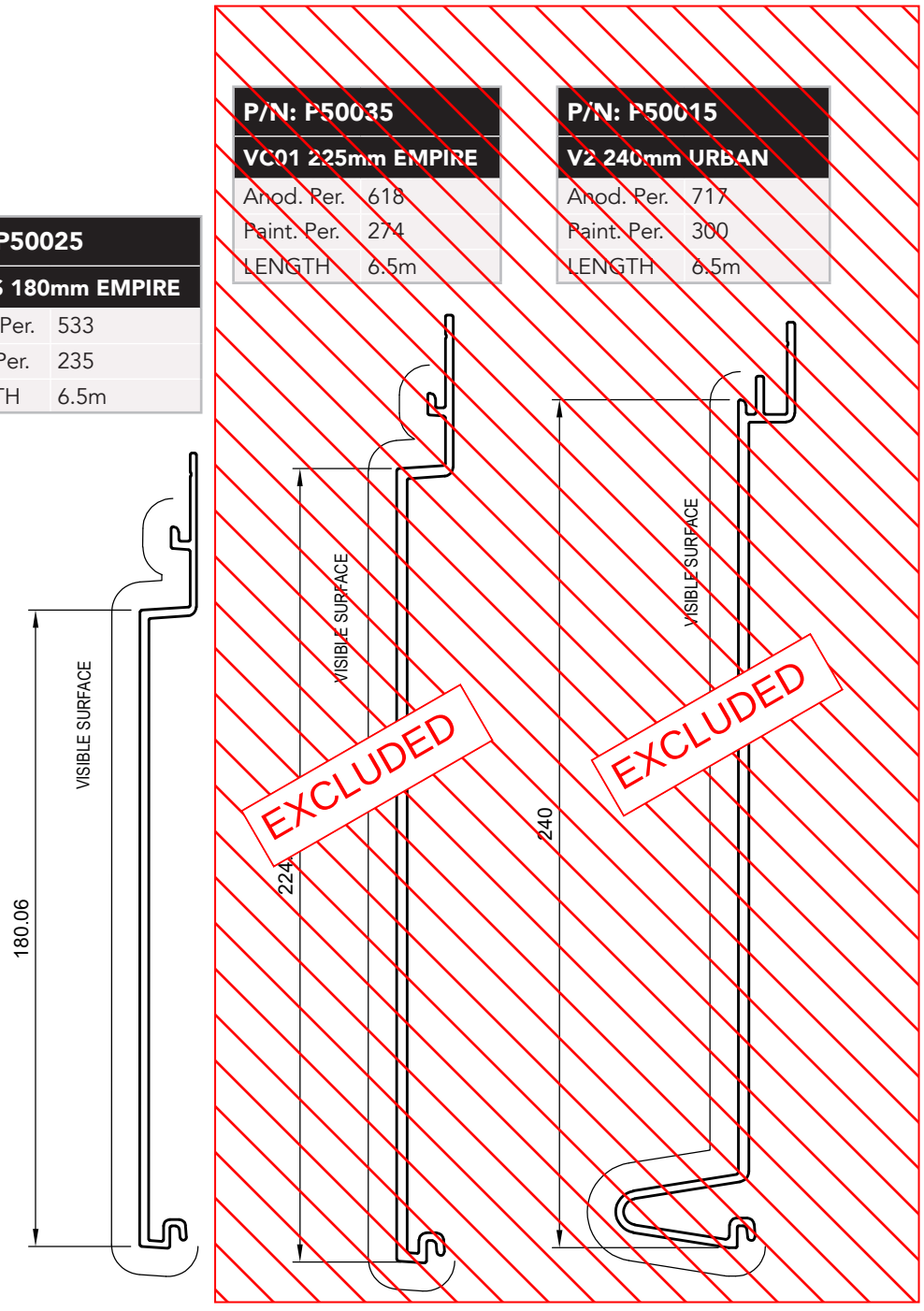
## Vertical Panels

VERTICAL

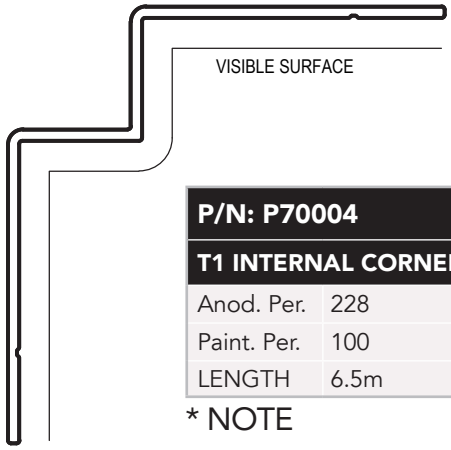
| P/N: P50025 | |
|---|---|
| VC01S 180mm EMPIRE | |
| Anod. Per. | 533 |
| Paint. Per. | 235 |
| LENGTH | 6.5m |

| P/N: P50035 | |
|---|---|
| VC01 225mm EMPIRE | |
| Anod. Per. | 618 |
| Paint. Per. | 274 |
| LENGTH | 6.5m |

| P/N: P50015 | |
|---|---|
| V2 240mm URBAN | |
| Anod. Per. | 717 |
| Paint. Per. | 300 |
| LENGTH | 6.5m |

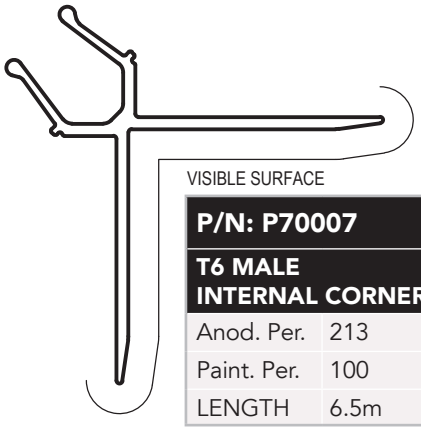


## Internal Corner Options

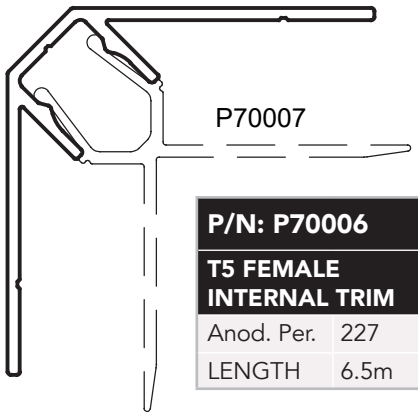



| P/N: P70004 | |
|---|---|
| **T1 INTERNAL CORNER** | |
| Anod. Per. | 228 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

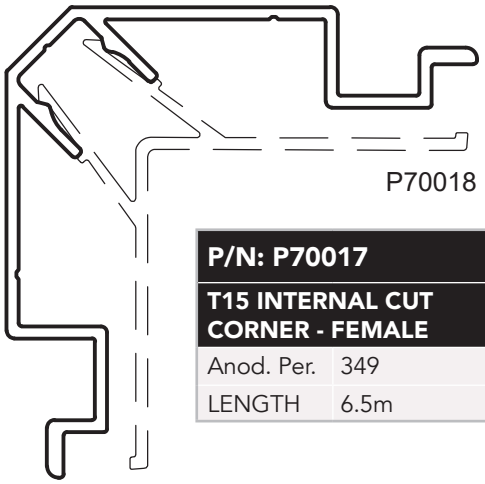
* NOTE



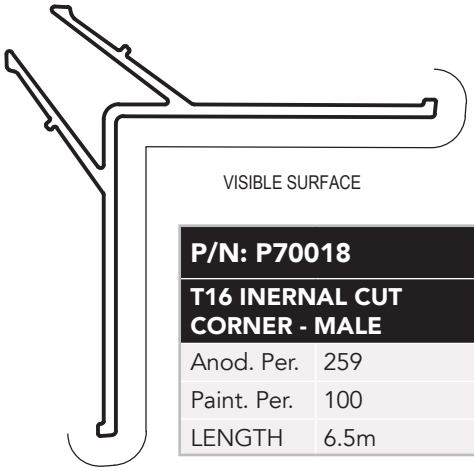

| P/N: P70007 | |
|---|---|
| **T6 MALE INTERNAL CORNER** | |
| Anod. Per. | 213 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |




| P/N: P70006 | |
|---|---|
| **T5 FEMALE INTERNAL TRIM** | |
| Anod. Per. | 227 |
| LENGTH | 6.5m |




| P/N: P70017 | |
|---|---|
| **T15 INTERNAL CUT CORNER - FEMALE** | |
| Anod. Per. | 349 |
| LENGTH | 6.5m |

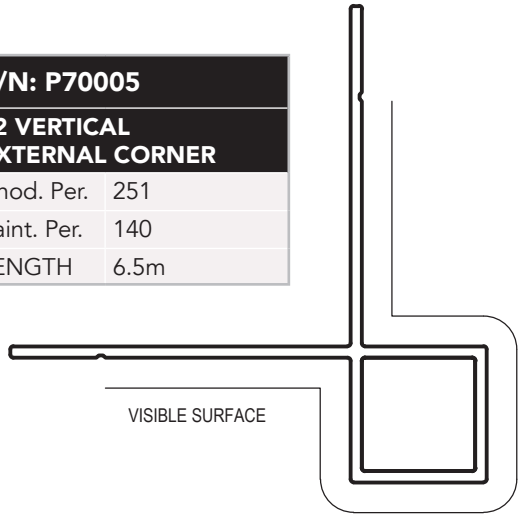



| P/N: P70018 | |
|---|---|
| **T16 INERNAL CUT CORNER - MALE** | |
| Anod. Per. | 259 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

* NOTE: Non-Stock item. Lead time subject to availability

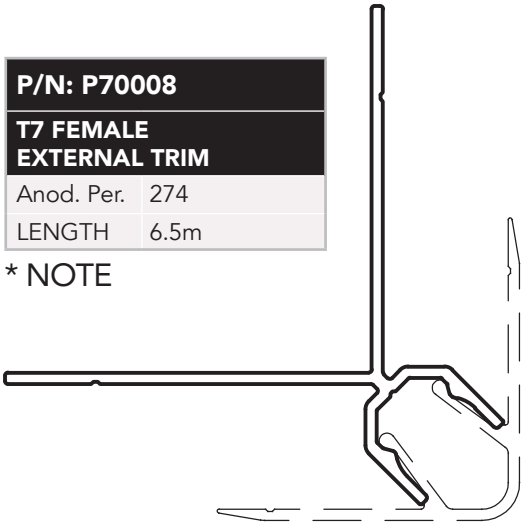
## External Corner Options

| P/N: P70005 | |
|---|---|
| **T2 VERTICAL EXTERNAL CORNER** | |
| Anod. Per. | 251 |
| Paint. Per. | 140 |
| LENGTH | 6.5m |




| P/N: P70008 | |
|---|---|
| **T7 FEMALE EXTERNAL TRIM** | |
| Anod. Per. | 274 |
| LENGTH | 6.5m |

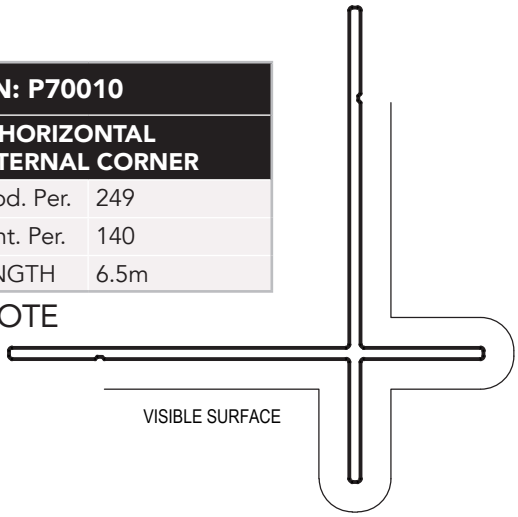
* NOTE



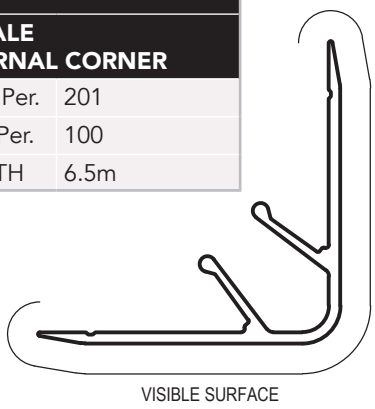
P70009

| P/N: P70010 | |
|---|---|
| **T3 HORIZONTAL EXTERNAL CORNER** | |
| Anod. Per. | 249 |
| Paint. Per. | 140 |
| LENGTH | 6.5m |

* NOTE




| P/N: P70009 | |
|---|---|
| **T8 MALE EXTERNAL CORNER** | |
| Anod. Per. | 201 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

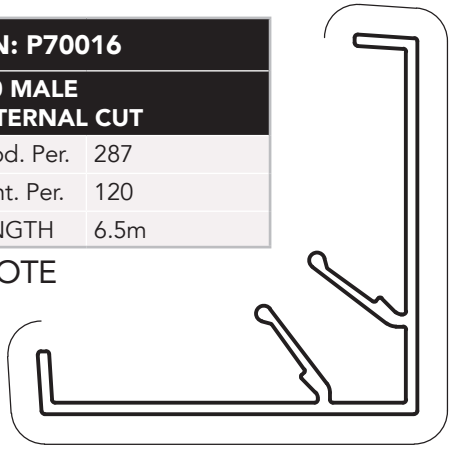



* NOTE: Non-Stock item. Lead time subject to availability

## External Corner Options

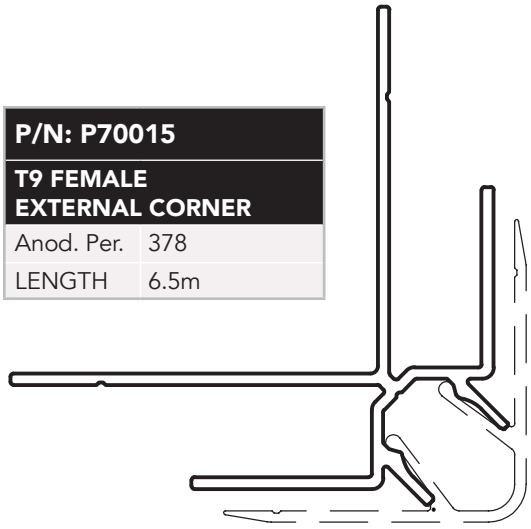
| P/N: P70016 | |
|---|---|
| T10 MALE EXTERNAL CUT | |
| Anod. Per. | 287 |
| Paint. Per. | 120 |
| LENGTH | 6.5m |

* NOTE



VISIBLE SURFACE

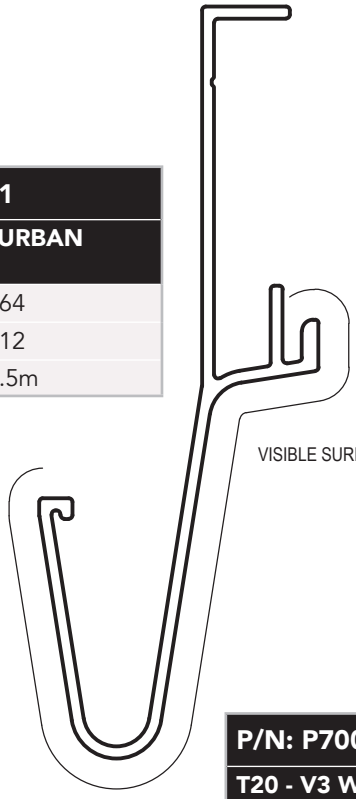
| P/N: P70015 | |
|---|---|
| T9 FEMALE EXTERNAL CORNER | |
| Anod. Per. | 378 |
| LENGTH | 6.5m |



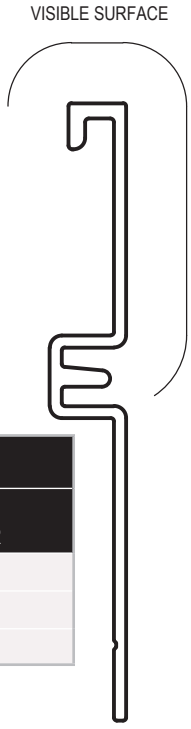
P70009

| P/N: P70021 | |
|---|---|
| T19 LINEAR URBAN CORNER | |
| Anod. Per. | 364 |
| Paint. Per. | 112 |
| LENGTH | 6.5m |

* NOTE



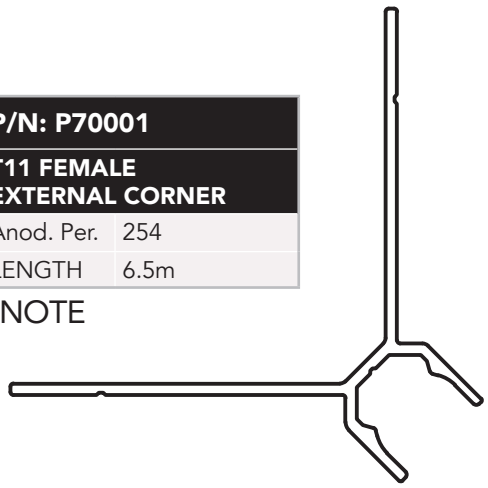
VISIBLE SURFACE



VISIBLE SURFACE

| P/N: P70001 | |
|---|---|
| T11 FEMALE EXTERNAL CORNER | |
| Anod. Per. | 254 |
| LENGTH | 6.5m |

* NOTE

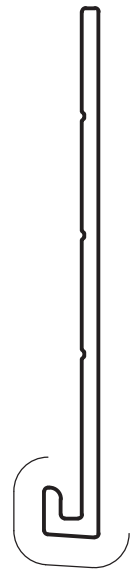


| P/N: P70023 | |
|---|---|
| T20 - V3 WALSH EXTERNAL CORNER | |
| Anod. Per. | 227 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

* NOTE

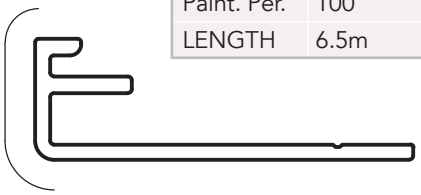
* NOTE: Non-Stock item. Lead time subject to availability

## Panel Starters & Panel Ends



V.S

| P/N: P70014 | |
|---|---|
| **T4 VERTICAL STARTER STRIP** | |
| Anod. Per. | 161 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

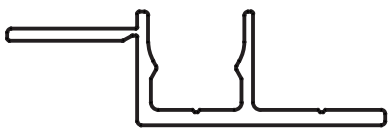


V.S

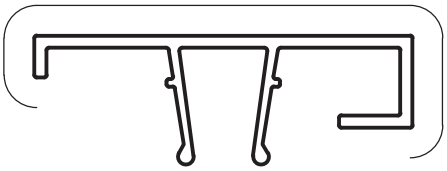
| P/N: P70002 | |
|---|---|
| **T12 VERTICAL STARTER** | |
| Anod. Per. | 158 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

| P/N: P70013 | |
|---|---|
| **T14 MALE CUT STARTER** | |
| Anod. Per. | 212 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

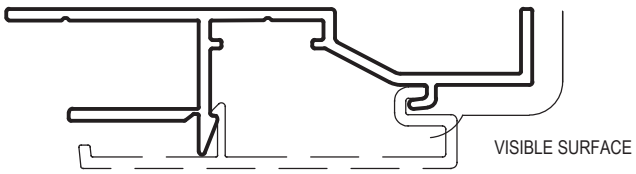
| P/N: P70012 | |
|---|---|
| **T13 FEMALE CUT STARTER** | |
| Anod. Per. | 154 |
| LENGTH | 6.5m |



VISIBLE SURFACE

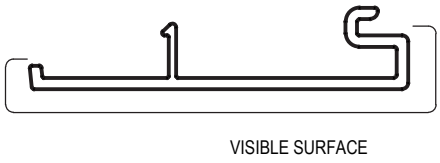


## Window Edge Trims




| P/N: P70019 | |
|---|---|
| **T17 - LINEAR WINDOW EDGE- FEMALE** | |
| Anod. Per. | 253 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

* NOTE




| P/N: P70020 | |
|---|---|
| **T18 - LINEAR WINDOW EDGE - MALE** | |
| Anod. Per. | 154 |
| Paint. Per. | 100 |
| LENGTH | 6.5m |

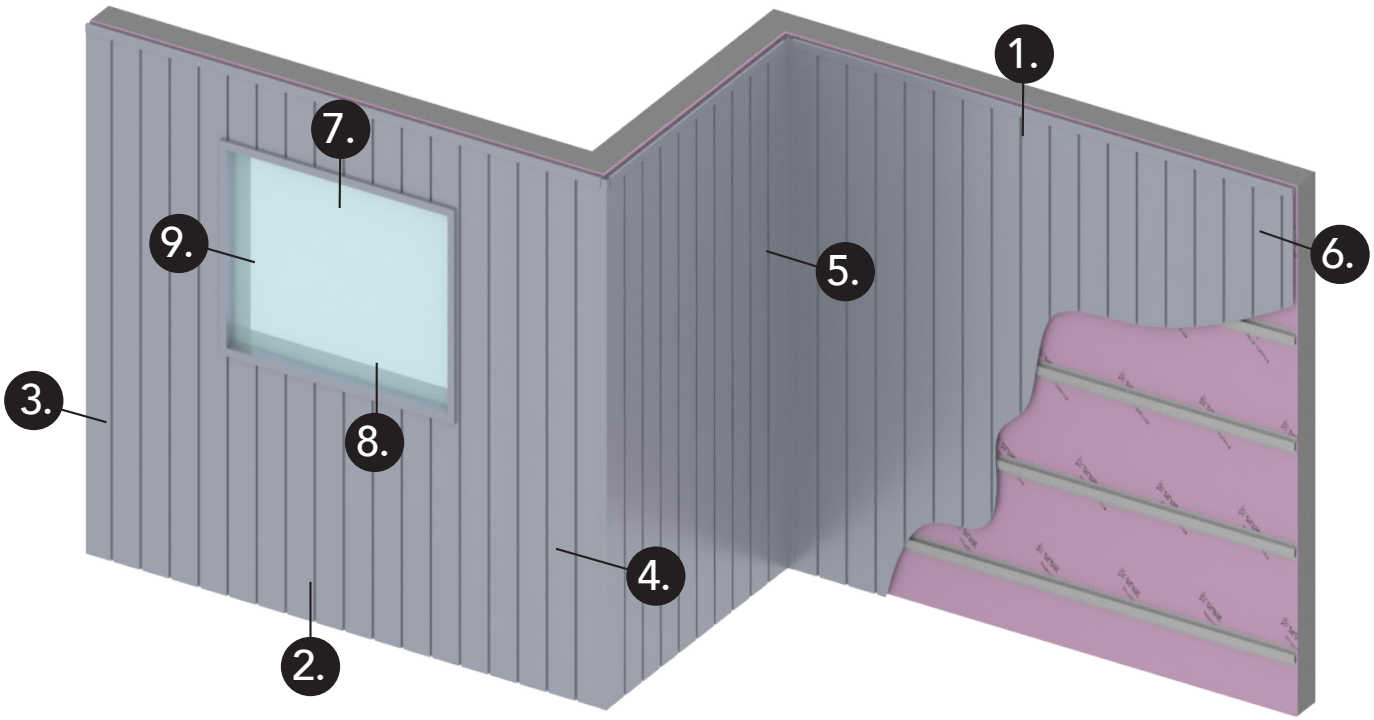
* NOTE

* NOTE: Non-Stock item. Lead time subject to availability

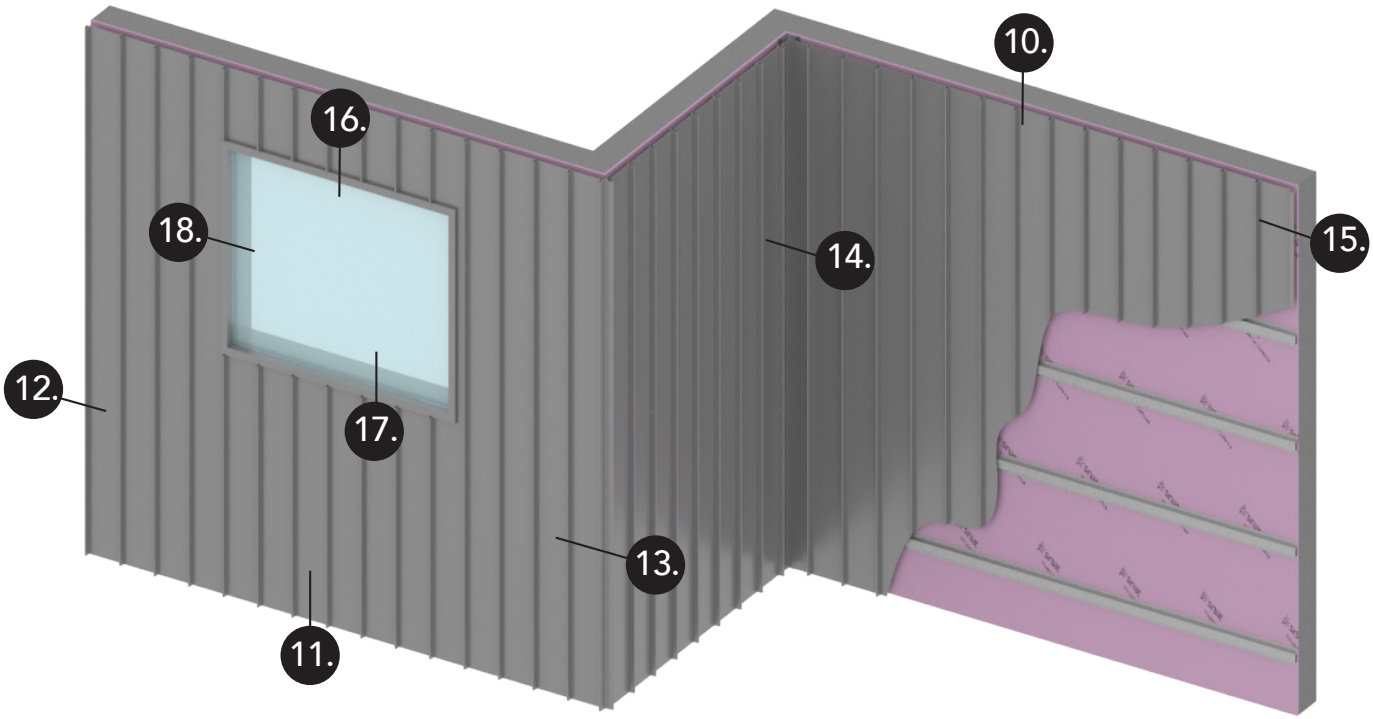
# 8. Elevation Detail - Vertical Panel

## EMPIRE VERTICAL / URBAN - Elevation Detail

### EMPIRE



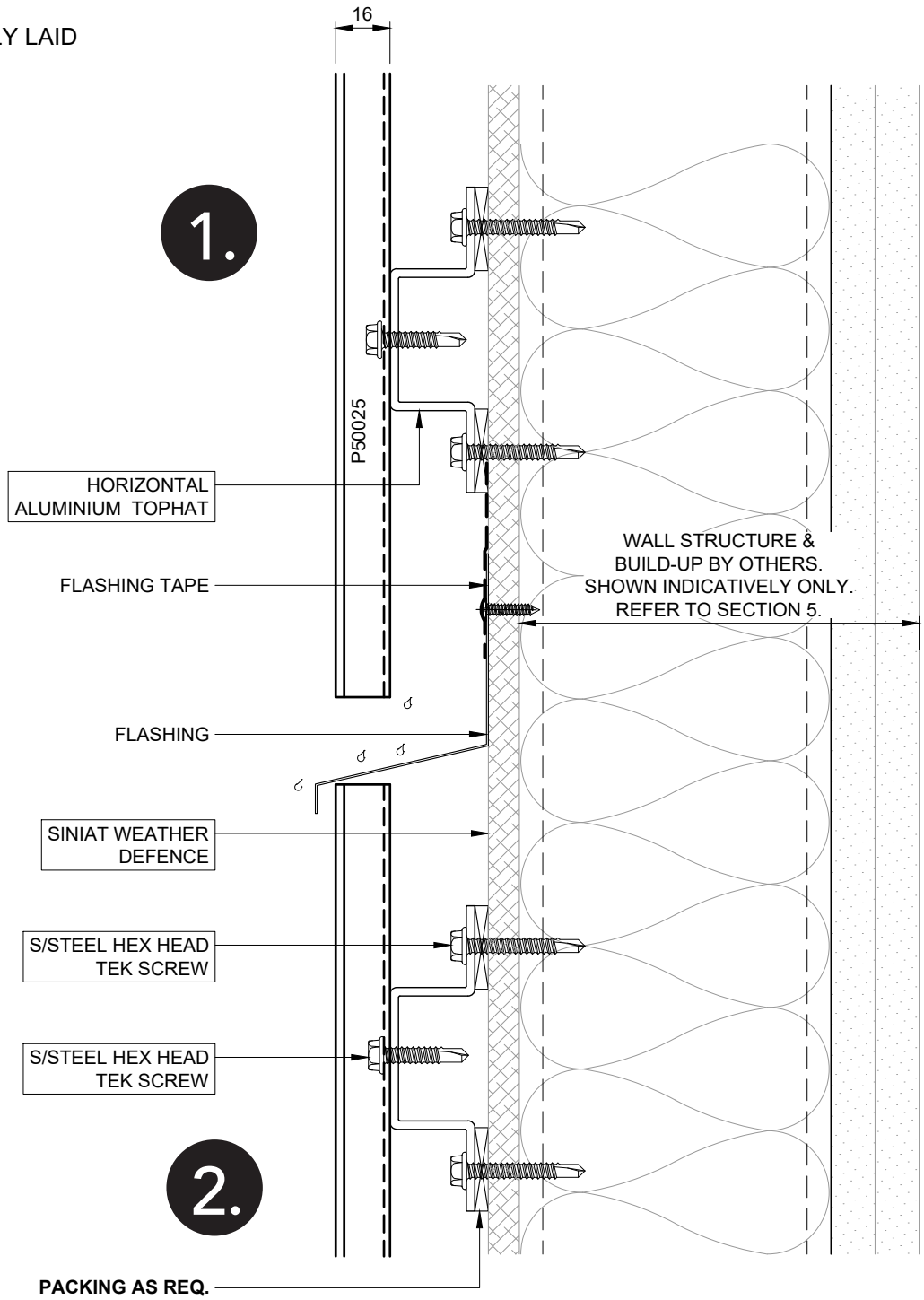

### URBAN



# 9. Vertical Panel - General Arrangement Details

## EMPIRE VERTICAL / URBAN - Vertical Detail

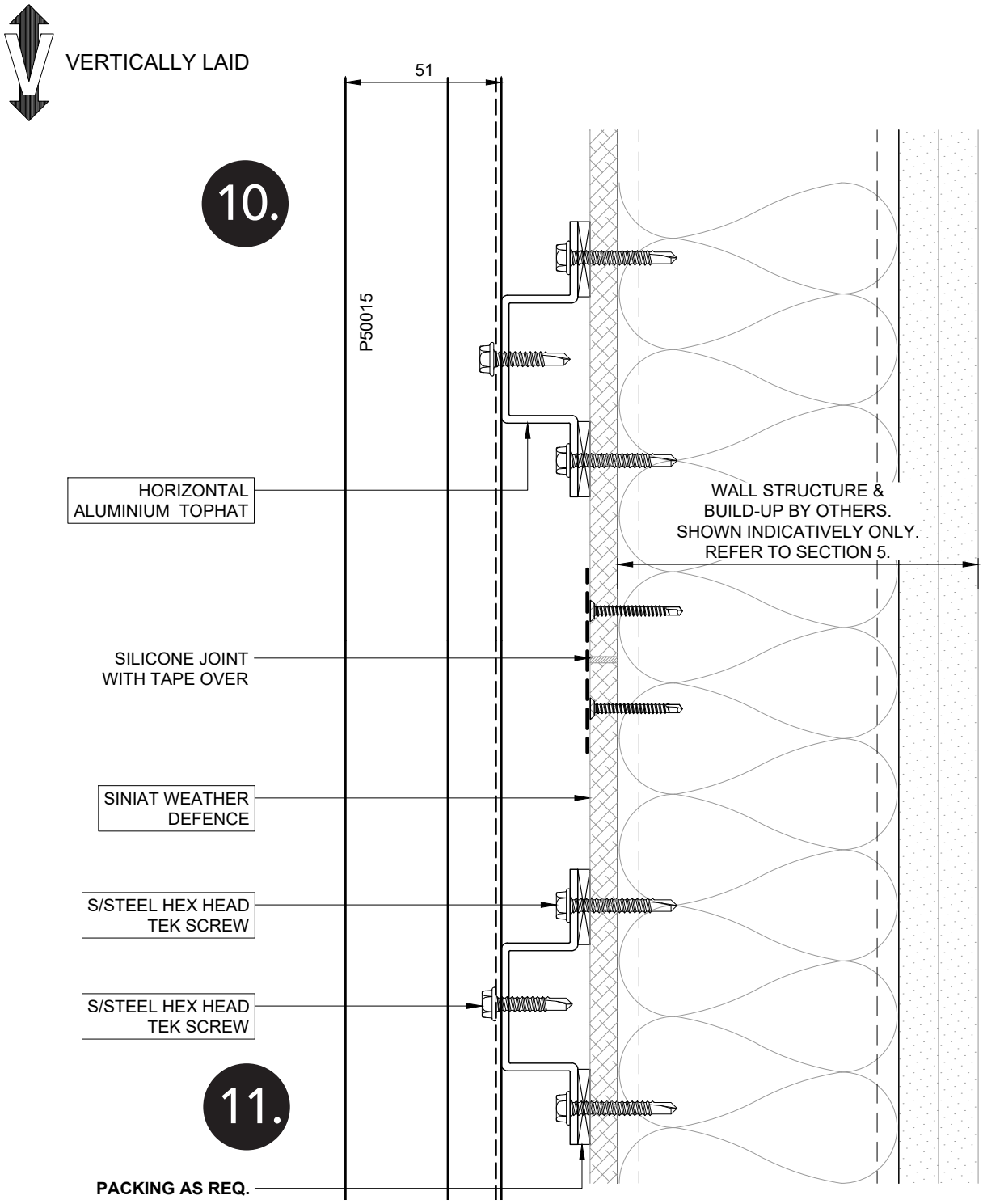
VERTICALLY LAID




DISCLAIMER:
THESE DETAILS ARE LIMITED TO THE GENERALISED DESIGN SPECIFICATION FOR PROCLAD LINEAR. VERIFICATION BY AN INDEPENDENT STRUCTURAL / FACADE ENGINEER RECOMMENDED. ANY USE OF THE DETAIL AS SHOWN IS AT YOUR OWN DISCRETION AND RISK.

*Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.*

## EMPIRE VERTICAL / URBAN - Vertical Detail

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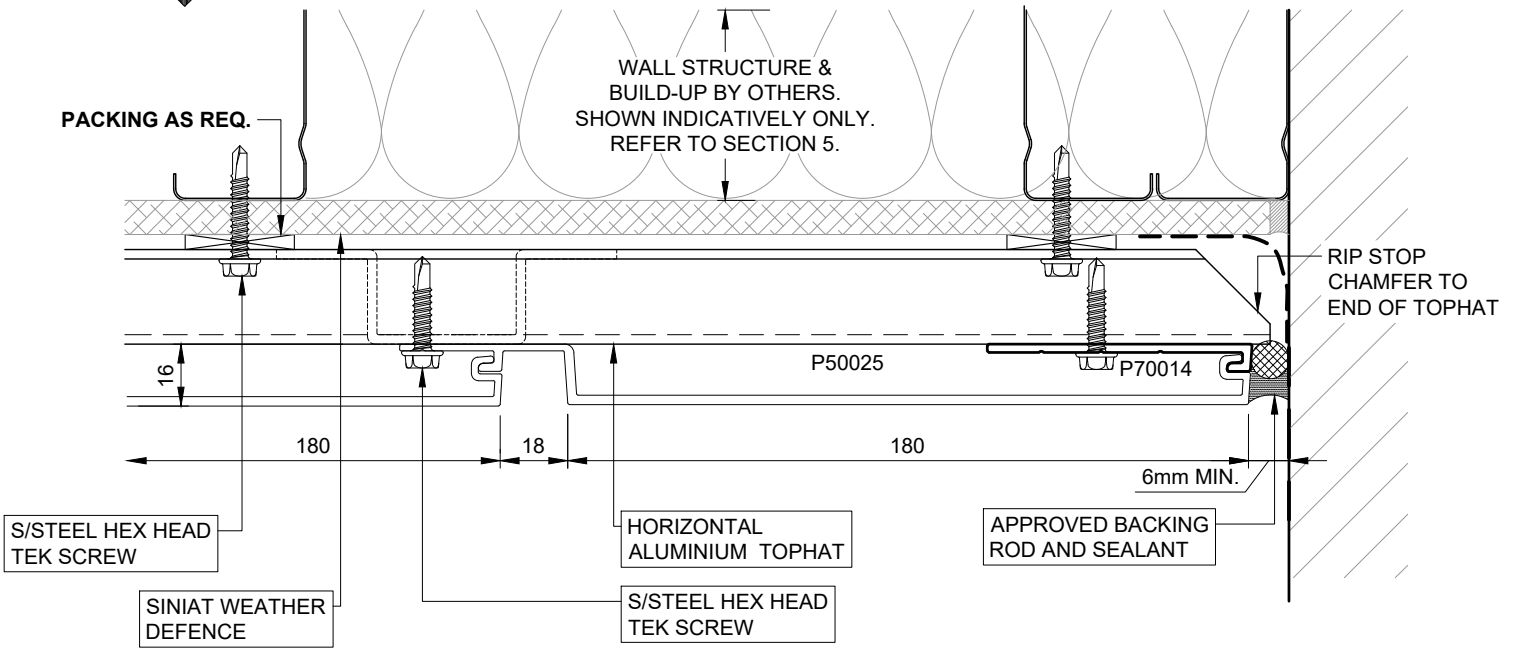
*Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.*

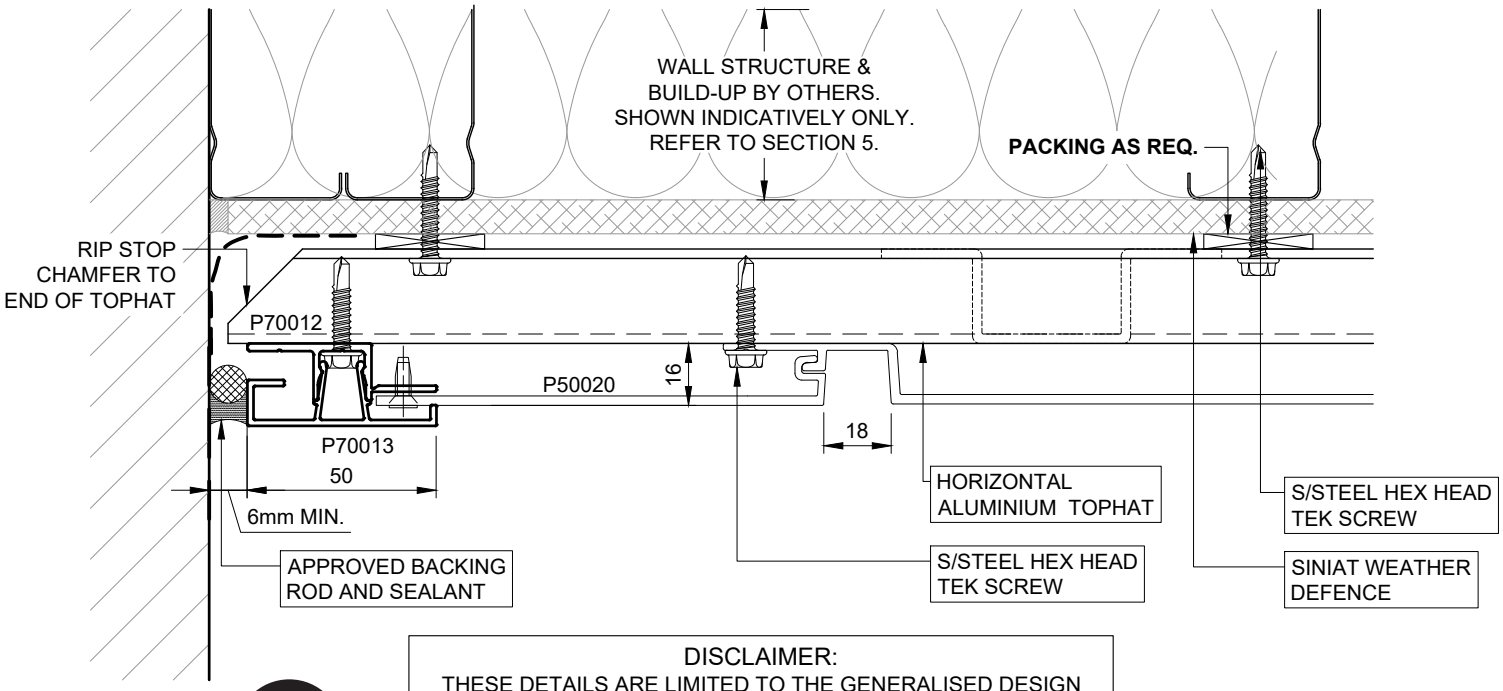
# 9. Vertical Panel - General Arrangement Details

## EMPIRE VERTICAL - Horizontal Detail

VERTICALLY LAID

6.




3.

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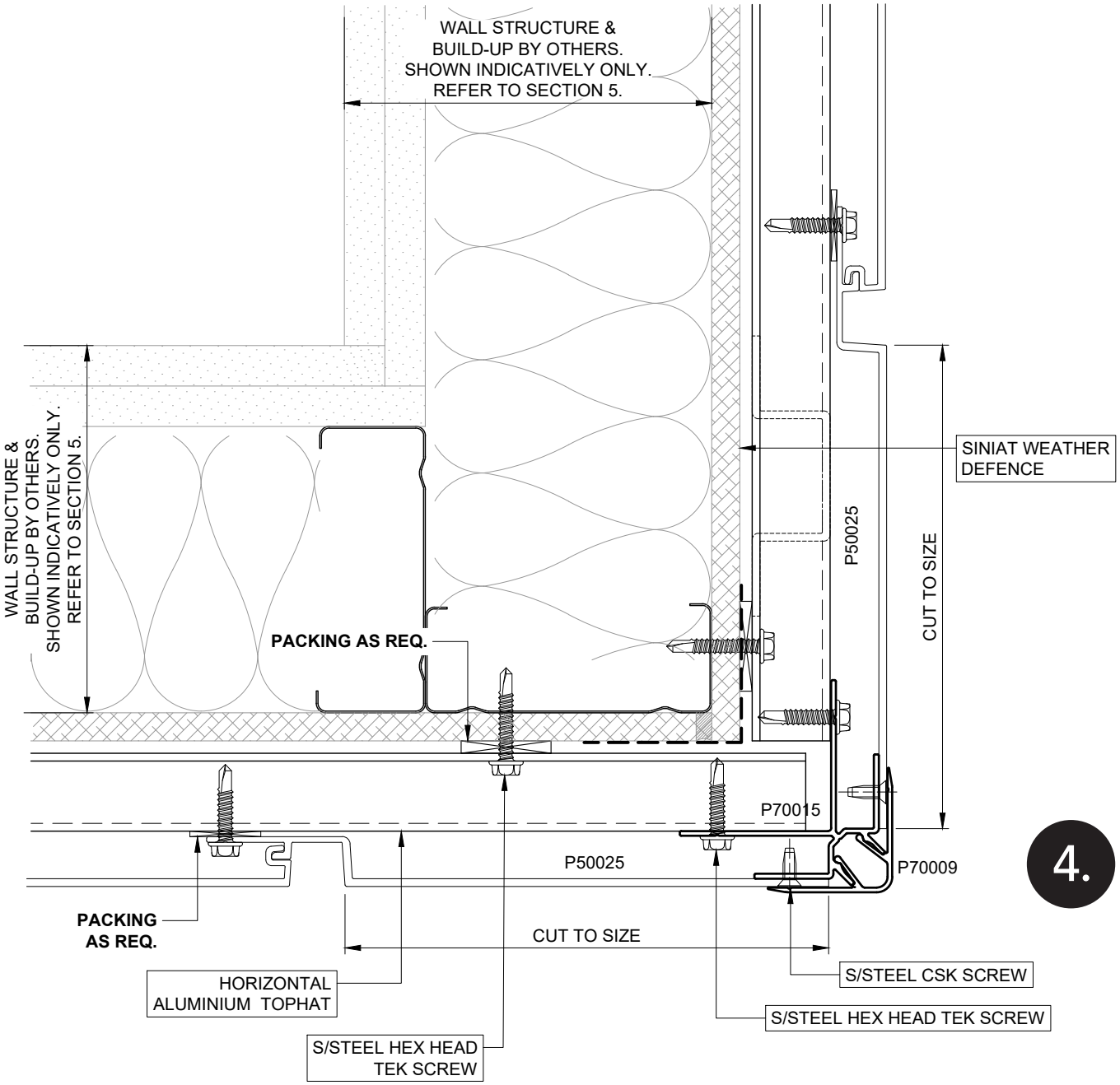
# 9. Vertical Panel - General Arrangement Details

## EMPIRE VERTICAL - External Cut Corner Detail

VERTICALLY LAID

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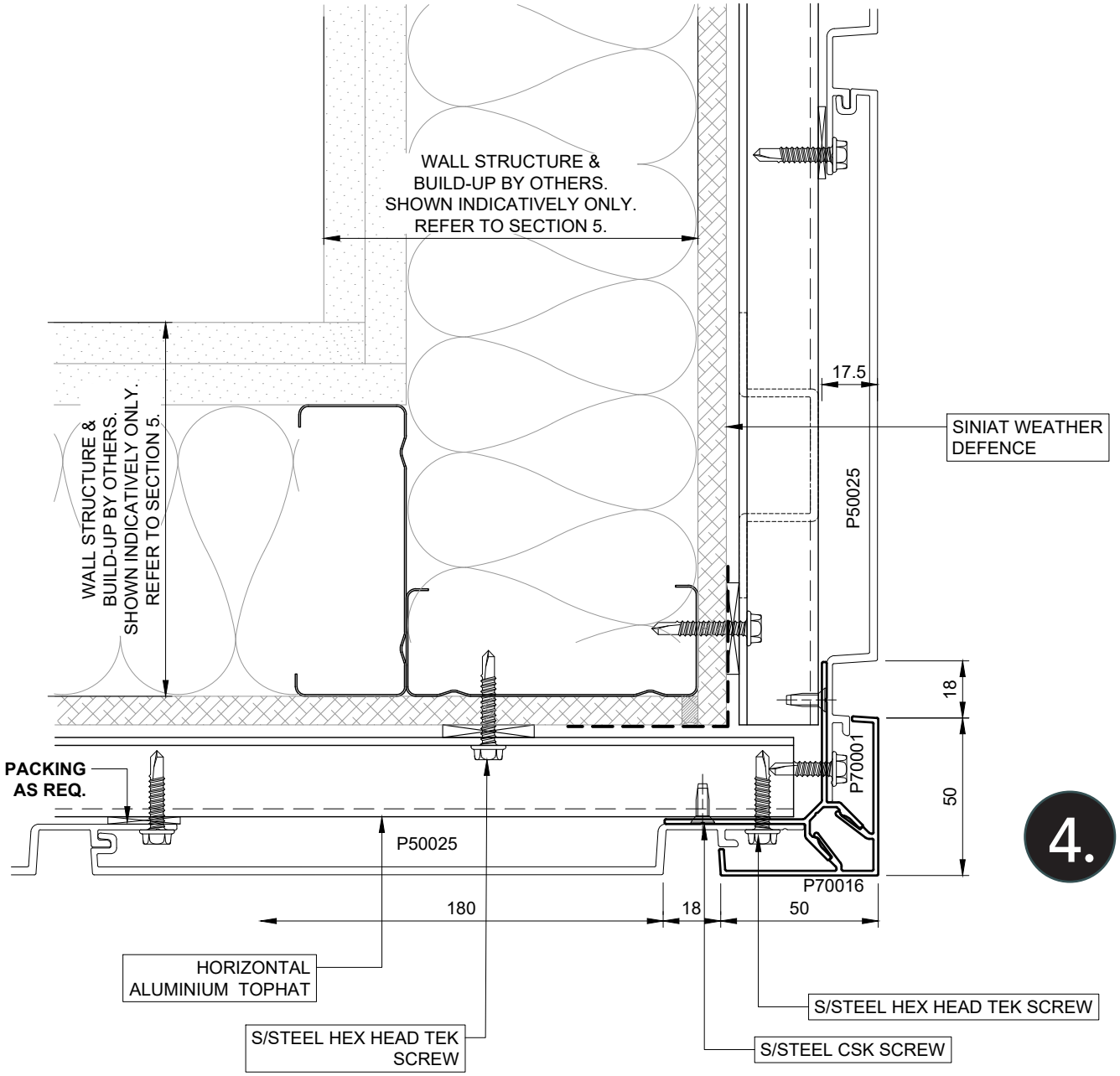
## EMPIRE VERTICAL - External Corner Detail

VERTICALLY LAID

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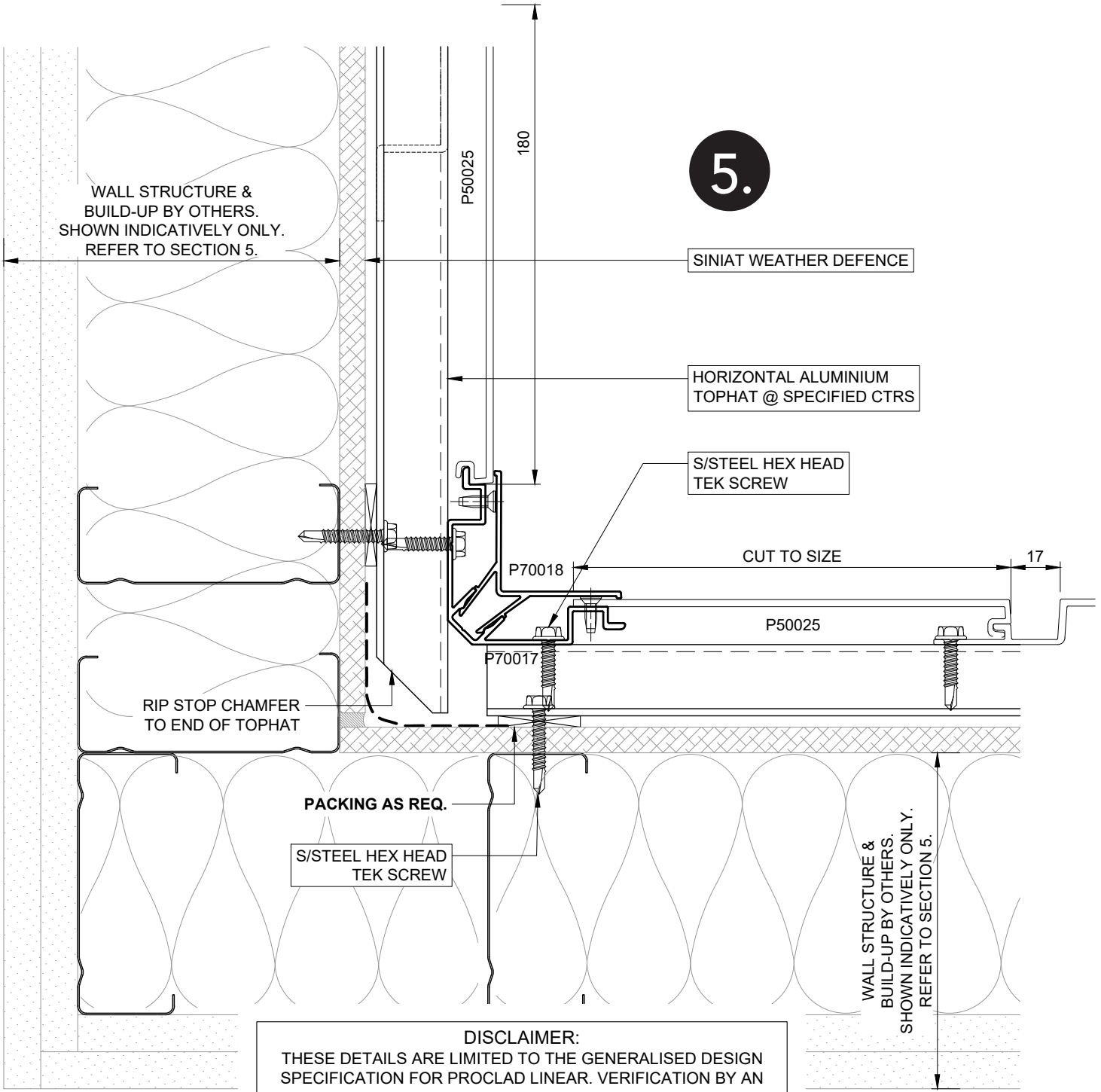
# 9. Vertical Panel - General Arrangement Details

## EMPIRE VERTICAL - Internal Cut Corner Detail

VERTICALLY LAID

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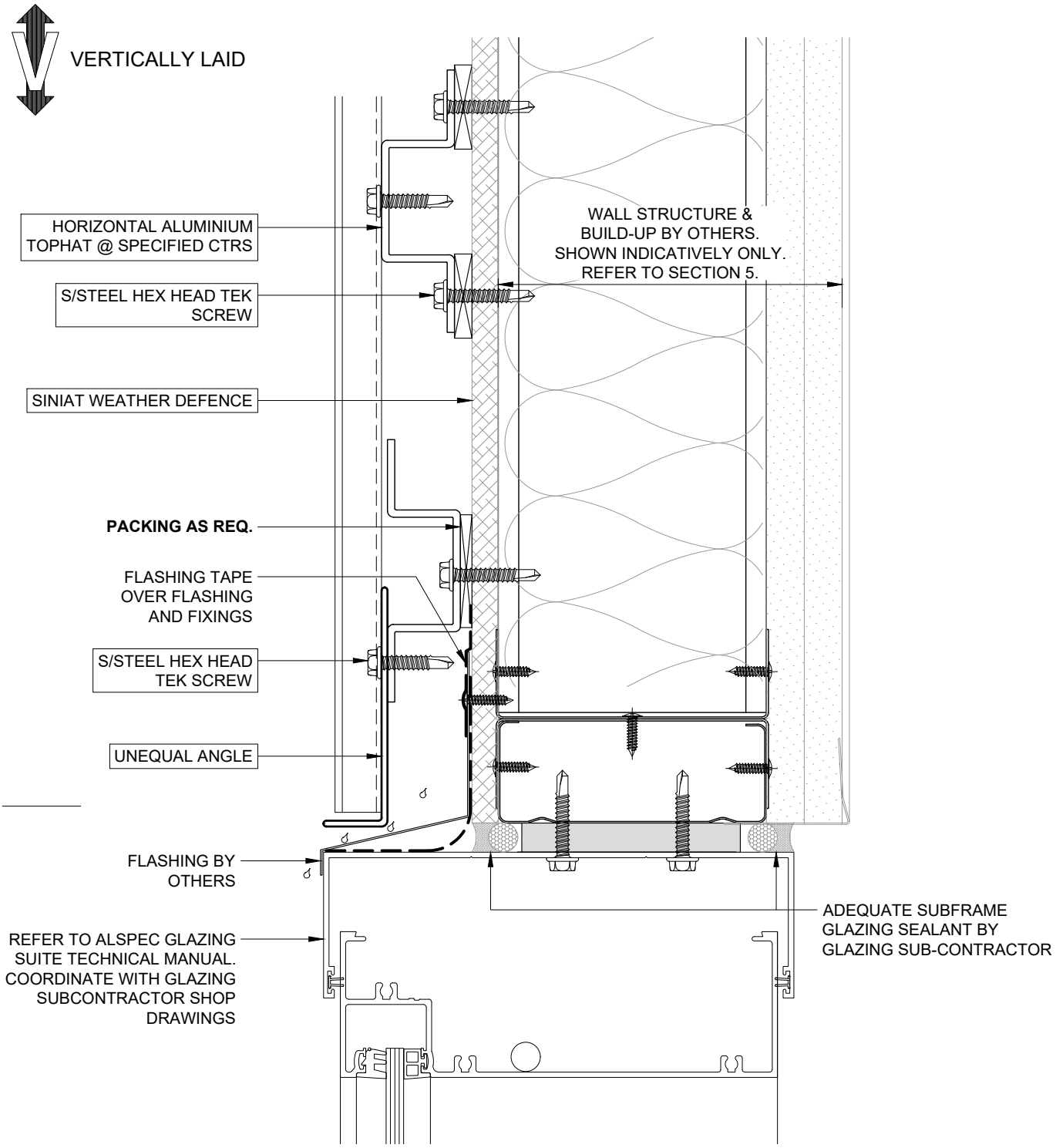
# 9. Vertical Panel - General Arrangement Details

## EMPIRE VERTICAL - Window Head Detail




7.

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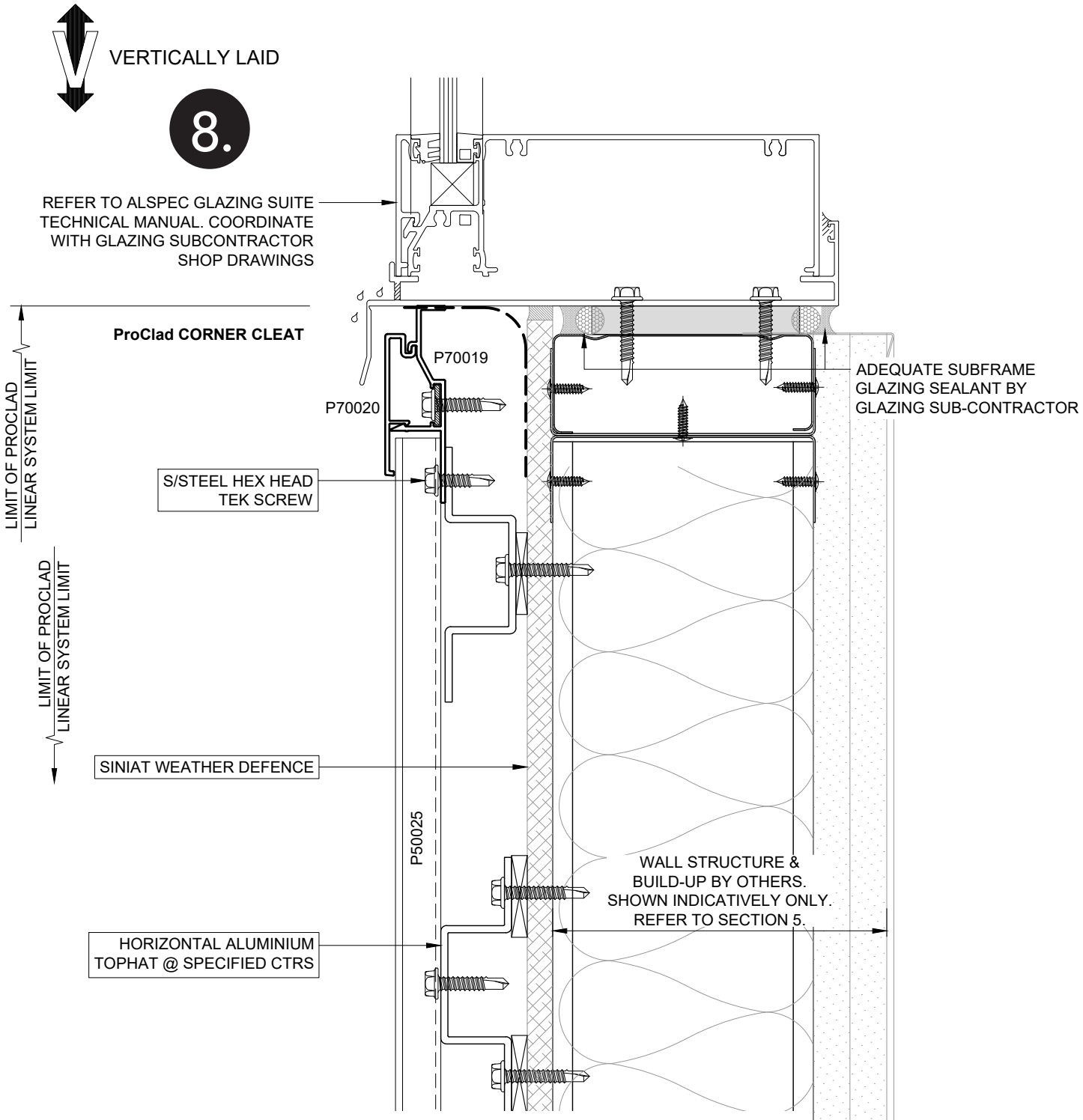
## EMPIRE VERTICAL - Window Sill Detail

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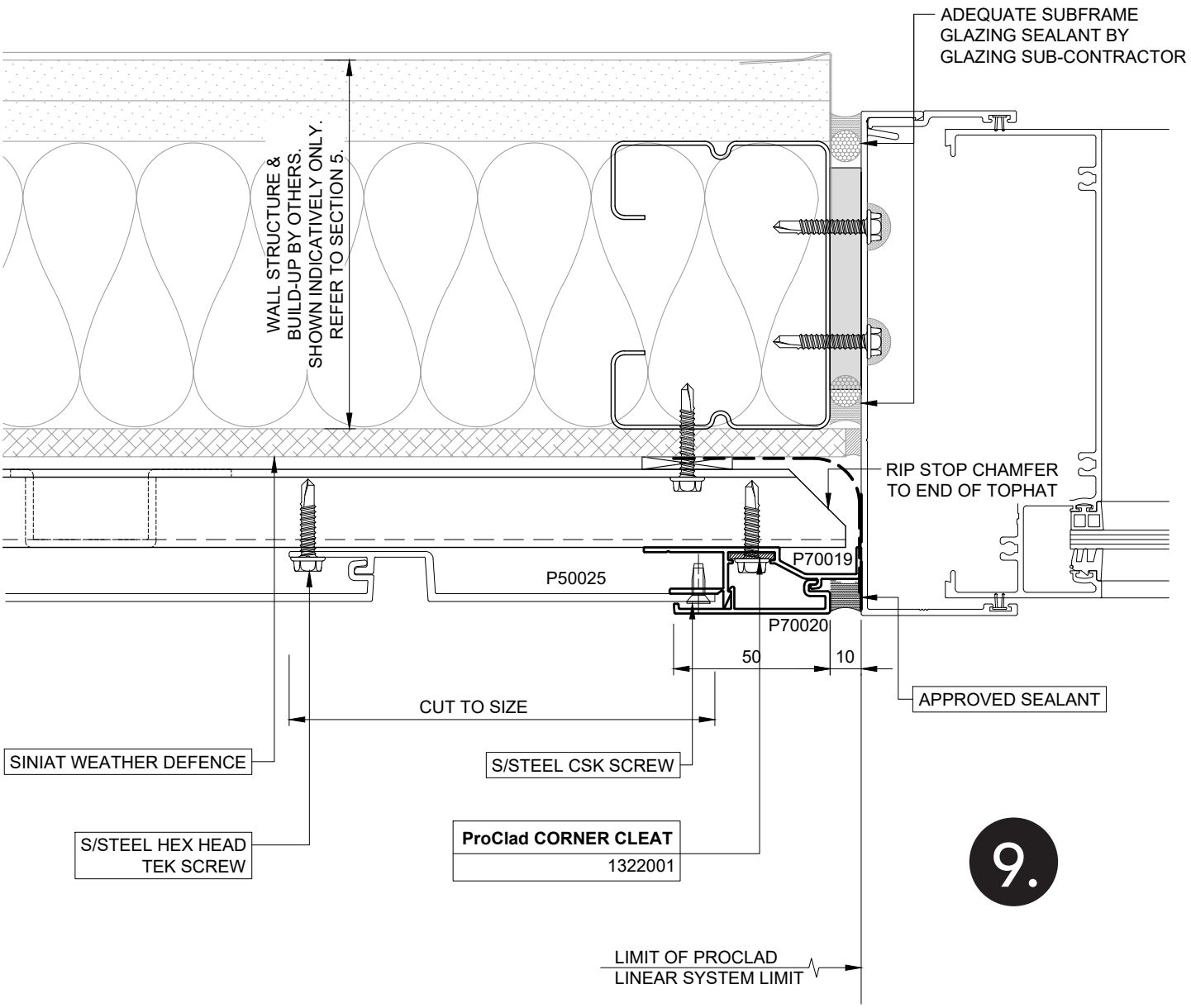
# 9. Vertical Panel - General Arrangement Details

## EMPIRE VERTICAL - Window Jamb Detail

VERTICALLY LAID

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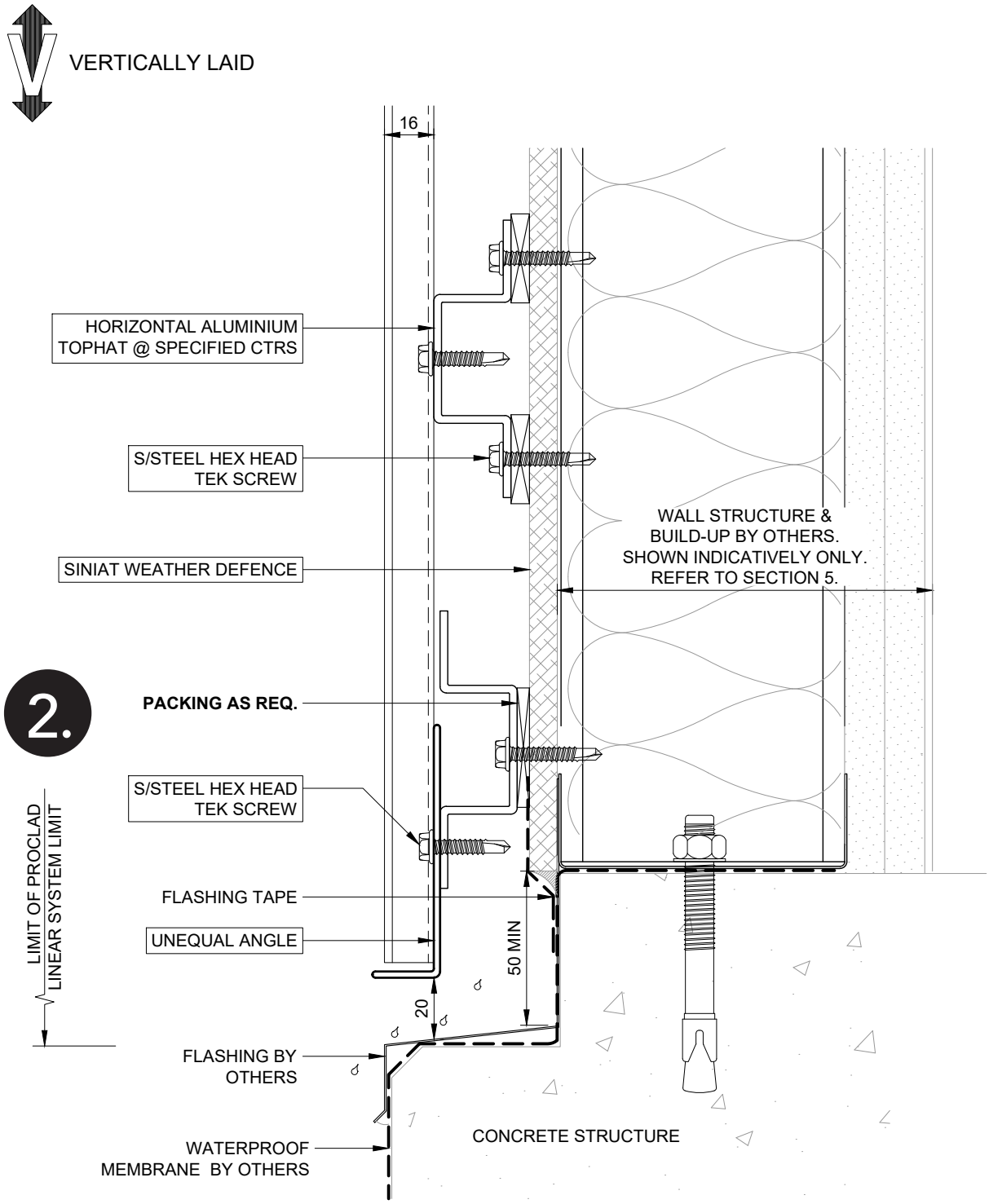
## EMPIRE VERTICAL - Sill Section Detail

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## Appendix B: Proclad™LINEAR Specification Notes and Maintenance Requirements



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# 1. GENERAL NOTES - DESIGN, FABRICATION AND INSTALLATION REQUIREMENTS

## 1.1. General Notes - Design and Specification Requirements

1.1.1. Wall structure, cladding sub-framing and cladding panels to be designed, documented and specified in accordance with the current edition of the following and all other relevant Australian Codes and Standards:

National Construction Code (NCC) including the Building Code of Australia (BCA)

| | |
|---|---|
| AS/NZS 1170 | Structural design actions |
| AS/NZS 1170.0 | General principles |
| AS/NZS 1170.1 | Permanent, imposed and other actions |
| AS/NZS 1170.2 | Wind actions |
| AS 1170.4 | Earthquake actions in Australia |

The relevant material design standards, which may include standards such as:

| | |
|---|---|
| AS/NZS 1664 | Aluminium Structures |
| AS 3600 | Concrete Structures |
| AS 4100 | Steel Structures |
| AS/NZS 4600 | Cold-formed steel Structures |
| AS/NZS 4673 | Cold-formed stainless-steel Structures |
| AS 3700 | Masonry Structures |
| AS 1720 | Timber Structures |

1.1.2. Construction loads and maintenance loads should also be considered in the design of the wall structure, cladding sub-framing and cladding panels.

1.1.3. Façade Access loads should be considered in the design of the wall structure, cladding sub-framing and cladding panels. This may include rope access loads in accordance with AS/NZS 4488 Parts 1 & 2 Industrial rope access systems.

1.1.4. Deflection limits should be as recommended in AS/NZS 1170.0 Appendix C.

1.1.5. The cladding design including fasteners and sub-framing, shall accommodate all short and long-term movements and deflections in the base-building, substrates to which the cladding is fixed, and within the façade cladding itself. Movement allowances shall include thermal movements of the façade and base building and differential movements between elements. Movements shall be accommodated without failure of the or the transfer of loads from the base-building to the cladding fasteners and sub-framing. Coordinate all movement allowances with the building's project Structural Engineer.



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1.1.6. The cladding design including fasteners and sub-framing, shall accommodate all base-building tolerances together with all manufacture, fabrication and installation tolerances required to complete the work. Coordinate all base-building tolerance allowances with the building's project Structural Engineer.

1.1.7. Design fixings to resist working loose due to the effects of vibrations, or cyclic effects of load, deflections and thermal expansion.

1.1.8. Wall structure, cladding sub-framing and cladding panels to be designed and certified by a suitably qualified Structural or Façade Engineer or Engineers having the relevant, required State or Territory building practitioners registration appropriate for the location of the project in Australia and as a minimum, a person eligible for membership of Engineers Australia, or who is already a member of Engineers Australia.

1.1.9. Design and documentation detailing of the facade is to be in accordance with the notes included in this section and details provided in Section 6 of this Technical Manual; Or certified as meeting the NCC Volume 1 parts F3P1 & F8P1 / NCC Volume 2 parts H2P2 & H4P7 [NCC: 2022] using the Verification Methods NCC Volume 1 F3V1 & F8V1 / NCC Volume 2 H2V1 & H4V5; or a Performance Solution in accordance with A2G2 of the NCC. In order to comply with the ProClad™ SOLID cladding system pre-certifed F3P1 [vol. 1] / H2P2 [vol. 2] Performance Solution, the following must occur in addition to complying with the instructions, material and component selections and details in this manual:

- Accurate assessment of these façade wind pressures in accordance with AS/NZS 1170.2 for each elevation and cladding location on the façade. This is the responsibility of the design and/or construction team for the project.
- Once these pressures have been accurately assessed, they can be compared to the Ultimate, Serviceability, Water Penetration and Air Infiltration pressures in the AS/NZS 4284 Test Report:
    - Ian Bennie & Associates AS/NZS 4284 Test Report No. 2021-030-S1 dated February 2022
- Provided the building's project specific wind pressures are all lower than the corresponding pressures that achieved a pass in the AS/NZS 4284 Test, then this F3P1 [vol. 1] / H2P2 [vol. 2] Performance Solution is applicable.

1.1.10. Comply with the requirements of the NCC Volume 1 Section C / NCC Volume 2 parts H3 [NCC: 2022] with regard to the fire safety and combustibility of all façade components relevant to the project specific requirements under the NCC's relevant Type of Fire Resisting Construction.

1.1.11. Complete the façade design and documentation, developed from the details provided in Section 6 of this Technical Manual to meet all project brief and statutory thermal, environmental, acoustic, fire, condensation and other necessary requirements. Coordinate with all relevant design consultants and disciplines.

1.1.12. The details provided in section 6 are intended to be developed for the project specific geometry, interfaces and performance requirements.

1.1.13. Provide adequate drainage for the effects of condensation and any other moisture or water build-up within the façade system.

1.1.14. Design of the façade is to be in accordance with AS 1562.1 *Design and installation of metal roof and wall cladding Metal.*



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## 1.2. General Notes - Fabrication and Product / Material Supply Requirements

1.2.1. Waterproofing membranes for external above ground use must comply with AS 4654.1 *Waterproofing membranes for external above-ground use Materials* and; AS 4654.2 *Waterproofing membranes for external above-ground use Design and installation*

1.2.2. Fixings must comply with the following Standards as relevant to the manufacture, design and/or install:

| | |
|---|---|
| AS 3566.1 | Self-drilling screws for the building and construction industries General requirements and mechanical properties |
| AS 3566.2 | Self-drilling screws for the building and construction industries - Corrosion resistance requirements. |
| AS 1110.1 | ISO metric hexagon bolts and screws – Product grade A and B Bolts |
| AS 1110.2 | ISO metric hexagon bolts and screws – Product grade A and B Screws |
| AS 1111.1 | ISO metric hexagon bolts – Product grade C Bolts |
| AS 1111.2 | ISO metric hexagon bolts – Product grade C Screws |
| AS/NZS 1252.1 | High strength steel bolts with associated nuts and washers for structural engineering - Bolts, nuts and washers Technical requirements |
| AS/NZS 1252.1 | High strength steel bolts with associated nuts and washers for structural engineering - Bolts, nuts and washers Verification testing for bolt assemblies |
| AS/NZS 1559 | Hot-dip galvanized steel bolts with associated nuts and washers for tower construction |
| AS 1112 | ISO Metric hexagon nuts (parts 1 to 4) |
| AS 1237.1 | Plain washers for metric bolts, screws and nuts for general purposes General plan |
| AS 1237.2 | Tolerances for fasteners Washers for bolts, screws and nuts - Product grades A, C and F |
| AS/NZS 4402 | Hexagon head tapping screws |
| AS/NZS 4403 | Slotted pan head tapping screws |
| AS/NZS 4404 | Slotted countersunk (flat) head tapping screws (common head style) |
| AS/NZS 4405 | Slotted raised countersunk (oval) head tapping screws (common head style) |
| AS/NZS 4406 | Cross-recessed pan head tapping screws |
| AS/NZS 4407 | Cross-recessed countersunk (flat) head tapping screws (common head style) |
| AS/NZS 4408 | Cross-recessed raised countersunk (oval) head tapping screws |
| AS/NZS 4409 | Hexagon washer head tapping screws |



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| | |
|---|---|
| AS/NZS 4410 | Hexagon flange head tapping screws |
| AS/NZS 4411 | Tapping screws thread |
| AS/NZS 4412 | Heat-treated steel tapping screws - Mechanical properties |

1.2.3. Post installed anchors must comply with AS 5216 *Design of post-installed and cast-in fastenings in concrete.*

1.2.4. Handling and Storage:

- Care should be taken in handling ProClad LINEAR to eliminate the risk of damage.
- ProClad LINEAR aluminium panels are sensitive to scratching and denting whilst storing and handling. Cutting swarf must be removed and the surface must be clean prior to stacking or packing. Any foreign inclusion may lead to pressure impact dents.

## 1.3. General Notes – Installation Requirements

1.3.1. All cladding to be installed by suitably qualified tradespeople.

1.3.2. Follow all Aluminium Façade System's instructions for storage, delivery, handling and installation of materials.

1.3.3. Inspect all cladding panels or cladding system components prior to install. Any cladding panels or cladding system components found to be defective in any way must not be installed.

1.3.4. Project specific Quality Assurance (QA) and Inspection Test Plans (ITPs) are to be developed and implemented for the installation of the membranes, accessories, components and cladding panels on the façade.

1.3.5. Ensure that the works carried out are fully interfaced, coordinated and sealed with all adjacent elements of work and are programmed on site to achieve the necessary detailed installation sequence.

1.3.6. Weather Defence Board:

- Installation of weather defence board to be in accordance with AS 4654.2 *Waterproofing membranes for external above-ground use Design and installation*
- Installation of weather defence board to be in accordance with Manufacturer's product specific requirements.
- Sealing of weather defence board to all adjacent interfaces and joints to complete weather line of façade to be in accordance with the details in section 6 of this Technical Manual and product manufacturer's requirements.
- Seal all joints between weather defence boards, edges, interafaces and corners prior to the application of the weather defence tape.

1.3.7. Sealant:

- Clean and prepare joint surfaces before the application of sealants and provide backer rods in accordance with the sealant manufacturer's recommendations.
- Use sealant primer compatible with the sealant being used on all metal surfaces prior to application of sealant.
- Prevent three-sided adhesion of the sealant.
- Size sealant joints in accordance with the sealant manufacturer's minimum and maximum dimensional and aspect ratio requirements. As a minimum all sealant joints need to have a thickness of sealant that is > ½ the sealant joint width.



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- Check the shelf life expiry date on each sealant cartridge or sausage and discard any sealant that has expired.
- Store the sealant in a dry environment within the allowable storage temperatures of the product manufacturer and discard any sealant that has been exposed to temperatures or conditions that exceed the limitations.
- Conduct peel adhesion tests on the substrates that the sealant needs to bond to prior to commencing sealant work on site.
- Apply and cure sealants in accordance with the manufacturer's directions on minimum and maximum temperature and relative humidity conditions.
- Tool the surface of the sealant to complete.
- Check sealant adhesion, dimensions, depth and bond on a regular basis in accordance with the project specific QA plan and ITPs.

1.3.8. Separate all dissimilar metals to avoid galvanic corrosion, the acceleration of corrosion, and/or the premature degradation of coatings.

1.3.9. Isolate electrical systems from the façade cladding components to prevent corrosion.

1.3.10. Do not allow aluminium components to come into contact with incompatible materials such as wood preservatives containing copper, mercury, or fluorides; mortar; concrete; plaster; masonry; and wet-application fireproofing.

1.3.11. Do not remove and re-install fixings for site adjustment or other reasons. Replace components that require fixing removal and discard the removed fixings.

1.3.12. All fixings made through water proofing layers (membranes, sarkings and other facade waterproofing barriers such as cladding and linings and weather defence boards) must be adequately sealed at the point of penetration using wet applied sealant or tape. Where the façade is considered Low Risk and the façade is subject to site water testing, the sealant may be omitted from the fixings.

- Low Risk means: Having a risk score of 20 or less, when the sum of all risk factor scores are determined in accordance with Table F3V1 NCC Volume 1 / Table H2V1a / NCC Volume 2 [NCC: 2022] and not subjected to an ultimate limit state wind pressure of more than 2.5 kPa

1.3.13. Do not cut any metal products on site near glass or other finished surfaces.

1.3.14. Protect all products from mechanical damage and the harmful effects of heat and weather conditions. For elements, materials and components of the façade that will be covered in the final construction, adhere to the maximum weather exposure times for the products, or replace the products that exceed these timeframes.

1.3.15. Installation of the façade is to be in accordance with SA HB 39 Installation code for metal roof and wall cladding and AS 1562.1 *Design and installation of metal roof and wall cladding Metal.*

1.3.16. Installation is to be in accordance with the details provided in Section 6 of this Technical Manual, or certified as meeting the NCC Volume 1 parts F3P1 & F8P1 / NCC Volume 2 parts H2P2 & H4P7 [NCC: 2022] using the verification methods NCC Volume 1 F3V1 & F8V1 / NCC Volume 2 H2V1 & H4V5; or a Performance Solution in accordance with A2G2 of the NCC.

1.3.17. Site water and air permeability testing is recommended to verify the façade's performance.

## 2. CARE & MAINTENANCE



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2.1. The ProClad **Linear** Cladding Systems are the product of extensive research and development and designed to resist corrosion and rusting, but as with all external elements on the building require some maintenance to keep them looking good and performing well. Depending on how harsh the environment elements are, the maintenance period will vary. Refer to recommended maintenance table below.

2.2. Your **ProClad Linear** Cladding Systems should only ever need to be washed down with a soft bristled brush using warm water and mild detergent. Rinse well with fresh water and remove any detergent residue. Strong detergents and abrasive cleaners should never be used to clean the **ProClad Linear** Cladding Systems as they may scratch or damage the surface finish.

2.3. The first inspection of exposed sealant joints must be carried out one (1) year after application. Subsequent sealant inspections should occur once every two years. If any detachment / delamination / adhesion loss / cracks in sealant / damage / fungal or mold growth / severe weathering or loss of skin / tackiness is found, then the sealant must be replaced.

2.4. Sealant should be replaced on the expiration of the product warranty in order to maintain the weather performance of the façade.

## MAINTENANCE PERIOD TABLE

| ENVIRONMENT | RECOMMENDED MAXIMUM MAINTENANCE INTERVAL |
|---|---|
| Mild | Six Months |
| Moderate | Three Months |
| Tropical/Severe | One Month |

Environmental Definitions:

**Mild** – Being rural, away from the coast and remote from industry and urban activity.

**Moderate** – Being mainly urban, inland and away from heavy industry.

**Tropical** – Being coastal/marine, subject to salt deposition and within 15km of the Eastern coast or 10km of the Western coast of Australia.



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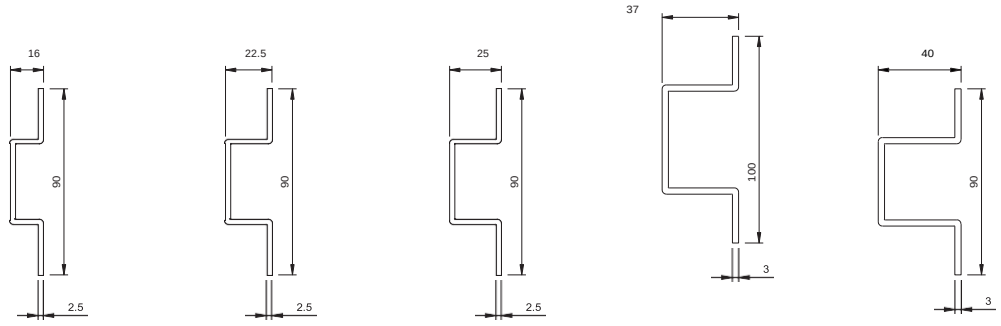
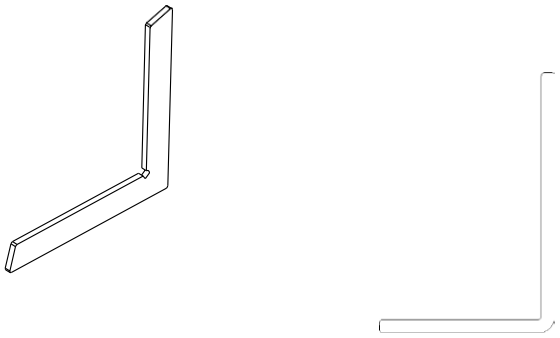
# Appendix C: Proclad™LINEAR Product Data

## Accessories




| | 16mm TOPHAT | 22.5mm TOPHAT | 25mm TOPHAT | 37mm TOPHAT | 40mm TOPHAT |
|---|---|---|---|---|---|
| PART | 1629894 | 1629895 | 1629896 | 1629891 | 1806053 |
| FINISH | MILL (001) | | | | |
| QTY | LENGTHS (6.5m) | | | | |



| PCLA1 CORNER CLEAT 100 x 14 x 1.6mm | |
|---|---|
| PART | P70022 |
| FINISH | MILL (001) |
| QTY | EACH |

| L - ANGLE TRIMS | |
|---|---|
| **Part** | **Size** |
| 1030510 | 20 x 20mm |
| 1030530 | 25 x 20mm |
| 1030540 | 25 x 25mm |
| 1030548 | 32 x 20mm |
| 1030581 | 40 x 20mm |
| 1030579 | 45 x 20mm |
| MORE SIZES AVAILABLE, PLEASE ASK YOUR LOCAL AFS MANAGER | |



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## Membranes

| 12.5mm WEATHERDEFENCE BOARD<br>2400 x 1200mm | |
|---|---|
| PART | 1322006 |
| USE | Weathertight, lightweight, breathable and non-combustable sheathing board , faced with a water-resistant material.. |
| PRODUCT & MANUFACTURER | SINIAT Weather Defence Board |
| QTY | PER BOARD |

| WEATHER DEFENCE JOINT TAPE<br>60mm x 25m ROLL | |
|---|---|
| PART | 1322005 |
| USE | single sided adhesive tape for interior and exterior use, providing a high-performance air and weather tight seal. For use with Weather Defence board. |
| PRODUCT & MANUFACTURER | SINIAT Weather Defence Joint Tape |
| QTY | PER ROLL |

FORMOREINFORMATIONONSINATWEATHERDEFENCE,PLEASEASKFOR TECHNICAL DOCUMENTATION



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# Silicone and Sealants

## SELLEYS FIREBLOCK XT SEALANT

**Applications**

- Internal and External, non-trafficable control joints
- Used with Siniat Weather Defence Board
- High UV resistance, moisture curing sealant for fire and acoustic rated construction
- Approx 50mins for skin time (@23 $^{0}$C & 50% RH)
- Cure rate 2 to 3mm per day (@23 $^{0}$C & 50% RH)

| Part # | Colours | Qty |
|---|---|---|
| 1322011 | Grey (036) | 600ml Sausage |


## ALSPEC 100% NEUTRAL CURE SILICONE

**Applications**

- General glazing & façade sealing for cladding
- Approx 10 minute Skin time
- Movement Capacity: +/- 25%

This sealant can be used in both interior and exterior applications offering excellent adhesion to glass, aluminium, timber, concrete, masonry, plastics and most powder coated surfaces.

| Part # | Colours | Qty |
|---|---|---|
| 1385011 | Gloss Black (034) | 300 ml Cartridge (20 cartridges per carton) |
| | Gloss White (010) | |
| | Gloss Grey (036) | |
| | Translucent (055) | |
| | Matt Black (0G7) | |
| | Matt White (0ZY) | |
| | Matt Grey (0BC) | |




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STRUCTURAL ENGINEERING DESIGN

## HIGH PERFORMANCE 100% NEUTRAL CURE SILICONE

**Applications**

- General & High performance glazing & cladding sealing for façades
- 10 to 15 minute Skin time (@20$^0$C & 50% RH)
- 5 to 7 days Cure time (@20$^0$C & 50% RH)
- Dynamic Joint Movement (ASTM C719): +/- 50%

Premium low modulus one part moisture curing, 100% calcium carbonate filled, high performance neutral cure silicone sealant (oxime) designed to give superior adhesion and durability in a wide range of glazing, weather sealing, cladding and trade applications. It will bond to form a strong weatherproof seal on most common building materials such as: glass, ceramic, steel, aluminium, brick, concrete, most plastics etc.

Weathering and UV resistance is excellent and its superior physical properties are retained over many years exposure.

PRODUCT AND MANUFACTURER: ADMIL Prosil 41 LM

| Part # | Colours | Qty |
|---|---|---|
| 1385005 | Black<br>Grey<br>White | 300 ml Cartridge<br>(20 cartridges per carton)<br>Also available in 600 ml Sausage for Caulking Gun |


## LOW MODULUS ISOCYANATE FREE POLYURETHANE SEALANT

**Applications**

- Construction Joint Sealant applications; Sealing and Bonding of Metal
- 35 minutes Skin time (@25$^0$C & 50% RH)
- Upto 7 days Cure time (2.5mm per 24 Hrs)
- Movement Capacity: +/- 25%

Low Modulus, Hybrid Polyurethane, flexible joint sealant and adhesive that is free of Isocyanates and other hazardous raw materials. SupaSeal has been formulated to offer outstanding adhesion to most common building materials, such as Aluminium, timber, concrete, fibreglass and be used in most sealing and joint filling applications.

Paintable.

PRODUCT AND MANUFACTURER: ADMIL SupaSeal PU

| Part # | Colours | Qty |
|---|---|---|
| 1385020 | Black<br>Dark Grey<br>Grey<br>Off White<br>Sandstone<br>Beige<br>White | 950 ml Sausage for Caulking Gun<br>Also available in 300 ml Cartidge |




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STRUCTURAL ENGINEERING DESIGN

# Fixings

| TEK SCREWS | |
|---|---|
| PART | …… |
| PRODUCT | …… |
| USES | Fixing of top hats to metal framing structure<br>Fixing of panel support top hats to cross battens<br>Fixings of panel Zeds to supporting top hats or to each other<br>Do not use in slotted thermal movement holes. |
| MATERIAL | Stainless Steel; or<br>Class 5 corrosion resistance in accordance with AS/NZS 3566.2 *Self-drilling screws for the building and construction industries Part 2: Corrosion resistance requirements and requirements for non-conductive seals* |
| SIZE | To be confirmed by Structural / Façade Engineer to suit the design loads and performance requirements. No smaller than #10 gauge screws. |
| SPACING | To be confirmed by Structural / Façade Engineer to suit the design loads and |
| TYPE | Use series 500 tek screws where drilling into thick materials.<br>Select thread pitch to suit materials being fixed. |

| GTEC SELF DRILLING SCREWS FOR SINAT BOARDS | | | |
|---|---|---|---|
| PART # | SIZE | USE | QUANTITY |
| 1322007 | 3.5 x 25mm | METAL STUD WORK UNDER 0.7mm | BOX of 1000 |
| 1322008 | 3.5 x 38mm | METAL STUD WORK UNDER 0.7mm | BOX of 1000 |
| 1322009 | 3.5 x 42mm | TIMBER STUDS | BOX of 1000 |
| 1322010 | 3.5 x 25mm | METAL STUDS UNDER 3mm | BOX of 1000 |



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STRUCTURAL ENGINEERING DESIGN

# ProClad LINEAR ALUMINIUM

## EMPIRE
## URBAN
## MANOR

# ProClad LINEAR ALUMINIUM

## EMPIRE

The EMPIRE profile is clean and sophisticated.  Tem fugitibus quam cus maximporiti ut endaecto cone sanitem eaquias audi to id utassunt.

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## URBAN

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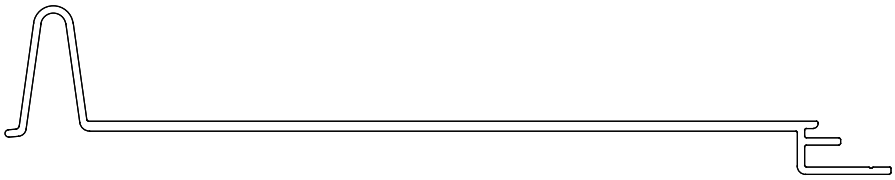
Oreiciam ute nonestibus, unt aut est ut am hil iducias quunt faccum fuga. Nequi rehenit que sequidipid mos iur, torectorro to con erferib eatemquatem eum, quis endaest officaturiam volupta voluptur auta in net aut dolupit, solo



## MANOR

Everupta tiuntiumque prae coremolum ratum voloribustia pa consento exeribus sum as doluptiusci officiatis quidiciis dolut quam volore perio. Et dolo te latem fugiate mporibusdam dolo ommo et asperio. Ut alitian ditiissit quassi aditam rerunt pe nam faceatiis a volestem que prae experum

All ProClad LINEAR products can be custom designed to suit any project.

### Interlocking Facade System

ProClad™ LINEAR is an modern facade alternative to other commercial cladding products. The product range has been architecturally designed and engineered by experienced commercial facade professionals to meet the demands of today's facade industry.

### 100% Non-Combustible

ProClad™ LINEAR products are made of 100% solid aluminium which is non-combustible meeting AS 1530.1 and AS1530.3. Architects, engineers, and designers can be certain ProClad™ LINEAR will not burn or contribute to the spread of flame.

### Intelligent Installation Design

ProClad™ LINEAR profiles have been intelligently designed to provide excellent workability with matching ancillaries to cover every detail of the facade ensuring a fast and efficient installation.

### Pre-Finished System

Pre-Finished product with the option of powder coating, anodising, including state of the art production techniques for woodgrain finishes. ProClad™ LINEAR finishes are guaranteed to perform and outlast to highest standards.

### Proudly Australian Made

ProClad™ is a 100% Australian owned, designed and manufactured product, which contributes to it's outstanding quality and fast lead times. ProClad™ LINEAR proudly supports local and aids all aspects of the Australian economy.

### Environmentally Friendly

ProClad™ LINEAR solid aluminium is a 100% recyclable product putting our environment first from production to installation.

### Minimal Fabrication

ProClad™ panels can be ordered to custom lengths which eliminates additional fabrication. Panels are simply interlocked and tightened, then fixed. This also optimises usability and decreases waste.

### Premium Aesthetics

ProClad™ LINEAR profiles all have their own unique look with modern shadow profiles, traditional weatherboard profiles or industrial style standing seam rounding of with the option of any anodised, powdercoat or wood grain finish.

### Industry Leading Warranty

ProClad LINEAR provides an industry leading 25 year product warranty. Clients can be confident that their facade will withstand the test of time.

# Colours

ProClad™ LINEAR is available in powder-coated, anodised and wood grain colour finishes.
Custom colours are available on request.

## Powder Coated


Pearl White


Citi Pearl


Champagne Pearl


Anodic Natural


Precis Natural Shimmer


Eternal Silver


Charcoal


Charcoal Pearl


Precis Pure Gold


Sable Medium Bronze


Bronze Pearl


Precis Dark Bronze


French Champagne


Sable Brilliance


Titanium Pearl


Asteroid Pearl


Sable Bass


Ebony


Monument


Precis Black Ink


Brilliant Yellow


Lycra Strip


Sensation


Lobster


Viper Green


Shamrock Green


Bondi Blue


Jaybird

**Colour Disclaimer**: Colour representations in this brochure are for **illustrative purposes only**. You should request actual samples before placing your order.

## Anodised


Satin Spanish Silver


Satin Stainless Grey


Satin Silver Grey


Satin Slate Grey


Satin Charcoal Grey


Satin Sandstone


Satin Quarry Beige


Satin Pale Bronze


Satin Light Bronze


Satin Medium Bronze


Satin Dark Bronze


Satin Espresso


Satin Black


Satin Champagne


Satin Doeskin


Satin Oriental Gold


Satin Venetian Gold

## Wood Grain


White Oak


Grey Oak


American Oak


Golden Oak


Western Red Cedar


Red Oak


Royal Oak


Brown Oak


Volcano Oak

**Colour Disclaimer**: Colour representations in this brochure are for **illustrative purposes only**. You should request actual samples before placing your order.

# ProClad
## LINEAR

ALUMINIUM

ALUMINIUM
FACADE
SYSTEMS
POWERED BY ALSPEC

3 Alspec Place, Eastern Creek NSW 2766
PO Box 262, Horsley Park NSW 2175
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Fax: 02 9834 9532 | ABN: 63 001 252 259
aluminiumfacadesystems.com.au

ProClad
LINEAR
ALUMINIUM

ALUMINIUM FACADE SYSTEMS
POWERED BY ALSPEC

# TECHNICAL DATA SHEET

| Properties | Units | Values |
|---|---|---|
| Alloy | | 6063 |
| Temper | | T5 |
| Standard Thickness | mm | 2.5mm - 3.0mm |
| Painted Weight | kg/m² | 1.673kg/m |
| Raw Density | kg/m³ | 2700 |
| Young's Modulus (E) | GPa | 68.3 |
| Tensile Strength (25°) | MPa | 220 |
| Yield Strength (25°) | MPa | 180 |
| Shear Strength | MPa | 117 |
| Fatigue Strength | MPa | 69 |
| Elastic Modulus | MPa | 69 |
| 0.2% Proof Stress | MPa | >170 |
| Elongation | % | 12 |
| Linear Thermal Expansion | | 2.4mm/m at 100° temperature difference |
| Melting Range | °C | 640-660 |
| Electrical Conductivity - Equal Volume | MS/m | 32 |
| Electrical Conductivity - Equal Mass | MS/m | 105 |
| Thermal Conductivity | W/m.K | 201-218 |
| Sound Absorption Factor | NCR | 0.05 |
| Sound Reflection | % | 95 |

# ALSPEC SILICONE

"100% Neutral curing adhesive and sealant for glazing applications"

*Proudly partnered with*


## PRODUCT DETAILS

Alspec silicone is a 100% neutral curing adhesive and sealant designed for general purpose glazing applications. This sealant can be used in both interior and exterior applications offering excellent adhesion to glass, aluminium, timber, concrete, masonary, plastics and most powder coated surfaces.

## GLOSS

### Applications

- General purpose glazing
- Industrial sealing
- Automotive body panel sealant
- Caravan & truck body sealing

### Features

- Non corrosive
- Super adhesion
- 5-10 minute skimming time
- +/- 25% Movement capability
- < 4% VOC Content
- Temp Range -60 to 170 °C

### Materials

- Glass
- Aluminium
- Galvanised Steel
- Concrete
- Wood
- Ceramics
- Plastics
- Most powder coated surfaces

## MATT

### Applications

- General purpose glazing
- Colonial bars
- Structural butt joints
- Weather-sealing of high rise buildings
- Shopfronts
- Timber windows
- Shower screens
- Solar panel installation
- Industrial assembly

### Features

- Excellent UV Resistance
- 48 Shore A hardness
- No slump
- 5-10 minute skimming time
- +/- 25% Movement capability
- Temp Range -40 to 140 °C

### Materials

- Glass
- Aluminium
- Concrete
- Wood
- Masonry
- Plastics
- Most powder coated surfaces

| 1385011 | MATT BLACK | BLACK | MATT GREY | GREY | MATT WHITE | WHITE | TRANSLUCENT |
|---|---|---|---|---|---|---|---|
| COLOUR CODE | 0G7 | 034 | 0BC | 036 | 0ZY | 010 | 055 |

JUL 2016

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alspec.com.au

alspec® ALUMINIUM SYSTEMS SPECIALISTS

ADMIL SEALANTS & ADHESIVES

# Technical Data Sheet

Dated: 26/07/2019

# SupaSeal PU

LOW MODULUS ISOCYANATE FREE POLYURETHANE

## Low Modulus Isocyanate Free Polyurethane Sealant

### PRODUCT DESCRIPTION

**Description**: Admil **SupaSeal PU** is a Low Modulus, Hybrid Polyurethane, flexible joint sealant and adhesive that is free of Isocyanates and other hazardous raw materials and omits low odour. SupaSeal has been formulated to offer outstanding adhesion to most common building and automotive materials; such as Aluminium, timber, concrete, fibreglass and be used in most sealing and joint filling applications.

SupaSeal displays high joint movement capability with no sagging or slump characteristics to provide a high quality & efficient joint finish.

**SupaSeal PU** complies with **ASTM C920, Type S, Grade NS, Class 25, Use NT,M,G,A and O**

### APPLICATIONS

**Admil SupaSeal PU is suitable for:**

- Construction Joint Sealant applications
- perimeter seals around doors, windows and facades
- general purpose interior joint sealant applications
- sealing and bonding metal roofing systems
- automotive and marine applications requiring a flexible adhesion profile between substrates.

### FEATURES

- Solvent & Isocyanate Free
- Low VOC
- Low Odour & Non Corrosive
- Joint Movement +/- 25%
- Non Slump
- Up to 40mm wide joints
- Paintable

### MATERIALS

- Precast Concrete Panels
- Fibre Cement Sheet
- Block work & Bricks
- Aluminium Profiles
- Sandstone & Granite
- Fibreglass
- Plasterboard & Blue Board

### SURFACE PREPERATION

Surfaces to be bonded must be clean and dry, as well as free of wax, grease, dust and any other foreign materials so that the adhesive bond is not compromised. Metal substrates should be degreased with Admil Pro Clean Contact Adhesive Cleaner.

### TYPICAL PROPERTIES

| PROPERTY | VALUE | Test Method |
|---|---|---|
| **Appearance** | Thixotropic, Non Sag paste | |
| **Curing Method** | Moisture Curing | |
| **Movement Capability** | +/- 25% | |
| **Elongation @ Break** | Approx. 300% | |
| **Skinning Time** | Approx. 35 mins @ 25°C, 50% Relative Humidity | |
| **Tack Free Time** | 64 minutes | ASTM C 679-87 |
| **Rate of Cure** | 2.5mm per 24 hours | |
| **Full Cure** | | |
| **Shore A. Hardness** | 30 | ASTM C 661 |
| **Specific Gravity** | 1.6 grams/ml | DIN 52451-A |
| **Tensile Strength** | 0.7 N/mm² | |
| **Service Temperature** | -40°C to +90°C | |
| **Application Temperature** | +5°C to +50°C | |
| **VOC Rating** | 34 gm/L (3.4%) | |

Note: All data provided is based on 25°C and 50% Humidity Conditions & fully cured after 21 days

### PRIMING

It is advisable to conduct preliminary adhesion tests on substrates where the application is critical or if the adhesion performance is unknown. The use of Admil Prosil Primer 1 is recommended for Non Porous substrates such as metal, aluminium, glass and plastics.

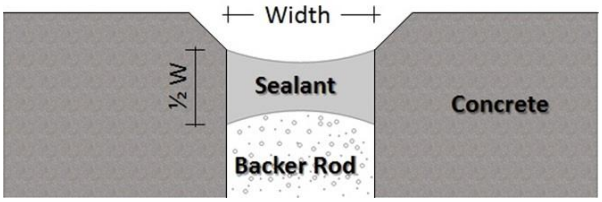
### APPLICATION INSTRUCTIONS

Cut nozzle at a sharp angle slightly wider than the desired Bead or joint width. If being installed as a joint sealant, always use a suitable backing rod to ensure the correct depth is achieved. The Joint depth should be half of the joint width. Extrude sealant with a gun and tool with a round spatula within 10 minutes to spread the sealant against the joint surfaces.

# SupaSeal PU - Technical Data Sheet

## JOINT DESIGN

- SupaSeal PU has a high body designed not to slump in joints up to 40mm in width.
- To allow the sealant to move effectively, the correct joint design requires that the sealant depth must be half of the width of the joint.
- A suitable closed cell must be used to ensure that the correct joint depth is achieved.




## SHELF LIFE & STORAGE

18 months shelf when stored in a dry environment and between +5°C and +25°C.

## SAFETY DIRECTIONS

Use in well-ventilated areas, and avoid breathing vapours.
In case of eye contact immediately flush with water for 15 minutes and seek medical advice.
Avoid contact with skin or clothing.

Keep out of reach of children. In use, please ensure that Occupational Health and Safety requirements are observed.

**Eyes:** Irrigate with water for 10 minutes and see a doctor.
**Skin:** Wash off with warm water and soap.

If swallowed, give plenty of water. Do not induce vomiting.
Seek medical attention.

**Admil SupaSeal PU SDS available upon request**

## CURING

Cure speed is dependent upon the temperature, humidity, depth of sealant and substrate. Typically, a joint will form a firm skin in one hour and take up to seven days to fully cure. In cold or very humid climates, the cure time may extend beyond seven days.

## LIMITATIONS

- SupaSeal PU will bond to most common construction substrates, however an adhesion tests on samples substrates should be conducted to ensure adequate adhesion in the finished application.
- In waterproofing applications, SupaSeal PU should be left to cure for a minimum of 8 hours prior to being covered by any membrane / sealer system.
- Tests should be conducted to ensure that there are no adverse reactions between SupaSeal PU and a membrane coating system.

## PACKAGING

**SupaSeal PU** is Packaged in Dark Grey, Grey, Black, Off White, Sandstone, Beige & White 950g Sausages also available in 300ml cartridges

## Notice

ADMIL SEALANTS & ADHESIVES

# Technical Data Sheet

Dated: 12/09/2019

## PROFESSIONAL PROSIL 41LM

## 100% Neutral Cure Matt Silicone Sealant

### PRODUCT DESCRIPTION

Admil's **Prosil 41LM** is a premium low modulus one part moisture curing, 100% calcium carbonate filled, high performance neutral cure silicone sealant (oxime) designed to give superior adhesion and durability in a wide range of glazing, weather sealing, cladding and trade applications. It will bond to form a strong weatherproof seal on most common building materials such as: glass, ceramic, steel, aluminium, brick, concrete, most plastics etc.
Weathering and UV resistance is excellent and its superior physical properties are retained over many years exposure.

### ADVANTAGES

**Prosil 41LM** has excellent adhesion properties superior to most other silicones and will adhere to most common building materials including :
Glass, aluminium, concrete and plastics, wood, masonry and most powder coated surfaces.5-8 minute skin time

- **10 minute skin time**
- **Matt Colours**
- **Movement capability > + 50%**
- **Superior Adhesion**
- **Low Modulus for high movement applications**

### APPLICATIONS

**Prosil 41LM** is ideal in glazing, and cladding applications where a matt finish is required:
General purpose glazing, colonial bars, and structural butt joints. Weather-sealing of high rise buildings, Installation of solar panels. It is also often used in truck and caravan assembly due to its excellent adhesion and high flexibility.

### LIMITATIONS

**Prosil 41LM** is not recommended for use:

- On submerged joints where porous substrates permit water to the bond interface.
- For certain rubber products where bleeding of plasticiser may occur, check with us if unsure.
- In aquarium construction and structural glazing. (Admil recommends Prosil 20 acetic for aquarium applications).

### TYPICAL PROPERTIES

| PROPERTY | VALUE |
|---|---|
| **Method** | Neutral (Oxime) 100% |
| **Sag/Slump** | No Slump |
| **Hardness (ASTM D2240)** | 18 Shore A |
| **Dynamic Joint Movement ASTM C719** | +/- 50% |
| **Tensile Strength (MPA) ASTM D412** | 2.5 MPa |
| **Elongation @ Break ASTM D412** | >750% |
| **Skin Time @ 20°C & 50% RH** | 10-15 Minutes |
| **Cure Time 10mm @ 25°C & 50% RH** | 5-7 Days |
| **Operating Temperature Range** | -40 to 140°C |
| **Specific Gravity** | 1.35 |

**Values given in this list should not be used as specifications. All Data based on samples cured for 21 days @23oC and 50% R.H.**

### SURFACE PREPARATION

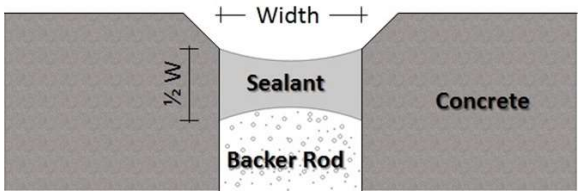
All surfaces must be clean, dry, sound, and free from dust, oil, rust, or any other contamination. Metals should be cleaned with a non-oily solvent soaked clean cloth. Solvent should be wiped from the surface with a clean dry cloth. Use an alcohol such as methylated spirits on glass. When used on remedial work all existing sealant must be removed.

### APPLICATION INSTRUCTIONS

Cut nozzle at a sharp angle slightly wider than the desired bead. Extrude sealant with a gun and tool with a round spatula within 10 minutes to spread the sealant against the joint surfaces.

## JOINT DESIGN

- To allow the sealant to move effectively, the correct joint design requires that the sealant depth must be half of the width of the joint.
- A suitable closed cell must be used to ensure that the correct joint depth is achieved.




## PACKAGING

Admil's **Prosil 41LM** is available in 300ml Cartridges & 600ml Sausages

## COLOURS

Prosil 41LM is a calcium carbonate filled material and is available in White, Grey & Black

## STORAGE

12 months from date of manufacture if stored below 28$^{o}$C

## HEALTH AND SAFETY

This product emits Methyl Ethyl Ketoxime whilst curing, which is hazardous. Use in well-ventilated areas, and avoid breathing vapours.

Contact with uncured product will irritate eyes. In case of eye contact immediately flush with Water for 15 minutes and seek medical advice.

Avoid contact with skin or clothing.

Keep our of reach of children

**Admil Prosil 41LM MSDS available upon request**

## Notice

The information given and the recommendations made herein apply to our product(s) alone and not combined with any other product (s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the purchasers' responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

# Technical Data Sheet

**Version 2.0**
**Updated 07/08/2020**

# Fireblock XT

## Description

Selleys Fireblock XT is a fire and acoustic rated High Performance SMP Sealant.

## Product Information

| Packaging | Size | Colour |
|---|---|---|
| **Cartridge** | 435g | Grey |
| | | |

## Uses

This fire and acoustic rated joint sealant has high UV resistance and can be used indoors and outdoors on most surfaces.

External and internal, non-trafficable control joints in concrete, masonry, AAC and brick fire rated construction.

Acoustic sealing between most common building materials such as concrete, masonry, aerated concrete, plasterboard, fibre cement, metals, timber and plastic as part of a suitable design.

Installation over a wide temperature range

## Features

- Fire rated up to 4 hours according to AS1530.4
- Complies with BCA acoustic requirements
- No primer required
- Adhesion to wet surfaces
- Better curing (>5°C) Non-bubbling
- Better extrudability (>5°C)
- No slump
- Paintable
- Low VOC
- Halogen free
- Isocyanate free

## Technical Details

| Property | Typical Result |
|---|---|
| **Technology** | Moisture curing silyl-modified polymer (SMP) |
| **Colour** | Grey |
| **Density** | 1.45 |
| **Application Temperature** | 5 to 45 °C |
| **Tooling Time (25°C)** | Approx. 30min |
| **Skin Time (23°C, 50% R.H.)** | Approx. 50 mins |
| **Cure rate (23°C, 50% R.H.)** | 2 – 3mm per day |
| **Tensile Strength** (DIN 53504) | 1.1MPa |
| **Shore A Hardness** (DIN 53505) | 31 |
| **Elongation at Break (ASTM D412)** | > 260% |
| **Modulus at 100% Elongation** (ASTM D412) | 0.67 MPa |
| **Elastic Modulus at 50% Elongation (DIN 53504)** | 0.41 MPa |
| **Movement Capability** (ISO 9047) | ± 20% |
| **Service Temperature** | -40 °C to 90 °C |
| **VOC Content** | 15 g/L |

Indicative data only, not intended for preparation of specifications

## Surface Preparation

Ensure surfaces are clean and free of oil, grease, release agents, dust or loose particles.

Porous surfaces should be prepared by grinding, brushing, wiping with cloths or blowing off with oil-free compressed air. Any laitance should be removed from concrete-based surfaces.

Non-porous surfaces should be free of scale, rust or oxides and can be degreased with a solvent such as MEK, acetone or mineral turpentine. Some degreasing solvents may leave a residue that should be removed.

## Directions for Use

The following should only be used as a guide and the installer should apply all Australian Standards, BCA/NZBC requirements, and best practices when using Fireblock XT.

Cut tip of cartridge and attach nozzle. Insert in caulking gun. Cut nozzle to size required for joint.

Extrude sealant smoothly into joint, while ensuring that all substrates are well wetted out with sealant.

For fire rating, joint width should be between 20mm and 40mm. Minimum joint depth should be 10mm or half the width for joints wider than 20mm.

$$\frac{\textbf{width}}{\textbf{depth}} = \mathbf{2}$$

For joints greater than 20 mm, the ratio of width to depth should 2:1.

A tight fitting non-absorbent, non-adhering backing material should be used to ensure the correct dimensions and prevent three-surface adhesion. Suitable materials include open cell foam backer rod or bond-breaking tape.

**Head Office** **1 Gow Street, Padstow, NSW, 2211, Australia. Tel: 1300 555 205 (Aus); 0800 735 539 (NZ), Email: support.selleysau@selleys.com**

# Fireblock XT

Curing: The sealant cures by reaction with atmospheric moisture therefore cure rate is dependent on humidity, ambient temperature and joint size. Typically, the sealant will form a thick skin within 24 hours and full cure can be expected after 7 days.

In dry or cool conditions the sealant cure will be longer.

Painting: Paintable with water-based paints after product skins (60 – 90 min). Allow longer times before painting in colder weather. Paint within 12 hours of application. Solvent-based paints may be used after first painting with a water-based paint. Due to the large number of paints and varnishes available, a preliminary test of compatibility is recommended.

## Tips

For neat joints use masking tape on both sides of the joint and remove before skinning.

In dry conditions, surfaces can be misted with water to speed up cure.

## Coverage

| Joint Size (mm) | Metres per cartridge |
|---|---|
| **6 x 6** | 7.9 |
| **8 x 8** | 4.5 |
| **10 x 10** | 2.9 |
| **12 x 12** | 2.0 |
| **15 x 7.5** | 2.5 |
| **20 x 10** | 1.4 |
| **30 x 15** | 0.6 |
| **40 x 20** | 0.4 |

## Clean Up

Uncured product can be removed with mineral turpentine. Cured product can be removed by mechanical action. Use Poly Cleaning Wipes to remove sealant from the skin.

## Storage

12 months from date of manufacture if stored below 28◦C

## Limitations

- Not for permanent water immersion or below water-line use
- Not suitable for use on polyethylene, polypropylene or Teflon.

## Warnings, First Aid and Shipping Information

This information can be located on the product SDS found through our website – www.selleys.com

**Head Office** **1 Gow Street, Padstow, NSW, 2211, Australia. Tel: 1300 555 205 (Aus); 0800 735 539 (NZ), Email: support.selleysau@selleys.com**

# Fireblock XT

## Standards

AS1530.4-2005 Fire test in vertical concrete and AAC – control joints.

Fire Rating Summary of Tests to AS1530.4

| Test Type | Substrate | Joint Width (mm) | Joint Depth (mm) | 1 or 2 sided | Resistance to passage of flame (min) | Insulation limit of 181°C temperature rises (min) | Rating |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| **Control joint** | Concrete | 40 | 20 | 1: fire side only | 197 | 39 | -/180/30 |
| **Control joint** | Concrete | 40 | 20 | 2: fire and non-fire side | No Failure at 241 min | 145 | -/240/120 |
| **Control joint** | Concrete/AAC interface | 40 | 20 | 2: fire and non-fire side | 178 | 117 | -/120/60 |

Fire rated levels are dependent on joint design, substrate and substrate configuration. Further configurations may also be tested. Please contact Selleys Technical Service for further details.

### Acoustic Performance

| Bead | Sealant Depth (mm) | Area of Gap (% of wall area) | Rw |
|---|---|---|---|
| **Single** | **15** | **0.5** | Up to 50 |
| **Single** | **15** | **1** | Up to 47 |
| **Single** | **15** | **2** | Up to 45 |
| **Double** | **15** | **0.5** | Up to 60 |
| **Double** | **15** | **1** | Up to 57 |
| **Double** | **15** | **2** | Up to 55 |

**Head Office** **1 Gow Street, Padstow, NSW, 2211, Australia. Tel: 1300 555 205 (Aus); 0800 735 539 (NZ), Email: support.selleysau@selleys.com**

siniat
Shaping the way people build

# WEATHER DEFENCE

## The revolutionary external gypsum sheathing board

Brochure Includes Information on;

- Fire Safety, including over 18m
- Eliminating Breather Membranes
- Creating An Airtight Layer

NOW
12 MONTHS
CONSTRUCTION EXPOSURE
siniat

etex building performance


Recent Siniat Weather Defence project: **Eastern High School, Rumney, Cardiff**

**Sector:** Education
**Project value:** £26m
**Architect:** Powell Dobson Architects
**Contractor:** Willmott Dixon
**Sub-contractor:** M&P Contractors

For more details on how to curve Weather Defence turn to page 22



You can find all of our case studies in our knowledge centre at: www.siniat.co.uk



# PRODUCT OVERVIEW

Weather Defence is an award-winning gypsum external sheathing board which is transforming building envelope construction and performance.

**Weather Defence has been specified by over 45% of AJ100 British Architects**

Allies Morrison, BDP, Scott Brownrigg and Sheppard Robson were amongst the early adopters of Weather Defence.

The design benefits it brings include:

- It is Euroclass A1, fully non-combustible so is suitable for structures above 18m in height
- It has two BBA certificates
- It achieves outstanding airtightness
- It is easy to cut, shape and bend, offering more options for design detailing
- Responsibly sourced and eligible for credits under BREEAM

**Weather Defence has been installed by over 75% of the Construction News' top 25 main contractors**

BAM Construction, Bouygues, Carillion, Galliard Homes, Graham Construction, Interserve, Kier and Willmott Dixon regularly specify Weather Defence because:

- It is 50% quicker to install than cement particle board
- It makes the building weathertight for internal trades
- It is 30% lighter than cement boards, making it easy to lift and move around site
- Simply score and snap, no need for specialist cutting equipment or segregated areas
- It helps reduce site noise and dust emissions
- Can eliminate the need for a breather membrane helping to reduce project costs

The new 2nd Generation Weather Defence Board has an improved formula and allows the board to be installed and exposed on frame for twelve months during construction, providing more flexibility to the project timeline.

# DESIGN BENEFITS

## An innovative, lightweight technology

External sheathing options have evolved. Weather Defence is a fully non-combustible Euroclass A1 rated sheathing board and confirmed by BRE as a suitable alternative to cement particle board in external systems, tested or assessed against BS8414-2 or BR 135.

Weather Defence is also a lightweight board which can easily create corners or striking curves, offering more options for design detailing.

Since its launch in 2013 it has been voted **Product Innovation of the Year** at the British Construction Industry Awards.

It's time to rethink your choice of external sheathing material.

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 10/4725

**Weather Defence is designed to be installed on:**

- Light steel infill and oversail systems on concrete and steel frame buildings
- Modular buildings
- Light gauge steel frame buildings
- Timber frame buildings

Weather Defence for exceptional airtightness in coastal locations

Swansea Bay Campus, Swansea

Weather Defence for striking designs

Wales & West Housing Office, Deeside





## Suitable for most façades

Weather Defence has two BBA Certificates. One as a sheathing board for use behind a variety of rainscreen types and as part of an insulated render façade system.

"...a really simple product that could very quickly become the major player in the market"

**BCIA Judging Panel**

Brick Cladding

University of Salford

Stone Cladding

Swansea University

Timber Rainscreen

Typical Timber Façade

Metal

Typical Metal Façade

Rainscreen Panels

Ice Arena, Wales

Insulated Render

North Somerset Enterprise and Technology College

# DESIGN BENEFITS

## Sustainability: it's sustainable, traceable and recyclable

Weather Defence:

- Is manufactured by Siniat in Europe
- Has a fully recyclable core
- Contributes towards credits under BREEAM
- CE marked to EN 15283-1

Most cement particle boards are not recyclable. They are typically made by a third party manufacturer in the Far East and imported into the UK, sometimes without the required CE marking and Declaration of Performance.

University of Salford – Student Accommodation

"Siniat are looking to be innovative and we as an industry are looking at all manner of innovations that assist in cutting down waste and simplifying the process. Siniat have been very good at that on this particular project and we've embraced that"

**Vernon Hailwood, Design Manager, Graham Construction (University of Salford Project)**

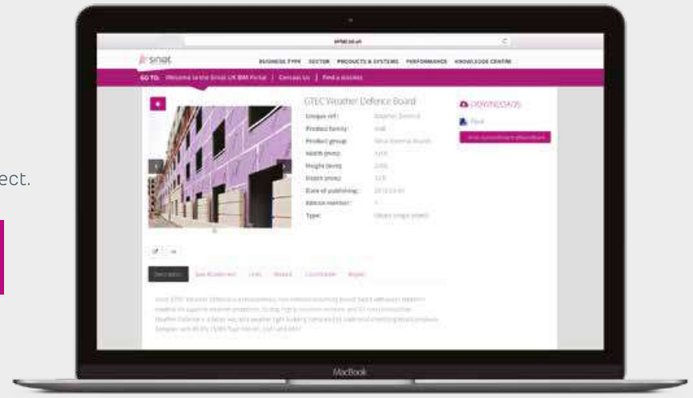




## BIM Objects

We have a full suite of BIM objects to help designers and contractors comply with Level 2, including a dedicated Weather Defence object – with a substantial amount of information included for you, to incorporate into your next BIM project.

**Visit www.siniat.co.uk/en/knowledge-centre/bim**




## Bespoke Detailing

If you would like us to do the detail for you, our Technical Support team are Weather Defence experts and are happy to help.

**0800 145 6033**

**technical.siniat@etexbp.co.uk**

# SYSTEM PERFORMANCE

Gypsum technology is at the heart of Weather Defence's system performance; its unique characteristics offer excellent fire performance, airtightness and high sound insulation

Combined with our range of internal boards, the system can achieve outstanding through-wall performance delivering safe and comfortable buildings.

### Cladding system performance

Our system performances are independent of external cladding. In most instances, cladding will not negatively impact system performance. Seek advice from the cladding supplier to identify any potential issues.

### Thermal performance

Systems shown are based on minimal insulation to achieve fire and acoustic performances. Additional insulation can be installed within the frame or external to the frame/board to improve U-values, in most cases without detriment to fire or acoustic performance.

### Acoustic performance

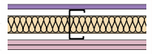
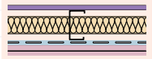
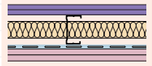
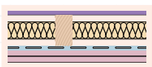
Acoustic insulation can be enhanced by:

- Choice of cladding
- Addition of further boards
- Separating internal boards from the structural frame using a GTEC Resilient Bar

| SYSTEM | COMPONENTS | Loadbearing fire resistance to BS 476-21 | Non-loadbearing fire resistance to BS 476-22 | Acoustic performance RwdB | THERMAL PERFORMANCE |
|---|---|---|---|---|---|
|  | **Sheathing board(s)**<br>1 x 12.5mm Weather Defence<br>**Frame**<br>Steel, min. 100mm x 35mm x 1.2mm<br>**Internal board(s)**<br>1 x 12.5mm Megadeco/Fire/ LaDura/Aqua Board<br>**Insulation**<br>50mm 45kg/m³ rock mineral wool | 30 mins both directions | 60 mins both directions | 42 | Excellent U-values can be achieved (0.15W/m²K or better) |
|  | **Sheathing board(s)**<br>1 x 12.5mm Weather Defence<br>**Frame**<br>Steel, min. 100mm x 35mm x 1.2mm<br>**Internal board(s)**<br>1 x 15mm Megadeco /Fire/Aqua Board<br>**Insulation**<br>50mm 45kg/m³ rock mineral wool | 60 mins both directions | 60 mins both directions | 43 | Excellent U-values can be achieved (0.15W/m²K or better) |
|  | **Sheathing board(s)**<br>1 x 12.5mm Weather Defence<br>**Frame**<br>Steel, min. 100mm x 35mm x 1.2mm<br>**Accessories**<br>Resilient bar<br>**Internal board(s)**<br>1 x 15mm Megadeco/Fire/ LaDura/Aqua Board<br>**Insulation**<br>50mm 45kg/m³ rock mineral wool | 30 mins both directions | 60 mins both directions | 50 | Excellent U-values can be achieved (0.15W/m²K or better) |

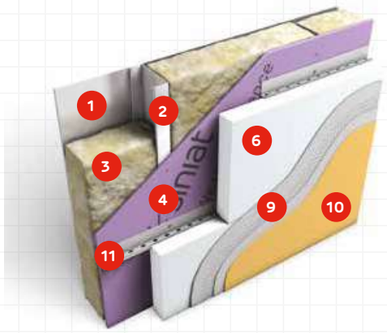




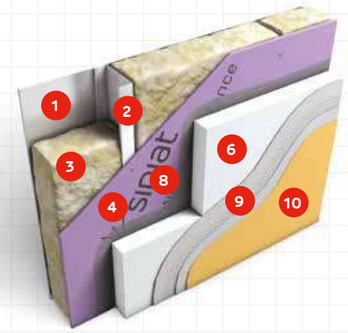
| SYSTEM | COMPONENTS | Loadbearing fire resistance to BS 476-21 | Non-loadbearing fire resistance to BS 476-22 | Acoustic performance RwdB | THERMAL PERFORMANCE |
|---|---|---|---|---|---|
|  | **Sheathing board(s)**<br>1 x 12.5mm Weather Defence<br>**Frame**<br>Steel, min. 100mm x 35mm x 1.2mm<br>**Internal board(s)**<br>2 x 12.5mm Megadeco/ Fire/Aqua Board<br>**Insulation**<br>50mm 45kg/m³ rock mineral wool | 60 mins both directions | 90 mins both directions | 47 | Excellent U-values can be achieved (0.15W/m²K or better) |
|  | **Sheathing board(s)**<br>1 x 12.5mm Weather Defence<br>**Frame**<br>Steel, min. 100mm x 35mm x 1.2mm<br>**Internal board(s)**<br>2 x 12.5mm Megadeco/Fire/ LaDura/Aqua Board<br>**Accessories**<br>Resilient bar<br>**Insulation**<br>50mm 45kg/m³ rock mineral wool | 30 mins both directions | 90 mins both directions | 55 | Excellent U-values can be achieved (0.15W/m²K or better) |
|  | **Sheathing board(s)**<br>2 x 12.5mm Weather Defence<br>**Frame**<br>Steel, min. 100mm x 35mm x 1.2mm<br>**Internal board(s)**<br>2 x 15mm Megadeco/Fire/ LaDura/Aqua Board<br>**Accessories**<br>Resilient bar<br>**Insulation**<br>50mm 45kg/m³ rock mineral wool | N/A | 120 mins both directions | 59 | Excellent U-values can be achieved (0.15W/m²K or better) |
|  | **Sheathing board(s)**<br>1 x 12.5mm Weather Defence<br>**Frame**<br>Timber, min. 140mm x 38mm<br>**Internal board(s)**<br>2 x 12.5mm Megadeco/Fire/ LaDura/Aqua Board<br>**Insulation**<br>50mm 45kg/m³ rock mineral wool | 60 mins both directions | N/A | 45 | Excellent U-values can be achieved (0.15W/m²K or better) |
|  | **Sheathing board(s)**<br>1 x 12.5mm Weather Defence<br>**Frame**<br>Steel, min. 100mm x 35mm x 1.2mm<br>**Internal board(s)**<br>2 x 12.5mm Megadeco/Fire/ LaDura/Aqua Board<br>**Accessories**<br>Resilient bar<br>**Insulation**<br>50mm 45kg/m³ rock mineral wool | 60 mins both directions | N/A | 56 | Excellent U-values can be achieved (0.15W/m²K or better) |

Note: System performances may be dependent on specific project circumstances, contact Siniat Technical Services to confirm.

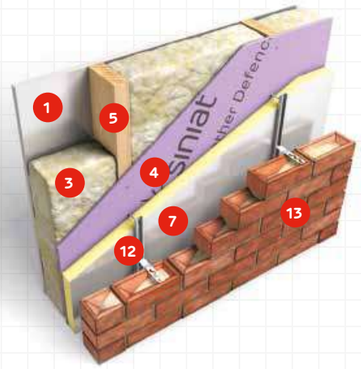
# TYPICAL SYSTEM CONSTRUCTION DETAILS



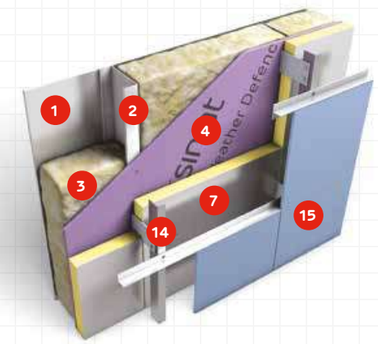

Light steel frame with EIFS and rails




Light steel frame with EIFS




Timber frame with brickwork cladding




Light steel frame with rainscreen cladding

1. Siniat Internal Board to suit specification
2. Light steel frame to manufacturer's specification
3. Rock Mineral wool insulation to meet specification
4. Weather Defence external sheathing board
5. Timber frame to manufacturer's specification
6. Insulation for EIFS system fixed to framing
7. Additional cavity insulation
8. Insulation fixed to board with adhesive
9. Render reinforcement mesh and adhesive
10. Render finish
11. Insulation support rail fixed back to frame
12. Brick tie system to manufacturer's guidelines
13. Brickwork cladding
14. Rainscreen support rail system to manufacturer's guidelines
15. Rainscreen cladding to suit specification





# INSTALLATION BENEFITS

Why Weather Defence is significantly quicker to install than cement particle board

- It can be accurately scored and snapped with a Stanley knife
- No transportation time to a separate cutting area
- It is light and easy to transport around on-site by two people
- It can eliminate the need for a breather membrane, taking a stage out of the weathertightness process
- Fine details are easily prepared on the framework using a pad saw
- Can be left exposed on frame for up to twelve months

But you don't have to take our word for it...


"Compared to cement particle board, Weather Defence is 30% lighter, faster to work with and has advanced technical performance. We ultimately have a board with greater benefits."

**Steve Waugh, Design Manager, BAM Construction**

"...the job was completed much faster, more safely and we saved money."

**Lee Davis, Site Manager, Manorcraft**

"The lighter weight of Weather Defence meant we could easily cut holes in situ without having to bring the board down to the ground each time. This sped up construction."

**Jurgen Mensinga, Director, Elite Cladding Systems**

"Weather Defence saves us so much time – we use it whenever we can."

**Tommy Burke, Director, Brebur**

# INSTALLATION BENEFITS

Provides manual handling
and health & safety benefits

### Why use Weather Defence?

**Weight**

Weather Defence weighs 10.8 kg/m$^2$ which is 30% lighter than a cement particle board of the same thickness, making it easier to lift and move around site.

**Safety**

When cutting, cement particle boards require an electrical circular saw with a sharp blade. In contrast, Weather Defence just requires a Stanley knife hand tool.

**Dust hazards and cutting areas**

Cutting cement particle boards is likely to generate large quantities of very fine dust, which requires effective emission ventilation – often a cutting area some distance from the installation area. In contrast, the score and snap method used for Weather Defence generates minimal dust levels and doesn't require a separate cutting area.

**Noise disturbance for neighbours**

As Weather Defence is so quiet to cut and fix, it has proved very useful for projects where neighbours are in close proximity – like extension projects or in built-up residential areas.





Making the building
weathertight to improve
the project's Critical Path

**You can make the building watertight for internal trades**

Weather Defence is water, weather and mould resistant and can be left exposed on frame for up to twelve months. It makes the building weathertight which means the internal trades – dry liners, electrical engineers, heating engineers etc... – can begin work in advance of the completed façade.

"If we'd gone down a traditional brick build (instead of using Weather Defence), it would have taken two years to get the building watertight."

**Brian Smith, Design Manager, Graham Construction**

# INSTALLATION BENEFITS

CASE STUDY: Dolphin School, Bristol

The Dolphin School, is a BAM Construction project for a major extension to create a new two form entry primary school for approximately 420 pupils. With the build taking place on a very constrained site in the heart of Bristol, with close neighbouring properties and the existing school within feet from the live site, Weather Defence delivered practical benefits for the contractors to handle these issues.

"Weather Defence is lightweight compared to other products. In terms of cutting we don't have the issues with something similar like a cement base board in terms of dust issues. You don't need to take up big cutting areas on-site, and with the proximity of so many neighbouring properties around here, we obviously have noise and dust considerations to think about."

**Paul Lacey, Senior Site Manager, BAM Construction**

"The Weather Defence board is ideal because it's quite lightweight, robust and easy to manoeuvre around site."

**Tyler Clark, Trainee Site Manager, Optimum Drywall Systems Ltd**

Angled corner

"Using Siniat Weather Defence board it is easier to form angles, whereas when you are using a cement board you have to use a skill saw to rip through the cement board and it can be trial and error often with this (Weather Defence) as it is like an internal plaster board, we can use a padsaw, a rasp, or a just a normal saw to form the angle."

**Tyler Clark, Trainee Site Manager, Optimum Drywall Systems Ltd**





Recent Siniat Weather Defence project: **The Dolphin School, Bristol**

**Sector:** Education

**Architect:** AWW Architects

**Contractor:** BAM

**Sub-contractor:** Optimum Drywall Systems Ltd

Dolphin School, Bristol

# ENGINEERING WEATHER DEFENCE

## Creating an airtight envelope

**Weather Defence can dramatically reduce air leakage:**

- It is easily cut and shaped, to form tight, clean and airtight junctions around complex details
- It is also extremely stable, hardly expanding or contracting in reaction to weather and humidity, making joints stable and air-tight for the long-term
- The Weather Defence sheathing layer forms an extremely large area of the building envelope which can be sealed easily, and is situated away from internal fittings which might penetrate internal linings
- The board and joints have negligible airflow through them, projects built with Weather Defence consistently exceed airtightness values demanded from both Building Regulations and low energy, low permeability designs

**Laboratory evidence:**

Air permeability:

- Tested for air permeability to European standard EN 12114
- Achieved 0.002 $m^3/m^2/hr$ – a negligible flow of air

Humid movement:

- A range of moisture expansion tests to EN318 were conducted
- Achieved maximum expansion of just 0.11mm per m (0.011%), from 65% to 85% relative humidity, typical of the British climate.

Abercynon Primary School, South Wales

**Project specification for airtightness:** $3m^3/m^2/hr$

**Achieved:** $2m^3/m^2/hr$

"Siniat Weather Defence board provided an effective primary air-seal for the building envelope on a number of schools which achieved less than $1.5m^3/(Hr.m^2)$ at 50 Pascal."

**Ed Westgate Director, HRS Services Limited (Air Tightness Consultancy & Testing)**





## Resisting Moisture and Breathing Vapour

**Weather Defence both resists rain and moisture, and allows vapour to escape, just like a breather membrane.**

- Weather Defence is an extremely stable substrate and will only expand by fractions of a millimetre per metre, as humidity changes. This means that gaps do not need to be left between boards.
- The board is vapour open yet highly water resistant, allowing damaging moisture trapped within a wall to escape

**Laboratory evidence:**

Vapour resistance test:

- Measured as 0.49 MN·s/g, or 8μ, making Weather Defence a highly breathable building material
- Meets the requirements of a breather membrane - a breather membrane must be between 0.25 – 0.6 MN·s/g according to BS5250

Prevention of water penetration test:

- Test for prevention of water penetration EN13859-2
- Achieved Class W1 – the highest level for water resistance – the same classification as a breather membrane

**IMPORTANT TO NOTE:**

Weather resistance performance relies upon Weather Defence being correctly installed and sealed. If installation has been poor, or for certain complex details, a breather membrane may still be advised – the project designers must decide if risks are present. A vapour control layer may be required internally, using a Siniat vapour resistant foil backed plasterboard. A condensation risk analysis should be carried out to determine the likelihood of condensation due to internal humidity and whether a vapour control layer is required.


**IMPORTANT TO NOTE:**

Vapour control layers and breather membranes are not the same.

A vapour control layer resists all water vapour whether liquid or as a gas, and in Britain is used on the internal side of a wall to keep water vapour in the room rather than allow it into the wall.

A breather membrane is used on the external side of the wall build-up to prevent rain penetration from the outside but will allow water as a gas to escape if it finds a way into the wall.

**Ask us for our Condensation Risk Assessment Report or download a sample copy from:**

**www.siniat.co.uk**

# ENGINEERING WEATHER DEFENCE

## How it controls fire above 18m

**Fire:**

- Weather Defence is a fully non-combustible, Euroclass A1 rated sheathing board
- The gypsum core locks moisture into the crystal structure of the gypsum material which suppresses temperatures during a fire
- It will not act as an additional fuel source in a façade cavity fire, whilst a breather membrane is combustible
- It can reduce transmission of fire if other materials in the façade ignite

**Reaction to fire test:**

- Test conducted to BS EN 13501-1:2007
- Achieved Euroclass A1
- Fully non-combustible

**Fire resistance testing:**

- Tests conducted to BS 476-21, EN 1364-1 and EN 1365-1
- Achieves 30 to 120 mins fire resistance (see systems detail on pages 8 & 9)

**Façades exceeding 18m in height:**

- As a non-combustible board, Weather Defence is immediately compliant with Approved Document B (Fire) for façades exceeding 18m
- It also complies with (Technical Note 18) Building Control Alliance – Option 1

**Weather Defence has been confirmed by BRE as an alternative to cement particle sheathing boards in testing or assessments to BR135 and BS 8414-4.**

**Please contact our Technical Services team for more information.**

**IMPORTANT TO NOTE:**

For cladding systems using combustible materials, additional testing or assessment of the cladding will be required.

Fire cavity barriers may be needed within the wall build-up or façade cavity to fully comply with the building regulations, preventing spread from floor to floor through empty cavities or for the fire to break from the building into the cavity.

Additional fire protection may also be required in the wall to ensure fire resistance compartmentation is maintained.





**Project Specification for fire performance:**

60 Minutes

**System Components**

Sheathing board: 1 x 12.5mm Weather Defence

Frame: Steel

Internal boards: 1 x 15mm Fire/Aqua Board

**System Performance**

Loadbearing fire resistance BS:
60 Minutes
Both Directions

Non-Loadbearing fire resistance BS:
60 Minutes
Both Directions


University of Salford

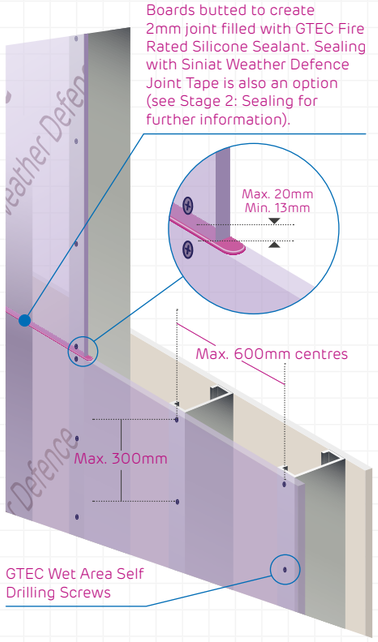
# INSTALLATION GUIDE

## Stage 1: Fixing Board to Steel Frame*

Install boards horizontally in a staggered 'brick bond' pattern.

Figure 1

**Typical board fixing with GTEC Wet Area Self Drilling screws on to steel frame**




Locate screws at least 13mm and no more than 20mm from board edges and penetrate at least 10mm into the substrate, **see Fig 1, above**.

Fix to studs at a maximum 300mm centres (or narrower if required for wind loadings, **see Table 1, top right**).

Use GTEC Wet Area Self Drilling screws for steel studs or combinations of steel studs up to 3mm thick (total).

EOS Façades our sister company specialise in the manufacture and design of Steel Framing Systems (SFS).

Please note: Accommodation of frame and board movement (thermal, hygroscopic or structural) must be considered in fixing the board to frame.





Do not fix to frames where stud centres exceed 600mm.

Higher wind loadings may require fixings at closer centres than 300mm and/or studs at closer centres than, 600mm, see Table 1, below.

Table 1 — Characteristic wind load resistance

| STUD CENTRES (MM) | SCREW CENTRES (MM) | CHARACTERISTIC WIND LOAD (kN/M²) |
|---|---|---|
| 600 | 300 | 1.275 |
| 600 | 200 | 1.915 |
| 400 | 300 | 1.915 |

Appropriate cold-applied sealing methods such as butyl tapes or EPDM, by others (e.g. Tremco Illbruck), should be used to seal deflection or movement joints created in the board layer.

Where metal build up exceeds 3mm contact Siniat Technical Services for fixing specification.

Boards can be fixed to the stud frame where the fastener passes through an intermediate material (e.g. a membrane, batten or cavity rail).

Separate board from areas where water may pool (e.g. damp proof membranes, cavity trays) by at least 5mm. Board should be installed above dpc and 150mm above ground level.

# INSTALLATION GUIDE

Curved Weather Defence boards

## Stage 1B: Curving Weather Defence

- SFS stud centres up to maximum 400mm centres for a curve radius no tighter than 4m
- Fix FS90/W Flat Plate to studs corresponding with all horizontal board joints
- Fit Weather Defence board horizontally across studs and install in a 'brick bond' pattern
- Fix using Siniat GTEC Wet Area Self Drilling screws at maximum 300mm centres
- Fire Rated Silicone Sealant or Weather Defence Joint Tape used to seal joints, see opposite

## Stage 2: Sealing

### Which sealing option:

- Silicone sealants provide a robust weather seal as they allow two boards to be squeezed together which limits the opportunity for water and air leakages
- For fire resistance: use GTEC Fire Rated Silicone Sealant where fire resistance of 30 minutes or above is required
- Siniat Weather Defence Joint Tape may be used where no fire resistance or acoustic insulation is required. Sealing tapes should be checked for compatibility with silicone sealant, if used together. Use primer when using tapes over silicone joints

### Applying sealant:

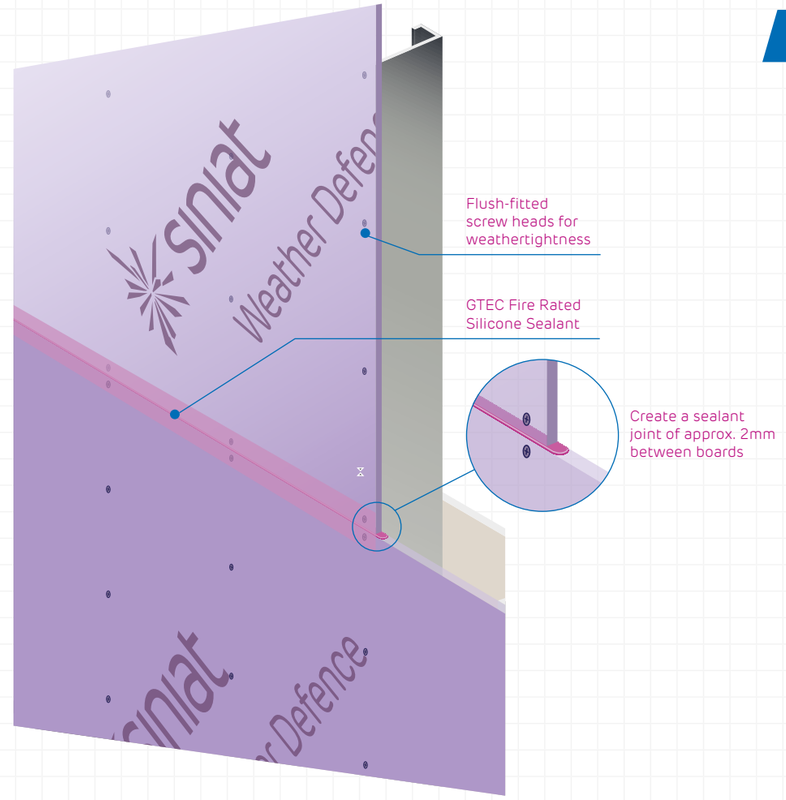
- Apply sealant as boarding progresses, along the previously fixed board edge prior to installation of the next board
- Apply sufficient sealant to create a sealant joint of approx. 2mm when the next board is loosely butted
- Any gaps in the sealant should be filled with additional sealant
- Flush-fitted screw heads are weathertight. Sealing with a dab of sealant will prevent issues where a screw is not perfectly flat
- Multiple attempts to fix a screw may create holes, inspect for holes carefully and seal
- Where raintightness is critical, we recommend detailed inspection and hose testing
- Only use cold applied waterproofing materials
- Appropriate cold-applied sealing methods such as butyl tapes or EPDM, by others should be used to seal deflection or movement joints created in the board layer
- Sealing methods and associated details should accommodate all expected movement and satisfy the need for acoustic, fire, weather, or other performance requirement expected from the Weather Defence sheathing layer
- Additional layers of boards or rock mineral wool may be required to maintain fire resistance at movement joints and in cavities

Table 2 Sealing capability

| | LEVEL OF SEALING REQUIRED | | | |
|---|---|---|---|---|
| Joint sealing method | Air | Rain | Acoustic | Fire |
| GTEC Fire Rated Silicone Sealant | ● | ● | ● | ● |
| Siniat Weather Defence Joint Tape | ● | ● | ○ | ○ |








### Applying Weather Defence Joint Tape:

- Tape may be applied at any time within the twelve month exposure period following installation providing that limited water penetration through unsealed joints is acceptable
- Do not use tape in combination with silicone sealant. Where unavoidable use appropriate primer over the silicone, contact Technical Services for more information
- The tape is air and water tight and UV resistant for at least 12 months
- The Weather Defence board surface should be generally clean, dry and free of oil, dust and other particles or chemicals that could cause poor adhesion – significant contamination may impair adhesion
- No gap is required between boards when sealing with tape, lightly butting the boards will usually create a 0–0.5mm gaps which is more than sufficient to allow expansion
- Peel backing paper from the tape as the operation progresses
- Apply with joint running along the centre of the tape – this will usually cover screw fixings
- Apply without wrinkles or excessive tension in the tape. Firmly press, and smooth against Weather Defence board. Running over the tape with a roller may improve adhesion
- Minimise the number of pieces of tape used to reduce risk of gaps. Overlap tapes by minimum of 50mm where multiple pieces have to be used. Ensure overlaps are pressed firmly against board and fully sealed
- Seal horizontal joints first and run tapes for vertical joints over the top of the horizontal band of tape
- Patch tapes with additional 150mm pieces perpendicular to the original tape, rather than removing strips from the Weather Defence board and risking damage to the substrate
- Where high levels of rain tightness are required it is advised to use a hose test to identify holes or gaps
- Tape may be applied between 5°C and 40°C. Installation may proceed at temperatures as low as -10°C and damp conditions if grab/tack is sufficient. Primers may be required to increase adhesion in severe conditions, contact Technical Services for more information

# INSTALLATION GUIDE

## Stage 3: Board Inspection

We advise you to inspect the Weather Defence boards for any damage prior to closing off the sheathing layer (e.g. with insulation or other cladding) and after extreme weather.

### Pay particular attention to:

- Any facer delamination/ removal greater than 5mm
- Any degradation of the board core greater than 2mm deep, which may occur in the lower portion of the board if it has inadvertently been immersed in water
- Any significant dents, scrapes or tears which have occurred during construction
- Holes through the board caused by repeated attempts to screw fix, all holes must be sealed (see previous section – Sealing)

### How to deal with damage:

- Small areas of damage, up to 15mm x 15mm and maximum 3mm deep, may be patched using Siniat Fire Rated Silicone Sealant or Siniat Weather Defence Joint Tape
- Areas up to 300mm x 300mm and maximum 5mm deep, may be filled with Siniat Aquamix water resistant compound
- An area larger than 300mm x 300mm or if the board has been perforated by damage must be replaced. Additional metal noggins or straps may be required to support the board

Close-up of board

# INSTALLATION GUIDE

## Stage 4: Insulation Fixing

### Cavity and Insulation Rail Fixing:

- Rails or battens may be used with Weather Defence to create cavities to meet NHBC requirements for dwellings, or to support insulation; they should be fixed directly to studs
- Intermediate rail fixings, or where the rail cannot be located over a stud, may be made directly into Siniat Weather Defence Boards using appropriate cavity anchors. It may be necessary to reduce fixing centres from manufacturer's standard recommendation to achieve adequate pull out resistance; this must be determined by the rail system supplier or a qualified engineer





### Insulation Fixing:

- Both dense mineral wool and rigid foam sheet insulation are suitable for use with Weather Defence. *Please see Fire section on page 27 of this document for additional guidance on insulation above 18m in height*
- The number and type of insulation fixings should be determined by a wind loading assessment which should be carried out by an appropriately qualified engineer. This will provide the maximum positive and negative load per square metre to be resisted
- Resistance to the maximum load is not always required in all locations on the building e.g. sheltered façades may be subject to much lower wind forces, whereas at corners the magnitude increases
- Insulation may be fixed using mechanical or adhesive methods

### Adhesive Fixing:

- Using adhesive fixing typically provides a pull-off resistance many times greater than wind load
- Adhesive fixing also limits the bowing of individual insulation boards and prevents small air gaps forming behind the boards
- It is highly recommended as an installation method for fixing insulation to Siniat Weather Defence – always follow adhesive manufacturer's recommendations and guidance
- Mechanical fixings are required to temporarily support the self-weight of the insulation board and wind loads while the adhesive cures
- It is always recommended to provide temporary retention by fixing through to studs. Where it is impractical to fix to studs, it is possible to temporarily retain insulation directly fixed to the board using appropriate fixings – a minimum of five fixings per square metre is required
- NHBC Standard 6.9.8 and CWCT Standards require the use of one additional non-combustible fixing per square metre, made permanent into the structure, and in addition to adhesive fixing


Weather Defence Joint Tape being applied

### Mechanical Fixing:

- The required number of insulation fixings depends on the magnitude of the wind loading per square metre to be resisted
- Historically, the total wind load is divided by a conventional pull-out resistance to give the number of fixings required where each fixing resists an identical load
- Alternatively, insulation fixings into the metal studs, which will typically achieve pull-out of >1.65kN per fixing (Category B in Table 3, overleaf), can be considered to provide the full resistance to wind loading. This alternative configuration provides an optimised fixing solution
- Suitable additional fixings into the field of the board to limit insulation bowing and support self-weight are recommended (Category A criteria fixings in Table 3, overleaf)
- Figure 3, overleaf, shows typical fixing patterns with fasteners shared between adjoining 1.2 x 0.6 m insulation panels to achieve 1.5 kN/m$^2$ wind suction load as an example
- Insulation retention 'washers' must be appropriately sized to restrain the insulation without damage and provide the required pull-through resistance
- Additional fixings may be required at jambs, sills or in other areas of frame variation; advice should be sought from the system manufacturer
- When using cavity rails, insulation fasteners should not bridge between rail and board

# INSTALLATION GUIDE

Table 3 Insulation fastener categories

| Fixing category | Substrate | Minimum load resistance | Purpose of insulation fixing | Examples |
|---|---|---|---|---|
| **Category A** | Siniat Weather Defence | 0.5 kN (mean ultimate) | Permanently support self-weight and limit deflection/bowing. No wind load | • Etanco SK-RB<br>• Spit Isomet CC |
| **Category B** | Steel | 1.65 kN (mean ultimate) | Permanently support self-weight, limit deflection/ bowing and provide wind load resistance | • Self-drilling screw fixing, e.g. Ejot SW8R |

Figure 2 Insulation fixed to studs with typical insulation fixings **(Category B in Table 3)**

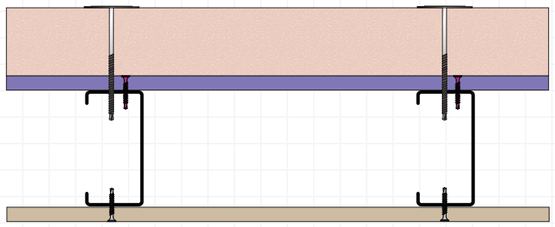
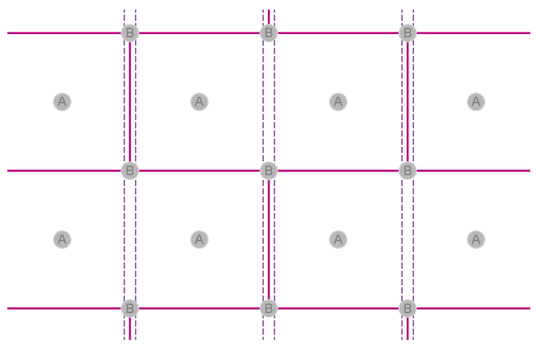


Figure 3 Typical fixing pattern (1.2 x 0.6m insulation board) up to 1.5kN/m² characteristic wind load **(See Table 3 for fixing types)**







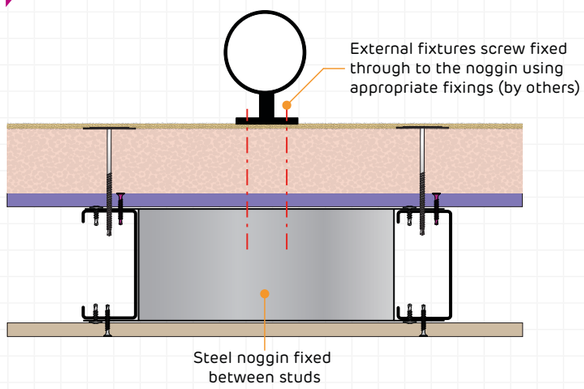

### Cladding and Rainscreen Fixing:

- All cladding loads must be directly supported by the structural frame and not carried by the Siniat Weather Defence Board. Weather Defence may act as an intermediate layer provided the cladding fixings are attached to the frame through the board
- Bearing pressure on Weather Defence from brackets must not exceed 2.5N/mm². Spreader plates will be required in rare instances where this pressure is exceeded

### Fixtures:

- Where possible, all fixtures should be fixed back to the frame studs
- Suitable pattresses may be installed into the frame in specific locations to provide fixing capability, e.g. for external lighting or downpipes. Ideally additional metal studs or noggins should be provided for this purpose
- Lightweight fixtures may be fixed directly to Siniat Weather Defence without pattresses using specialist cavity anchors. Generic pull-out data is available from technical.services@siniat.co.uk or from fixing suppliers who will conduct testing and fixing selection specific to the site

Figure 4 Lightweight Fixtures attached to Weather Defence





Insulation on Weather Defence

# STEEL FRAME SYSTEMS FROM EOS FAÇADES

## Complementary systems from EOS Façades, an Etex Building Performance company.

In 2016, Siniat acquired steel frame system manufacturer, EOS Façades. Its range of light gauge steel frame systems – continuous walling, stud and track and prefabricated façade panels – work effortlessly with Weather Defence.

Similarly to Siniat, EOS Façades provide comprehensive technical support, including design and structural calculations.

Weather Defence in conjunction with an EOS Steel Frame System


"In my eyes, EOS Façades are the best SFS supplier in the UK by a country mile; the EOS system is more user-friendly for a variety of reasons and the quality surpasses anything on the market."

Mark Huntley, Managing Director,
M&P Contractors Wales Ltd

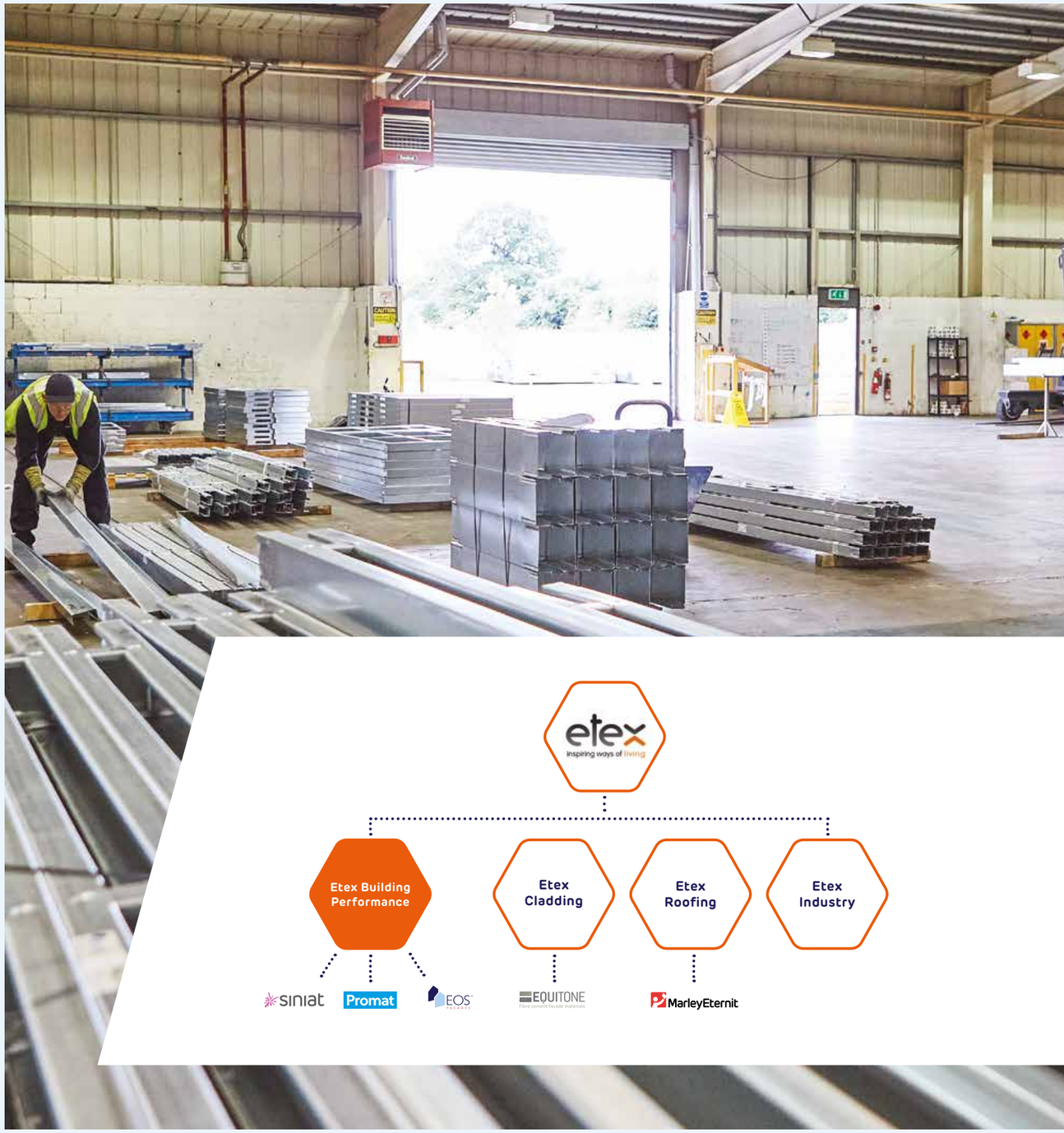
To see how Steel Frame Systems from EOS Façades could complement your project, call the EOS enquiry line on **01325 303030**

**EOS Façades enquiries**
For placing orders, delivery enquiries, local stockists etc.

01325 303030
enquiries@eosuk.org







# TECHNICAL CHARACTERISTICS

| Type | Description | Performance Values | Units |
|---|---|---|---|
| **General** | Density | **860** | kg/m$^3$ |
| **Mechanical properties** | Flexural strength longitudinal direction according to BS EN 520:2004 | **680** | N |
| | Flexural strength transverse direction according to BS EN 520:2004 | **310** | N |
| | Elastic modulus longitudinal direction according to BS EN 789:2004 | **3600** | MPa |
| | Elastic modulus transverse direction according to BS EN 789:2004 | **3150** | MPa |
| | Impact resistance according to BS EN 15283-1:2008 | **GM-I** | |
| | Compressive strength | **9** | N/mm$^2$ |
| **Fire** | Reaction to fire – Euro class according to BS EN 13501-1:2007 | **A1** | |
| **Thermal** | Thermal conductivity according to BS EN 12667:2001 | **0.25** | W/mK |
| | Thermal resistance (12.5mm board) | **0.05** | m$^2$.K/W |
| **Permeability** | Water vapour resistance (12.5mm board) according to BS EN 1SO 12572:2001 | **0.49** | MNs/g |
| | Water vapour resistance factor (μ) according to BS EN 1SO 12572:2001 | **8** | |
| **Moisture resistance** | Water uptake (2 hrs immersion) according to EN 520:2005 | **< 3** | % |
| | Surface water absorption (2 hrs Cobb test) according to EN 520:2005 | **< 100** | g/m$^2$ |
| | Dimensional change (20°C/30%-65%RH), longitudinal direction dimensional stability according to BS EN 318:2002 | **0.09** | mm/m |
| | Dimensional change (20°C/65%-85%RH), longitudinal direction dimensional stability according to BS EN 318:2002 | **0.11** | mm/m |
| | Dimensional change (20°C/30%-65%RH), transverse direction dimensional stability according to BS EN 318:2002 | **0.09** | mm/m |
| | Dimensional change (20°C/65%-85%RH), transverse direction dimensional stability according to BS EN 318:2002 | **0.05** | mm/m |
| **Mould resistance** | Resistance to mould growth – ASTM 03273 | **10/10** | no mould growth |
| **Pull–through (with 3x safety factor)** | Pull-through resistance (23°C /50%RH), Siniat Wet Area High Thread fixing according to EN 1383 | **312** | N |
| | Pull-through resistance (23°C /50%RH), Siniat Wet Area Self Drilling fixings according to EN 1383 | **326** | N |
| | | **254** | N |
| **Shear strength** | Shear resistance according EN520 | **0.88** | kN/Screw |
| **Pull–through resistance (centre)** | Siniat GTEC Wet Area Self Drilling | **0.33** | kN |
| | Siniat GTEC Wet Area High Thread | **0.31** | kN |





### Waste and recycling

- The gypsum core in Weather Defence is fully recyclable and site off-cuts are accepted by GTEC Wasteline Direct service for recycling into new plasterboard products
- Gypsum powder from the recycled board fully meets the quality criteria of BSI PAS109* in relation to composition, paper fibre content and purity. This provides for diversion from landfill into recycling markets
- Weather Defence is supplied with minimal packaging and the pallets are composed of recyclable material with PEFC certification

*Specification for the Production of Recycled Gypsum

### Handling and storage

When manually handling Weather Defence, consideration of the correct manual handing technique has to be made to limit risk, according to the Manual Handling Operations Regulations 1992.

Weather Defence is supplied on pallets. Packs should be moved using a fork lift truck or hydraulic trolley. Care should be taken to ensure that the machinery is safely capable of such movements and that the operator is trained and competent.

Weather Defence should be stored in dry, flat conditions.

Weather Defence is weather resistant when installed in the vertical plane and able to shed water.

Weather Defence is not a suitable product to be used as a platform or deck, it will not support body weight and therefore it is important that installers use an independent support mechanism.

### Pack sizes

**Board thickness:** 12.5mm

**Width:** 1200mm

**Length:** 2400mm

**Boards per pallet:** 52

**Board weight:** 10.8kg/m$^2$

**Pallet weight:** 1.62 tonnes

**Max. height incl. pallet:** 750mm

### Personal protection

**Respiratory:** Adequate localised ventilation or extraction is recommended when creating dust and fibres. Alternatively use appropriate respiratory protection.

**Eyes:** Eye protection is recommended when dust and/or fibres are likely to be generated as irritation may be caused by contact.

**Hands:** Gloves should be worn when handling this product.

## Warranties

Weather Defence benefits from a 12 year warranty when built with Siniat components and materials. This must be installed by qualified professionals in accordance with our latest literature and relevant standard. See www.siniat.co.uk for more details.

**Weather Defence delivers on performance**

- Weather Defence has two BBA certificates; one for the product and one for the system
- The information you need upfront to prove it will deliver on technical performance

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 10/4725

bci british construction industry awards 14 WINNER

12 YEAR WARRANTY siniat

siniat
Shaping the way people build

To see how Weather Defence can benefit your next project, call our Technical Services team on **0800 145 6033.**


**GB Orderline**
For placing orders, delivery enquiries, local stockists etc.

0800 373636
01275 377700
orderline@etexbp.co.uk

**Technical Services Department**
Advisory service.

0800 145 6033 or 01275 377789
01275 377456
technical.siniat@etexbp.co.uk



Edition: September 17



**Etex Building Performance Ltd**
Marsh Lane,
Easton-in-Gordano,
Bristol BS20 0NE

+44 (0)1275 377773
www.siniat.co.uk


etex building performance

TECHNICAL DATASHEET

# Weather Defence



**Description**

Siniat Weather Defence is a glass fibre mat faced, gypsum based board for use externally as a sheathing board. It is strong, highly moisture resistant, non-combustible and has improved workability compared to traditional sheathing board products.

**Applications**

- As a general external sheathing board
- As an external sheathing board substrate for insulation boards

**Appearance**

Weather Defence is coloured purple on the front face and white on the back face.

**Standard Format**

1200 mm x 2400 mm x 12.5 mm Square Edge
(other board formats available to special order)

**Composition**

Aerated calcium sulphate di-hydrate with liners made from polymers and glass fibre with moisture and fire resistant fillers/fibres enclosed in gypsum core.

Core and facers are bonded with starch. Edge glue is PVA. The board contains a water resistant additive and a biocide to inhibit mould growth.

**Compliance**

12.5mm GTEC Weather Defence is manufactured to BS EN 15283-1 Types GM-F, GM-H1, GM-I and CE marked accordingly.

**Physical Properties / System performances**

*Flexural Strength to BS EN 15283-1:*
12.5 mm board
Longitudinal breaking load ≥ 680 N
Transverse breaking load ≥ 310 N

*Fire Resistance / Sound Insulation:*
See separate Weather Defence brochure

*Reaction to fire:*
Non-combustible
Euroclass A1 to BS EN 13501-1
Class '0' to UK Building Regulations

*Moisture Content:*
< 1%

*Mass:*
10.8 kg/m$^2$ for 12.5 mm board
860 kg/m$^3$ density

*Thermal Conductivity, $\lambda_R$:*
0.25 W/mK to BS EN 12524

*Thermal Resistance, R:*
12.5 mm = 0.05 m$^2$ K/W

**Wet Area Properties**

*Moisture Resistance:*
Maximum water uptake after 2h total immersion in water:
< 3%

*Water vapour resistance factor:*
μ = 8 to BS EN ISO 12572 (for 12.5mm board)

*Size variation at 20˚C and Humidity 65% RH to 85% RH (DIN EN 318):*
Longitudinal direction 0.15 mm/m
Cross direction 0.11 mm/m

*Freeze -20°C :*
No loss of integrity and no crack in the core

*Mould Resistance:*
Mould resistant with zero biodegradability

**ETEX BUILDING PERFORMANCE LIMITED**
Gordano House, Marsh Lane, Easton-in-Gordano, Bristol, BS20 0NE
Technical Services | T: +44 (0)800 145 6033 or +44 (0)1275 377 789
E: technical.siniat@etexbp.co.uk
www.siniat.co.uk

03/2020

**Handling and Fixing**

GTEC Weather Defence may be cut using the 'score and snap' method as used with plasterboards. No power tools are required.

Fixings must be suitable for the intended substrate. GTEC Wet Area Self Drilling Screws are appropriate for steel thicknesses between 0.9mm and 3mm (total thickness) and GTEC Wet Area High Thread Screws for timber substrates.

**Finishing**

To achieve weathertightness, GTEC Weather Defence should be sealed with GTEC Fire Rated Silicone Sealant or Weather Defence Joint Tape.

To achieve weathertightness, fire resistance and sound insulation, GTEC Weather Defence should be sealed with GTEC Fire Rated Silicone Sealant.

**Cladding**

The board is considered suitable for use with adhesive fixed external insulation systems.

All mechanically fixed cladding/insulation systems must be fixed back to framework or may be fixed with appropriate fixing, e.g. stainless steel SnapToggle by Toggler. For further advice contact Technical Services.

**Certification**

Weather Defence is certified by BBA in the following certificates:

4725/4 – For rainscreen applications
4725/5 – For insulated render application

**Health & Safety**

See separate data sheet available on website

Product supplied from March 2017 has a non-itch surface.

*Board weight:*
31 kg for 2400 mm x 1200 mm x 12.5 mm board

*Issue 4 – 20/01/2021 SP*

**ETEX BUILDING PERFORMANCE LIMITED**
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October 2022

# 10-YEAR PRODUCT WARRANTY

Due to the stringent testing procedures that all Admil products must pass prior to becoming available to the market and then routinely throughout the life of each product, this provides us the opportunity to offer a 10-year product warranty.

For project or for non-standard substrates, Admil offers adhesion testing that is conducted prior to application to ensure the best suited product is chosen. For further detail, please contact us:

80-84 Peters Ave,
Mulgrave, VIC, 3170, Australia
Tel: 03 8544 6200
Email: support@silicone.com.au

This Company Warranty is given by Admil, a division of Selleys & DuluxGroup (Australia) Pty Ltd.

| | |
|---|---|
| **Warranty Period** | 10 years |
| **Products** | Admil Supaseal PU |

In addition to, and without excluding, restricting or modifying, the purchaser's statutory rights, Admil offers the purchaser the Company Warranty set out below:

If you are a consumer under the Australian Consumer Law (the '**Act**'), our goods come with guarantees that cannot be excluded under the Act. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

To the extent permitted by the Act or other laws, Selleys:
(a) limits its liability for breach of a statutory guarantee to the payment of the cost of replacing the Product or acquiring an equivalent Product; and
(b) expressly excludes any liability for consequential loss and incidental or indirect damages (including but not limited to damages for loss of business profits, income, business, goodwill or reputation, or business interruption) due to a defect of the Product.

**Warranty content and validity:** This Company Warranty

(a) consists of the Details section on the front page of this document (the '**Details'**), the Technical Data Sheet ('**TDS**') for the Product and these warranty conditions.
(b) is only enforceable by the original purchaser and is not transferable;
(c) applies only to Products sold by Admil;
(d) only applies once the sealant has fully cured after 7 days application and does not cover any cracking or bulging that may occur due to excess movement before the sealant has fully cured, or problems due to 3-sided adhesion. (see TDS on how to minimize risk.); and
(e) becomes valid only when Admil or its agent has been paid in full for all Product used.

2. **Warranty:** Except as set out in paragraph 6, Admil warrants that the Products it supplied as set out in the Details (**'Products'**) will not crack, crumble, or harden beyond a Shore A hardness of 70 for the duration of the warranty period set out in the Details, due to the effects of weathering, if the sealant is applied within its shelf life:
   (a) provided that the Products are applied in accordance with the instructions in the TDS, or which appear on the Product, or which are otherwise provided in writing by Admil (together, the '**Product Directions'**); and
   (b) subject to the exclusions in this Company Warranty and in the TDS.

**3.** **Making a warranty claim:** To make a claim under this Company Warranty, you must, within two weeks days of any alleged defect or failure of the Product first becoming apparent, send written notice describing the defect or failure, and the original product purchase receipt, to Admil at 80-84 Peters Ave, Mulgrave, VIC, 3170. Admil must be provided adequate time to attend the site, review the claim and investigate the alleged defect. Where applicable, you must advise Admil of the quantity and batch numbers of all Product used. You are responsible for the expense of making a claim under this warranty.

4. **What Admil will do:** In the event of a claim under this Company Warranty, if it is established to Admil's satisfaction that all or part of the Product has not performed in accordance with this Company Warranty, then Admil will, at its option, either:
   (a) supply without charge replacement Product in a manner Admil considers reasonable; or
   (b) refund the original purchase cost of the Product.

   In either (a) or (b) above, the value of Product supplied, or the sum of money refunded will not exceed the value of the original Product purchase and will be reduced by a percentage equal to the portion of the warranty period that has expired at the date the relevant non-performance is notified to Admil, divided by the full warranty period.

5. **What Admil won't do:** In the event of a claim under this Company Warranty, Admil is not responsible for, or for paying the costs of:
   (a) reapplying the Product;
   (b) removing existing Product;
   (c) providing equipment such as scaffolding or other access equipment;
   (d) other actions or work needed to allow reapplication or repair to occur;
   (e) reinstatement of Product or finishes; or
   (f) related costs or damages,

   unless it is required to do so under the Act.

6. **Exclusions:** Subject to guarantees under the Act, this warranty does not extend to fair wear and tear or any damage, defects or failures in the Product which, in Admil's reasonable opinion, arise directly or indirectly from, or are due to:
   (a) errors by the purchaser, or a party authorised by the purchaser, in product suitability, surface or substrate suitability or preparation, product application, use, maintenance or care, or otherwise, including failure to observe any instructions or directions in the 'Product Directions');
   (b) movement, cracking, lifting, peeling, flaking or other deterioration of the substrate to which the product is applied, or a previous system or coating on the substrate;
   (c) direct sunlight / UV exposure;
   (d) service conditions >50°C;
   (e) use of machinery or other instruments with or in proximity to the Product other than as stated in the Product Directions;
   (f) lack of proper maintenance, service or care of the Product, including as recommended in the Product Directions;
   (g) events or acts beyond the reasonable control of Admil, including accidental, deliberate or negligent damage by any person other than Admil, or damage resulting from fire, flood, storm, or other 'Acts of God';
   (h) other contaminants; or
   (i) any other causes specified in the Product Directions as being excluded from this warranty.

This warranty does not extend to colour fade in any circumstances.

Due to the wide variety of materials that sealant is used on we are not able to warranty the adhesion performance of each sealant and substrate combination, without conducting substrate adhesion testing.

This warranty is in place of all other warranties, express or implied to the extent of the law. Admil expressly disclaims all other warranties including warranties of merchantability and fitness for a particular purpose.

Adrian Brocken
Business Manager

12th May 2021

# 10-YEAR PRODUCT WARRANTY

Due to the stringent testing procedures that all Admil products must pass prior to becoming available to the market and then routinely throughout the life of each product, this provides us the opportunity to offer a 10-year product warranty.

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| | |
|---|---|
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| **Products** | Admil Prosil 41LM |

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To the extent permitted by the Act or other laws, Selleys:
(a) limits its liability for breach of a statutory guarantee to the payment of the cost of replacing the Product or acquiring an equivalent Product; and
(b) expressly excludes any liability for consequential loss and incidental or indirect damages (including but not limited to damages for loss of business profits, income, business, goodwill or reputation, or business interruption) due to a defect of the Product.

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(b) is only enforceable by the original purchaser and is not transferable;
(c) applies only to Products sold by Admil;
(d) only applies once the silicone has fully cured after 7 days application and does not cover any cracking or bulging that may occur due to excess movement before the silicone has fully cured, or problems due to 3-sided adhesion. (see TDS on how to minimize risk.); and
(e) becomes valid only when Admil or its agent has been paid in full for all Product used.

2. **Warranty:** Except as set out in paragraph 6, Admil warrants that the Products it supplied as set out in the Details (**'Products'**) will not crack, crumble, or harden beyond a Shore A hardness of 60 for the duration of the warranty period set out in the Details, due to the effects of weathering, UV, and sunlight, if the silicone is applied within its shelf life:
   (a) provided that the Products are applied in accordance with the instructions in the TDS, or which appear on the Product, or which are otherwise provided in writing by Admil (together, the '**Product Directions'**); and
   (b) subject to the exclusions in this Company Warranty and in the TDS.

**3.** **Making a warranty claim:** To make a claim under this Company Warranty, you must, within two weeks days of any alleged defect or failure of the Product first becoming apparent, send written notice describing the defect or failure, and the original product purchase receipt, to Admil at 80-84 Peters Ave, Mulgrave, VIC, 3170. Admil must be provided adequate time to attend the site, review the claim and investigate the alleged defect. Where applicable, you must advise Admil of the quantity and batch numbers of all Product used. You are responsible for the expense of making a claim under this warranty.

4. **What Admil will do:** In the event of a claim under this Company Warranty, if it is established to Admil's satisfaction that all or part of the Product has not performed in accordance with this Company Warranty, then Admil will, at its option, either:
   (a) supply without charge replacement Product in a manner Admil considers reasonable; or
   (b) refund the original purchase cost of the Product.

   In either (a) or (b) above, the value of Product supplied, or the sum of money refunded will not exceed the value of the original Product purchase and will be reduced by a percentage equal to the portion of the warranty period that has expired at the date the relevant non-performance is notified to Admil, divided by the full warranty period.

5. **What Admil won't do:** In the event of a claim under this Company Warranty, Admil is not responsible for, or for paying the costs of:
   (a) reapplying the Product;
   (b) removing existing Product;
   (c) providing equipment such as scaffolding or other access equipment;
   (d) other actions or work needed to allow reapplication or repair to occur;
   (e) reinstatement of Product or finishes; or
   (f) related costs or damages,

   unless it is required to do so under the Act.

6. **Exclusions:** Subject to guarantees under the Act, this warranty does not extend to fair wear and tear or any damage, defects or failures in the Product which, in Admil's reasonable opinion, arise directly or indirectly from, or are due to:
   (a) errors by the purchaser, or a party authorised by the purchaser, in product suitability, surface or substrate suitability or preparation, product application, use, maintenance or care, or otherwise, including failure to observe any instructions or directions in the 'Product Directions');
   (b) movement, cracking, lifting, peeling, flaking or other deterioration of the substrate to which the product is applied, or a previous system or coating on the substrate;
   (c) use of machinery or other instruments with or in proximity to the Product other than as stated in the Product Directions;
   (d) lack of proper maintenance, service or care of the Product, including as recommended in the Product Directions;
   (e) events or acts beyond the reasonable control of Admil, including accidental, deliberate or negligent damage by any person other than Admil, or damage resulting from fire, flood, storm, or other 'Acts of God';
   (f) other contaminants; or
   (g) any other causes specified in the Product Directions as being excluded from this warranty.

This warranty does not extend to colour fade in any circumstances.

Due to the wide variety of materials that silicone is used on we are not able to warranty the adhesion performance of each silicone and substrate combination, without conducting substrate adhesion testing.

This warranty is in place of all other warranties, express or implied to the extent of the law. Admil expressly disclaims all other warranties including warranties of merchantability and fitness for a particular purpose.

Adrian Brocken
Business Manager

Dulux AccreditedPowderCoater™

# Pre-Approval / Issue Of Warranty Online Application Guide

# Pre Approval / Issue Of Warranty Online Application Guide

## Alumi Shield™ Level 1 & 2
## Steel Shield™

**Purpose of form**

This is guide outlining the information required to be submitted when applying for a pre-approval or issue of warranty for Dulux Alumi Shield™ or Steel Shield™ warranties. This application can be completed in the Powder Portal by an approved Dulux Accredited Powder Coater.

This document covers both Alumi Shield™ and Steel Shield™ warranty applications. Only information relating to the required warranty type will need to be completed.

## 1. Project Name and Address (Powder Coater to complete)

**Please complete the project name and address:**

Each Dulux Alumi Shield™ Warranty is attributable to a project and a location. The project name must detail that location and building/item. This information is critical to identify the project and the warranty, eg University of Canberra Hospital, Block A.

Please note this cannot be a fabricator or a builder business name.

**1.1 Project Name**

**1.2 Address** Street

Suburb State Postcode

**1.3 Dulux Specification (optional)**

If you have received a Dulux Duspec Specification for this project please detail the specification reference number below:

**Specification number**

If you require a specification speak to your Account Manager or call our Advice line. Our dedicated consultants can help simplify the specification process, saving you time and money by providing the right coating advice for your project. Call 13 24 99 or visit duluxpowders.com.au

## 2. Project Type (Powder Coater to complete)

**2.1 Please select which project type the Powder Coating is for:**


Non-habitable ☐


Residential <4 Levels ☐


Residential >3 Levels ☐


Commercial <4 Levels ☐


Commercial >3 Levels ☐


Prestigious Commercial ☐


Monumental ☐

**Definitions:**

- Non-Habitable projects are those that are not dwelling types. Examples can be furniture, bus shelters, signage etc.
- Residential properties are typically easy to maintain, given their height and access.
- High-rise projects are less sheltered from neighbouring buildings, raising their exposure and reducing their ease of maintenance.
- Monumental projects attract the most attention and have the highest standards required to uphold the reputation expected from landmark sites

Alumi Shield™

Sections 3-6 are only required to be completed for Alumi Shield warranty applications

## 3. Alumi Shield™ Warranty being applied for (Powder Coater to complete)

3.1 Please select the Alumi Shield™ warranty being applied for is indicated below:

| | Duralloy | Precious | Duratec Intensity | Duratec Elements | Duratec Zeus | Duratec Eternity | Electro | Fluoroset |
|---|---|---|---|---|---|---|---|---|
| Aluminium Durability | 10 Years | 10 Years | 25 Years | 25 Years | 25 Years | 25 Years | 25 Years | 35 Years |
| Aluminium Colour | 10 Years | 10 Years | 15 Years | 20 Years | 20 Years | 20 Years | 15 Years | 30 Years |
| | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

## 4. Substrate (Powder Coater to complete)

4.1 Select below the substrate material being coated:

Extruded Aluminium ☐ Sheet Aluminium ☐ Perforated Aluminium ☐

4.2 Does this project include aluminium welds?

☐ Yes ☐ No

## 5. Components to be Coated (Powder Coater to complete)

5.1 Select below the substrate material being coated:

Windows ☐ Louvres ☐ Doors ☐ Balustrades ☐ Decorative sheet ☐ Other ☐

For other please add detailed description:

## 6. Location (Powder Coater to complete)

6.1 Select below the site location:

| Exterior | | | Interior | |
|---|---|---|---|---|
| **Mild C2 – C3** | **Severe C4 – C5** | **Tropical C5** | **General Interior (C1 – C2)** | **Moderate Interior (C3 & C4)** |
| Example environments: Arid, urban, inland City, industrial & coastal | Example environments: Sea shore (calm) Heavy industrial | Example environment: Sea shore (surf) | Example environment: Dry interiors Minor condensation | Example environment: High Moisture Significant contamination |
| ☐ | ☐ | ☐ | ☐ | ☐ |

If you are unsure please refer to the Alumi Shield™ documentation, visit duluxpowders.com.au, speak to your Dulux Account Manager or call the advice line on 13 24 99.

Steel Shield™

Sections 7-12 are only required to be completed for Steel Shield warranty applications

## 7. Substrate (Powder Coater to complete)

7.1 Select below the substrate material being coated:

| Mild Steel | Bright/Semi Bright Steel | Black/Blue Steel |
|---|---|---|
| ☐ | ☐ | ☐ |

## 8. Components to be coated (Powder Coater to complete)

8.1 Please detail below a description of the item being coated:

## 9. Design Considerations (Powder Coater to complete)

Have the items to be coated been planned and designed in accordance with AS/NZS 2312 Section 3?

☐ Yes ☐ No

## 10. Substrate Preparation (Powder Coater to complete)

Have you:

1. Prepared the steel in accordance with AS1627.4 to visual standard AS1627.9 Class 2.5 (equivalent to ISO8501-1, Sa 2.5: Vry Thorough Blast-Cleaning).
2. Used a non-metallic medium that will generate a surface profile of 35 to 65 microns (as tested to AS3894.5 Method A)

☐ Yes ☐ No

## 11. Location (Powder Coater to complete)

Please detail if the powder coated steel will be located internally or externally.

☐ Internally ☐ Externally

## 12. Environment and System Choice (Powder Coater to complete)

12.1 Select below the environment (corrosivity zone) and appropriate System Choice:

| Corrosivity Zone | | C1 Very Low | C2 Low | C3 Medium | C4 High | C5 Very High Industrial | C5 Very High Marine |
|---|---|---|---|---|---|---|---|
| Example Environment | | Interior: Dry indoors | Interior: Minor condensations Exterior: Arid, urban, inland | Interior: High moisture Exterior: City, coastal or industrial | Interior: Significant contamination Exterior: Sea shore (calm) | Aggressive industrial areas where the environment may be acidic with a PH of less than 5 | This category is on the beachfront in regions of rough seas and surf beaches |
| Primer System | Zinc Shield | • | • | • | • | • | • |
| | E-Prime | | | | • | • | • |
| Top Coat Choice | Flouroset | • | • | • | • | • | • |
| | Electro | • | • | • | • | • | • |
| | Duratec | • | • | • | • | • | • |
| | Duralloy | • | • | • | | | |
| | Precious | • | • | • | | | |
| Corrosion Warranty | | 10 Years | 10 Years | 5 Years | 5 Years | 5 Years | 5 Years |
| Your selection | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

If you are unsure please refer to the Steel Shield™ documentation, visit duluxpowders.com.au, speak to your Dulux Account Manager or call the advice line.

## 13. Project Environment – Exterior Projects only (Powder Coater to complete)

**13.1 Select below the site proximity to salt water (high tide mark), industrial environments, and or distance to other water/liquids e.g. outdoor pools where relevant.**

| To salt water (high tide mark) | | | To severe industrial environments | | Distance to other water/liquids* | |
|---|---|---|---|---|---|---|
| Less than 10m from the high tide ☐ | Between 10 and 100m ☐ | More than 100m ☐ | Less than 5km ☐ | More than 5km ☐ | Within 2m (splash zone) ☐ | Greater than 2m from water/liquid ☐ |

*Relevant for environments such as outdoor pools

**13.2 If the proximity is within 2m of the splash zone please select water/liquid type.**

Please note chemically treated water includes antimicrobial treatments, e.g. in pools, anti-corrosive chemicals, soapy water eg, in bathrooms, showers, etc. Note if the water is chemically treated a warranty cannot be claimed for areas within 2m of the splash zone.

| Water Type | | | Other Liquid Type |
|---|---|---|---|
| Chemically treated (see above examples) ☐ | Clean tap or potable water ☐ | Salt Water ☐ | Please tick and detail in 13.3 ☐ |

**13.3 Please describe the environment in more detail, listing any chemicals and the environment:**

## 14. Project Environment – Interior only (Powder Coater to complete)

**14.1 Select below if the environment is humid or dry:**

If the environment has a high moisture content (e.g. hot pools, steam presses, laundries etc) please state humid.

Humid ☐ Dry ☐

**14.2 Select below if chemicals are present:**

This is to capture if chemicals are used in the environment of the powder coated item and is particularly relevant to manufacturing or industrial environments. If there are no chemicals used please tick other. Please note that environments that are strongly acidic (e.g. pH less than 5) or strongly caustic (e.g. pH greater than 9) or where strong solvents are prevalent no warranty is available.

Yes* ☐ No ☐ Other ☐

*If yes please detail chemicals present in 14.5

**14.3 Select below the proximity to water/liquid:**

Please note if the powder coating is immersed in water no warranty can be given

Within 2m (splash zone) ☐ Greater than 2m from water/liquid ☐

**14.4 If the proximity is within 2m of the splash zone please select water/liquid type:**

Please note chemically treated water includes antimicrobial treatments, e.g. in pools, anticorrosive chemicals, soapy water in bathrooms and showers etc. Note if the water is chemically treated a warranty cannot be claimed for areas within 2m of the splash zone.

| Water Type | | | Other Liquid Type |
|---|---|---|---|
| Chemically treated (see above examples) ☐ | Clean tap or potable water ☐ | Salt Water ☐ | Please tick and detail in 14.5 ☐ |

**14.5 Please describe the environment in more detail, listing any chemicals and the environment:**

## 15. Product Details (Powder Coater to complete)

### 15.1 Product choice

| Duralloy | Precious | Duratec Intensity | Duratec Zeus | Duratec Eternity | Electro | Fluoroset |
|---|---|---|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

### 15.2 Core Line or Made to Order

Please detail if chosen colour is a core line from our range (this will be detailed on your price list) or is a Custom Colour / Made To Order line.

Core Line ☐ Custom Colour / Made To Order ☐

### 15.3 Colour name and product code

Please detail the chosen colour and product code.

| | |
|---|---|
| 15.3.1 Colour Name | |
| 15.3.2 Product Code | |

### 15.4 Powder coating details

Please detail the estimated details if this is a pre-approval or the actuals if this is an issue of warranty application.

| | Pre-approval estimate | Actual powder used |
|---|---|---|
| 15.4.1 Amount of powder used in Kg: | | |
| 15.4.2 Actual coated area in sqm | | |
| 15.4.3 Completion date (for issue of warranty only) | | |

15.4.4 Batch number(s) used including primer and top coat (please tick to indicate)

| Top Coat | Primer | Batch number |
|---|---|---|
| ☐ | ☐ | |
| ☐ | ☐ | |
| ☐ | ☐ | |
| ☐ | ☐ | |
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| ☐ | ☐ | |
| ☐ | ☐ | |
| ☐ | ☐ | |

## 16. Other Parties involved in the Project (Powder Coater to complete)

Please detail below all parties involved in this project where applicable:

**16.1 Fabricator:**

| | |
|---|---|
| Company Name | |
| Main Contact | |
| Phone Number | |
| Email Address | |

---

**16.2 Steel blaster (if applicable):**

| | |
|---|---|
| Company Name | |
| Main Contact | |
| Phone Number | |
| Email Address | |

---

**16.3 Builder or Developer:**

| | |
|---|---|
| Company Name | |
| Main Contact | |
| Phone Number | |
| Email Address | |

---

**16.4 Architect, Specifier, Designer:**

| | |
|---|---|
| Company Name | |
| Main Contact | |
| Phone Number | |
| Email Address | |

---

**16.5 End user, asset owner or consumer if applicable:**

| | |
|---|---|
| Company Name | |
| Main Contact | |
| Phone Number | |
| Email Address | |

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## Powder Portal

Dulux Accredited Powder Coaters have exclusive access to the Powder Portal to easily renew your accreditation, manage your warranty applications, and access marketing resources to help your business grow.

Visit powderportal.com.au

## Need help?

A new system can be tricky! That's why you'll find '**How to**' videos covering everything you need to know in the Powder Portal.

If you're still unsure, contact your account manager or call the Advice Line on 13 24 99

## Offices


### Australia

**Dulux Powder & Industrial Coatings**
1-15 Pound Road West
Dandenong South VIC 3175

**T** (61) 3 8787 4500
**F** (61) 3 8787 4542

### New Zealand

**Dulux Powder & Industrial Coatings**
31B Hillside Road
Glenfield, Auckland, New Zealand

**T** (64) 9 441 8244
**F** (64) 9 441 8242


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Dulux Accredited PowderCoater™

Interpon powder coatings
EVERY COLOR IS GREEN

# Interpon D Project Notification Form

**Commencement of Project**

Use this form at the commencement of the project to identify the project conditions, obtain technical approval and secure a project warranty number so that you can commence ordering Interpon D products. This form will cover all future orders in relation to this project unless the product technology changes or the environment category of the project changes. If this occurs then a new project number and further approval needs to be requested.

Please note that **THIS IS NOT AN ORDER FORM.** You will receive a Warranty number dedicated to your project once the details of the project have been approved by the Interpon Technical Manager. This number must appear on all Warranty Product Order Forms (WPOFs) to ensure your orders will be processed and to ensure details specific to this project are correct for warranty purposes.

You may submit this form with your Warranty Product Order Form (WPOF) or independently of the WPOF, depending on your requirements.

## Applicator Details

| | | | |
|---|---|---|---|
| **Applicator No.** | | Request to commence a Warranty Project : | ☐ |
| Commence Date: | | Updating project details ONLY: | ☐ |
| Revised Date: | | Existing Project: | ☐ |
| Applicator Business Name: | | | |
| Applicator contact: | | | |
| Phone: | | Email: | |
| Applicator Signature: (Email approval will suffice) | | | |
| Interpon Sales Manager Approval: (Email notification will suffice) | | | |

## Project Details

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | | | | | |
| Project Address: | | | | | |
| Suburb: | | State: | | Postcode: | |
| Architect: | | Fabricator: | | Builder/Contractor: | |
| Building Type | *Residential ☐ **Commercial ☐ or Other ☐ Perforated Screens ☐ Metaprep primer required | | Application: | Internal ☐ External ☐ | |
| ***Residential** – In accordance with Vol 2 (class 1 and 10 buildings) Building Code of Australia. Constructions up to 3 levels above ground and greater than 100m from any salt water or surf line. | | ****Commercial** – In accordance with Vol 2 (class 2 through 9 buildings) Building Code of Australia. | | | |
| Articles Coated: | | | | | |
| Building Environment: As per category AS4312 | ☐ C1-C3 Non Hazardous | ☐ C4 Swimming & leisure Pools/Light Industrial | ☐ C5-M Beachfront/ Marine | | |
| | ☐ C3/T Tropical | ☐ C4 Coastal Environment | ☐ C5-I Heavy Industrial | | |

## Product Details

Interpon powder coatings
EVERY COLOR IS GREEN

Please state what products you are intending to order. At this stage you only need to provide technology i.e. D2015, D3000 etc. and whether the product is ex-stock range, made to order or MiniB orders. If you are using existing product, you do not need to complete a separate order form. State existing product details below.

| Ex-Stock Products | ☐ | Made to Order | ☐ | Mini B | ☐ | Existing Stock | ☐ |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Product Name: | | Product Code: | | Expected qty | | Batch No (if using existing product) | |
| Product Name: | | Product Code: | | Expected qty | | Batch No (if using existing product) | |
| Product Name: | | Product Code: | | Expected qty | | Batch No (if using existing product) | |
| Product Name: | | Product Code: | | Expected qty | | Batch No (if using existing product) | |
| Product Name: | | Product Code: | | Expected qty | | Batch No (if using existing product) | |
| Product Name: | | Product Code: | | Expected qty | | Batch No (if using existing product) | |
| Metaprep Primer: (only required for Perforated Screens) | | Product Code: | | Expected qty | | Batch No (if using existing product) | |

**Interpon Internal Use Only**

| **Approved?** | Yes ☐ | No ☐ | **Warranty Project No. Issued:** | |
|---|---|---|---|---|
| Requires modification (complete technical requirements comments below) | | | | ☐ |
| Technical Requirements: | | | | |

| | |
|---|---|
| Name: | |
| Title: | |
| Signature: | |

**CLOSING OFF THE PROJECT**

You do not need to complete this section until you are ready to request a Warranty certificate. At the completion of your project, please complete the section below and fax/email/mail this form to your local Sales Manager to request your warranty certificate.

| Date: | | Closing the Project (request for Warranty Certificate): | Yes ☐ |
|---|---|---|---|
| Applicator Name: | | | |
| Project Name: | | | |
| Interpon Sales Manager Signature: (Email Approval will suffice) | | | |

Please ensure you use your dedicated warranty number on all future product requests for this project.

Please contact your Regional Sales Manager if you have any queries regarding this process.

**Ian Bennie & Associates**

# Test Report No. 2021-030-S1

## AFS Proclad Linear weather defence vertical boards with; Siniat weather defence rigid Air barrier

**Specimen tests by the methods of AS/NZS4284**

**For**

**Aluminium Facade Systems**

**February 2022**

NATA

Accredited Laboratory No. 2371
Accredited for compliance with ISO/IEC 17025 - Testing

IAN BENNIE & ASSOCIATES PTY. LTD.
Building performance Testing
ACN: 007 133 253

Accredited
Laboratory
No.2371

# TEST REPORT NUMBER 2021-030-S1

## SUMMARY

**Test Client:** **Aluminium Facade Systems**
3 Alspec Place Eastern Creek NSW 2766

**Specimen identification:**

AFS Proclad Linear weather defence vertical boards with Siniat weather defence rigid Air barrier test specimen, nominally 3.9 m in height x 3.6 m in width was installed on a steel stud wall by the client. The cladding boards were installed with vertical fixing details. The sample included a recessed area, soffit detail, window interfaces, horizontal control joint, wall junctions and parapet conditions. The window itself was not deemed a formal part of the test sample and as such it is not detailed in this report. Specific details of the specimen in its final condition are given in the drawings provided by the Client in Appendix B. Sample drawings received: 17th August 2021

**Test Method:**

Structural SLS, Air Infiltration, Water Penetration and Structural ULS test procedures and performance requirements in accordance with Australian Standard AS/NZS 4284:2008, Testing of building facades.

**Nominated Serviceability limit state pressures:** +2500 Pa and -2500 Pa

**Nominated Water penetration test pressures:** Max Static; 750 Pa
Max Cyclic; 750 - 1500 Pa

**Nominated Ultimate limit state pressures:** +3750 Pa and -3750 Pa

**Test Location:** Ian Bennie & Associates, Dandenong South, Victoria

**Test Date:** 22nd & 26th October, & 10th November 2021

**Sample received:** 13th October 2021



1 Luisa Avenue, Dandenong South, 3175, Victoria, Australia
Telephone: (03) 9768 3640 International: +613 9768 3640 Facsimile: (03) 9768 3642

**Conclusions:**

The AFS Proclad Linear weather defence vertical boards with Siniat Weather defence R.A.B sample passed the performance requirements of Clause 9.2.1 & 9.2.3 Structural test at SLS, Clause 9.3 Air Infiltration, Clause 9.4 Water penetration, and Clause 9.7 Structural test at ULS Test method requirements of AS/NZS 4284:2008 for the nominated test parameters. The Steel stud framing of the Alspec ProClad Linear weather defence vertical boards with Siniat Weather defence R.A.B sample failed the performance requirements for clause 9.2.2 Structural test at SLS – Successive member displacement. Complete details of all tests conducted and results are given in the body of this report.

**Disclaimer:**

Sample information including material properties and detailing was supplied by the client and no verification of actual construction details or sampling of production stock could be performed. The test results contained herein apply to the sample as tested. Ian Bennie & associates accept no liability for claims of losses, expenses, damages and costs arising as a result of the use of product(s) referred to in this report.



Report distribution:

| | | |
|---|---|---|
| Ian Bennie & Associates | PDF | Ian Bennie 28th February 2022 |
| AFS | PDF | Authorised Signatory |

# Test Methods & Results

**General:**
Structural SLS, Air Infiltration, Water Penetration and Structural ULS test procedures and performance requirements were conducted in accordance with Australian Standard AS/NZS 4284:2008, Testing of building facades, as detailed in Appendix A.

**Preliminary tests:**
Preliminary Water test 1 - 22nd OCtober 2021
Prior to commencement of Water test 1 the sample was loaded with the nominated serviceability pressures in accordance with Clause 8.1.2

Nominated serviceability pressures of ±1.8 kPa

Water penetration tests were carried out at required serviceability pressures with a max static of 600 Pa and cycling pressure stages of 300-600 Pa, 400-800 Pa, & 600-1200 Pa. and no sign of water on the internal facade was found. At the request of the client the max pressure was increased to find the limit of the system. The system was tested to a max static of 900 Pa & max cyclic pressure of 800-1600 with no failure, and when the pressure was increased to 900-1800 Pa a failure occurred in the connection detail between the sinait board and bottom sample flashing.
Due to this the formal testing requirements were set to ±2.5 kPa

**Structural test at serviceability limit states:**
*Method*
Tests were carried out in accordance with Clause 8.3 of Australian Standard AS/NZS 4284:2008. All displacement measurements were referenced to the rigid steel support structure. Before testing, each displacement transducer was calibrated with the measuring system against NATA calibrated gauge blocks. Measurement accuracy for subsequent displacement data may be taken as ±0.2 mm. All pressure transducers are calibrated against NATA certified manometers and may be taken to have a measurement accuracy of 1% .

**Nominated serviceability limit state pressures:** +2.50 and –2.50 kPa.

*Requirements*
As per Australian Standard AS/NZS 4284:2008, see Appendix A.

**Test Results:**
Structural Test 1 – 26th October 2021
The sample passed the requirements of the test for clause 9.2.1 & 9.2.3.
the sample failed the requirements of clause 9.2.2

*Test Readings and Observations*
Figure 1 shows the 3 measurement locations used to record the displacements under load of a vertical stud on the sample. Positive and negative structural test data for the three modes of this test, referenced to the readings taken at zero pressure after the settling periods, are given in Tables 1 to 3. Table 4 lists successive displacements of the test sample under no load measured at the zero pressure readings throughout the entire test. In this table, all readings are referenced to the initial zero after settling in for Mode 1 (Z1), and are keyed to the other tables by identification numbers in the column headed "Reading".

*Results*
*Clause 9.2.1 Deflection/Span ratios;*
Maximum Span deflection ratios recorded at serviceability limit pressures were:

| | | | | | |
|---|---|---|---|---|---|
| Metal Stud | Deflection/Span: | @ | +2.5 kPa = | 1 : 479 | Pass |
| | | @ | -2.5 kPa = | 1 : 493 | Pass |

*Clause 9.2.2 Successive member displacement;*
Maximum successive member displacement shall not exceed 3.0 mm
Maximum successive member residual displacement: **-8.9 mm.** Fail

*Clause 9.2.3 Maximum deflection;*
The maximum displacement of a framing member shall not exceed 20.0 mm
Maximum member displacement: **11.6 mm** measured at the Mid span of the stud. Pass

Following on from the first Structural Test there was too much slippage in the sections due to not enough fixings in the frame to resist the loads so more fixings were put from the stud frame to the support structure.

**Test Results:**
Structural Test 2 – 11th November 2021
The sample passed the requirements of the test for clause 9.2.1 & 9.2.3.
the sample failed the requirements of clause 9.2.2

*Results*
*Clause 9.2.1 Deflection/Span ratios;*
Maximum Span deflection ratios recorded at serviceability limit pressures were:

| | | | | | |
|---|---|---|---|---|---|
| Metal Stud | Deflection/Span: | @ | +2.5 kPa = | 1 : 479 | Pass |
| | | @ | -2.5 kPa = | 1 : 493 | Pass |

*Clause 9.2.2 Successive member displacement;*
Maximum successive member displacement shall not exceed 3.0 mm
Maximum successive member residual displacement: **-15.7 mm.** Fail

*Clause 9.2.3 Maximum deflection;*
The maximum displacement of a framing member shall not exceed 20.0 mm
Maximum member displacement: **11.6 mm** measured at the Mid span of the stud. Pass

**Air Infiltration Test:**
*Test Method*
Tests were conducted in accordance with Clause 8.4 of Australian Standard AS/NZS 4284:2008 at test pressures of ±150Pa. Air flow rate measurements were carried out with a NATA certified orifice plate flowmeter using pressure transducers calibrated against a NATA certified manometer. The accuracy of the flow rate may be taken as ± 0.04 L/m2.s.

*Requirement*
As per Australian Standard AS/NZS 4284:2008, see Appendix A

**Test Results:**
**Air Infiltration Test 1** – 11th October 2021
The sample passed the test requirement.

The air leakages recorded during the tests are given in the following table.

| Pressure | Leakage ($L/m^2*s$) | | |
|---|---|---|---|
| (Pa) | Chamber & Sample | Chamber | Sample |
| +150 | 0.7 | N.R | 0.7 |
| -150 | 0.4 | N.R | 0.4 |

NR: measurement not required.

**Water Penetration Test:**
*Test Method*
Tests were carried out in accordance with Clauses 8.5 and 8.6 of AS/NZS 4284:2008. The nominal full sequence of test pressures was as follows:

| Pressure (Pa) | Duration |
|---|---|
| 0 | 5 minutes |
| 750 | 15 minutes |
| 0 (no water) | 5 minutes |
| 375-750 | 5 minutes |
| 0 | 2 minutes |
| 500-1000 | 5 minutes |
| 0 | 2 minutes |
| 750-1500 | 5 minutes |
| 0 (no water) | 2 minutes |

Table A.1 Water penetration test pressure steps

Water was applied via sprays located 1 metre away from the outdoor face of the test sample. Water flow rate to the sprays was measured with a calibrated flow metre to an accuracy of 2% and was maintained at a level of 0.05 l/s.m2 over the test area throughout the test. Water application was maintained continuously and water was observed to evenly cover the exterior face of the test sample.

*Test Requirement*
As per Australian Standard AS/NZS 4284:2008, see Appendix A

**Test Results:**
**Water Test 1** – 26th October 2021 - Fail

Test Pressure 750 Pa static
Water was observed on the inside face of the facade in one location. Water came through the joint between the siniat weather board and the samples bottom flashing.

Rectification works were carried out and a slight change of details made. Where the sinait board ran down to the bottom of the flashing where the tape was being submerged due to water being trapped at the bottom of the sample, the gap from bottom of sinait board and Linear weather defence was changed from approx 20mm to approx 60mm to allow for better drainage of the cavity and to get the tape joint away from any water.

**Water Test 2** – 11th November 2021

The sample passed all the requirements of the test as no water appeared on the inside surface of the sample.

**Structural test at Ultimate limit state:**

*Test Method*

Tests were carried out in accordance with Clause 8,8 of Australian Standard AS/NZS 4284:2008. Nominated ultimate limit state pressures: +3.75 and –3.75 kPa for a period of 10 seconds each.

*Test Requirement*

As per Australian Standard AS/NZS4284:2008, see Appendix A.

**Test Results:** 11th November 2021

The sample passed the requirements of the test as the pressures of +3.75 and –3.75 kPa were sustained for 10 seconds without any sign of failure

## Figures, Tables, and Appendices

The figures, tables and appendices listed below are provided on the following pages of this report.

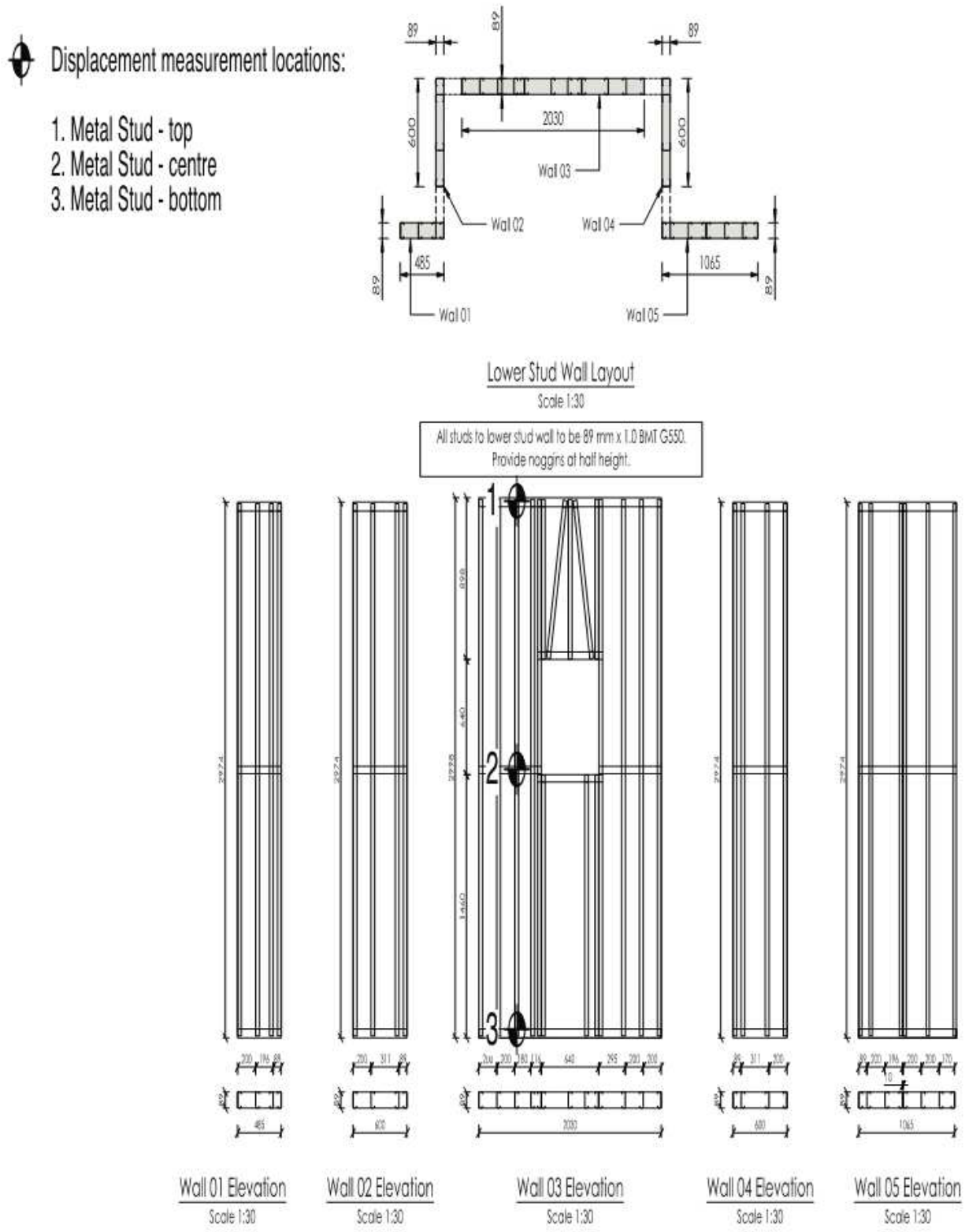



Figure 1. Elevation of the stud frame indicating the structural measurement locations

**Table 1**

**TEST NUMBER 1 - MODE 1**
**DISPLACEMENTS (mm) - POSITIVE PRESSURE**

Data file 2021-030-S1 Test Number: ST1 - mode 1 Date 26/10/21

| Reading | Pressure (kPa) | Measurement Location Number | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Take up | 2.53 | | | |
| Z1 | 0 | 0 | 0 | 0 |
| | Subsequent deflections are referenced to Z1 | | | |
| P1 | 0.51 | 1.2 | 1.8 | 0.1 |
| P2 | 1.03 | 3.2 | 4.2 | 0.5 |
| P3 | 1.51 | 5.0 | 6.4 | 0.8 |
| P4 | 2.02 | 6.9 | 8.7 | 1.1 |
| P5 | 2.55 | 9.4 | 11.4 | 1.4 |
| Z2 | 0.00 | 1.0 | 0.6 | 0.1 |
| P6 | 2.52 | 9.9 | 11.6 | 1.4 |
| P7 | 2.05 | 8.7 | 10.0 | 1.3 |
| P8 | 1.54 | 7.2 | 8.1 | 1.1 |
| P9 | 0.99 | 5.3 | 5.7 | 0.8 |
| P10 | 0.51 | 3.5 | 3.5 | 0.5 |
| Z3 | 0.00 | 1.1 | 0.6 | 0.1 |

**Table 2**

**TEST NUMBER 1 - MODE 2**
**DISPLACEMENTS (mm) - NEGATIVE PRESSURE**

Data file 2021-030-S1 Test Number: ST1 - mode2 Date 26/10/21

| Reading | Pressure (kPa) | Measurement Location Number | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Take up | -2.52 | | | |
| Z4 | | -7.9 | -5.2 | -0.6 |
| *Shift* | | -9.0 | -5.8 | -0.7 |
| N1 | -0.50 | -1.1 | -1.7 | -0.1 |
| N2 | -1.02 | -2.6 | -3.7 | -0.4 |
| N3 | -1.52 | -4.1 | -5.8 | -0.5 |
| N4 | -2.01 | -5.6 | -7.8 | -0.7 |
| N5 | -2.53 | -7.4 | -10.0 | -0.9 |
| Z5 | 0.00 | -0.9 | -0.7 | -0.2 |
| N6 | -2.45 | -7.4 | -9.9 | -0.9 |
| N7 | -1.97 | -6.7 | -8.6 | -0.9 |
| N8 | -1.51 | -5.7 | -7.1 | -0.8 |
| N9 | -1.07 | -4.6 | -5.6 | -0.6 |
| N10 | -0.56 | -3.0 | -3.3 | -0.4 |
| Z6 | 0.00 | -1.0 | -0.7 | -0.2 |

**Table 3**

**TEST NUMBER 1 - MODE 3**
**DISPLACEMENTS (mm) - POSITIVE PRESSURE**

Data file 2021-030-S1 Test Number: ST1-mode 3 Date 26/10/21

| Reading | Pressure (kPa) | Measurement Location Number | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Take up | 2.51 | | | |
| Z7 | 0 | 1.7 | 0.7 | -0.1 |
| *Shift during take up* | | 10.6 | 6.6 | 0.6 |

**Table 4**

**SUCCESSIVE ZERO-PRESSURE DISPLACEMENTS(mm)**
**REFERENCED TO THE ZERO AFTER TAKE UP IN MODE 1**

Data file 2021-030-S1 Test Number: ST1 Date: 26/10/21

| Reading | Measurement Location Number | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| *Z1* | 0.0 | 0.0 | 0.0 |
| *Z2* | 1.0 | 0.6 | 0.1 |
| *Z3* | 1.1 | 0.6 | 0.1 |
| *Z4* | -7.9 | -5.2 | -0.6 |
| *Z5* | -8.8 | -5.9 | -0.7 |
| *Z6* | -8.9 | -5.9 | -0.8 |
| *Z7* | 1.7 | 0.7 | -0.1 |

**Table 5**

**STRUCTURAL PERFORMANCE**

| DATAFILE: 2021-030-S1 | | Test Number:ST1 | | | Date: 26/10/2021 | | |
|---|---|---|---|---|---|---|---|
| Member | Pressure | Displacements (rounded to 0.1 mm) | | | Bending Deflection (Rounded to 0.01 mm) | Span | SDR |
| | | Left or Top | Centre | Right or bottom | $DC - \frac{(D1+D2)}{2}$ | | |
| | (kPa) | D1 (mm) | DC (mm) | D2 (mm) | DEF (mm) | L (mm) | L/DEF |
| 1,2,3 | | | | | | | |
| | 0.51 | 1.2 | 1.8 | 0.1 | 1.16 | 2870 | 2477 |
| | 1.03 | 3.2 | 4.2 | 0.5 | 2.37 | | 1212 |
| | 1.51 | 5.0 | 6.4 | 0.8 | 3.51 | | 819 |
| | 2.02 | 6.9 | 8.7 | 1.1 | 4.72 | | 608 |
| | 2.55 | 9.4 | 11.4 | 1.4 | 5.99 | | 479 |
| | 2.52 | 9.9 | 11.6 | 1.4 | 5.94 | | 483 |
| | 2.05 | 8.7 | 10.0 | 1.3 | 5.01 | | 573 |
| | 1.54 | 7.2 | 8.1 | 1.1 | 3.94 | | 728 |
| | 0.99 | 5.3 | 5.7 | 0.8 | 2.62 | | 1096 |
| | 0.51 | 3.5 | 3.5 | 0.5 | 1.47 | | 1956 |
| | -0.50 | -1.1 | -1.7 | -0.1 | -1.08 | | -2654 |
| | -1.02 | -2.6 | -3.7 | -0.4 | -2.22 | | -1291 |
| | -1.52 | -4.1 | -5.8 | -0.5 | -3.46 | | -830 |
| | -2.01 | -5.6 | -7.8 | -0.7 | -4.60 | | -624 |
| | -2.53 | -7.4 | -10.0 | -0.9 | -5.82 | | -493 |
| | -2.45 | -7.4 | -9.9 | -0.9 | -5.76 | | -498 |
| | -1.97 | -6.7 | -8.6 | -0.9 | -4.79 | | -599 |
| | -1.51 | -5.7 | -7.1 | -0.8 | -3.88 | | -740 |
| | -1.07 | -4.6 | -5.6 | -0.6 | -2.97 | | -967 |
| | -0.56 | -3.0 | -3.3 | -0.4 | -1.64 | | -1754 |

**Table 6**

**TEST NUMBER 1 - MODE 1**
**DISPLACEMENTS (mm) - POSITIVE PRESSURE**

Data file 2021-030-S1 Test Number: ST2 - mode 1 Date 10/11/21

| Reading | Pressure (kPa) | Measurement Location Number | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Take up | 2.53 | | | |
| Z1 | 0 | 0 | 0 | 0 |
| | Subsequent deflections are referenced to Z1 | | | |
| P1 | 0.50 | 1.5 | 2.0 | 0.1 |
| P2 | 1.00 | 3.5 | 4.3 | 0.4 |
| P3 | 1.54 | 5.6 | 6.8 | 0.7 |
| P4 | 2.03 | 7.6 | 9.1 | 1.0 |
| P5 | 2.51 | 9.5 | 11.5 | 1.3 |
| Z2 | 0.00 | 0.1 | 0.1 | 0.0 |
| P6 | 2.54 | 9.7 | 11.6 | 1.4 |
| P7 | 2.02 | 8.3 | 9.8 | 1.2 |
| P8 | 1.51 | 6.5 | 7.7 | 0.9 |
| P9 | 0.99 | 4.6 | 5.4 | 0.7 |
| P10 | 0.54 | 2.9 | 3.2 | 0.4 |
| Z3 | 0.00 | 0.2 | 0.2 | 0.0 |

**Table 7**

**TEST NUMBER 1 - MODE 2**
**DISPLACEMENTS (mm) - NEGATIVE PRESSURE**

Data file 2021-030-S1 Test Number: ST2 - mode2 Date 10/11/21

| Reading | Pressure (kPa) | Measurement Location Number | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Take up | -2.51 | | | |
| Z4 | | -0.6 | -0.3 | 0.0 |
| *Shift* | | -0.8 | -0.5 | -0.1 |
| N1 | -0.50 | -1.2 | -1.7 | -0.1 |
| N2 | -1.02 | -2.7 | -3.7 | -0.3 |
| N3 | -1.49 | -4.2 | -5.7 | -0.4 |
| N4 | -2.01 | -5.8 | -7.8 | -0.7 |
| N5 | -2.51 | -7.2 | -9.8 | -0.8 |
| Z5 | 0.00 | -0.2 | -0.1 | -0.1 |
| N6 | -2.50 | -7.2 | -9.8 | -0.9 |
| N7 | -2.02 | -6.4 | -8.6 | -0.9 |
| N8 | -1.51 | -5.3 | -6.9 | -0.7 |
| N9 | -1.02 | -3.9 | -5.0 | -0.5 |
| N10 | -0.50 | -2.2 | -2.7 | -0.3 |
| Z6 | 0.00 | -0.2 | -0.2 | -0.1 |

**Table 8**

**TEST NUMBER 1 - MODE 3**
**DISPLACEMENTS (mm) - POSITIVE PRESSURE**

Data file 2021-030-S1 Test Number: ST2-mode 3 Date 10/11/21

| Reading | Pressure (kPa) | Measurement Location Number | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Take up | 2.51 | | | |
| Z7 | 0 | 15.7 | 9.8 | 1.1 |
| *Shift during take up* | | 16.5 | 10.3 | 1.2 |

**Table 9**

**SUCCESSIVE ZERO-PRESSURE DISPLACEMENTS(mm)**
**REFERENCED TO THE ZERO AFTER TAKE UP IN MODE 1**

Data file 2021-030-S1 Test Number: ST2 Date: 10/11/21

| Reading | Measurement Location Number | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| *Z1* | 0.0 | 0.0 | 0.0 |
| *Z2* | 0.1 | 0.1 | 0.0 |
| *Z3* | 0.2 | 0.2 | 0.0 |
| *Z4* | -0.6 | -0.3 | 0.0 |
| *Z5* | -0.8 | -0.5 | -0.1 |
| *Z6* | -0.8 | -0.5 | -0.2 |
| *Z7* | 15.7 | 9.8 | 1.1 |

**Table 10**

**STRUCTURAL PERFORMANCE**

| DATAFILE: 2021-030-S1 | | Test Number:ST2 | | | Date: 10/11/2021 | | |
|---|---|---|---|---|---|---|---|
| Member | Pressure | Displacements (rounded to 0.1 mm) | | | Bending Deflection (Rounded to 0.01 mm) | Span | SDR |
| | | Left or Top | Centre | Right or bottom | $DC - \frac{(D1+D2)}{2}$ | | |
| | (kPa) | D1 (mm) | DC (mm) | D2 (mm) | DEF (mm) | L (mm) | L/DEF |
| 1,2,3 | | | | | | | |
| | 0.50 | 1.5 | 2.0 | 0.1 | 1.15 | 2870 | 2495 |
| | 1.00 | 3.5 | 4.3 | 0.4 | 2.36 | | 1216 |
| | 1.54 | 5.6 | 6.8 | 0.7 | 3.63 | | 791 |
| | 2.03 | 7.6 | 9.1 | 1.0 | 4.82 | | 596 |
| | 2.51 | 9.5 | 11.5 | 1.3 | 6.04 | | 475 |
| | 2.54 | 9.7 | 11.6 | 1.4 | 6.08 | | 472 |
| | 2.02 | 8.3 | 9.8 | 1.2 | 5.11 | | 562 |
| | 1.51 | 6.5 | 7.7 | 0.9 | 3.96 | | 725 |
| | 0.99 | 4.6 | 5.4 | 0.7 | 2.74 | | 1048 |
| | 0.54 | 2.9 | 3.2 | 0.4 | 1.57 | | 1824 |
| | -0.50 | -1.2 | -1.7 | -0.1 | -1.02 | | -2826 |
| | -1.02 | -2.7 | -3.7 | -0.3 | -2.20 | | -1306 |
| | -1.49 | -4.2 | -5.7 | -0.4 | -3.42 | | -840 |
| | -2.01 | -5.8 | -7.8 | -0.7 | -4.58 | | -627 |
| | -2.51 | -7.2 | -9.8 | -0.8 | -5.82 | | -493 |
| | -2.50 | -7.2 | -9.8 | -0.9 | -5.79 | | -496 |
| | -2.02 | -6.4 | -8.6 | -0.9 | -4.98 | | -577 |
| | -1.51 | -5.3 | -6.9 | -0.7 | -3.90 | | -736 |
| | -1.02 | -3.9 | -5.0 | -0.5 | -2.76 | | -1038 |
| | -0.50 | -2.2 | -2.7 | -0.3 | -1.42 | | -2016 |

## APPENDIX A TEST PROCEDURES FOR AS/NZS:4284-2008

### Test Sequence

### 1 Preliminary Water Penetration Test

**Test Parameters**

Structural pre-load pressures: serviceability limit state design pressures (Ws)
Structural pre-load duration: 10 seconds at each pressure
Water penetration: as per the Water Penetration Test, see below

### 2 Structural Test at Serviceability Limit State

**Test Parameters**

**Test pressure steps:** as given below to nominated serviceability limit state design pressures.


**Pass / Fail criteria:**

Maximum deflection/span ratio of framing members : **1:250.**
Maximum successive member residual displacement : **3.0 mm**
Maximum total displacement limit of framing members : **± 20 mm**

### 3 Air Infiltration Test

**Test Parameters**

**Test pressure:** ± 150 Pa
**Pass / Fail criteria:** Maximum allowable leakage: 5.0 l/m2.s Test with the joints on the face of the sample alternatively taped over and untaped - the difference in the two readings is the sample leakage.

### 4 Water Penetration Tests

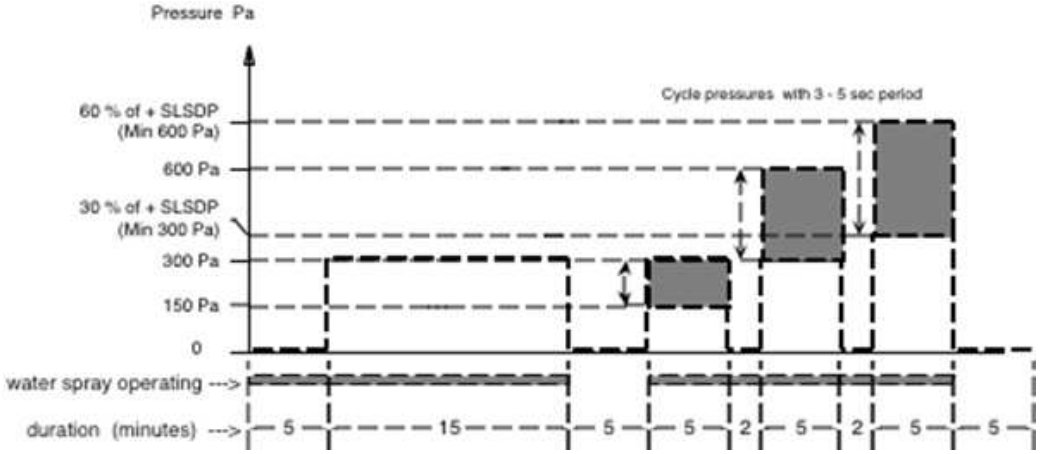
**Test Parameters**

**Test pressures:** Static 30% of Ws (at least 300 Pa) duration = 15 minutes

Cyclic 15% - 30% of Ws duration = 5 minutes
20% - 40% of Ws duration = 5 minutes
30% - 60% of Ws duration = 5 minutes

**Water application rate:** 0.05 L/m2.s

**Water penetration test sequence**




**Pass / Fail criteria:** No leaks under static and cyclic pressure.

For both the static and cyclic water tests, a leak is considered to occur when one or more of the following occur:

(a) water appears on any inside surface of the facade and is visible from an occupied space.

(b) uncontrolled water appears on any inside surface of the facade

(c) water appears that is likely to wet insulation, fixtures and finishes

(d) Water appears in other locations specified as unacceptable by the Specifier.

## 5 Structural Test at Ultimate Limit State

**Test Parameters**

**Test pressures**: Positive and negative ultimate limit state pressures for a period of not less than 10 seconds each.

**Pass / Fail criteria:**

"Under proof there shall be no collapse of the test sample. Collapse shall mean any one or any combination of the following:

Disengagement or partial disengagement of any framing member, façade panel or any part thereof.

Failure of any fixings that connect the facade to the building structure.

The failure of any stop, locking device, fastener or support which would allow an opening light to come open.

Repeated breakage of glass resulting in loss of chamber pressure. Glass may only be replaced once before the sample is deemed to have collapsed.

Repeated cracking of glass which does not result in loss of chamber pressure. Glass may only be replaced twice before the sample is deemed to have collapsed.

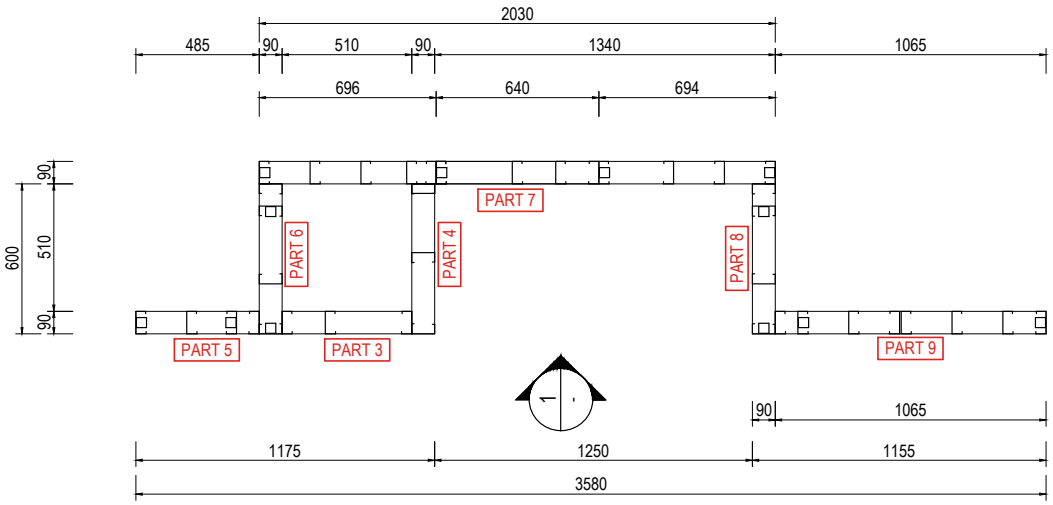
## 6 Retesting - if required

**Test Parameters**

**Preload pressures:** Positive and negative serviceability limit state pressures for a period of 2 minutes each.

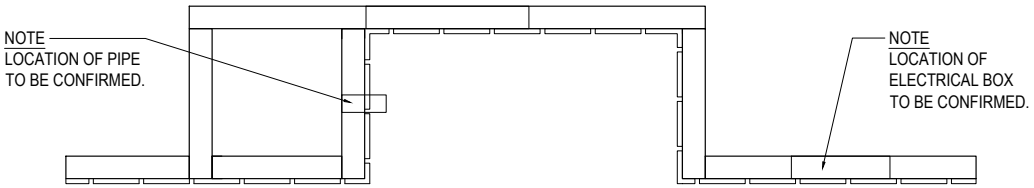
If the sample requires modification to enable it to pass either the air infiltration or water penetration tests then both test shall be repeated in full.

## APPENDIX B – Details of the test specimen provided by the client




FLOOR PLAN 01

SCALE 1:25

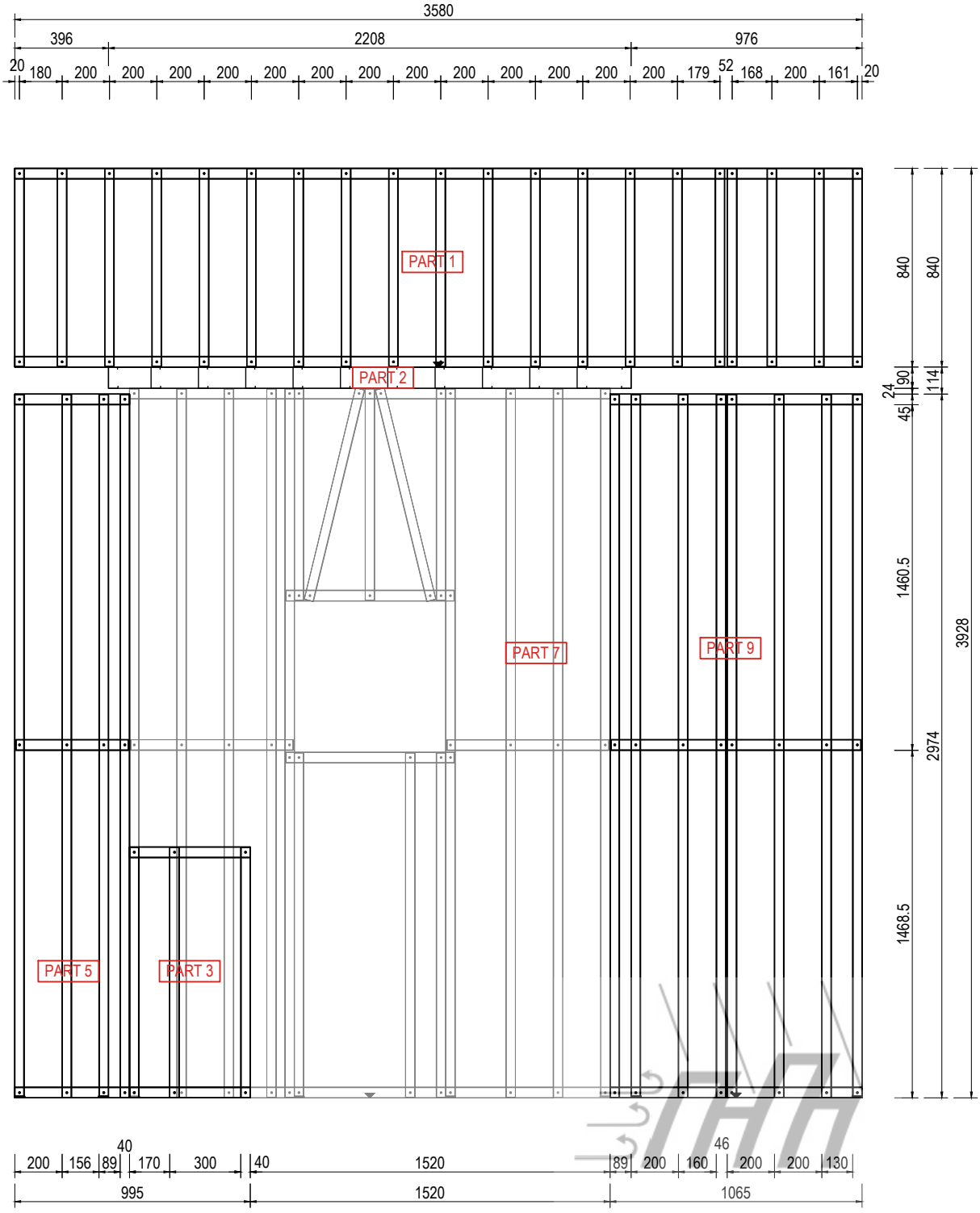



FLOORPLAN 02

SCALE 1:25

| | | |
|---|---|---|
| ASKIN Performance Panels<br>www.askin.net.au<br>VIC P : 03 8769 4816 WA P : 08 9249 4022<br>SA P : 08 8252 7188 QLD P : 07 3718 9500<br>NSW P : 02 8825 2598 NT P : 08 8252 7188 | PROJECT:<br>AS4284<br>WATER INGRESS SPECIMEN WITH ALUMINIUM MOULDS<br>©ASKIN 2021 | Revision<br>- - -<br>- - -<br>- - -<br>- - -<br>- - -<br>- - -<br>- - - |

| | |
|---|---|
| Checked By: A SHANNON | Scale: 1:25 |
| Drawn By: I QUELCH | Sheet size: A4 |
| Issue date: 02.08.2021 | Revision: - |
| Drawing No.: IPVI000000 - 001 | |




## ELEVATION 01

SCALE 1:25

ASKIN Performance Panels

www.askin.net.au

VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

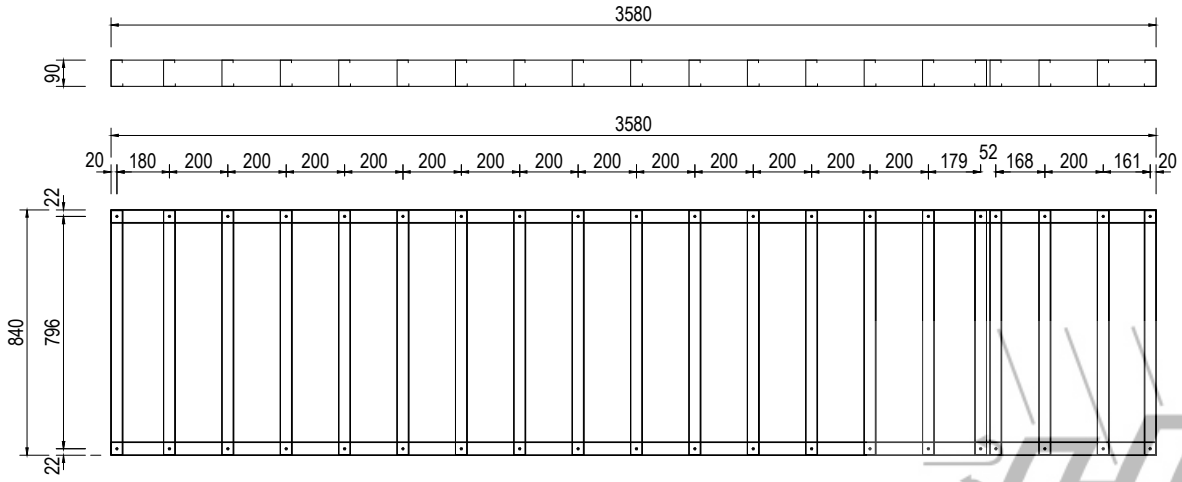
# AS4284

WATER INGRESS SPECIMEN WITH ALUMINIUM MOULDS



| Revision | | |
|---|---|---|
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |
| - | - | - |

| | |
|---|---|
| Checked By: A SHANNON | Scale: 1:25 |
| Drawn By: I QUELCH | Sheet size: A4 |
| Issue date: 30.10.2020 | Revision: - |
| Drawing No.: IPVI000000 - 002 | |

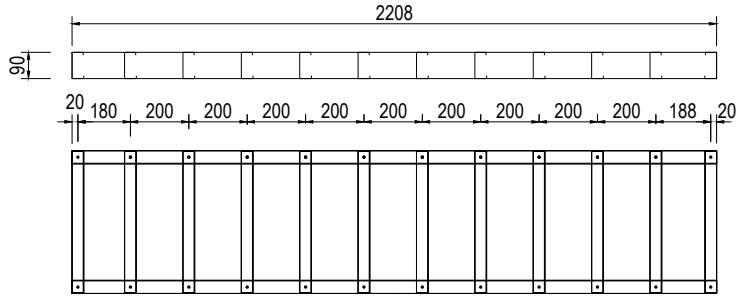



| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 3580 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 3580 | 1 | 1 |
| C9010ra | STUD | 100 | 836 | 1 | 1 |
| C9010ra | STUD | 101 | 836 | 1 | 11 |
| C9010ra | STUD | 102 | 836 | 1.00 | 7 |
| C9010ra | STUD | 103 | 836 | 1.00 | 1 |
| WALLTITE | SCREW | N/A | - | - | 80 |

## PART 1 - ELEVATION VIEW

SCALE 1:25

Length crib: 0
Floor RL: 0
INTERNAL wall
RL = 3099

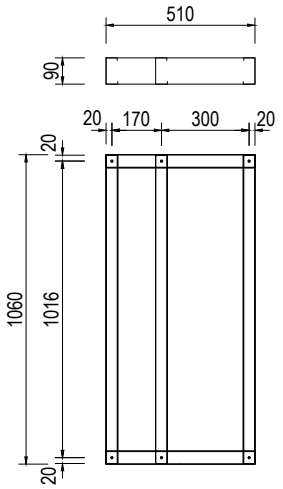



## PART 2 - ELEVATION VIEW

SCALE 1:25

Length crib: 0
Floor RL: 0
INTERNAL wall

| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 2208 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 2208 | 1 | 1 |
| C9010ra | STUD | 100 | 485 | 1.0 | 1 |
| C9010ra | STUD | 101 | 485 | 1.0 | 10 |
| C9010ra | STUD | 102 | 485 | 1.00 | 1 |
| WALLTITE | SCREW | N/A | - | - | 48 |

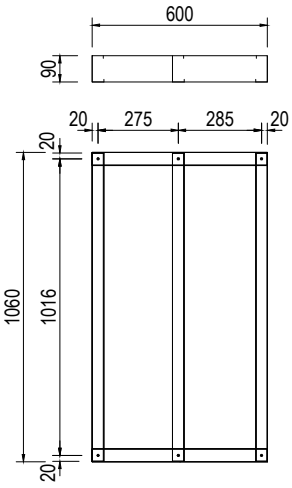



## PART 3 - ELEVATION VIEW

SCALE 1:25

Length crib: 0
Floor RL: 0
INTERNAL wall

| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 510 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 510 | 1 | 1 |
| C9010ra | STUD | 100 | 1056 | 1 | 1 |
| C9010ra | STUD | 101 | 1056 | 1 | 2 |
| WALLTITE | SCREW | N/A | - | - | 12 |




## PART 4 - ELEVATION VIEW

Length crib: 0
Floor RL: 0
INTERNAL wall

| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 600 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 600 | 1 | 1 |
| C9010ra | STUD | 100 | 1056 | 1 | 1 |
| C9010ra | STUD | 101 | 1056 | 1 | 2 |
| WALLTITE | SCREW | N/A | - | - | 12 |

ASKIN Performance Panels
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VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

# AS4284

WATER INGRESS SPECIMEN WITH ALUMINIUM MOULDS



| Revision | | |
|---|---|---|
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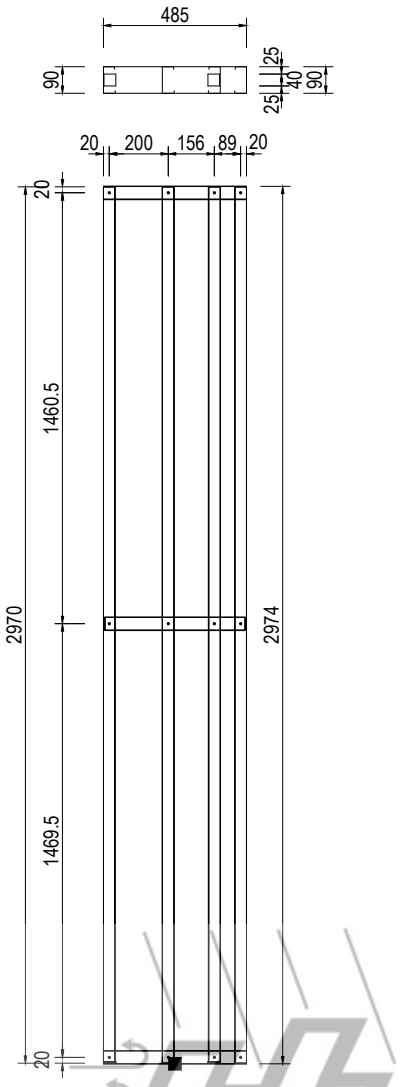
| Checked By: A SHANNON | Scale: 1:25 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 30.10.2020 | Revision: - |
| Drawing No.: IPVI000000 - 003 | |

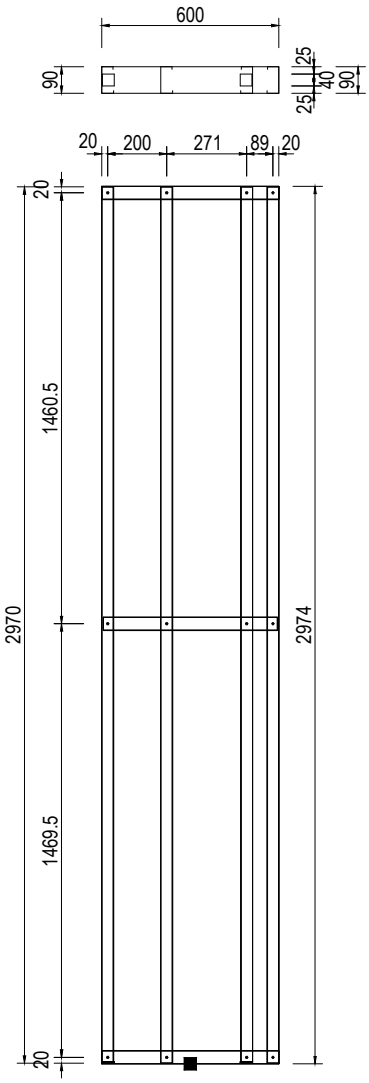



## PART 5 - ELEVATION VIEW

SCALE 1:25

| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 485 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 485 | 1 | 1 |
| U904410G550 | NOGGING | 003 | 475 | 1 | 1 |
| C9010ra | STUD | 100 | 2970 | 1 | 1 |
| C9010ra | STUD | 101 | 3012 | 1 | 1 |
| C9010ra | STUD | 102 | 2970 | 1 | 1 |
| C9010ra | STUD | 103 | 3012 | 1 | 1 |
| Washer40x40x5 | HOLDDOWN | N/A | | 5 | 2 |
| WALLTITE | SCREW | N/A | - | - | 24 |

Length crib: 0
Floor RL: 0
EXTERNAL wall




## PART 6 - ELEVATION VIEW

SCALE 1:25

| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 600 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 600 | 1 | 1 |
| U904410G550 | NOGGING | 003 | 590 | 1 | 1 |
| C9010ra | STUD | 100 | 2970 | 1 | 1 |
| C9010ra | STUD | 101 | 3012 | 1 | 1 |
| C9010ra | STUD | 102 | 2970 | 1 | 1 |
| C9010ra | STUD | 103 | 3012 | 1 | 1 |
| Washer40x40x5 | HOLDDOWN | N/A | | 5 | 2 |
| WALLTITE | SCREW | N/A | - | - | 24 |

Length crib: 0
Floor RL: 0
EXTERNAL wall

ASKIN Performance Panels
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SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

# AS4284

WATER INGRESS SPECIMEN WITH ALUMINIUM MOULDS



| Revision | | |
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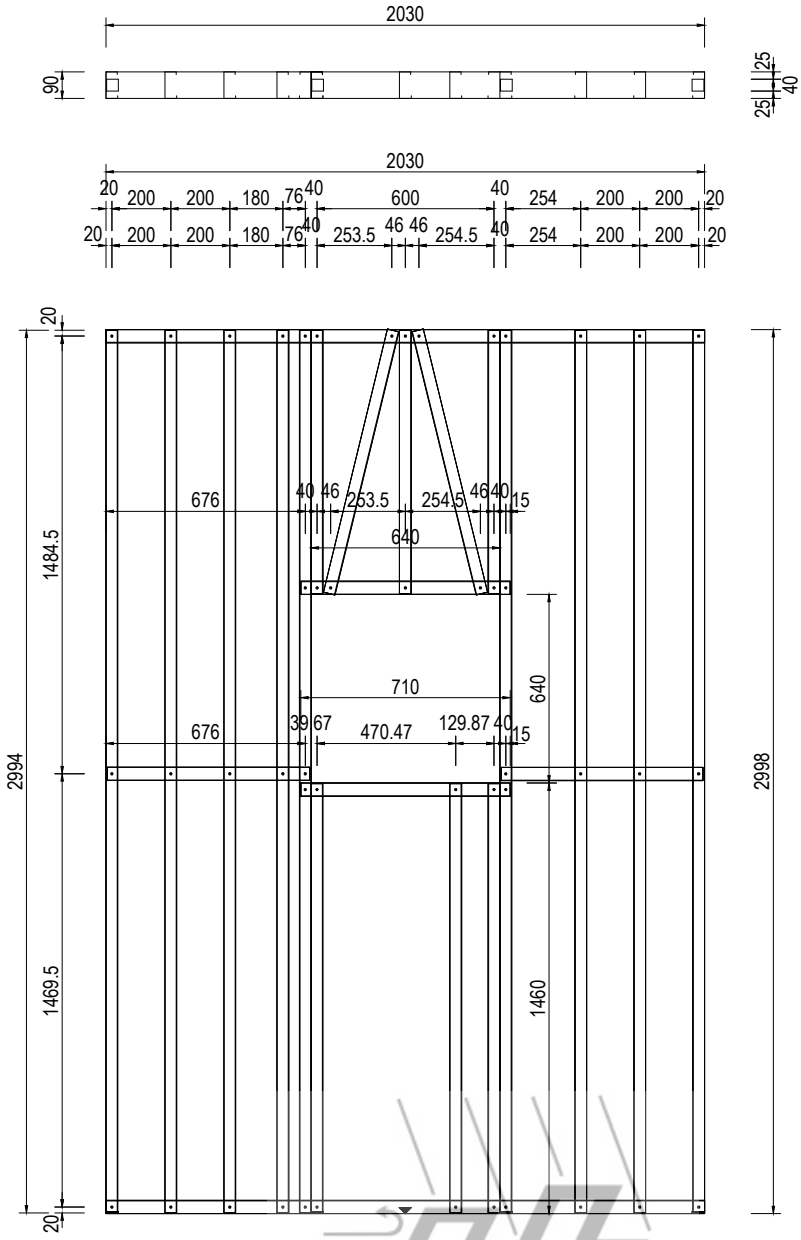
| Checked By: A SHANNON | Scale: 1:25 |
| Drawn By: I QUELCH | Sheet size: A4 |
| Issue date: 30.10.2020 | Revision: - |
| Drawing No.: IPVI000000 - 004 | |




## PART 7 - ELEVATION VIEW

SCALE 1:25

| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 2030 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 2030 | 1 | 1 |
| U904410G550 | NOGGING | 003 | 684 | 1.00 | 1 |
| U904410G550 | HEAD | 004 | 710 | 1 | 1 |
| U904410G550 | SILL | 005 | 710 | 1 | 1 |
| U904410G550 | NOGGING | 006 | 686 | 1 | 1 |
| C9010ra | STUD | 100 | 3036 | 1 | 1 |
| C9010ra | STUD | 101 | 2994 | 1 | 2 |
| C9010ra | STUD | 102 | 894 | 1 | 1 |
| C9010ra | STUD | 103 | 3036 | 1 | 1 |
| C9010ra | STUD | 104 | 1498 | 1.00 | 1 |
| C9010ra | STUD | 105 | 1456 | 1 | 1 |
| C9010ra | STUD | 106 | 894 | 1 | 1 |
| C9010ra | STUD | 107 | 894 | 1.00 | 1 |
| C9010ra | STUD | 108 | 3036 | 1 | 1 |
| C9010ra | STUD | 109 | 1498 | 1 | 1 |
| C9010ra | STUD | 110 | 2994 | 1 | 3 |
| C9010ra | STUD | 111 | 3036 | 1 | 1 |
| C9010ra | WEB | 201 | 919 | 1 | 1 |
| C9010ra | WEB | 202 | 919 | 1 | 1 |
| Washer40x40x5 | HOLDDOWN | N/A | | 5 | 4 |
| WALLTITE | SCREW | N/A | - | - | 94 |

Length crib: 0
Floor RL: 0
EXTERNAL wall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VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188


PROJECT:

# AS4284

WATER INGRESS SPECIMEN WITH ALUMINIUM MOULDS



| Revision | | |
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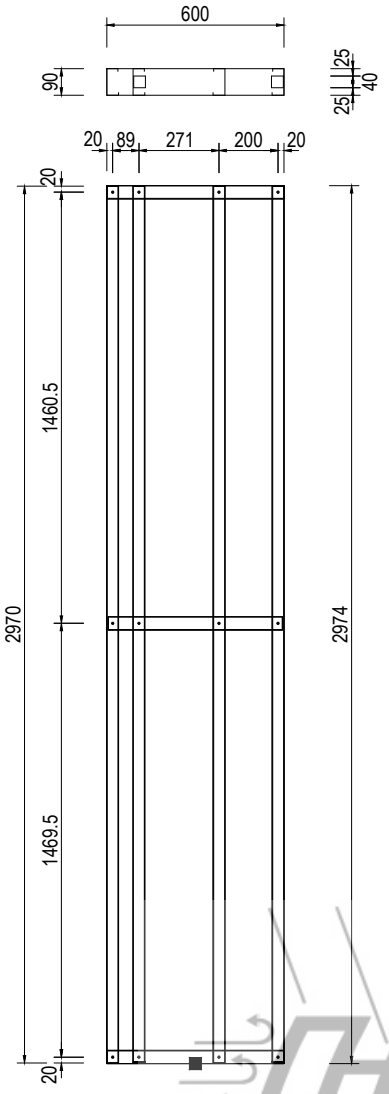
| Checked By: A SHANNON | Scale: 1:25 |
| Drawn By: I QUELCH | Sheet size: A4 |
| Issue date: 30.10.2020 | Revision: - |
| Drawing No.: IPVI000000 - 005 | |

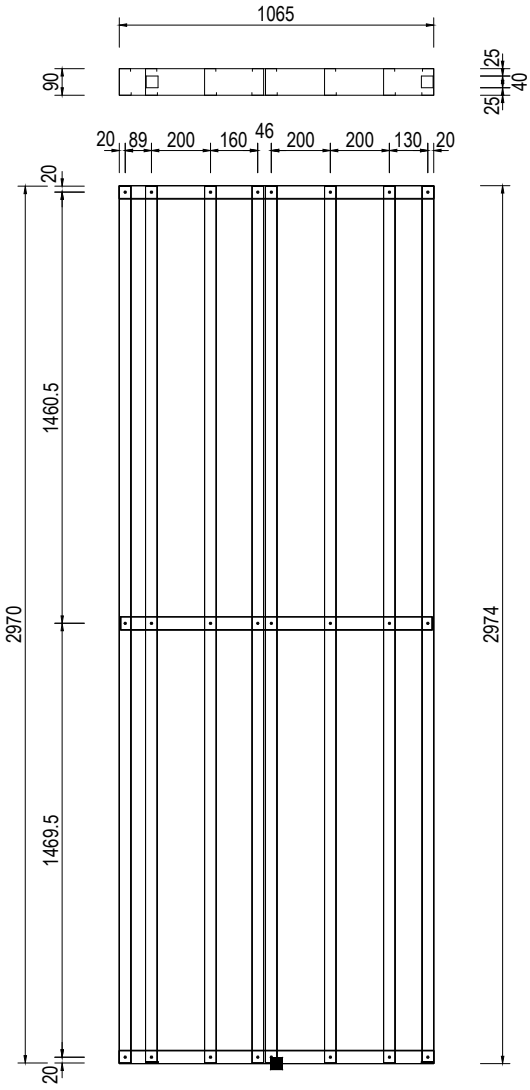



## PART 8 - ELEVATION VIEW

SCALE 1:25

| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 1065 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 1065 | 1 | 1 |
| U904410G550 | NOGGING | 003 | 1055 | 1 | 1 |
| C9010ra | STUD | 100 | 3012 | 1 | 1 |
| C9010ra | STUD | 101 | 2970 | 1 | 4 |
| C9010ra | STUD | 102 | 2970 | 1.00 | 1 |
| C9010ra | STUD | 103 | 2970 | 1.00 | 1 |
| C9010ra | STUD | 104 | 3012 | 1 | 1 |
| Washer40x40x5 | HOLDDOWN | N/A | | 5 | 2 |
| WALLTITE | SCREW | N/A | - | - | 48 |

Length crib: 0
Floor RL: 0
INTERNAL wall




## PART 9 - ELEVATION VIEW

SCALE 1:25

| DESCRIPTION | Usage | No. | Length | Mat. | Qty |
|---|---|---|---|---|---|
| U904410G550 | TOPPLATE | 001 | 600 | 1 | 1 |
| U904410G550 | BOTPLATE | 002 | 600 | 1 | 1 |
| U904410G550 | NOGGING | 003 | 590 | 1 | 1 |
| C9010ra | STUD | 100 | 3012 | 1 | 1 |
| C9010ra | STUD | 101 | 2970 | 1 | 1 |
| C9010ra | STUD | 102 | 3012 | 1 | 1 |
| C9010ra | STUD | 103 | 2970 | 1 | 1 |
| Washer40x40x5 | HOLDDOWN | N/A | | 5 | 2 |
| WALLTITE | SCREW | N/A | - | - | 24 |

Length crib: 0
Floor RL: 0
EXTERNAL wall

ASKIN Performance Panels
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SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

# AS4284

WATER INGRESS SPECIMEN WITH ALUMINIUM MOULDS



| Revision | | |
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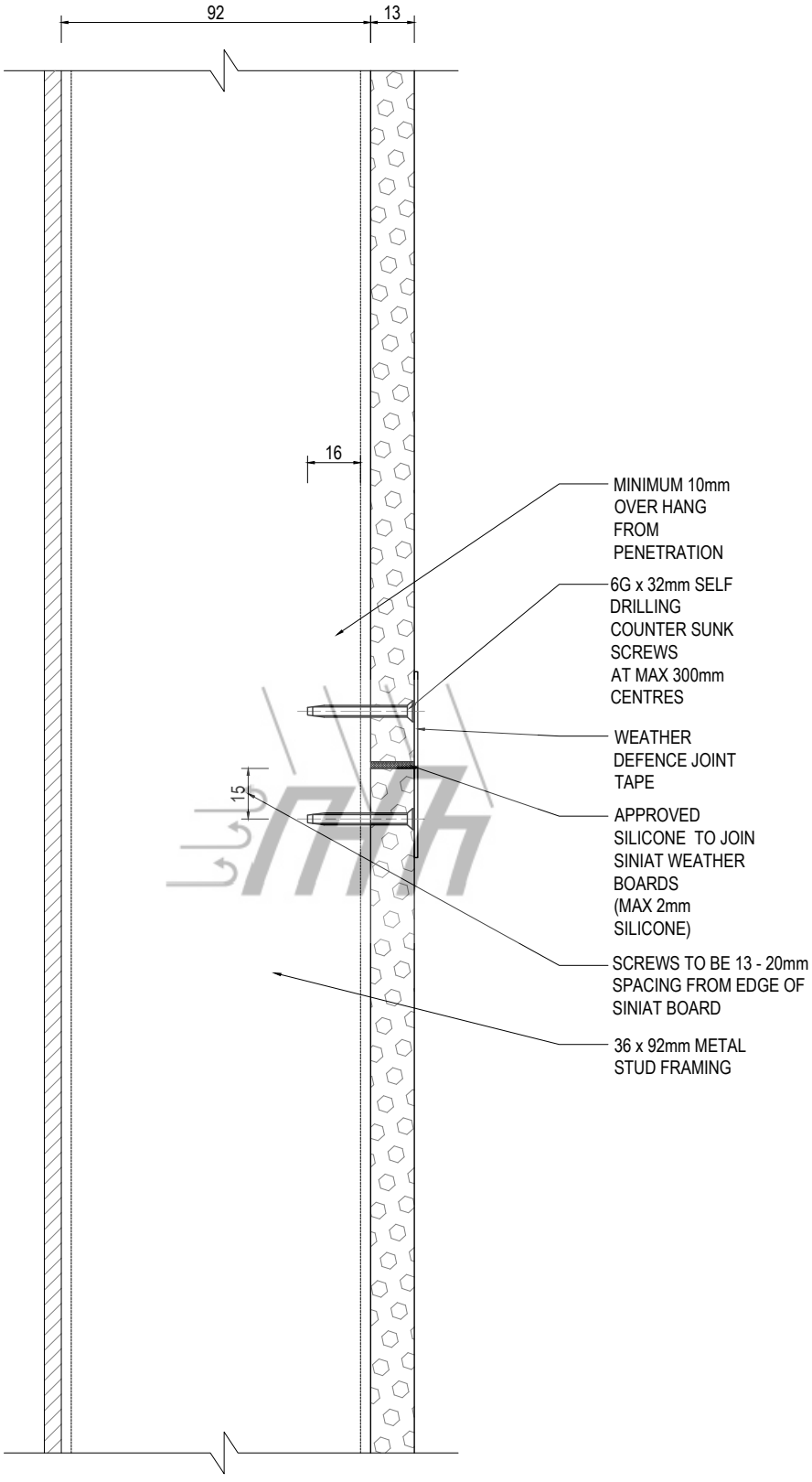
| Checked By: A SHANNON | Scale: 1:25 |
| Drawn By: I QUELCH | Sheet size: A4 |
| Issue date: 11.02.2021 | Revision: - |
| Drawing No.: IPVI000000 - 006 | |




## DETAIL 10

## WALL TO FLOOR CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels
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VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:
AS4284
DETAILS



Revision

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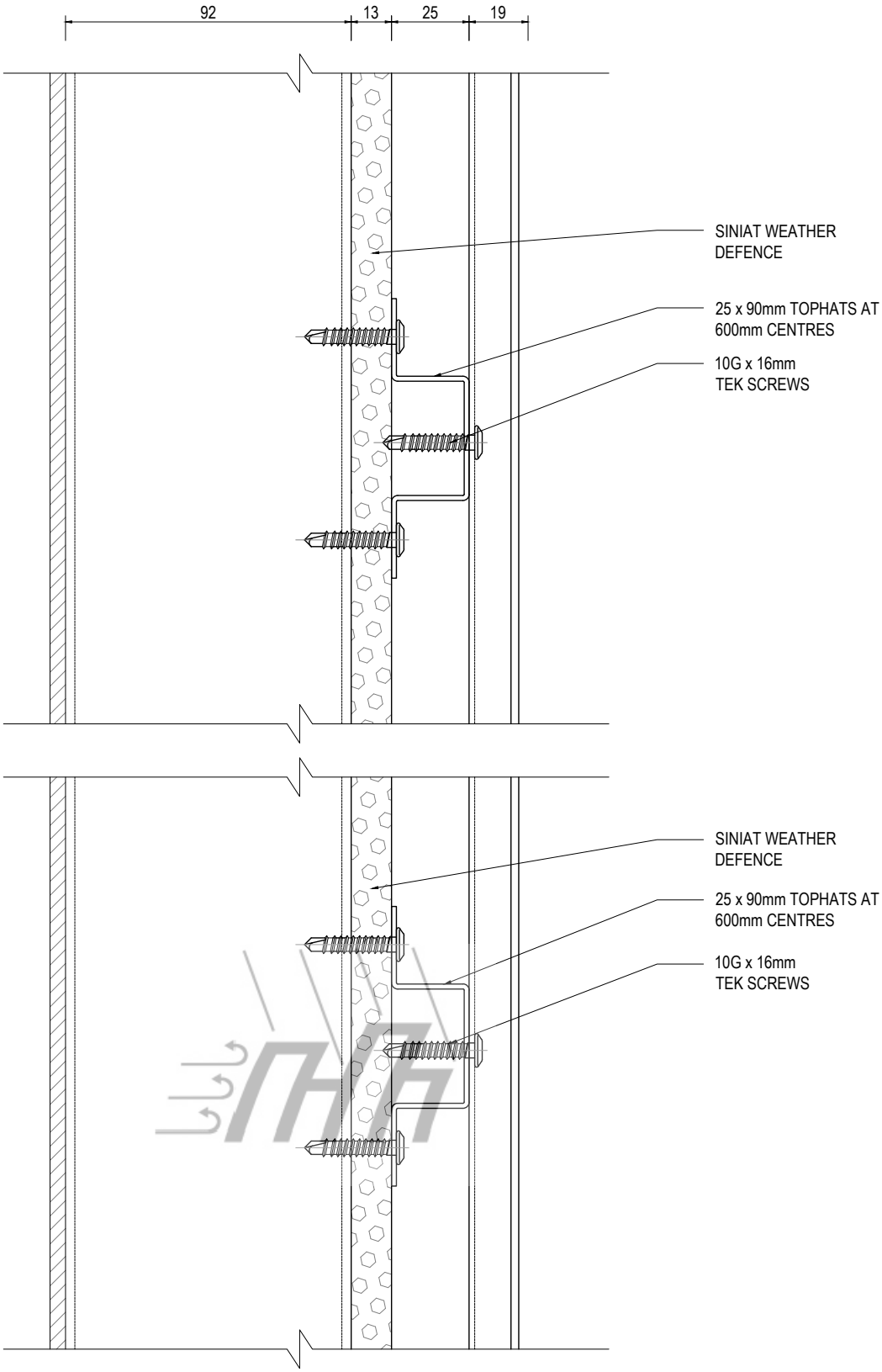
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 010 | |




## DETAIL 11

## VERTICAL CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:
AS4284
DETAILS



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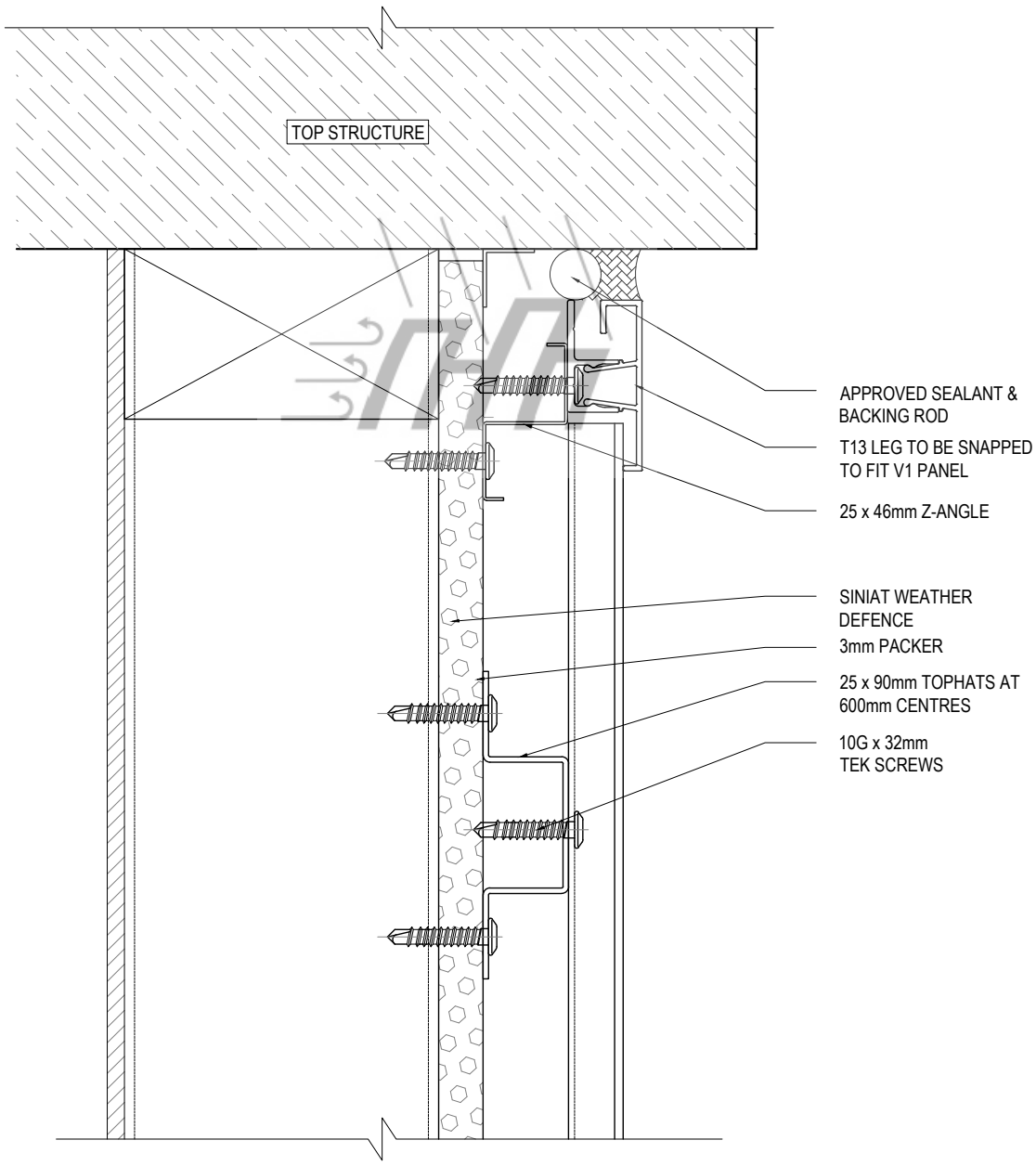
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 011 | |




## DETAIL 12

## HEADER CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



Revision

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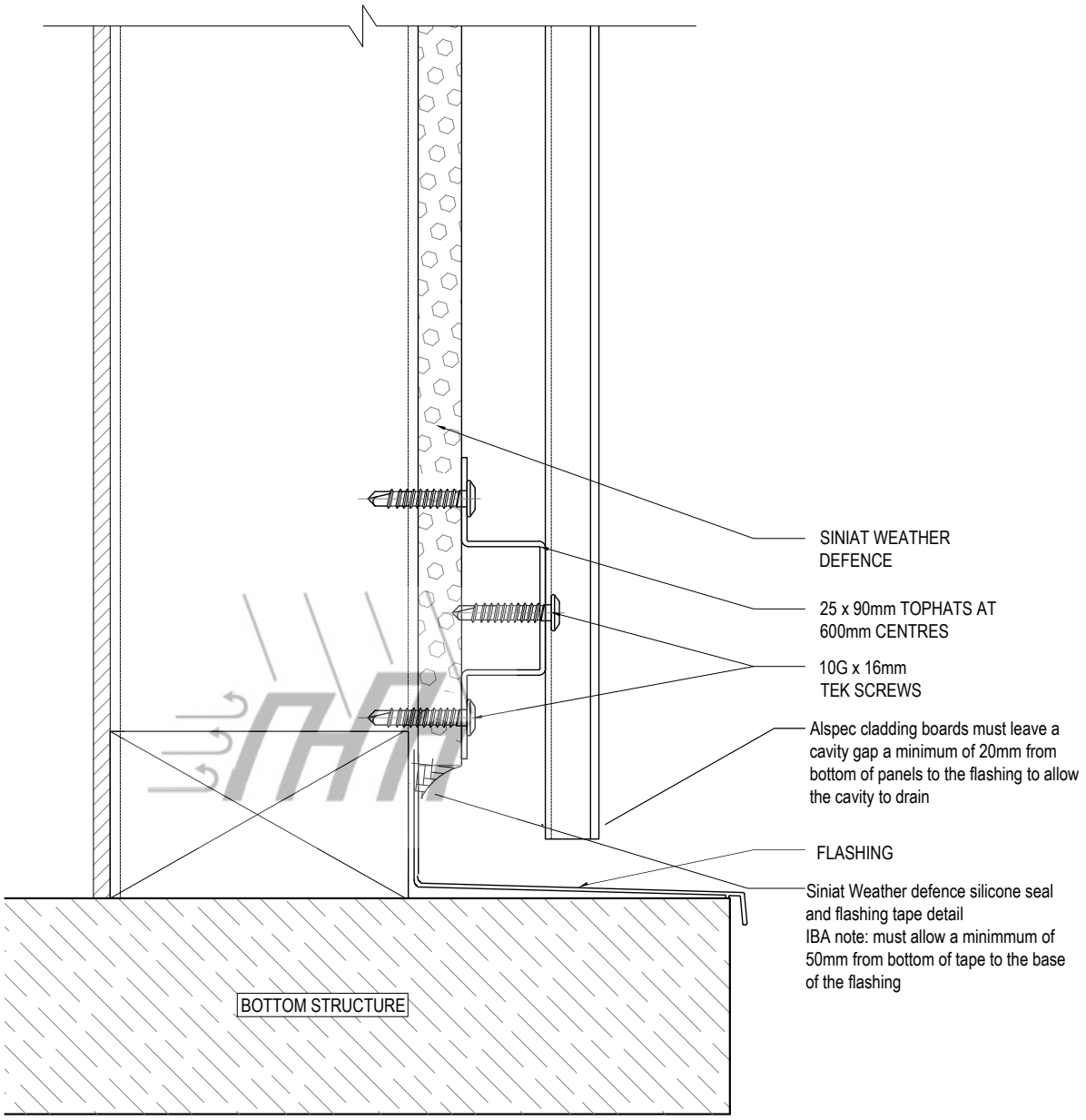
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 012 | |




## DETAIL 13
## FOOTER CONNECTION DETAIL - SECTION VIEW
SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:
AS4284
DETAILS



| Revision | | |
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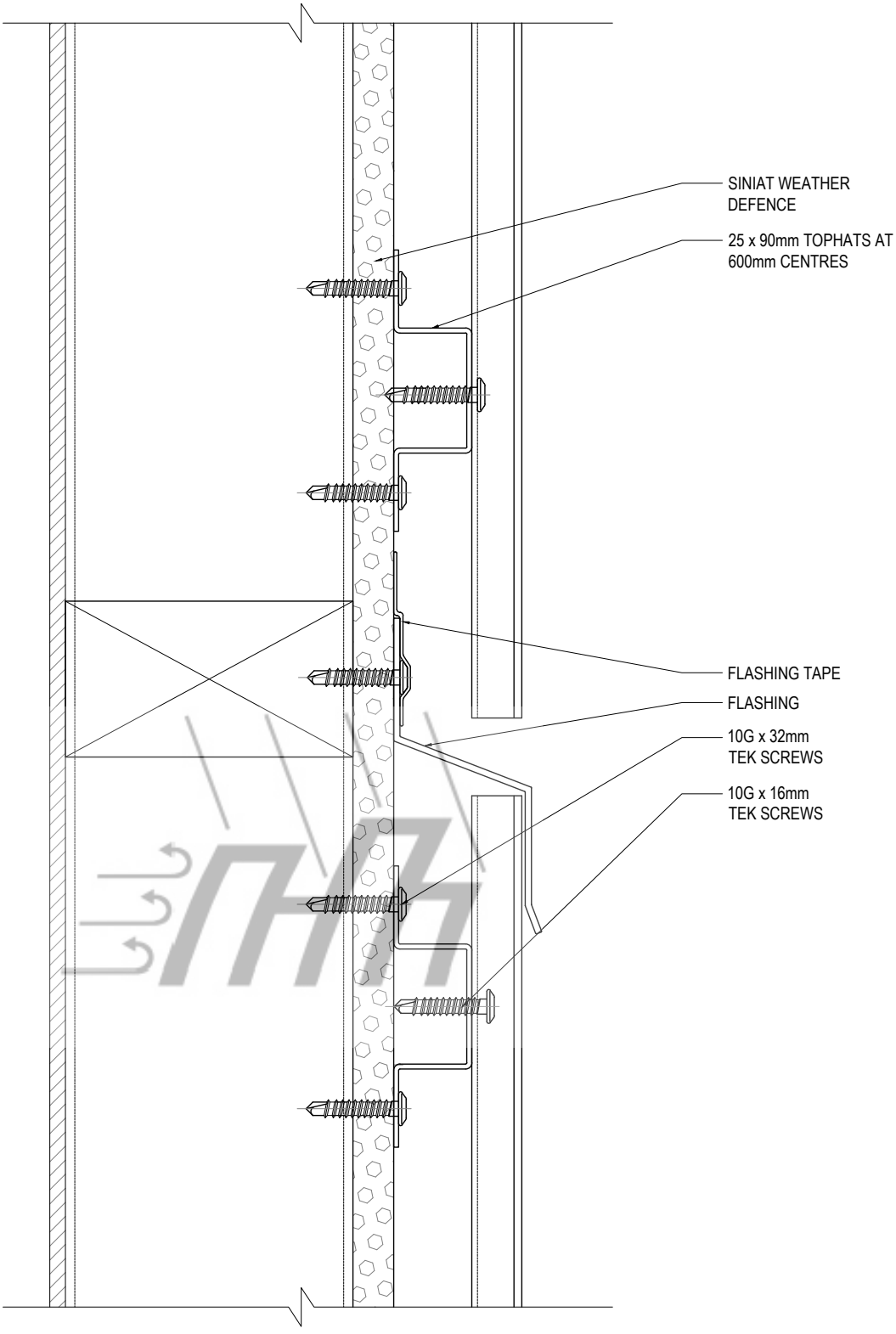
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 013 | |




## DETAIL 14

## HORIZONTAL JOINT CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels
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VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



| Revision | | |
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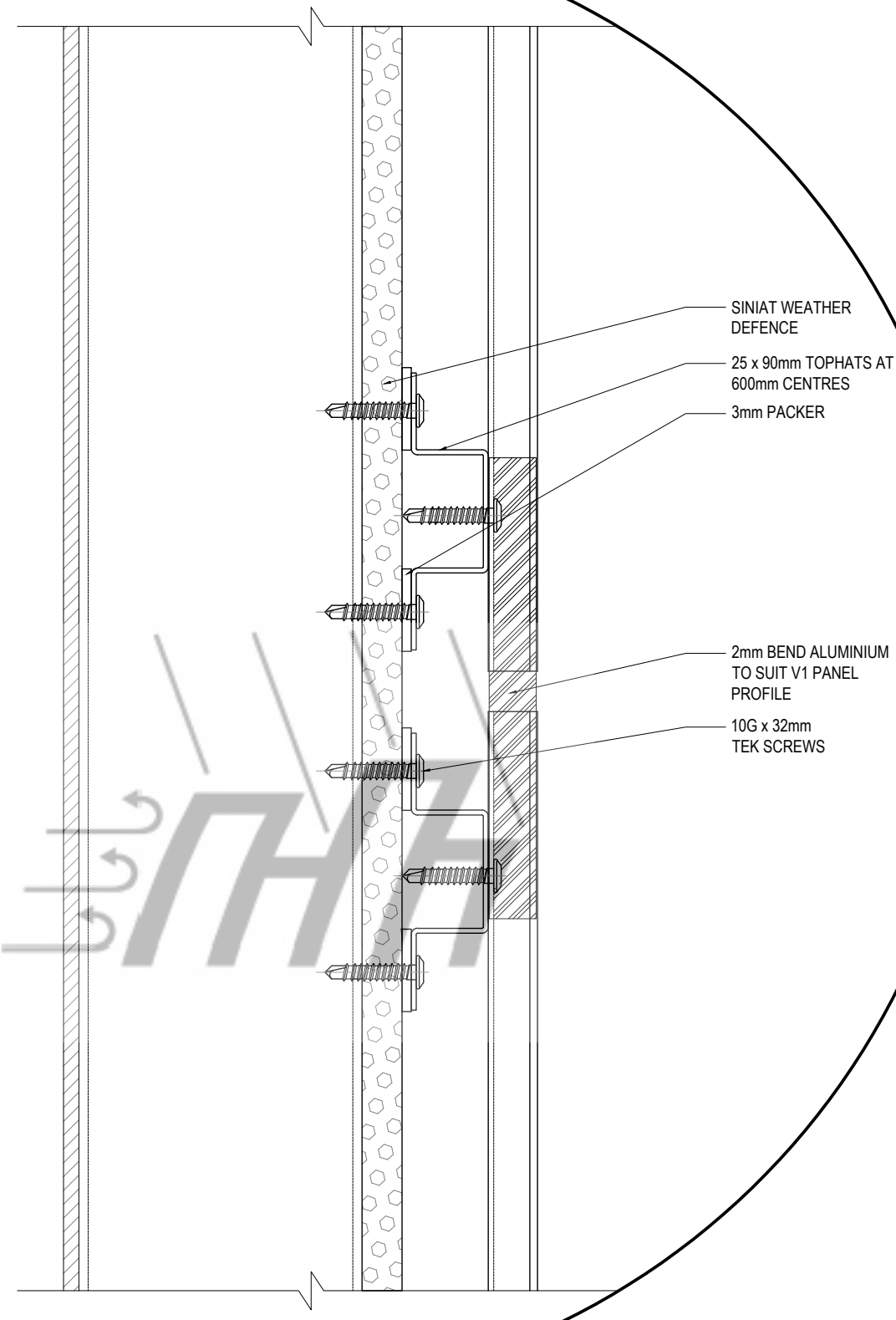
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 014 | |




DETAIL 15

HORIZONTAL JOINT CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels

www.askin.net.au

VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



Revision

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| Checked By: A SHANNON | Scale: 1:2 |
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| Issue date: 29.07.2021 | Revision: - |
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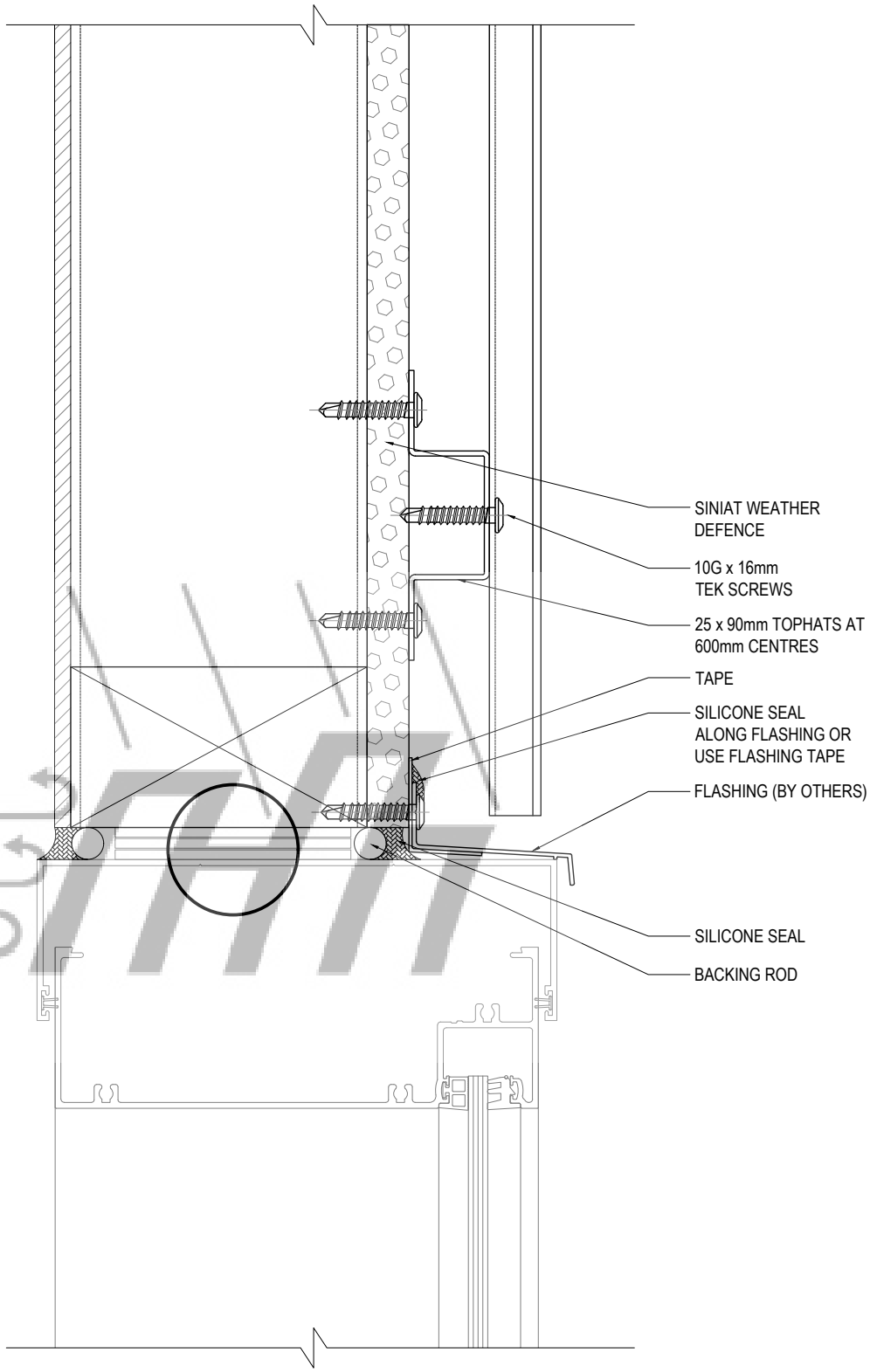


## DETAIL 16

## WINDOW HEAD CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



| Revision | | |
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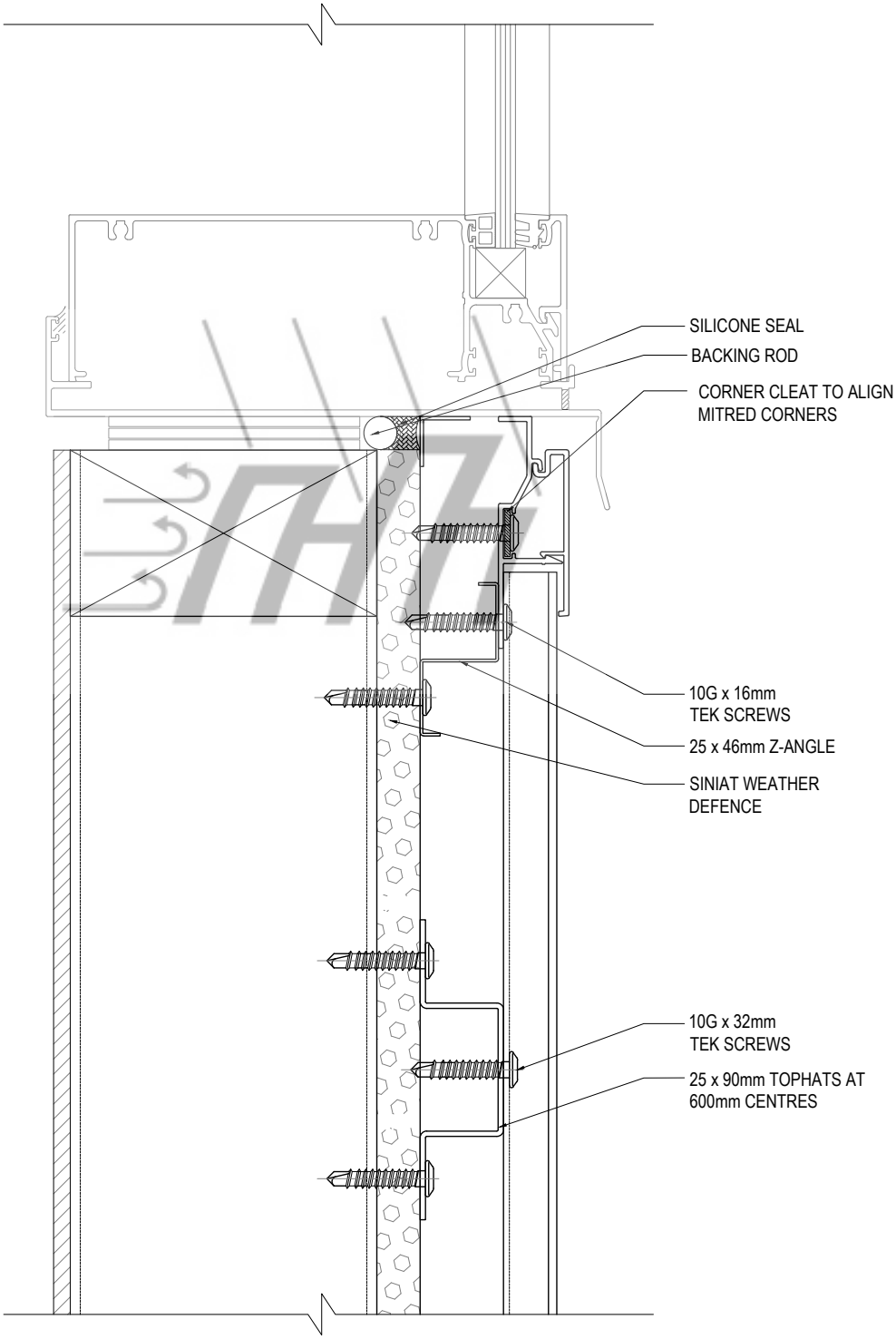
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 016 | |




## DETAIL 17

## WINDOW SILL CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels

www.askin.net.au

VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



| Revision | | |
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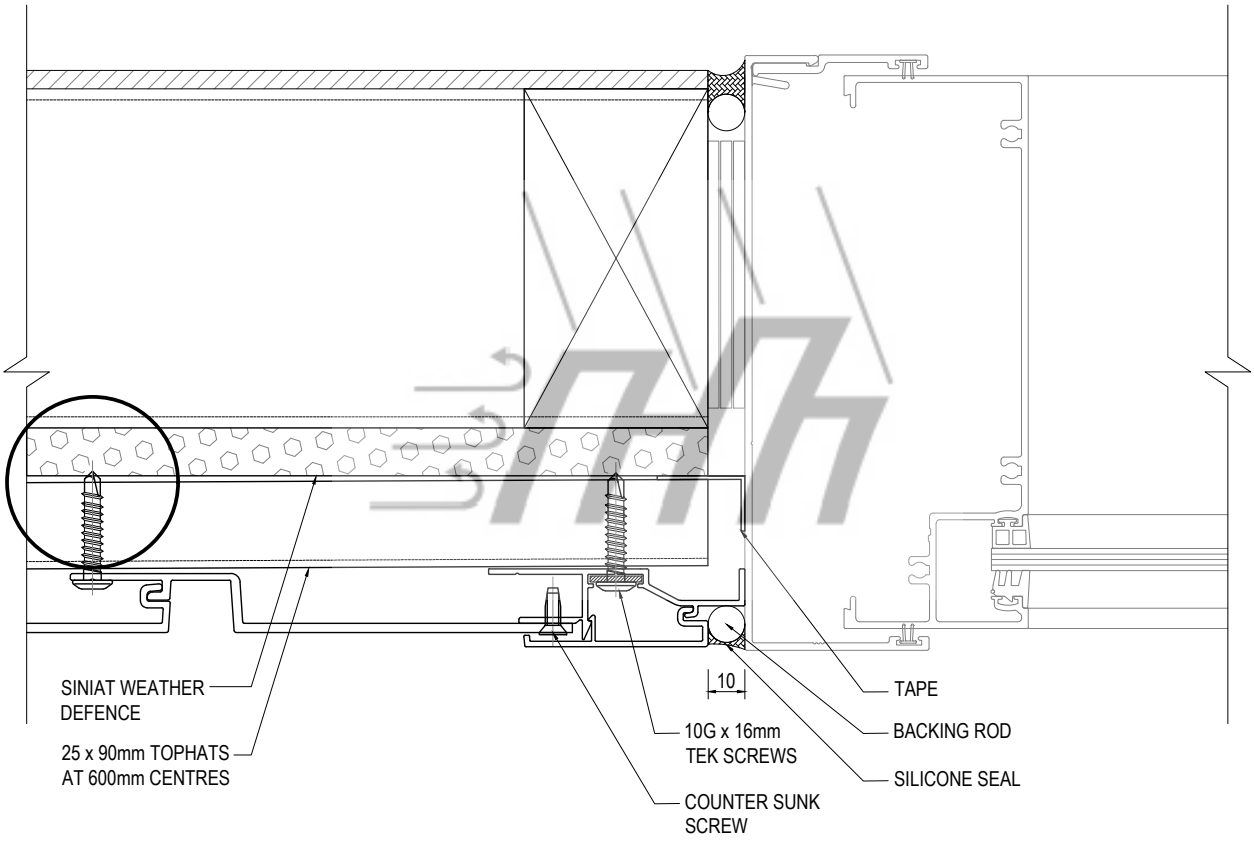
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 017 | |




## DETAIL 18

## WINDOW JAMB CONNECTION DETAIL - PLAN VIEW

SCALE 1:2

ASKIN Performance Panels
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VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:
AS4284
DETAILS



| Revision | | |
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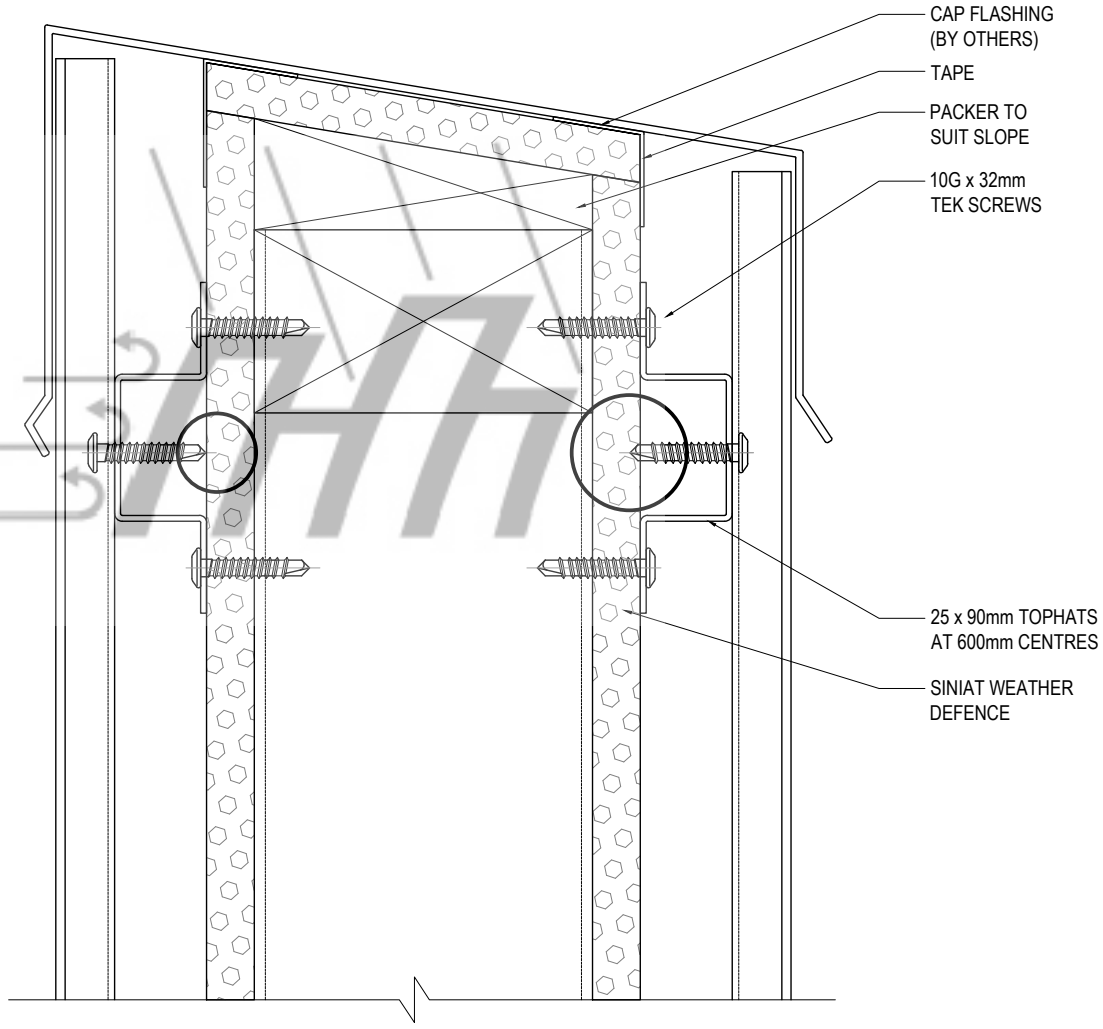
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 018 | |




## DETAIL 19

## PARAPET CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels
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VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



| Revision | | |
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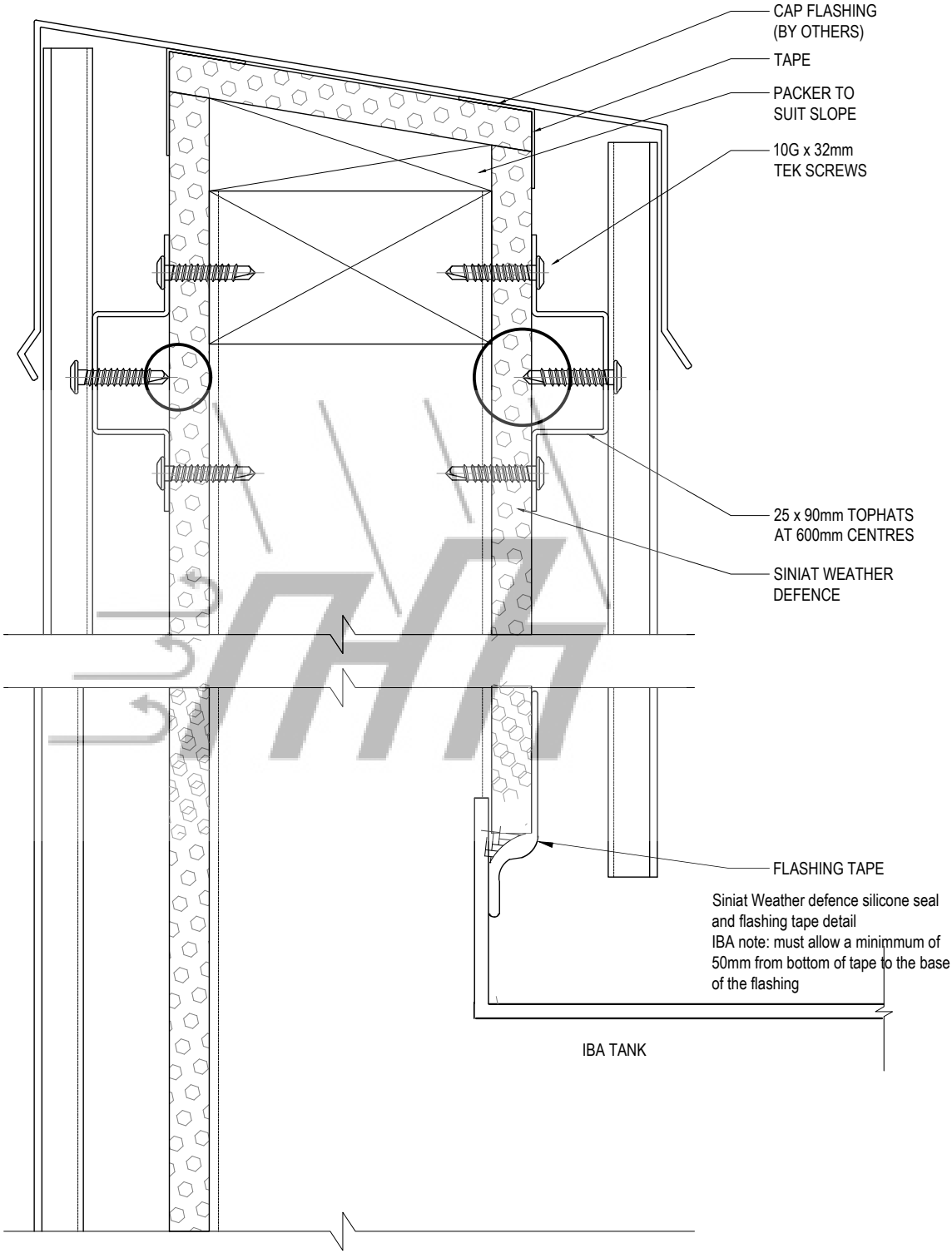
|---|---|
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 019 | |




## DETAIL 20

## PARAPET TO DECK OR PATIO CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels
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VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



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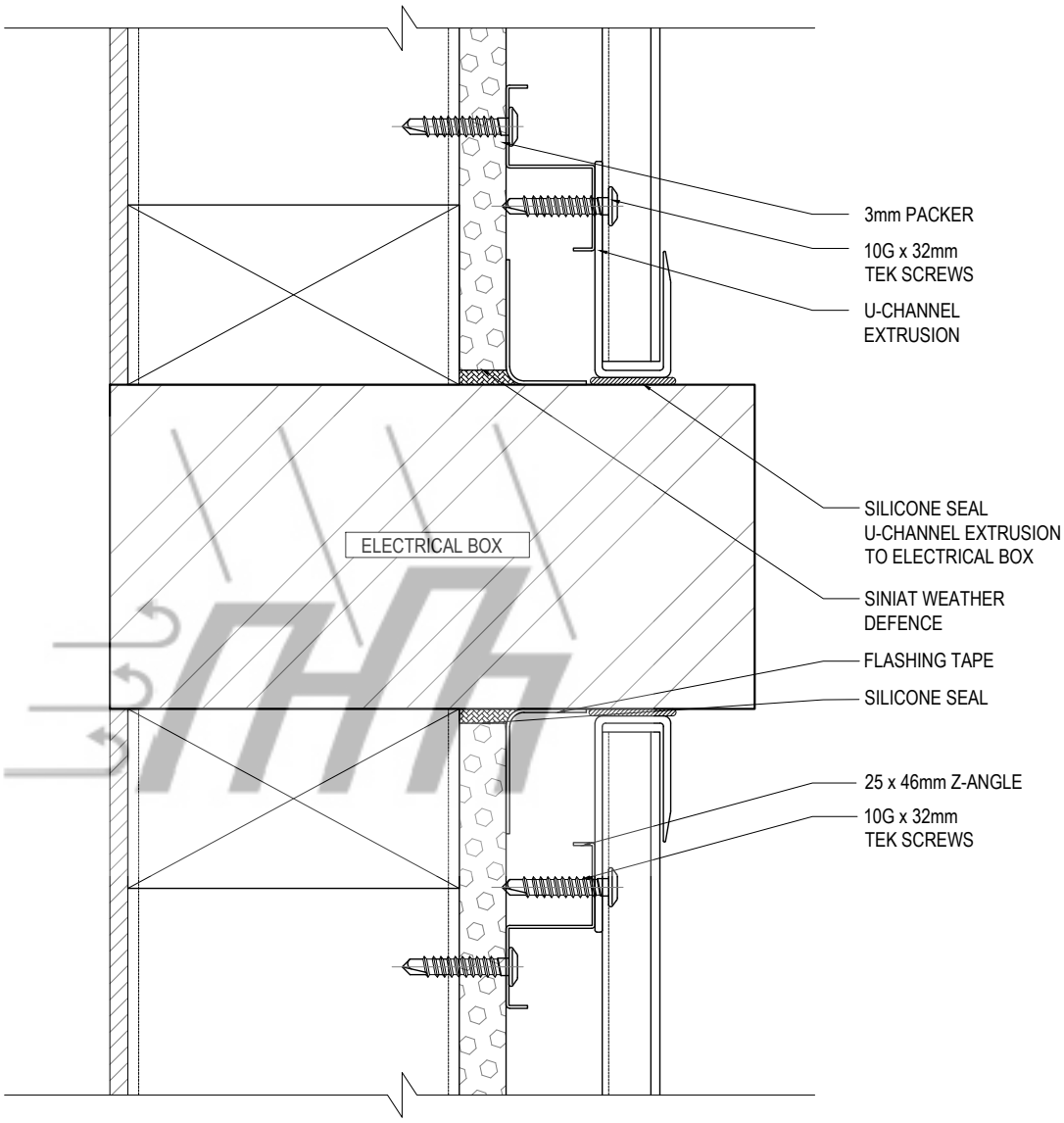
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 020 | |




## DETAIL 21

## ELECTRICAL BOX AND SILL CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels

www.askin.net.au

VIC **P** : 03 8769 4816 WA **P** : 08 9249 4022
SA **P** : 08 8252 7188 QLD **P** : 07 3718 9500
NSW **P** : 02 8825 2598 NT **P** : 08 8252 7188

PROJECT:

AS4284

DETAILS



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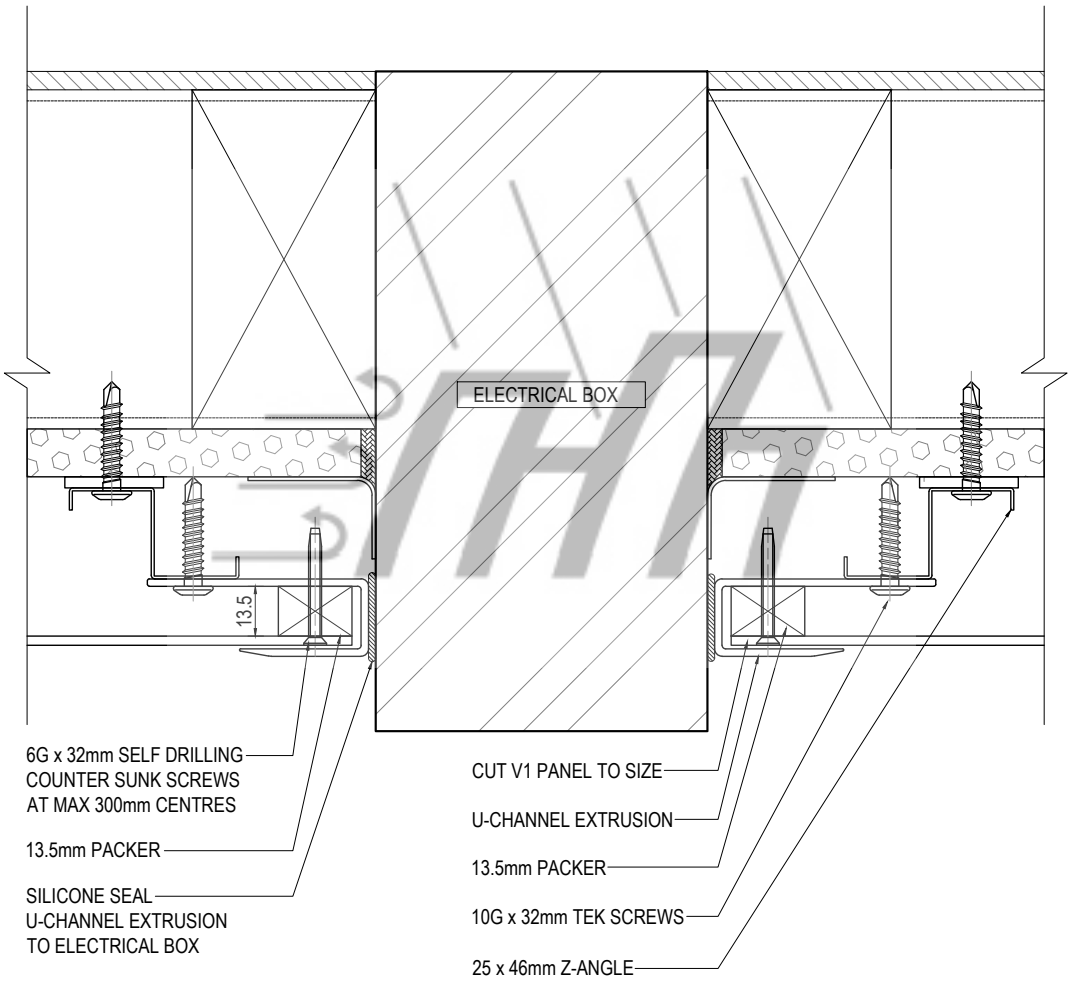
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 021 | |




## DETAIL 22

## ELECTRICAL BOX JAMB DETAIL - PLAN VIEW

SCALE 1:2

ASKIN Performance Panels

www.askin.net.au

VIC **P** : 03 8769 4816 WA **P** : 08 9249 4022
SA **P** : 08 8252 7188 QLD **P** : 07 3718 9500
NSW **P** : 02 8825 2598 NT **P** : 08 8252 7188

PROJECT:

AS4284

DETAILS



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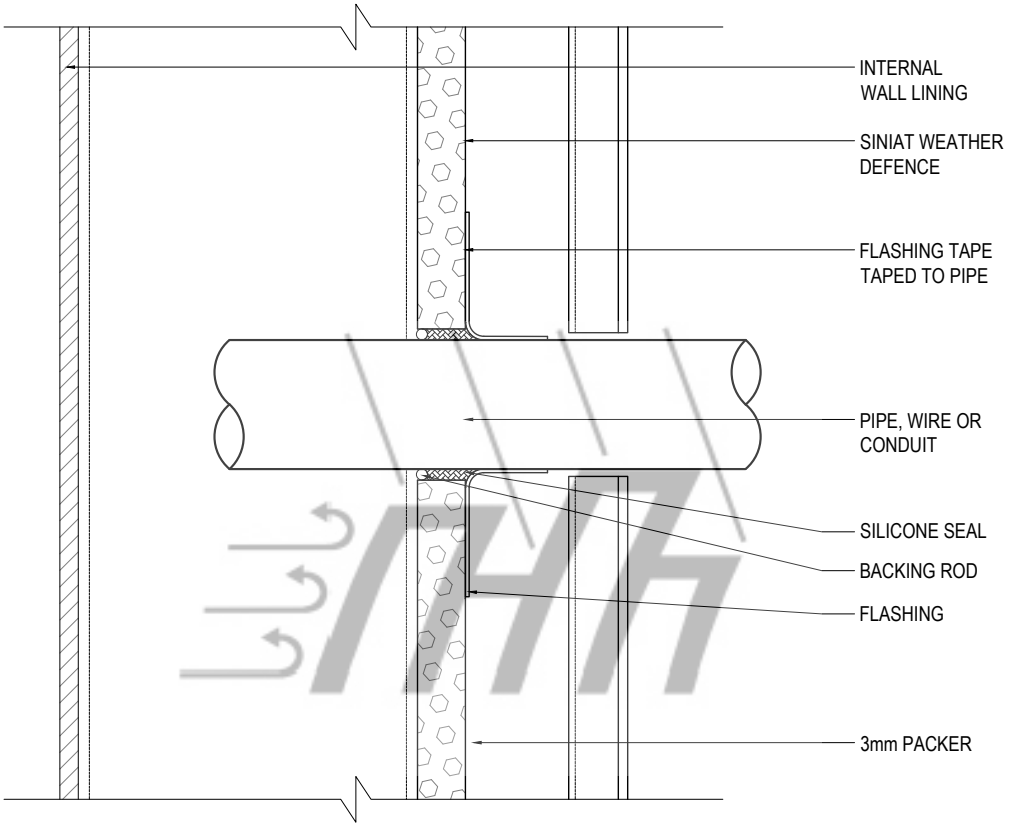
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |

Drawing No.

IPVI000000 - 022




## DETAIL 23

## PIPE PENETRRATION DETAIL - PLAN VIEW

SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



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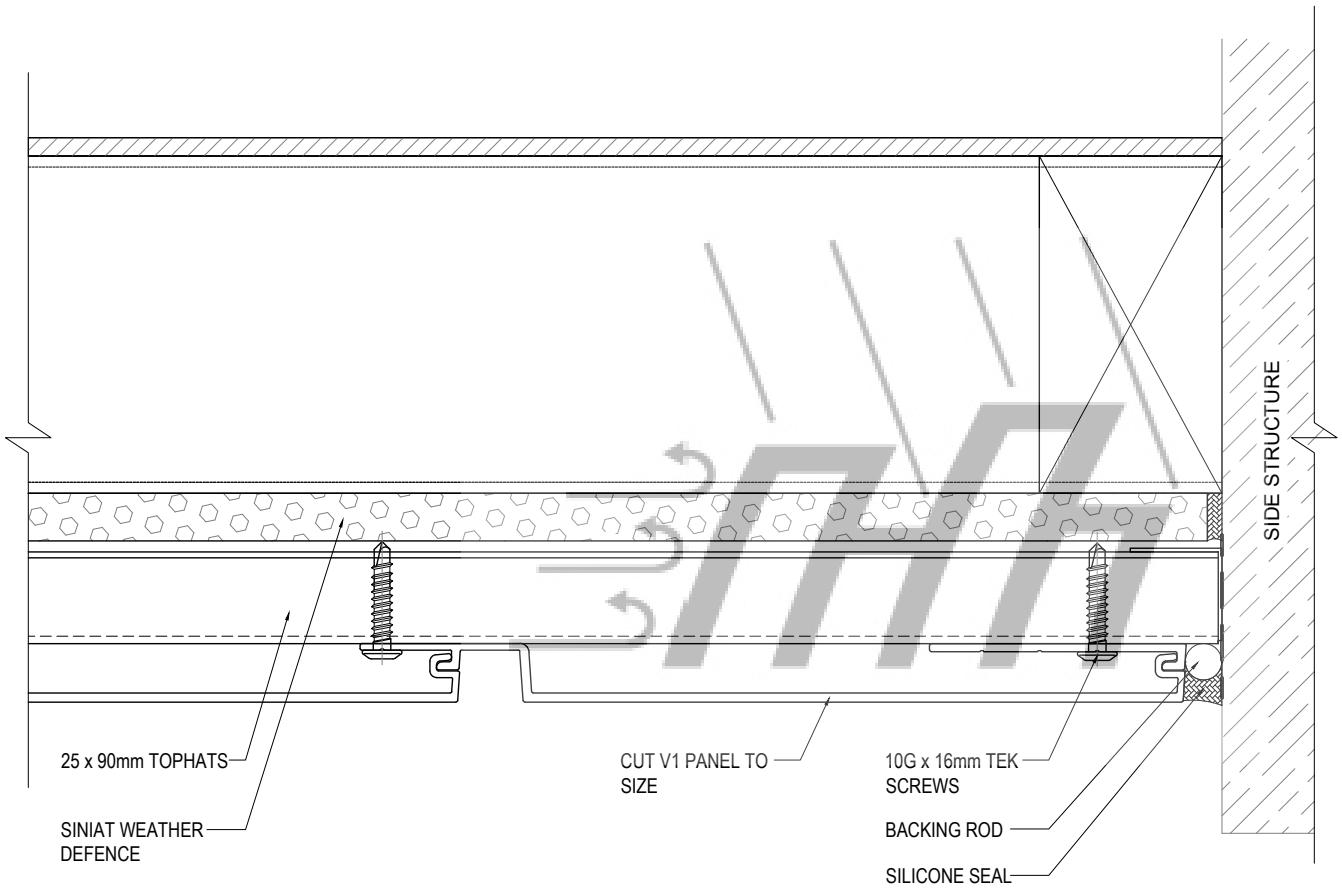
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 023 | |




## DETAIL 24

## JAMB DETAIL STARTER - PLAN VIEW

SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:
AS4284
DETAILS



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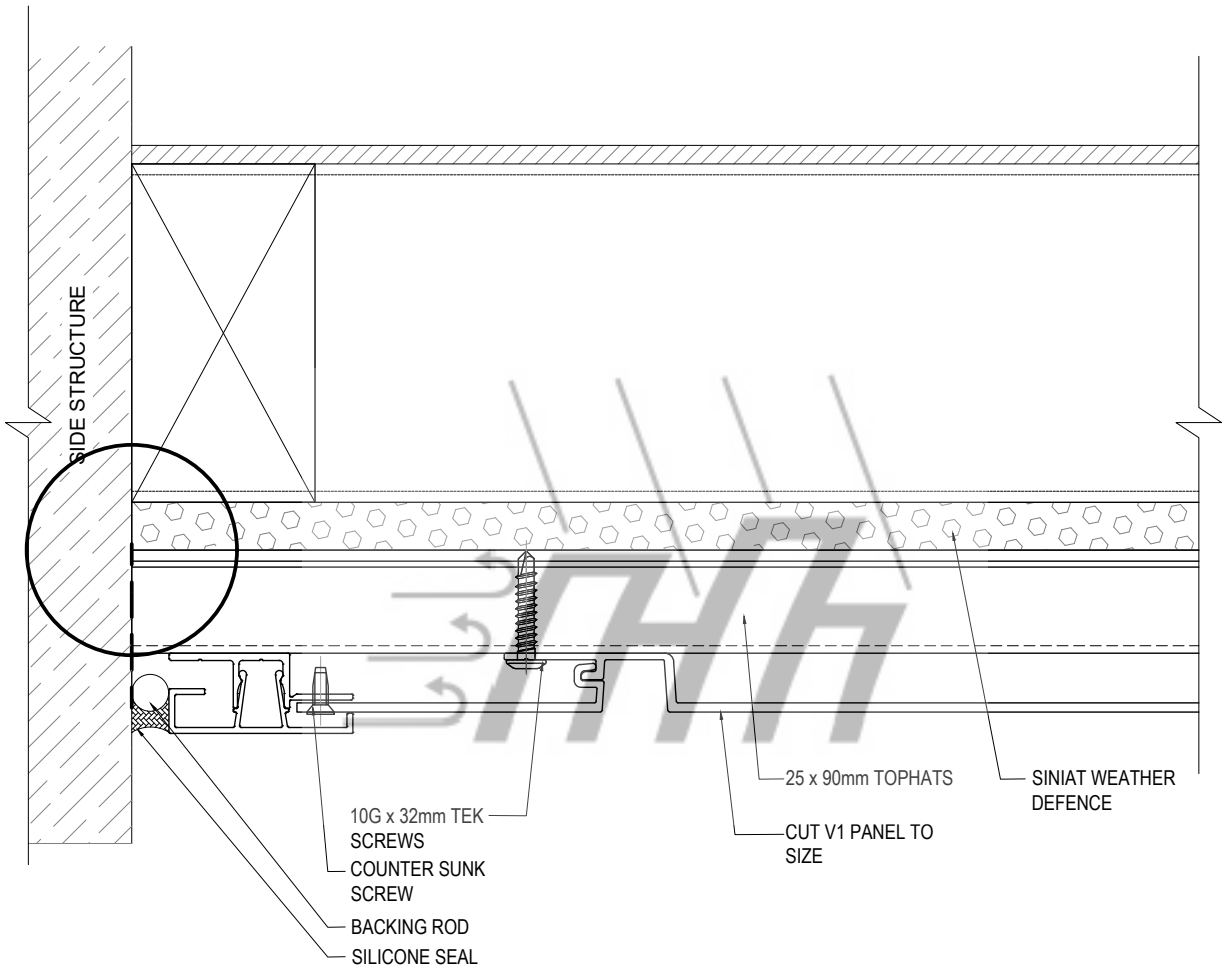
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 024 | |




## DETAIL 25

## JAMB DETAIL - END - PLAN VIEW

SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:

AS4284

DETAILS



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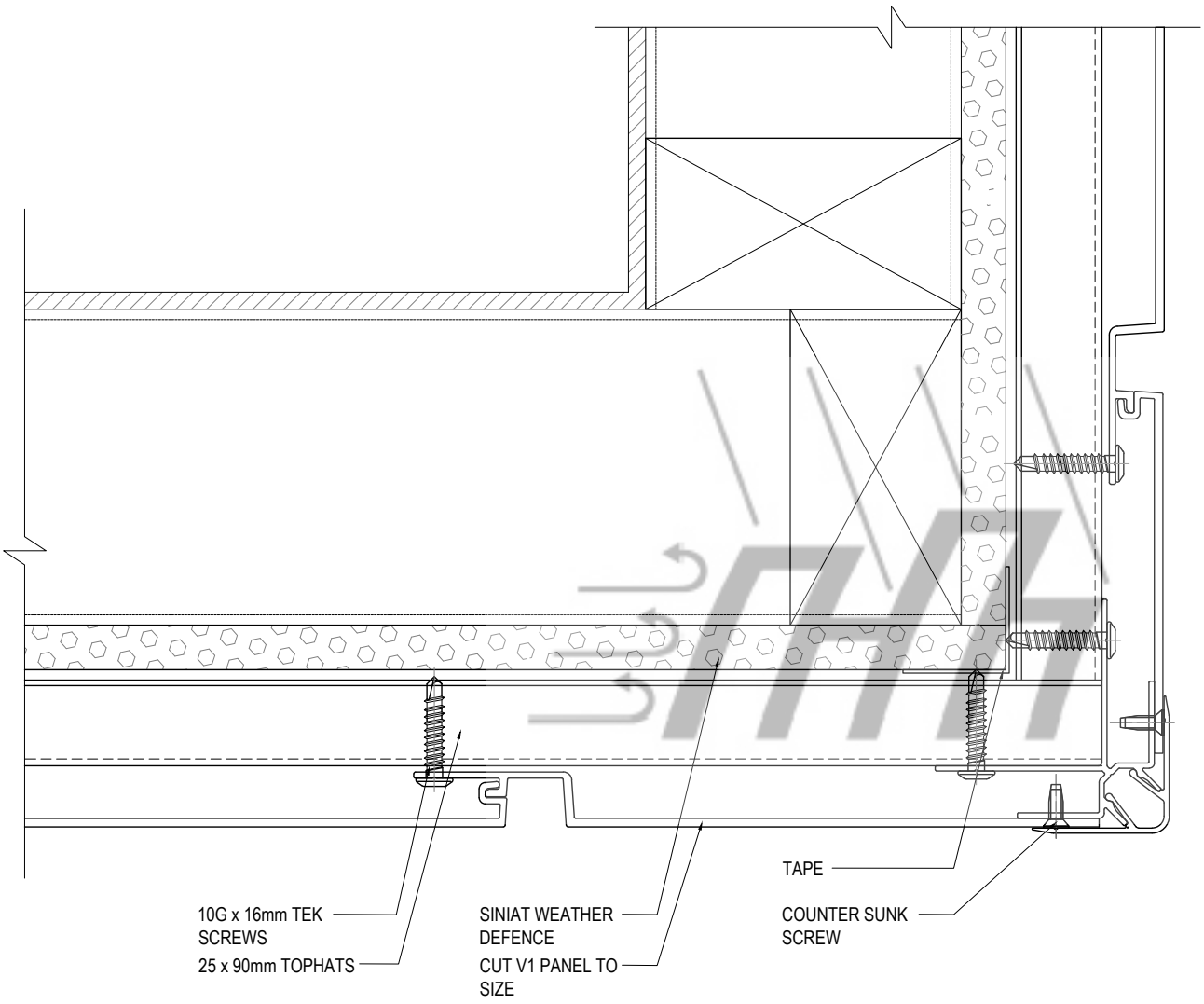
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 025 | |




## DETAIL 26
## EXTERNAL CORNER DETAIL - PLAN VIEW
SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:
AS4284
DETAILS



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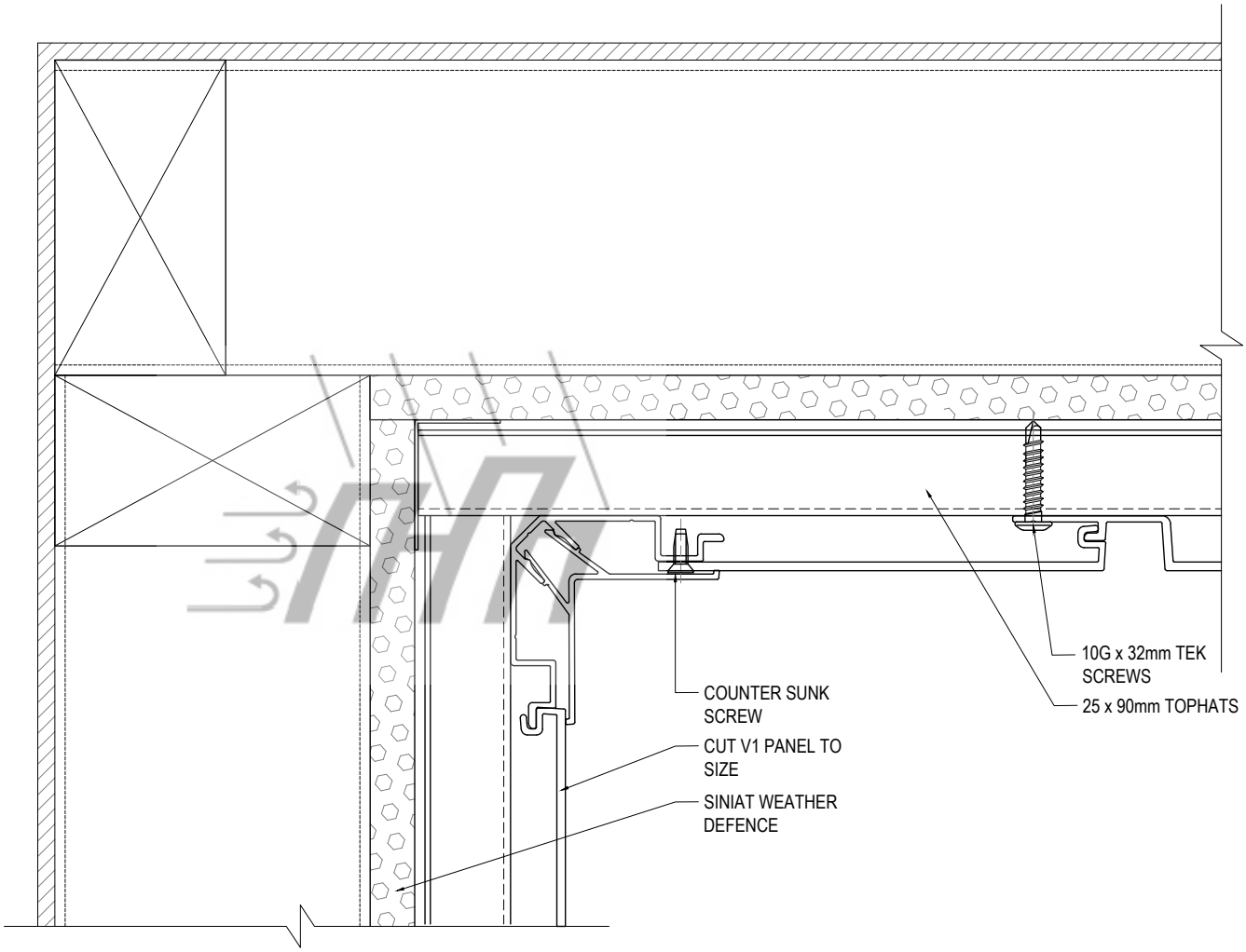
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 29.07.2021 | Revision: - |
| Drawing No.: IPVI000000 - 026 | |




## DETAIL 27
## INTERNAL CORNER DETAIL - PLAN VIEW
SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:
AS4284
DETAILS



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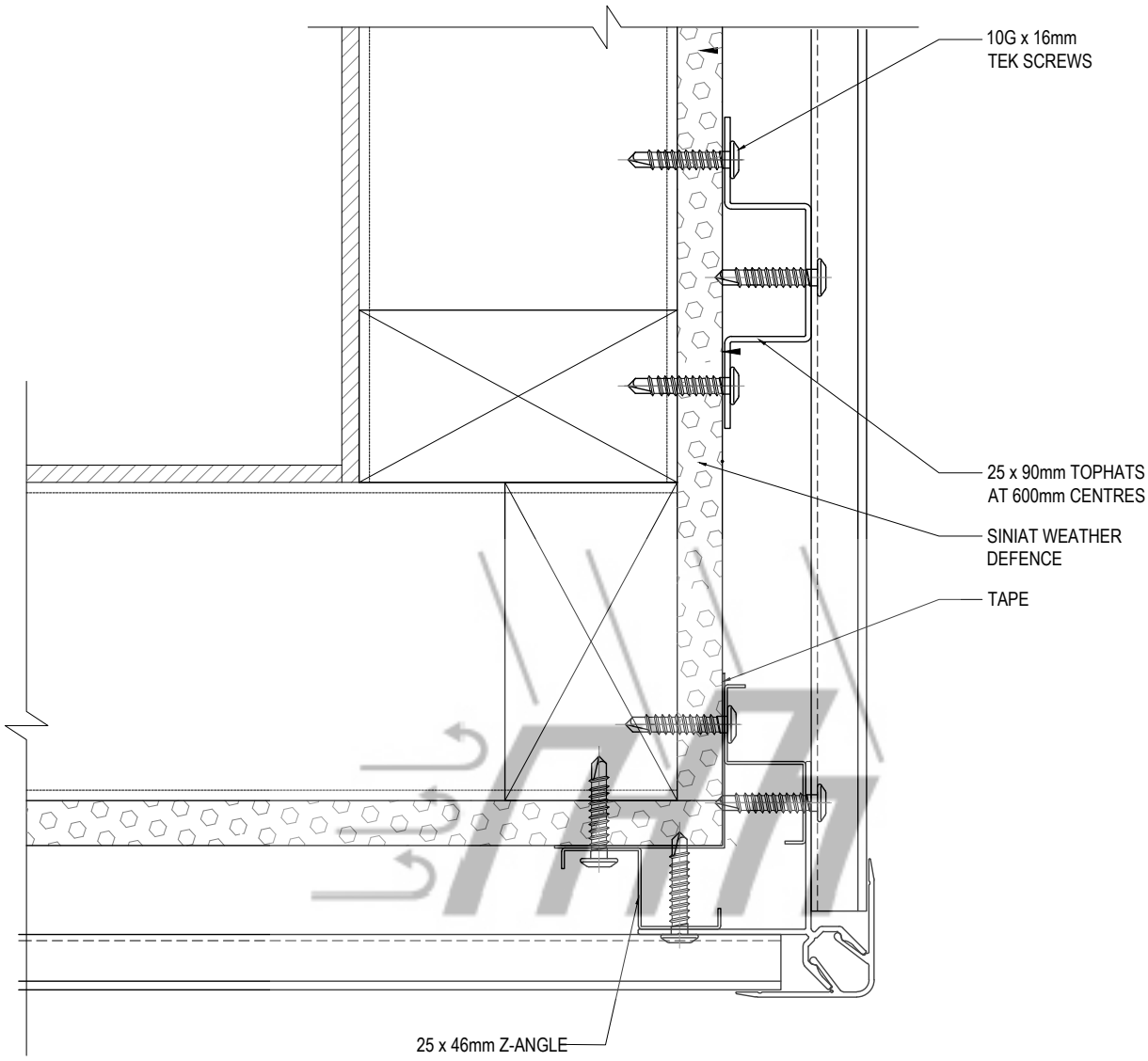
| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 10.08.2021 | Revision: - |
| Drawing No.: IPVI000000 - 027 | |




## DETAIL 28

## SOFFIT JUNCTION CONNECTION DETAIL - SECTION VIEW

SCALE 1:2

ASKIN Performance Panels
www.askin.net.au
VIC P : 03 8769 4816 WA P : 08 9249 4022
SA P : 08 8252 7188 QLD P : 07 3718 9500
NSW P : 02 8825 2598 NT P : 08 8252 7188

PROJECT:
AS4284
DETAILS



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| Checked By: A SHANNON | Scale: 1:2 |
| Drawn By: R VORWERK | Sheet size: A4 |
| Issue date: 10.08.2021 | Revision: - |
| Drawing No.: IPVI000000 - 028 | |

# 6 F3P1 [vol. 1] / H2P2 [vol. 2] Certification: ProClad™ LINEAR Empire Pre-Finished, Solid Aluminium, Extruded Cladding Panel System: Weatherproofing Performance (Vertical application rainscreen system with Siniat weather board behind panels) [BCA 2022]

## Certification:

**I certify that:**

1. We have carried out a detailed review of the ProClad™ LINEAR Empire cladding interlocking panel rainscreen cladding system in the vertical application with Siniat weather board taped and sealed behind panels; and
2. This façade system, if completed in accordance with the detail drawings and specifications specified in this certificate as listed above, Manufacturers' requirements, and Consultant Reports and Advice notices will comply with F3P1 [vol. 1] & H2P2 [vol. 2] [BCA: 2022]; and
3. This certificate only relates to the F3P1 [vol. 1] & H2P2 [vol. 2] [BCA: 2022] performance of the system.

**In making this declaration, I rely on:**

4. The drawings, plans, details, specifications, sketches and technical documents produced for compliance and specified in this certificate; and
5. The properties of the Facade elements complying with the requirements of the Building Code of Australia and material codes.
6. The Manufacturers' compliance with the Building Code of Australia and material codes.
7. Manufacturers' published data for the performance of their products.
8. Manufacturers' reported test performance for weather proofing performance.
9. The Contractors' and Sub-Contractors' responsibility to construct the Facade in accordance with the manufacturer's requirements, the content of this report, design, shop drawings and other design requirements as per sketches, markups, email and other project correspondence, and to make corrections where picked up during site inspections and subsequent reports.
10. The Designers, Contractors' and Sub-Contractors' responsibility to design the building facade in accordance with the Building Code of Australia and relevant Australian Standards and appropriately detail and construct the façade interfaces with adjoining façade systems to also be compliant with F3P1 [vol. 1] & H2P2 [vol. 2] [BCA: 2022].
11. The Contractors' and Sub-Contractors' responsibility to construct the building façade in accordance with the Building Code of Australia and relevant Australian Standards.

**Statement / Conditions:**

12. This Certificate covers the F3P1 [vol. 1] & H2P2 [vol. 2] [BCA: 2022] performance of the building only. Additional design work must be carried out by other consultants on the project to complete the design of building and those elements are not covered by this certificate. This includes the structure supporting the façade and those elements must comply with the relevant standards and suggested serviceability criteria therein, in order for this certificate to be valid.

**Declaration:**

I am qualified as a Professional Engineer (Structural) as defined in the Building Code of Australia.

| | | | |
|---|---|---|---|
| Name: | Simon Jewell | | |
| | IStructE: Meng MIStructE CEng | Membership No.: | 024402978 |
| | Engineers Australia: MIEAust CPEng NER | Membership No.: | 3682713 |
| Qualifications: | Victorian Building Authority (VBA)<br>Building Licensing Authority (BLA, Victoria):<br>Professional Engineer – Civil Engineering<br>Professional Engineer – Structural Engineering | Registration No.: | BLA: PE0002157<br>VBA: (EC 38144) |
| Signature: |  | Date: | 08/02/24 |



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T: 08 9228 9120
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www.atelierjv.com.au
ABN: 18 160 666 160
STRUCTURAL ENGINEERING DESIGN

ATELIER JV

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