



F3P1 [vol. 1] / H2P2 [vol. 2]
ProClad™ SOLID Pre-Finished, Solid
Aluminium, Folded Cassette Cladding
Panel System: Weatherproofing
Performance Solution Report
(face sealed with CSR Bradford Enviroseal
CW sarking behind cladding line)
[BCA 2022]

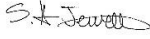
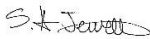
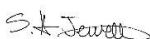
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This document should be read in full.

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1 Executive Summary

ProClad™ SOLID is a cladding panel system comprising non-combustible pre-finished aluminium, folded cassette panels. Manufacturer, Aluminium Façade Systems (AFS) have developed the ProClad™ SOLID 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™ SOLID 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 Façade 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. 2022-006-S1 dated March 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

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™ SOLID 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™ SOLID 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™ SOLID cladding system requirements.
- / ProClad™ SOLID 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.

2 Performance Based Design Brief

2.1 Background

ProClad™ SOLID is a cladding panel system comprising non-combustible pre-finished aluminium, folded cassette panels. Manufacturer, Aluminium Façade Systems (AFS) have developed the ProClad™ SOLID 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™ SOLID 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™ SOLID 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™ SOLID 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™ SOLID 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™ SOLID 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™ SOLID 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™ SOLID 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

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™ SOLID 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™ SOLID 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™ SOLID 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™ SOLID 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 Volume One NCC: 2022	Weatherproofing: 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 ✓ Undue dampness or deterioration of building elements. 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 Façade Engineering detailing and specification advice Façade Shop Detailer inclusion of the Façade Engineering detailing advice into the product installation manual Inclusion of design, detailing, fabrication, material, supply, handling, QA, installation and maintenance requirements into the product installation manual
2	H2P2 Volume Two NCC: 2022	Weatherproofing: A roof and external wall (including openings around windows and doors) must prevent the	Performance Requirements H2P2 are satisfied for a metal wall cladding if it is designed and	AS/NZS 4284 testing Façade Engineering detailing and specification advice

Performance Solution #	BCA Rqt.	Performance Requirement	DTS Provision	Proposed Performance Solution
		penetration of water that could cause— / Unhealthy or dangerous conditions, or loss of amenity for occupants; and / Undue dampness or deterioration of building elements.	constructed in accordance with AS 1562.1.	Façade Shop Detailer inclusion of the Façade Engineering detailing advice into the product installation manual Inclusion of design, detailing, fabrication, material, supply, handling, QA, installation and maintenance requirements into the product installation 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™ SOLID cladding panels not detailed, specified, fabricated, installed or maintained in accordance with this report and the AFS Installation Manual.
- / Cladding other than the ProClad™ SOLID cladding panel system.
- / Interfaces with adjacent cladding, glazing, landscaping, structure, or other building or site elements.
- / Glazing systems or interfaces.
- / ProClad™ SOLID cladding panels used in a roof situation or horizontal orientation other than a soffit or a parapet of limited width.
- / ProClad™ SOLID 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 (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. 2022-006-S1 dated March 2022
- / ProClad™ SOLID - Fabrication Manual_June 2020
- / ProClad™ SOLID Brochure 1.1
- / ProClad™ SOLID Installation Manual_June 2020
- / Updated details for inclusion in the ProClad™ SOLID Technical Manual (refer to Appendix A of this report)
- / ProClad™ SOLID Tech Data Sheet
- / ProClad Solid Warranty V1

2.6 Cladding System Description

ProClad™ SOLID is a cladding panel system comprising non-combustible pre-finished aluminium, folded cassette panels, manufactured by Aluminium Façade Systems (AFS), backed by Alspec.

Folded (routed or press bent) pre-finished, aluminium cassette panels are attached to a cladding sub-frame of top hats using cassette cladding panel edge Zeds or angles. 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, vapour permeable, building membrane located immediately in front of the insulation layer of the wall construction. Condensation that may develop from time to time in the space between the cladding panel and the vapour permeable, building membrane is ejected at the bottom of each enclosed area of cladding via weep holes in the sealed joint line.

The cladding system is a face sealed system. Weatherproofing performance in this report is based on the following products, materials and components:

- / Face Sealed ProClad™ SOLID cladding panels:
 - o Non-combustible pre-finished aluminium,
 - o Folded (routed or press bent) cassette panels,
 - o Manufactured by Aluminium Façade Systems (AFS), backed by Alspec.
- / Cassette panel edge Zeds or Angles with thermal release slots as required.
- / 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.
- / Sarking:
 - o CSR Bradford Enviroseal CW
 - o Fully sealed (taped),
 - o Commercial grade,
 - o Vapour permeable, building membrane
 - o Located immediately in front of the insulation layer of the wall construction.
- / Sealants:
 - o Alspec 100% Neutral Cure Silicone – Weather Seal
 - o ADMIL Prosil 41 LM High Performance 100% Neutral Cure Silicone – Weather Seal
 - o ADMIL SupaSeal PU Low Modulus Isocyanate Free Polyurethane Sealant – Bonding of stiffening angles
- / Weep holes in the sealed joint line at the base of each section of cladding (at max. 900mm Centres).

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 using a Performance Solution.

2.7.1.1 Assessment Method

Clause A2G2 details 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
- / 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™ SOLID 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™ SOLID 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™ SOLID 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™ SOLID 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. 2022-006-S1 dated March 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™ SOLID 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. 2022-006-S1 dated March 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: 0.6 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

The detailing and specification of the ProClad™ SOLID 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™ SOLID cladding system for building envelopes 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.

3 Performance Solution 1 & 2 – ProClad™ SOLID 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™ SOLID cladding system.

Table 3.1. Scope and Evaluation Method

Description of Solution	Category
DTSP 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. 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] Weatherproofing performance
BCA Compliance Approach	The compliance approach adopted is: Formulating a Performance Solution that- (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.

Description of Solution	Category
	BCA Clauses: A2G2(2)(a) Evidence of Suitability with reference to A5G3(1)(f) alternate documentary evidence; and 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: ✓ Unhealthy or dangerous conditions, or loss of amenity for occupants; and ✓ 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™ SOLID cladding system, its connections and ancillary parts.

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 utilise 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™ SOLID cladding system Weatherproofing Generally

The detail for the weatherproofing of this ProClad™ SOLID cladding system façade has been detailed to include a pre-finished aluminium cassette cladding panel as a face sealed system. The cladding is sealed with high quality, warranted façade sealant products and the long term maintenance requirements of these sealants specified in the product documentation.

Behind the sealed façade is detailed a cavity that free drains to the base of each façade element and ejects any condensation or minor water ingress through any damaged seal to the external face of the façade line using weep hole tubes installed at the lowest level of the façade cavity.

The rear of the sealed cavity behind the cladding is protected by the second weather line of defence being the vapour permeable building wrap breather membrane. This prevents any condensation or minor water ingress through any damaged seal 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 (typically to AAMA 501.2-15) has been used to complete the detailing of the ProClad™ SOLID 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™ SOLID cladding face sealed 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™ SOLID cladding Technical Manual input included in the Appendices of this report. The ProClad™ SOLID cladding face sealed system has been designed using sound weatherproofing details and solutions that have proven demonstrated, adequate performance.

On this basis we deem the ProClad™ SOLID cladding face sealed system with CSR Bradford Enviroseal CW Building wrap 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:

- ✓ Face Sealed ProClad™ SOLID cladding panels:
 - Non-combustible pre-finished aluminium,
 - Folded (routed or press bent) cassette panels,
 - Manufactured by Aluminium Façade Systems (AFS), backed by Alspec.
- ✓ Cassette panel edge Zeds or Angles with thermal release slots as required.
- ✓ 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.
- ✓ Sarking:
 - CSR Bradford Enviroseal CW
 - Fully sealed (taped),
 - Commercial grade,
 - Vapour permeable, building membrane
 - Located immediately in front of the insulation layer of the wall construction.
- ✓ 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
- ✓ Weep holes in the sealed joint line at the base of each section of cladding (at max. 900mm Centres).

Notes:

- ✓ The cladding system is a condensation drained, face sealed system.
- ✓ The cladding sub-frame top hats are attached to the external wall structure, which is to be designed by others within the deflection limits stated in this report. This structure does not form part of the system certified here.
- ✓ All relevant façade and building movements and tolerance must be detailed into the system by the building project design and construction team.

5 Document List

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

Drawings List (Refer Appendix A):

8.1	Typical Panel Joint Plan Detail	Feb-23
8.2	Typical Panel Joint Plan Detail	Feb-23
8.3	Horizontal Joint Section Detail	Feb-23
8.4	Panel at Wall Plan Detail	Feb-23
8.5	Slab Junction Section Detail -Head	Feb-23
8.6	Slab Junction Section Detail - Base	Feb-23
8.7	Soffit Junction Section Detail	Feb-23
8.8	Wall Abutment Plan Detail	Feb-23
8.9	External Corner Plan Detail	Feb-23
8.10	Internal Corner Plan Detail	Feb-23
8.11	Window Sill Section Detail	Feb-23
8.12	Window Head Section Detail	Feb-23
8.13	Window Jamb Plan Detail	Feb-23
8.14	Parapet Capping Section Detail	Feb-23

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

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

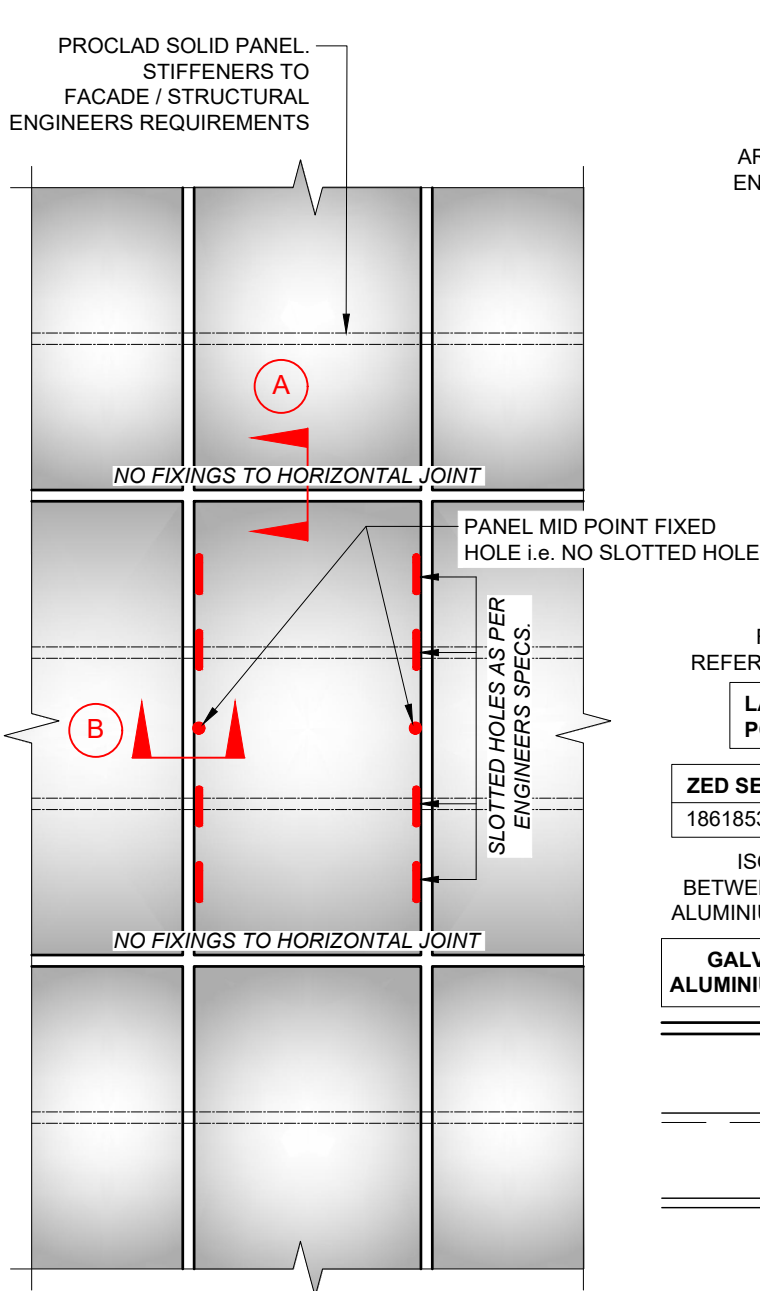
ProClad™ SOLID Documentation (Refer Appendix C):

- / Product component part requirements
- / Ian Bennie & Associates AS/NZS 4284 Test Report No. 2022-006-S1 dated March 2022
- / ProClad™ SOLID - Fabrication Manual_June 2020
- / ProClad™ SOLID Brochure 1.1
- / ProClad™ SOLID Tech Data Sheet
- / ProClad™ SOLID Warranty V1

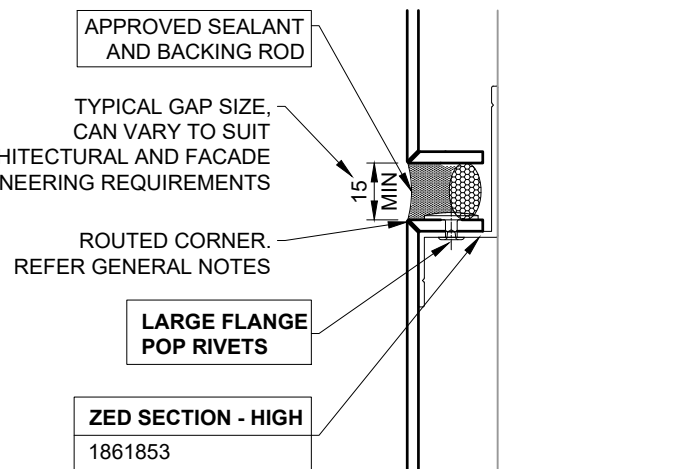
Appendix A: Cladding Details that form the Basis of this Performance Solution

6. Typical Cladding Details

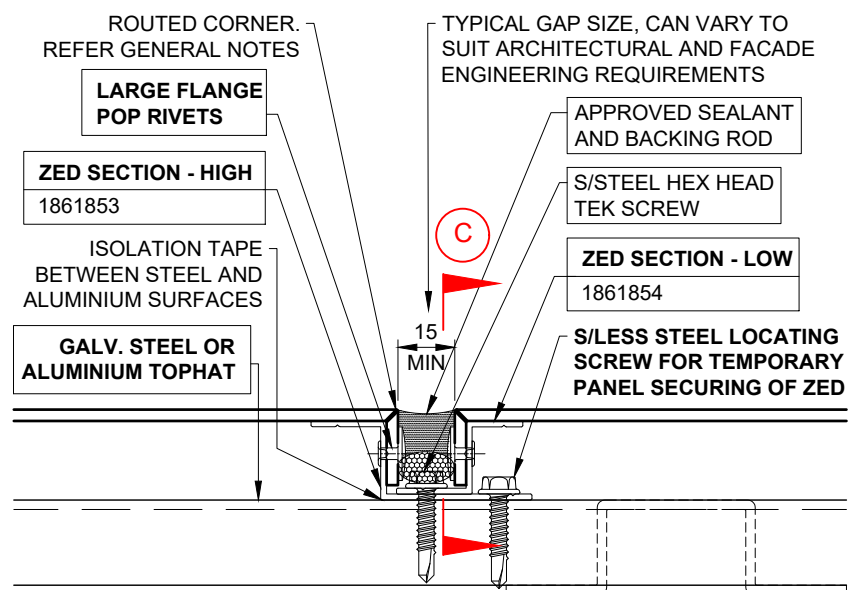
Typical Panel Joint Plan Detail



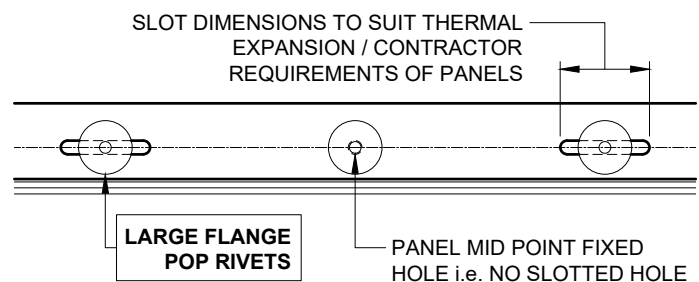
TYPICAL VERTICAL PANEL LAYOUT ELEVATION



A TYPICAL HORIZONTAL JOINT SECTION VIEW



B TYPICAL VERTICAL JOINT PLAN VIEW



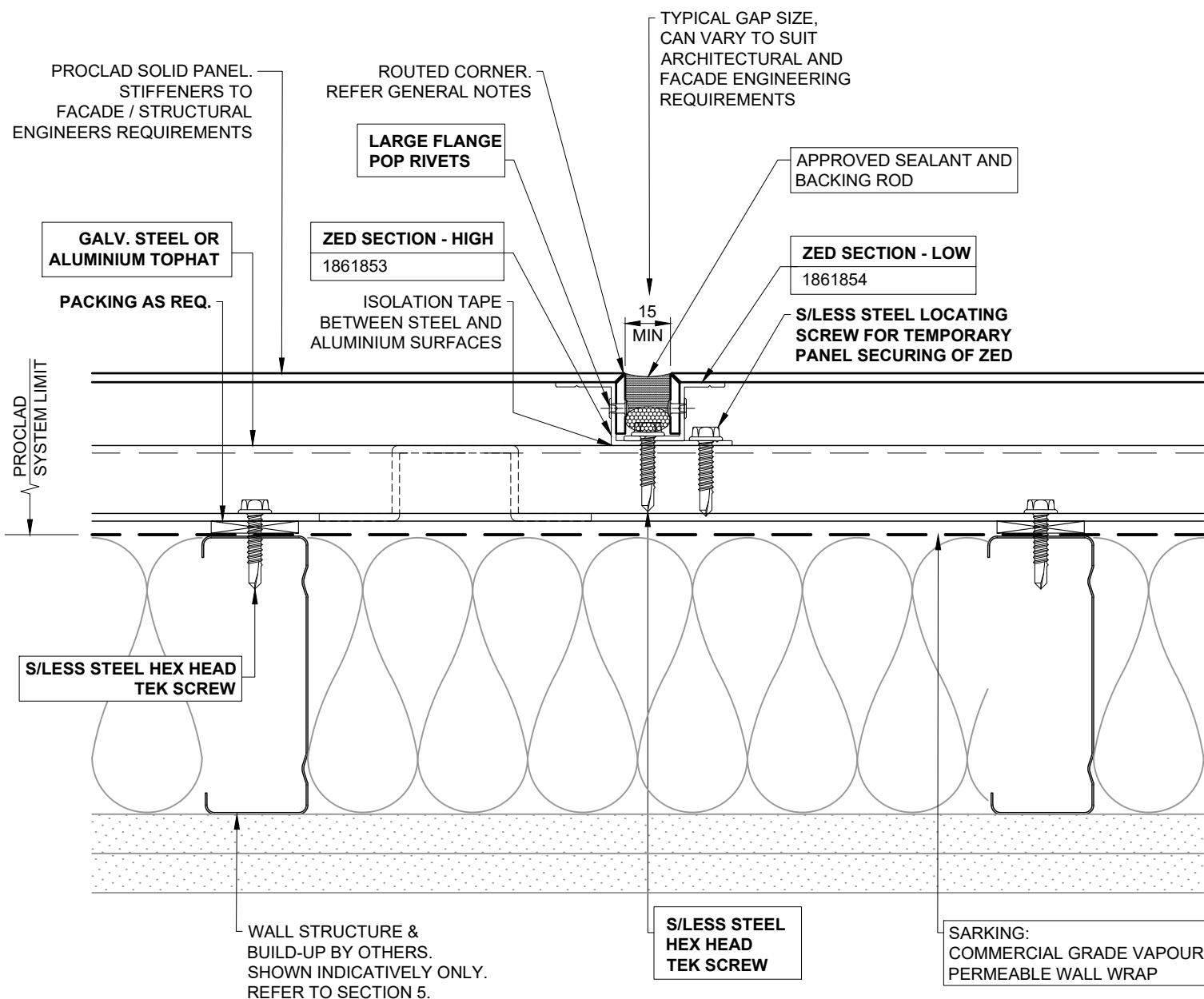
C TYPICAL RIVET HOLES TO PANEL RETURN

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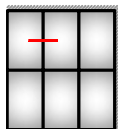
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Typical Panel Joint Plan Detail



KEY ELEVATION



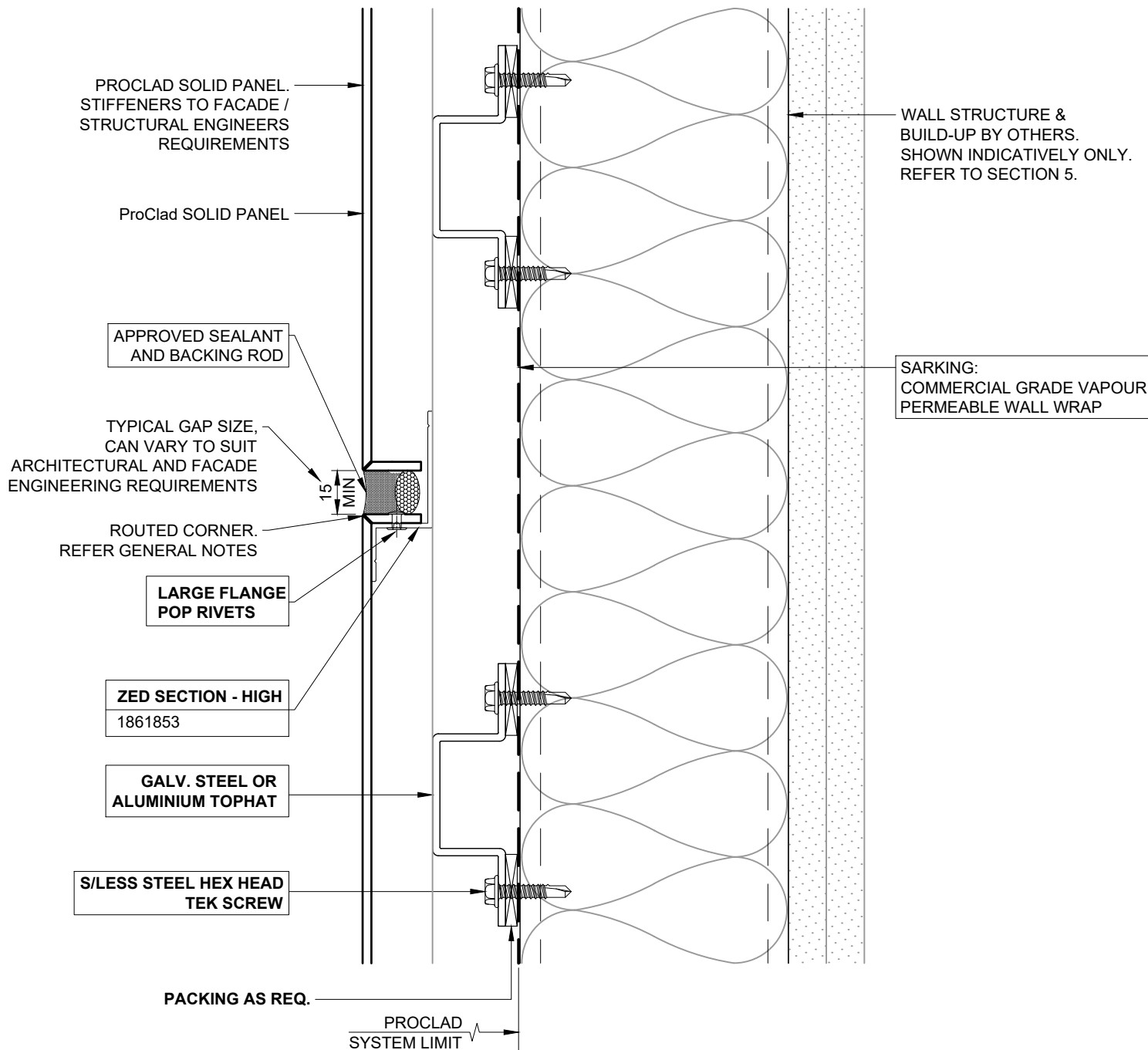
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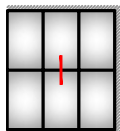
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Horizontal Joint Section Detail



KEY ELEVATION



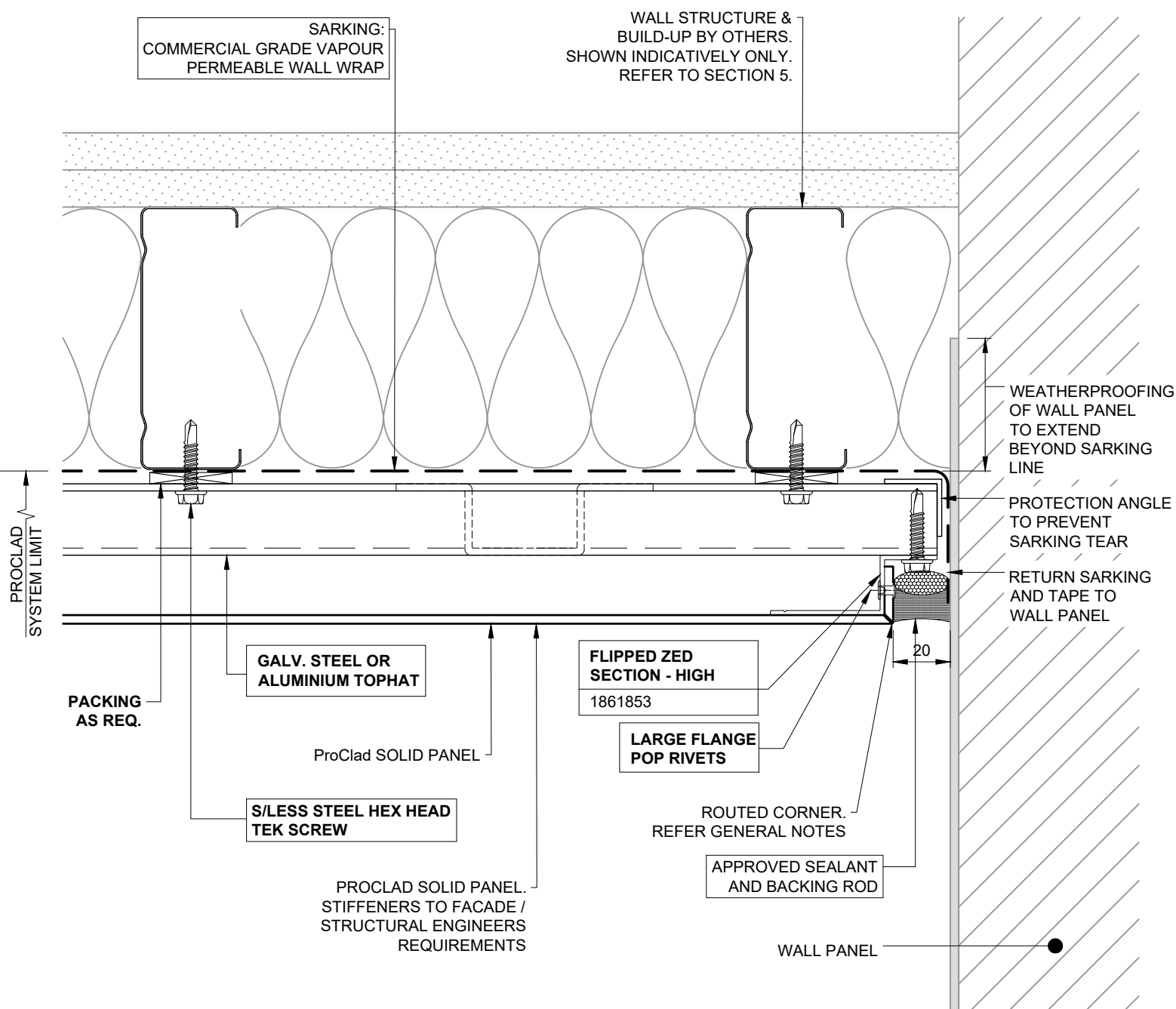
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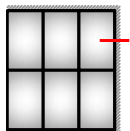
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Panel at Wall Plan Detail



KEY ELEVATION



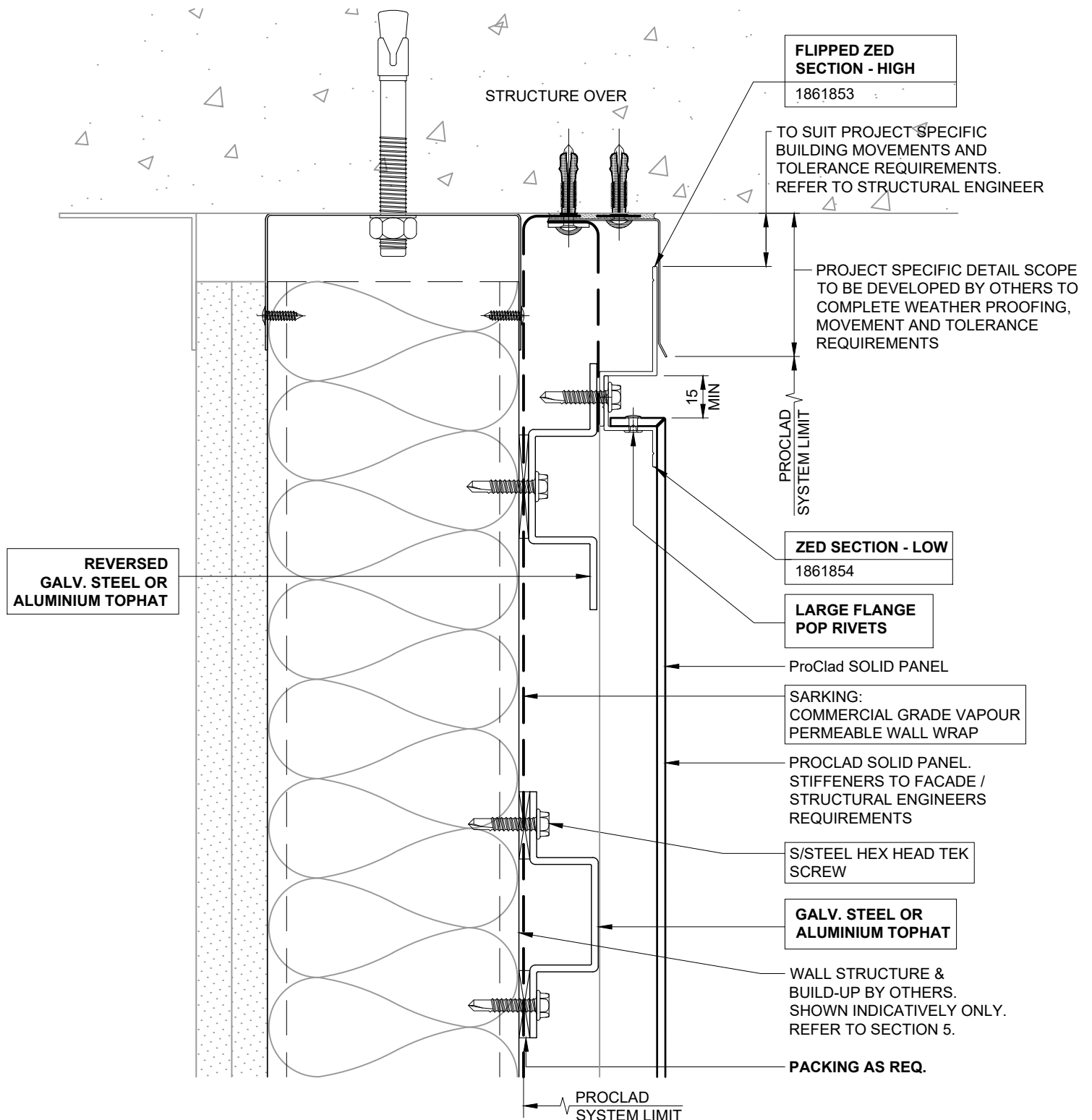
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6. Typical Cladding Details

Slab Junction Section Detail - Head

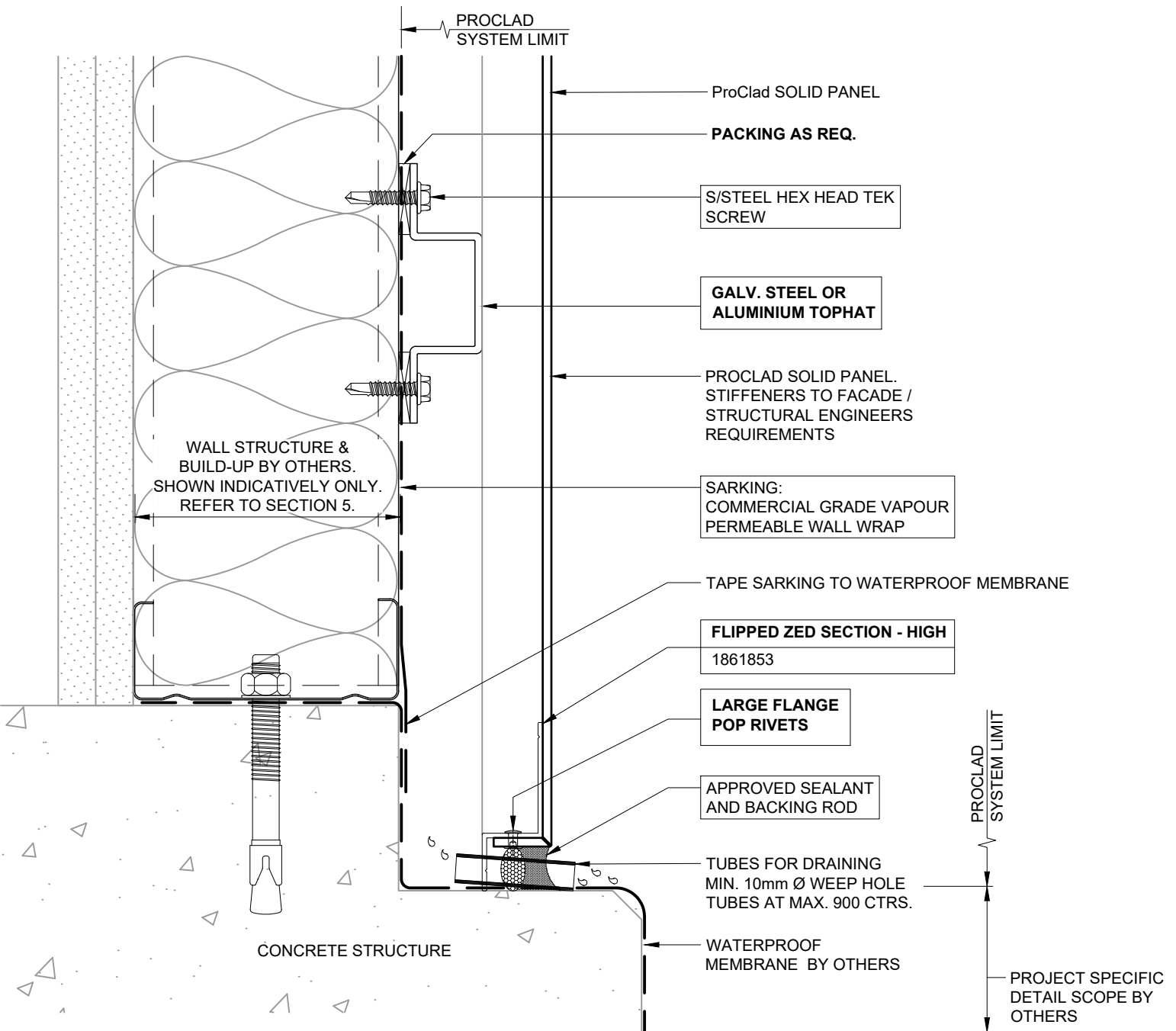


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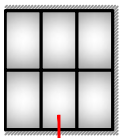
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Slab Junction Section Detail - Base



KEY ELEVATION

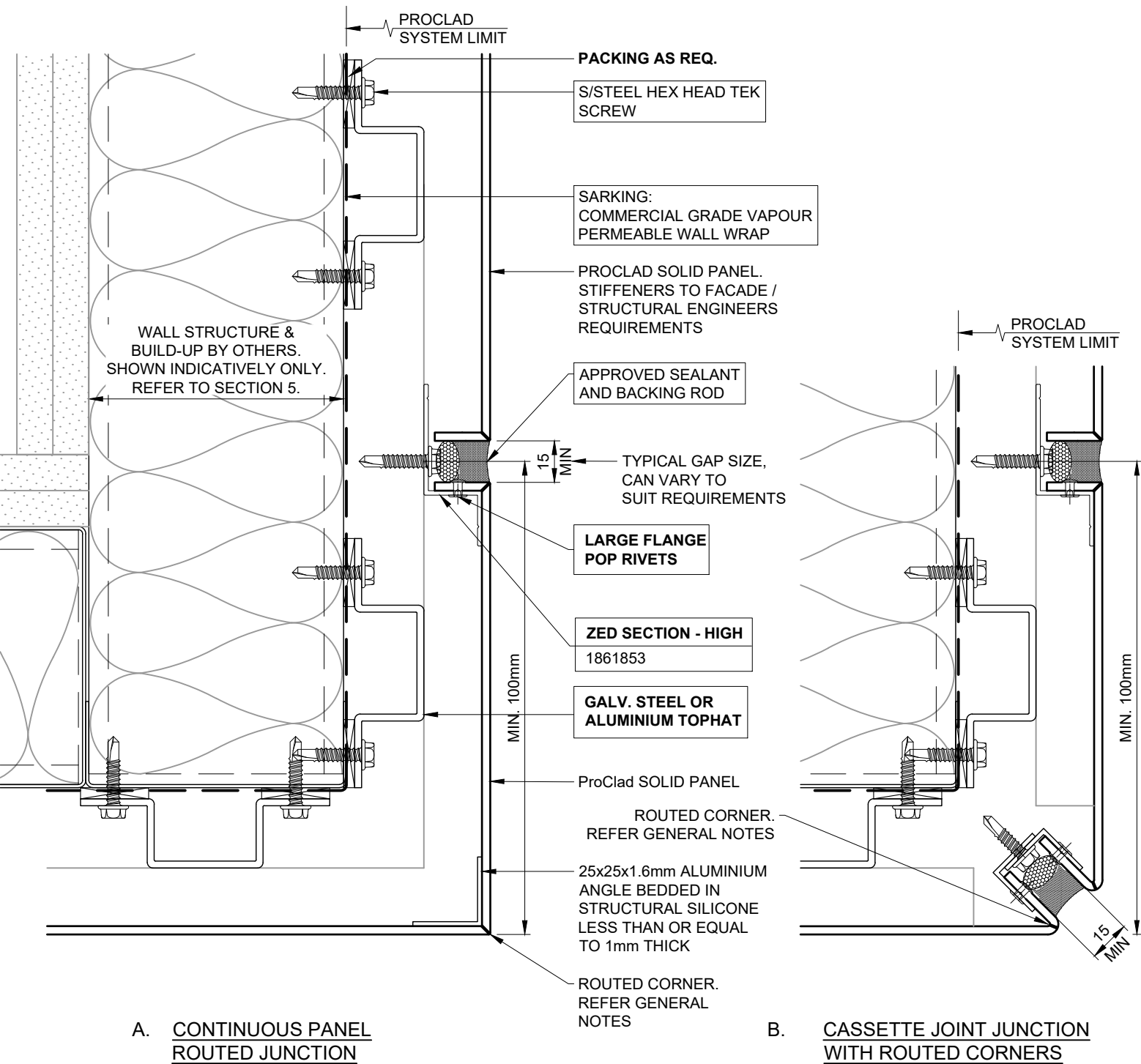


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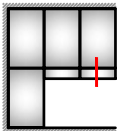
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Soffit Junction Section Detail



KEY ELEVATION

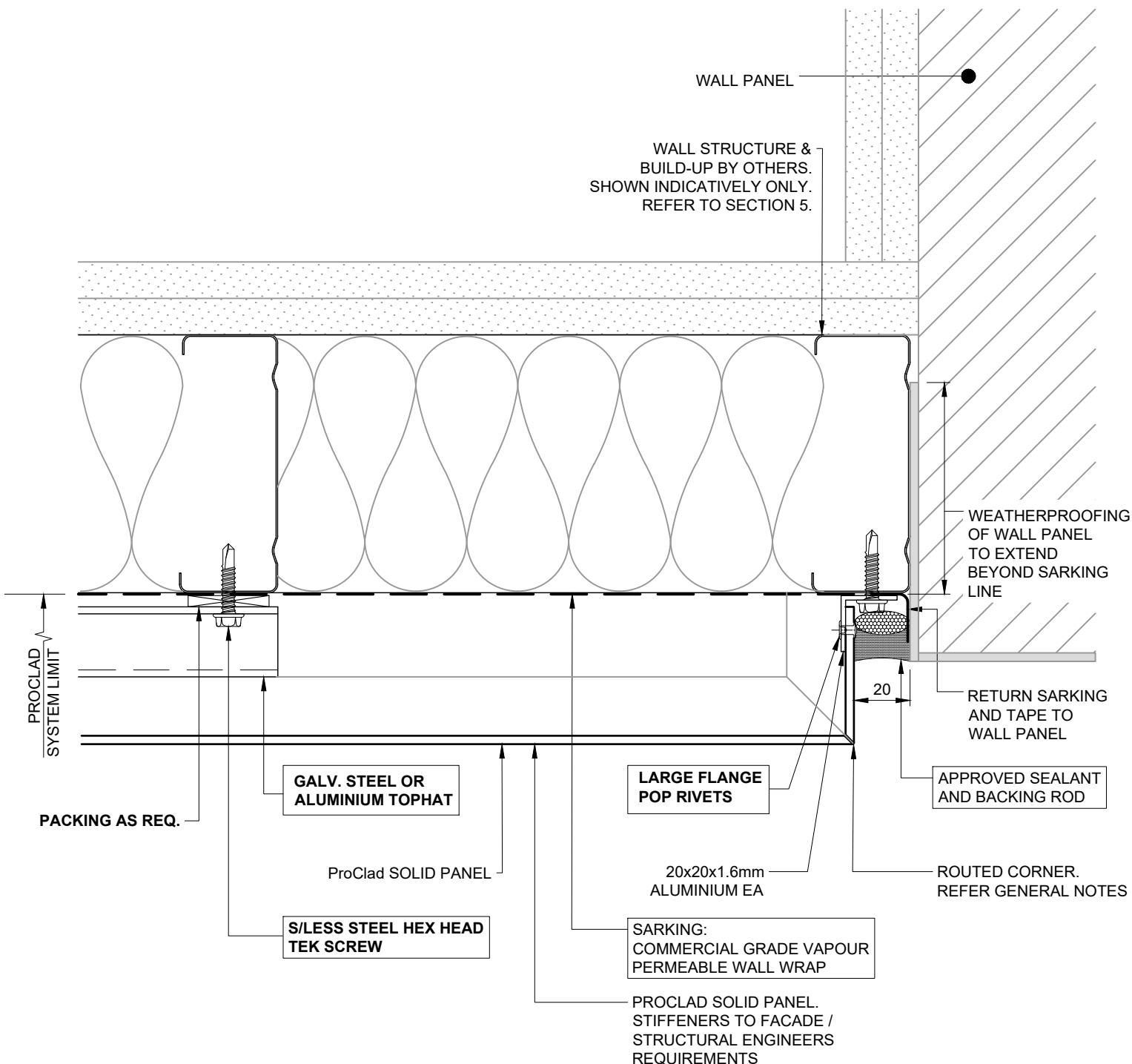


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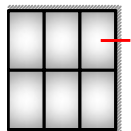
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Wall Abutment Plan Detail



KEY ELEVATION



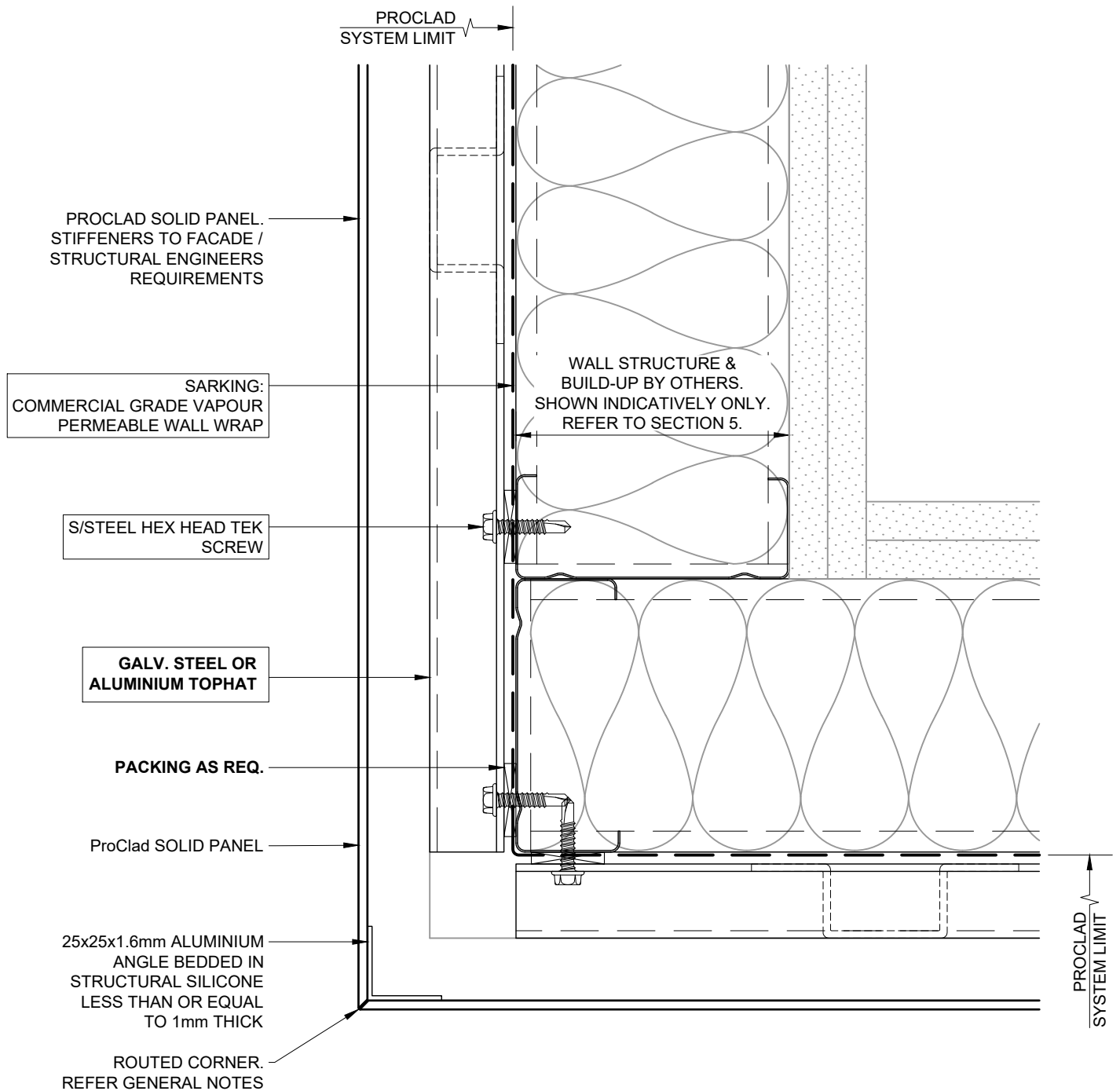
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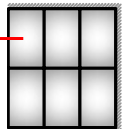
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

External Corner Plan Detail



KEY ELEVATION

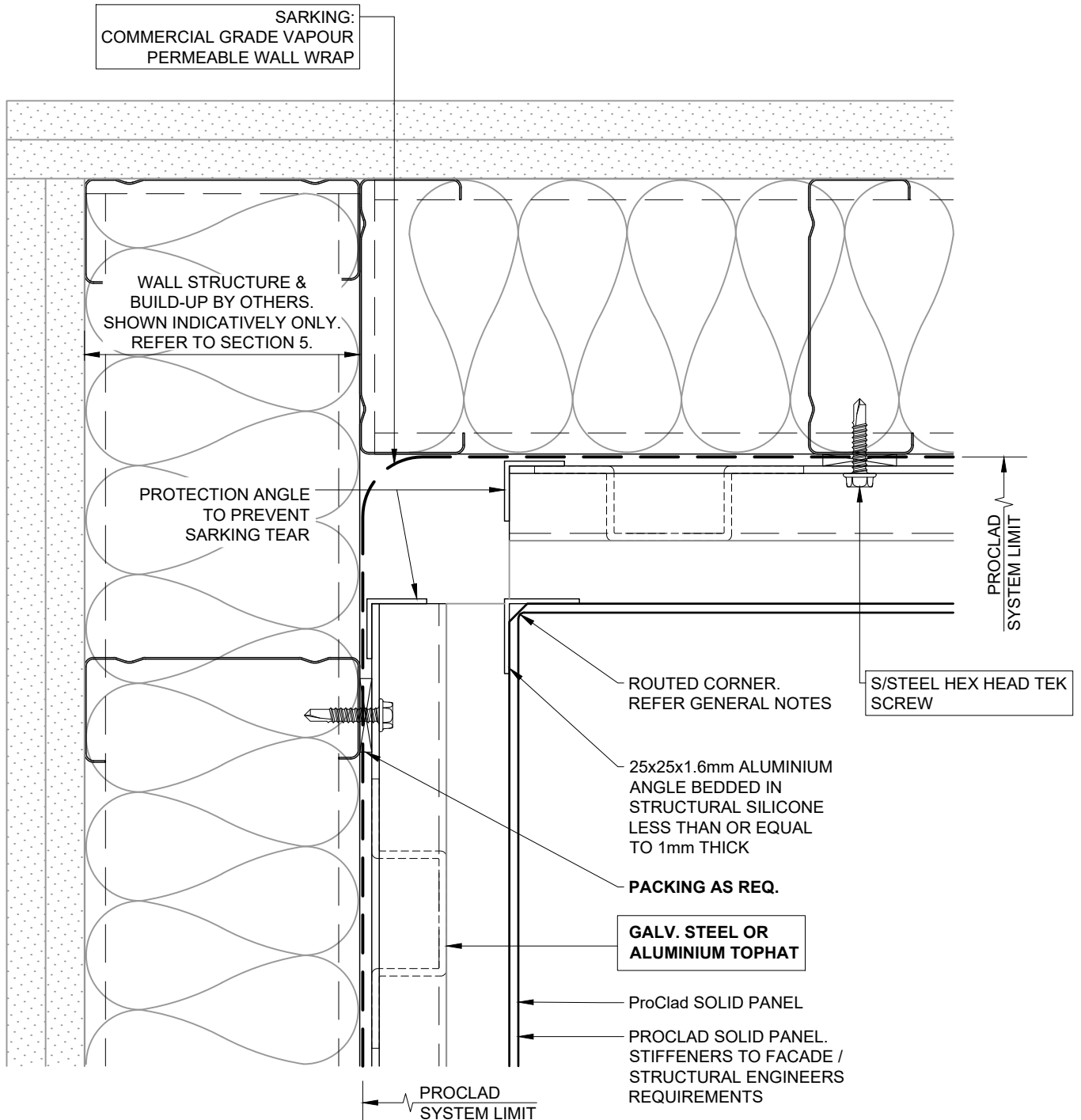


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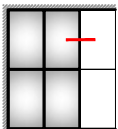
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6. Typical Cladding Details

Internal Corner Plan Detail



KEY ELEVATION

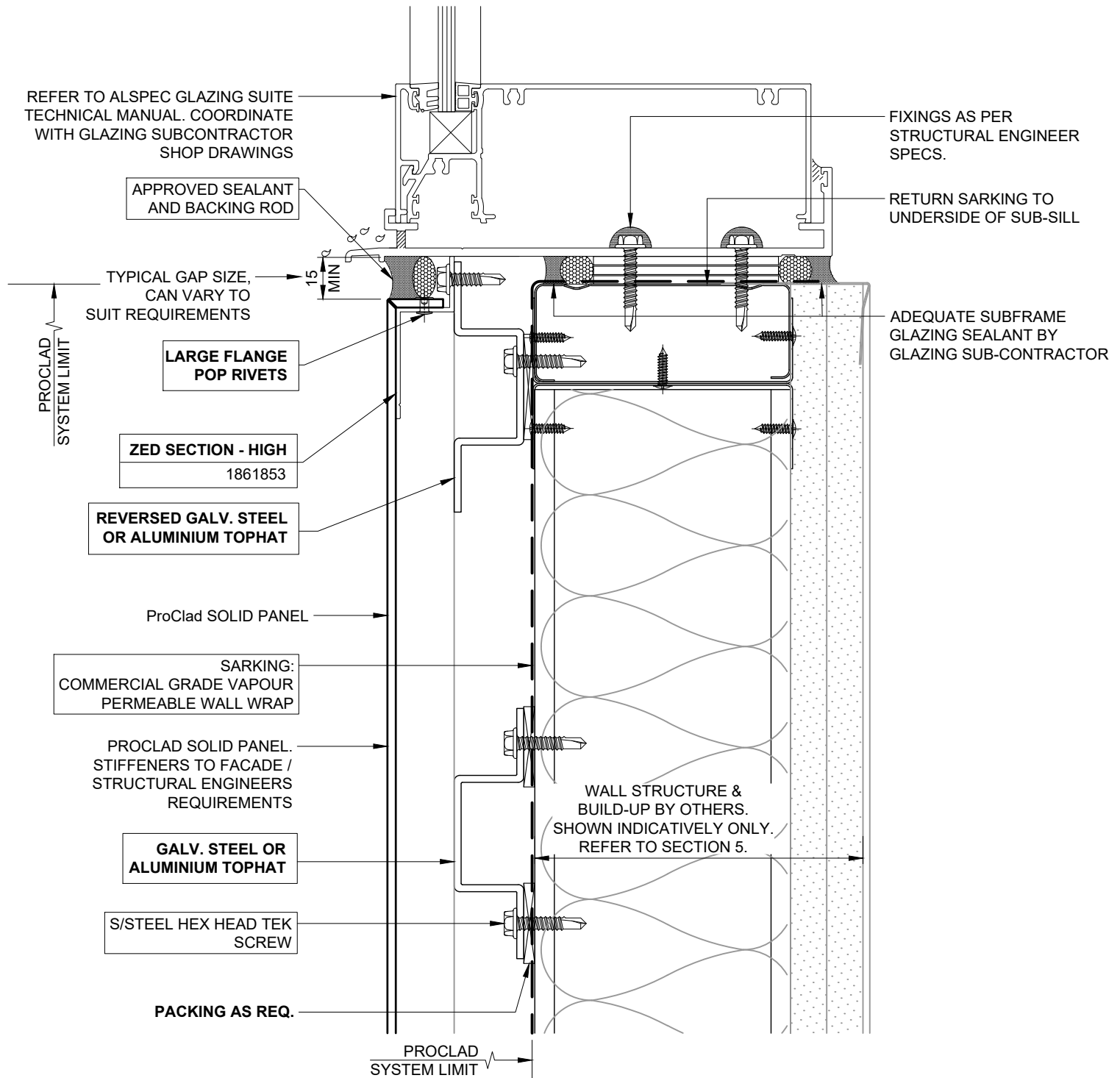


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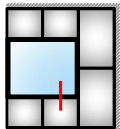
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Window Sill Section Detail



KEY ELEVATION

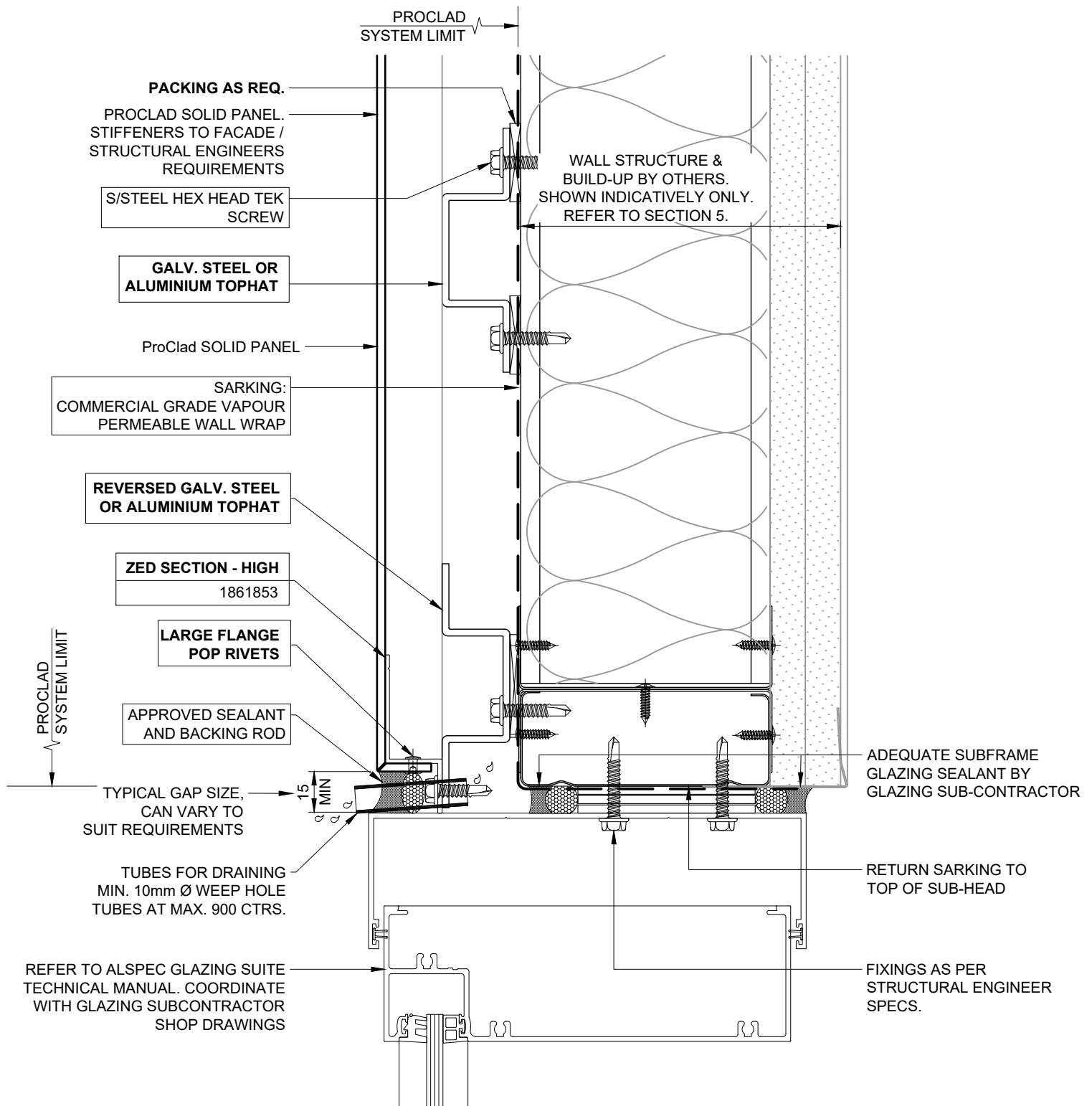


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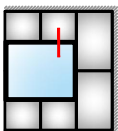
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Window Head Section Detail



KEY ELEVATION

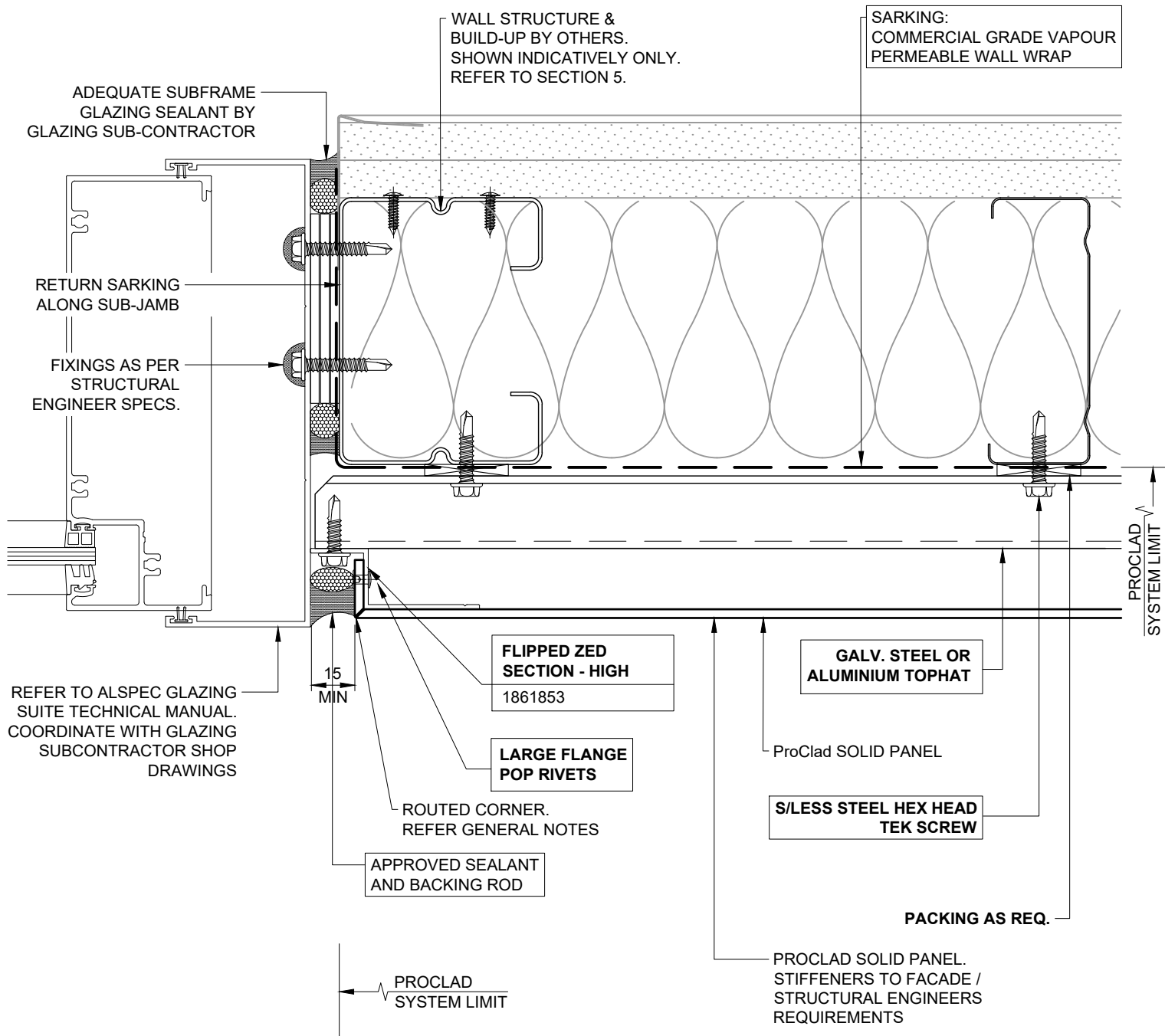


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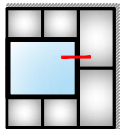
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Window Jamb Plan Detail



KEY ELEVATION

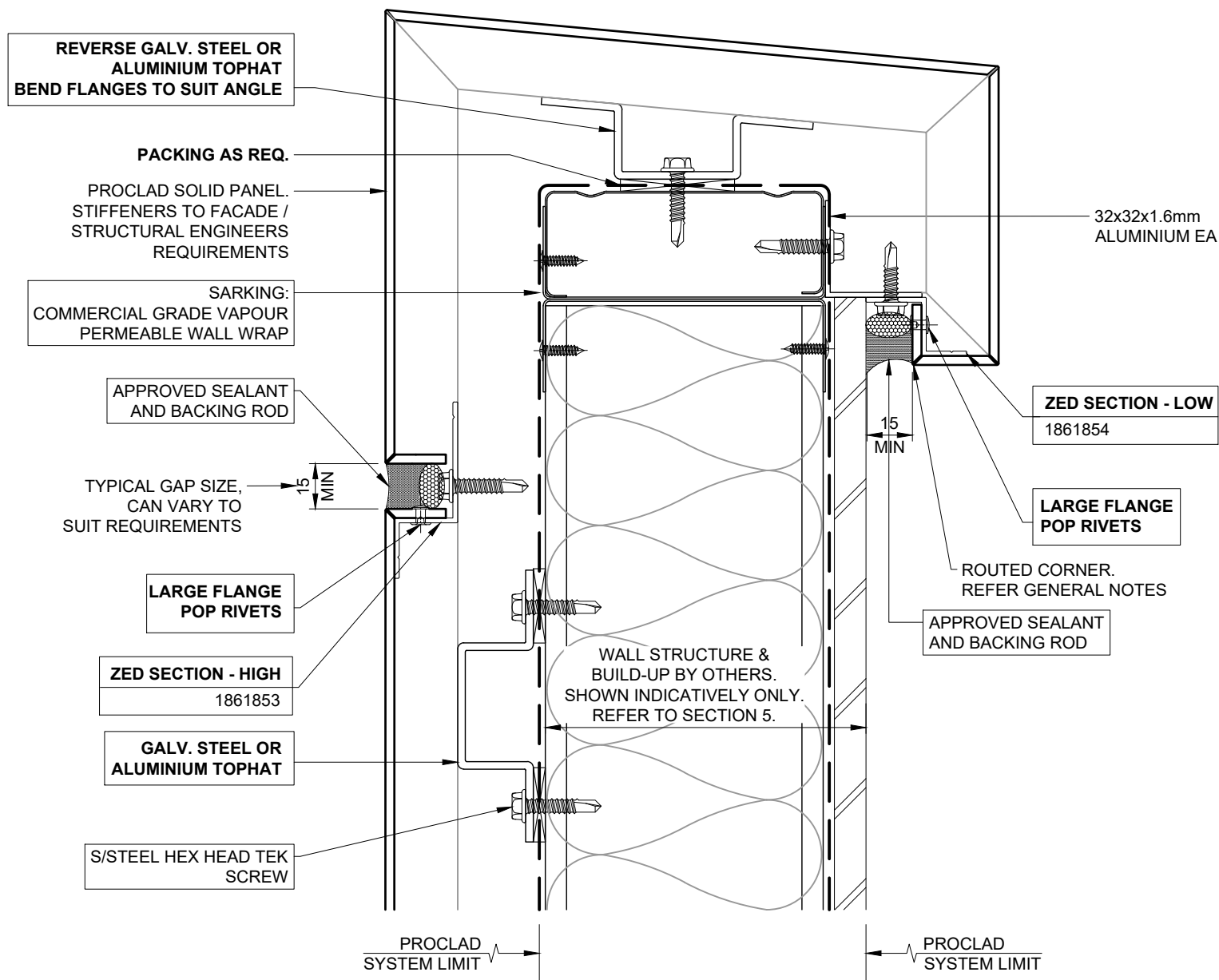


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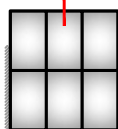
Important Note: All details must also comply with 4. HARDWARE & COMPONENTS and 5. GENERAL NOTES of this Installation Manual.

6. Typical Cladding Details

Parapet Capping Section Detail



KEY ELEVATION



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

Appendix B: Proclad™SOLID Specification Notes and Maintenance Requirements

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.
- 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 Installation 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-certified 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. 2022-006-S1 dated March 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*

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

- 1.2.1. All cladding panels shall be factory fabricated and assembled.
- 1.2.2. Check the Engineering requirements for panel stiffeners for each panel type and/or maximum spacing.
- 1.2.3. Cutting:
- Carry out cutting with external side facing up to prevent panel scratches and removal of the protective film.
 - Remove any debris from the panel face carefully after cutting to avoid dents during storage and assembly.
 - Sharpen and or replace saw blade at regular intervals as it becomes blunt. Blunt blades will result in large burrs or distortion at the cut edge.
- 1.2.4. Vee Groove Routing:
- Vee groove routing should be set to 0.9mm base material thickness with a tolerance of +/- 0.1mm
 - Vee groove routing should never cut the panel to less than 0.7mm in the base of the groove.
 - The Vee groove should have a flat base width of 3mm
 - Ensure the Vee grooving cutting process is set to the correct speed for the tolling / blade, so that excessive heat is not generated in the panel. If excessive heat is not generated in the panel, then the process needs to be slowed down. Excessive heat can cause changes to the material properties of the panel.
 - Ensure the Vee grooving and folding process does not cause cracking or distress along the folded edge. Do not use panels with signs of distress or cracking, this could lead to the tearing and separation of the panel edge in service. Adjust the Vee grooving and folding techniques if cracking or distress is being caused in processing.
 - Excess material in the channel of the V groove may result in cracking of the face skin when folding. Ensure that all material is removed as part of the processing in cutting the Vee groove.
 - The preferred method for Vee grooving is using a CNC Router.
 - The CNC Router must be calibrated on a regular, programmed basis in order to ensure that the routing tolerances are met.
 - The choice of CNC tooling and lubricant are critical to ensuring successful Vee grooves without overheating the panel.
 - Vertical Panel saws may be used for Vee grooving provide they are appropriately set up, calibrated, and operated. Consult Aluminium Façade Systems if you are uncertain over the appropriateness of this method.
 - Vertical Panel saws must be fitted with variable speed driver controllers and lubrication misting.
 - Blade selection for Vertical Panel saws is critical to the success of their use in Vee grooving.
- 1.2.5. Bending:
- Press bending of panels full thickness is a good way to create the folded edge.
 - Press bending can be used in combination with some preparatory CNC routing to improve the sharpness of corners and the neatness and tolerances of the panel folded dimensions.
 - The internal bending radius is roughly 1.5 times the ProClad SOLID aluminium panel thickness.
 - Use protective foils and always carry out a production trial on sample panels.
- 1.2.6. Waterproofing membranes for external above ground use must comply with AS 4654.1 *Waterproofing membranes for external above-ground use Materials*; AS 4654.2 *Waterproofing membranes for external above-ground use Design and installation* and AS 4200.1 *Pliable building membranes and underlays Materials*.

1.2.7. 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
AS/NZS 4410	Hexagon flange head tapping screws
AS/NZS 4411	Tapping screws thread
AS/NZS 4412	Heat-treated steel tapping screws - Mechanical properties

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

1.2.9. Handling and Storage:

- Care should be taken in handling ProClad SOLID to eliminate the risk of damage.
- ProClad SOLID 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.
- Care must be taken to ensure that no scratching occurs during stacking or moving sheets by sliding one sheet across another. A minimum of two people are required to handle effectively.
- Pallets of ProClad SOLID should be stored in a dry, cool, clean area where the temperature is relatively stable. Stack pallets horizontally and ensure that stacks are of equal size. Do not stack more than FOUR pallets high. Ensure that all pallets are adequately supported to prevent sagging.

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. Sarking:

- Installation of Sarking to be in accordance with AS 4200.2 Pliable building membranes and underlays Installation and AS 4654.2 Waterproofing membranes for external above-ground use Design and installation.
- Installation of Sarking to be in accordance with Manufacturer's product specific requirements.
- Sealing of Sarking 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.

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 $> \frac{1}{2}$ the sealant joint width.

- 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) must be adequately sealed at the point of penetration using wet applied sealant or tape. Where the façade is considered Low Risk, 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 Installation 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

- 2.1.1. The **ProClad SOLID** Cladding System is 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.
- 2.1.2. Your **ProClad** SOLID Cladding System 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 SOLID** Cladding System as they may scratch or damage the surface finish.
- 2.1.3. 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.
- 2.1.4. 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.

Appendix C: Proclad™ SOLID Product Data

EXTRUSIONS

Cladding Zeds

Cladding Panel Folded Edge Zeds	
Part	Size
1861853	High: 20/21/40 x 1.6
1861854	Low: 15/19.5/20 x 1.6

HARDWARE & COMPONENTS

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)				

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	

Membranes

SARKING: COMMERCIAL GRADE VAPOUR PERMEABLE WALL WRAP 1500mm WIDE	
PART	1331000
PRODUCT	CSR Bradford Enviroseal CW
USE	Class 4 vapour permeable, air and water barrier membrane.
QTY	PER ROLL (50m)

SARKING JOINT TAPE 60mm WIDE	
PART	1331001
PRODUCT	Enviroseal Wall Wrap Black Label Tape
USE	Weathertight joint tape for sealing and repairing sarking
QTY	PER ROLL (25m)

SARKING HIGH TACK JOINT TAPE 60mm WIDE	
PART	1331002
PRODUCT	Enviroseal Wall Wrap Black Label Tape
USE	Weathertight joint tape for sealing and repairing sarking
QTY	PER ROLL (25m)

SARKING HIGHLY ELASTIC FLEXIBLE JOINT TAPE 60mm WIDE	
PART	1331003
PRODUCT	Enviroseal Wall Wrap SLS Flexi Tape
USE	Weathertight joint tape ideal for sealing water, air and wind tight penetrations, as the tape can be pre-folded along the slit liner and then easily be adjusted to seal around penetrations.
QTY	PER ROLL (5m)

Silicone and Sealants

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)	



HIGH PERFORMANCE 100% NEUTRAL CURE SILICONE

Applications

- General & High performance glazing & cladding sealing for façades

- 10 to 15 minute Skin time (@20°C & 50% RH)

- 5 to 7 days Cure time (@20°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	300 ml Cartridge (20 cartridges per carton) Also available in 600 ml Sausage for Caulking Gun
	Grey	
	White	



Prosil 41LM

LOW MODULUS ISOCYANATE FREE POLYURETHANE SEALANT

Applications

- Construction Joint Sealant applications; Sealing and Bonding of Metal
- 35 minutes Skin time (@25°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



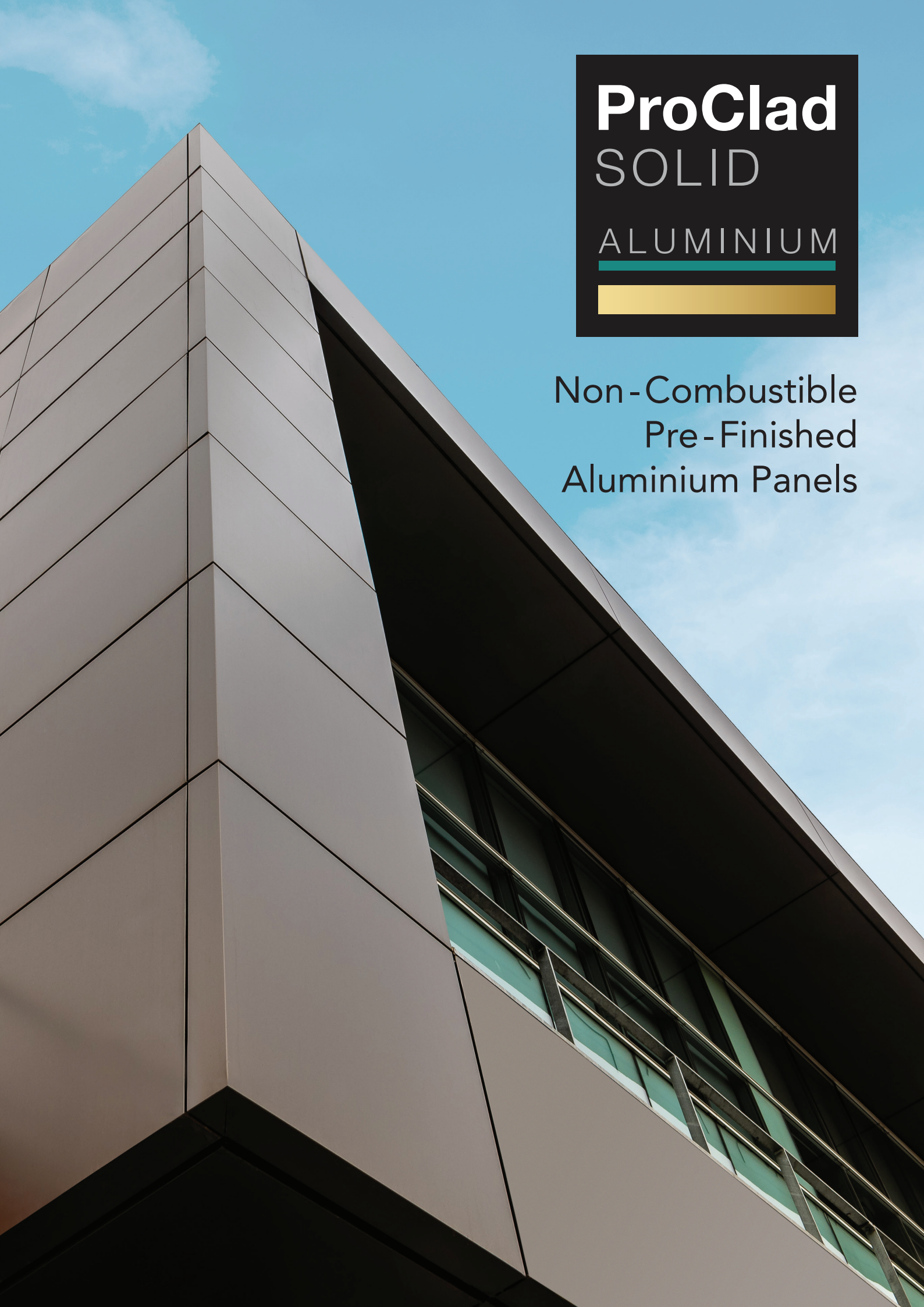
SupaSeal PU

Part #	Colours	Qty
1385020	Black	950 ml Sausage for Caulking Gun Also available in 300 ml Cartridge
	Dark Grey	
	Grey	
	Off White	
	Sandstone	
	Beige	
	White	

Fixings

TEK SCREWS	
PART	
PRODUCT	
USES	Fixing of top hats to metal framing structure Fixing of panel support top hats to cross battens Fixings of panel Zeds to supporting top hats or to each other Do not use in slotted thermal movement holes.
MATERIAL	Stainless Steel; or Class 5 corrosion resistance in accordance with AS/NZS 3566.2 <i>Self-drilling screws for the building and construction industries Part 2: Corrosion resistance requirements and requirements for non-conductive seals</i>
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. Select thread pitch to suit materials being fixed.

POP RIVETS	
PART	
PRODUCT	
USES	Fixing panel to panel edge zeds (do not use screws for fixing panel to panel edge zeds)
MATERIAL	AST 5-(5) Aluminium body, Stainless Steel mandrel Colour matched heads
SIZE	Use large head rivets. To be confirmed by Structural / Façade Engineer to suit the design loads and performance requirements. No smaller than 4mm.
SPACING	To be confirmed by Structural / Façade Engineer to suit the design loads and
TYPE	Pop rivet to be sized to be suitable for the clamping thickness of the materials being secured.



ProClad
SOLID

ALUMINIUM

Non-Combustible
Pre-Finished
Aluminium Panels

Non-Combustible Aluminium Panels

ProClad™ SOLID high quality aluminium panels are the ideal solution for any facade.

The non-combustible panels come in a vast array of colours to suit a range of applications from high-rise commercial buildings to residential development. ProClad™ SOLID is the perfect solution for any new build as well as recladding of existing projects.

Architects, designers, developers, builders and contractors can feel confident when specifying ProClad™ SOLID aluminium panels as they are 100% non-combustible, require low maintenance and have a high level of safety and durability.

Features & Benefits

- 100% Non-combustible to AS1530.1
- Custom sizes, colours and finishes
- Up to 25 years warranty
- High quality finish
- High quality marine grade aluminium
- Easy to fabricate
- Stocked in Australia
- Expert advice
- Competitively priced
- 100% Recyclable



Designed to Last

ProClad™ SOLID aluminium panels are non-combustible in accordance with AS1530.1 standards.

The high quality PVDF UV resistant paint finish makes ProClad™ SOLID panels the ideal solution for harsh Australian conditions.

Limitless Design Options

The wide range of finishes and sizes means that ProClad™ SOLID panels can be used to achieve even the most complex architectural designs.

Standard sizes and colours are stocked in Australia for added convenience.

ProClad™ SOLID also offers custom colours and sizes on request.

Maintenance Information

Regular cleaning with mild detergents is recommended. When cleaning the panels it is also recommended that the detergent is thoroughly rinsed off the facade to help maintain its original appearance.

Avoid using cleaning products with a high level of alkaline or acidity, as well as abrasive materials and paint dissolving solvents.

Facades that are located near a marine or industrial environment may need more frequent cleaning periods.



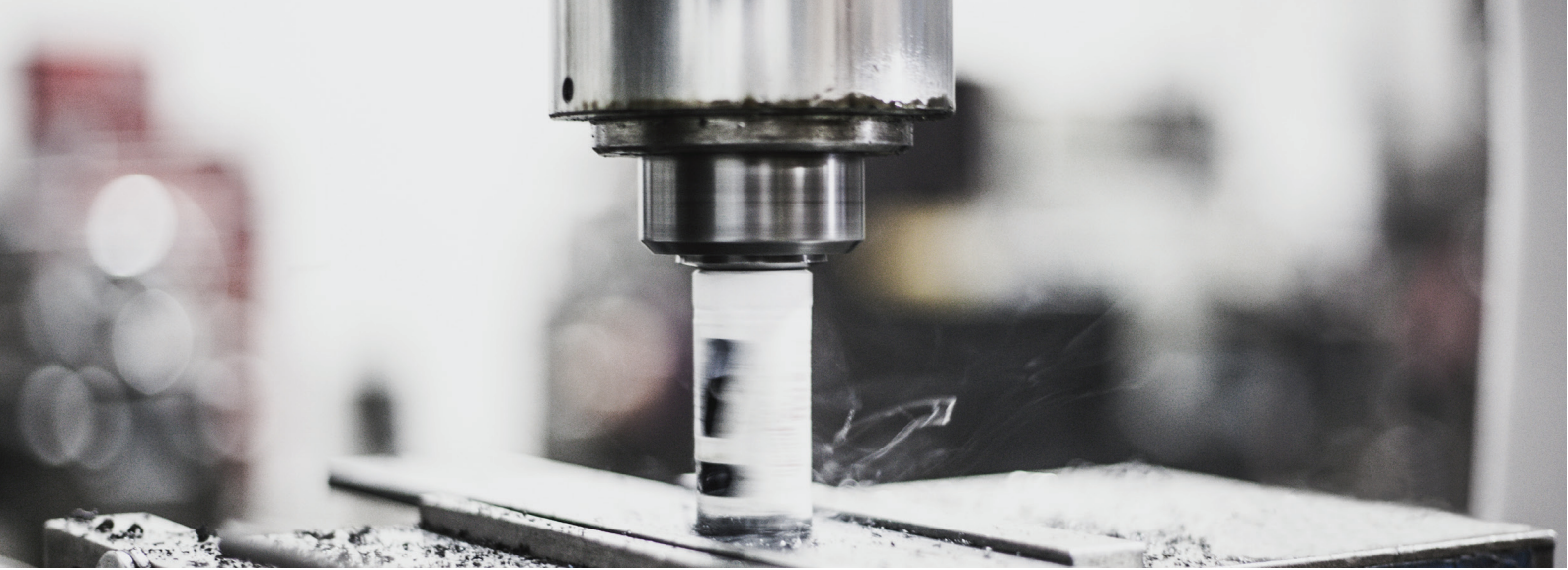
ProClad™ Technical Data Sheet

Properties	Values
Alloy	5052
Temper	H32
Standard Thickness	3mm
Painted Weight	8.31 kg/m²
Raw Density	2680 kg/m³
Indicative Minimum Radius	4.5mm
Tensile Strength	215–265 MPa
0.2% Proof Stress	>160 MPa
Elongation	7%
Linear Thermal Expansion	2.4mm/m at 100° temperature difference
Melting Range	655 °C
Modulus of Elasticity - Tension	69.3 GPa @20°C
Modulus of Elasticity - Torsion	25.9 GPa @20°C
Modulus of Elasticity - Compression	70.7 GPa @20°C
Thermal Conductivity	138 W/m.k @25°C
Electrical Resistivity	70.7 µΩ.m @20°C
Electrical Conductivity - Equal Volume	20 MS/m @20°C
Electrical Conductivity - Equal Weight	67 MS/m @20°C
Sound Absorption Factor	0.05 NCR
Sound Reflection	95%

Fire Performance

Test Standard	Result
AS1530.1	Non-Combustible
AS1530.3	PASS
Ignitability Index	0 ✓
Heat Evolved	0 ✓
Spread of Flame	0 ✓
Smoke Developed	1 ✓

ProClad™ SOLID aluminium panels are non-combustible when tested to AS1530.1.



Fabrication

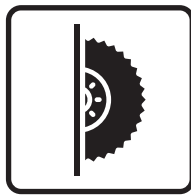
ProClad™ SOLID sheets can be fabricated into panels using various sawing, routing and drilling techniques. For best results it is recommended that:

- The right equipment is used according to the manufacturer's instruction manual
- Drill bits and blades selected are intended for use with aluminium



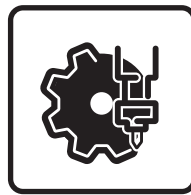
Circular Saw

For best results, a track guided circular saw is recommended. Hand folding is achievable without a requirement for bending equipment.



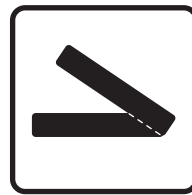
Vertical Panel Saw

Use for cutting and routing sheets. When creating a V groove for folding, the minimum thickness left in the bottom of the groove should be 0.7mm.



CNC Router

Used for straight and contour cutting along V Grooving for folding. When creating a V groove for folding, the minimum thickness left in the bottom should be 0.7mm.



Folding

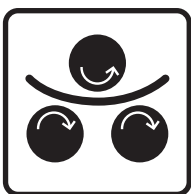
After the V groove has been formed, fold the return leg back in one movement.

A portable folding tool for small panels and a folding machine for larger panels is recommended.



Shearing

ProClad™ SOLID sheets can be guillotined to the required size.



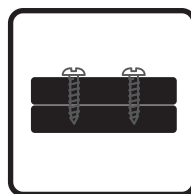
Roll Bending

To create curved surfaces, use a suitable bending machine. In order to minimise damaging the material use a protective film. Ensure rollers are clean and dent free.



Drilling

A high quality HSS centre point drill bit is suitable for drilling ProClad™ SOLID.



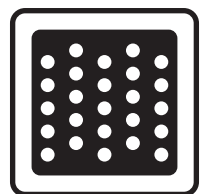
Fixing

Blind and solid rivets along with stainless steel screws can be used to secure ProClad™ SOLID sheets. Always consider the effects of thermal expansion and potential building movement.



Welding

TIG and MIG welding are common welding methods used on ProClad™ SOLID sheets. Consult with your local welding specialist for advice.



Perforating

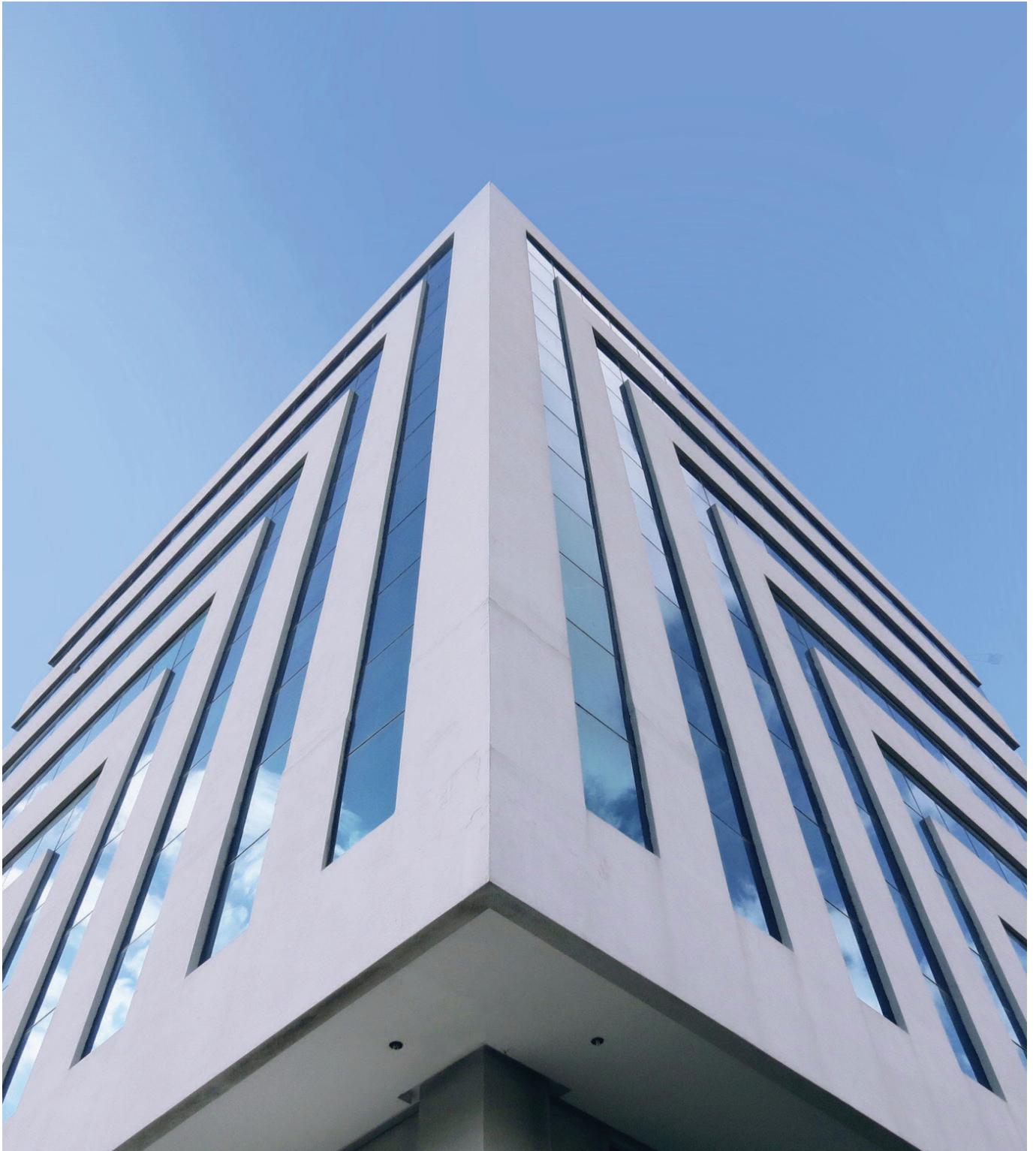
ProClad™ SOLID sheets can be perforated by punching, drilling or milling.

Product Availability

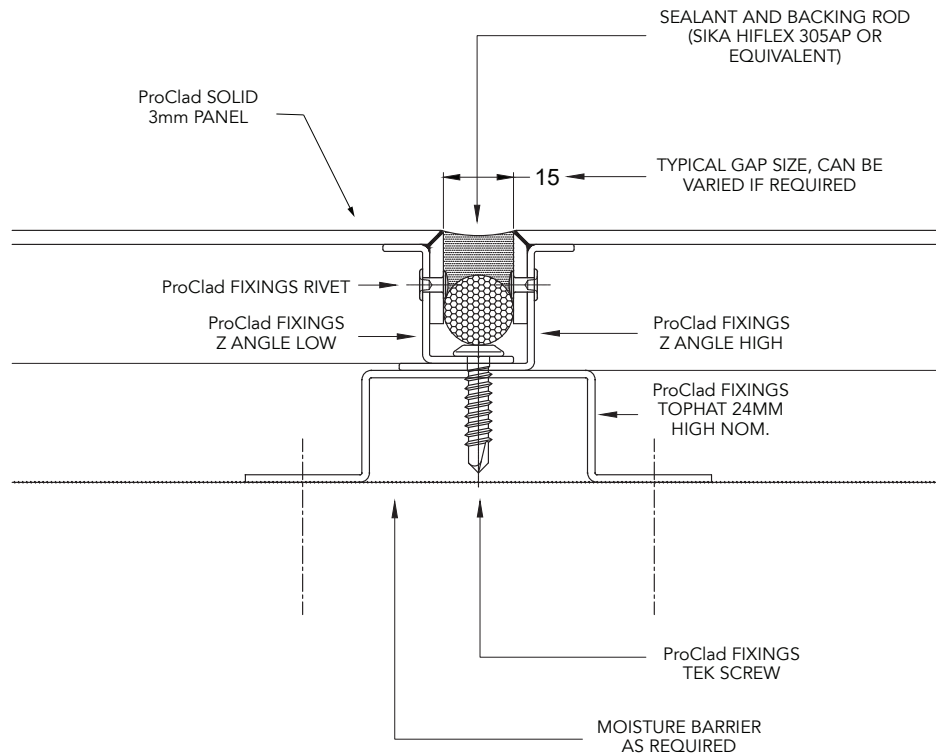
ProClad™ SOLID aluminium panels are available in following standard stock sizes:

- 2500 x 1250
- 2500 x 1500
- 3200 x 1250
- 3200 x 1500
- 4000 x 1250
- 4000 x 1500

*Custom sizes and finishes are also available upon request.



Fixing Details



For more information please refer to the ProClad™ SOLID Technical Information.

Application

ProClad™ SOLID is suitable for application on Type A and B constructions including hospitals and mixed-use developments. The 2019 BCA clause C1.9e (v) highlights the use of pre-finished metal sheeting wherever deemed non-combustible materials are required.

ProClad™ SOLID is 100% compliant having been deemed non-combustible to AS1530.1 and AS1530.3.

Warranty

ProClad™ SOLID is incredibly durable and includes a 20 year warranty, subject to standard terms and conditions.



Colours

ProClad™ SOLID use global leaders PPG coil coatings, which include some of the industry's best-known brands.

For nearly 50 years, DURANAR® coatings made with 70% fluoropolymer resin, have provided exceptional colour fastness, gloss retention and durability on buildings, including some of the world's most recognised landmarks.

As a global leader in coil coating technologies, PPG offers products in multiple resin formulations to meet the colour, cost and performance demands of architects, building owners and building product manufacturers. All PPG coil coatings are tested on chrome-pre-treated steel and aluminium using ASTM standards, so you can be confident that the coating you choose will perform to your expectations every time.

Solid



Metallic



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



**ALUMINIUM
FACADE
SYSTEMS**
POWERED BY ALSPEC

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aluminiumfacadesystems.com.au



TECHNICAL DATA SHEET

Properties	Units	Values
Alloy		5052
Temper		H32
Standard Thickness	mm	3
Painted Weight	kg/m ²	8.31
Paint Thickness	micron (nom)	30
Raw Density	kg/m ³	2680
Indicative Minimum Radius	mm	4.5
Tensile Strength	MPa	215-265
0.2% Proof Stress	MPa	>160
Elongation	%	7
Linear Thermal Expansion		2.4mm/m at 100°C temperature difference
Melting Range	°C	607-650
Modulus of Elasticity - Tension	GPa	69.3 @ 20°C
Modulus of Elasticity - Torsion	GPa	25.9 @ 20°C
Modulus of Elasticity - Compression	GPa	70.7 @ 20°C
Thermal Conductivity	W/m.K	138 @ 25°C
Electrical Resistivity	micro-ohm.m	70.7 @ 20°C
Electrical Conductivity - Equal Volume	MS/m	20 @ 20°C
Electrical Conductivity - Equal Weight	MS/m	67 @ 20°C
Sound Absorption Factor	NCR	0.05
Sound Reflection	%	95

Note: The ProClad PVDF coating is produced in accordance with the American Architectural Manufacturers Association Standard AAMA 2605-11 that includes Specification, Performance Requirements and Test Procedures.

FIRE PERFORMANCE

ProClad™ solid aluminium panels are non-combustible when tested to AS1530.1.

Test Standard	Result		
AS1530.1	Non-Combustible		
AS1530.3	Pass	Ignitability index	0
	Pass	Heat evolved	0
	Pass	Spread of flame	0
	Pass	Smoke developed	1

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, masonry, 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

1300 ALSPEC (1300 257 732)

alspec.com.au

alspec[®]
ALUMINIUM SYSTEMS
SPECIALISTS

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.

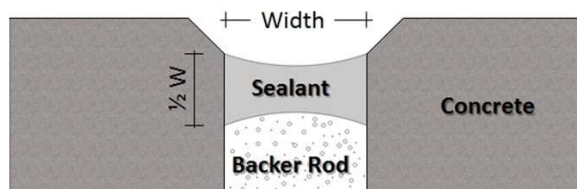
APPLICATION INSTRUCTIONS

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.

Prosil 41LM - Technical Data Sheet

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°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 out 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.

SupaSeal PU

LOW MODULUS ISOCYANATE FREE POLYURETHANE

Low Modulus Isocyanate Free Polyurethane Sealant

Dated: 26/07/2019

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/mm ²	
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.

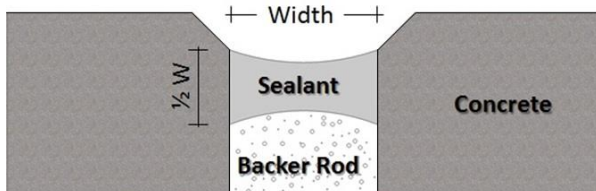
APPLICATION INSTRUCTIONS

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

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.

Enviroseal® CW

Refer to product table below for applicable product codes covered by this document

Issue **E**

Product Type & Application

Enviroseal® CW is a Class 4 vapour permeable, air and water barrier membrane. It is rated as Light Wall Duty and is constructed from a non-reflective, non-conductive spun bond material.

Compliance with the NCC

For use in Australia, when correctly specified and installed, this pliable building membrane:

NCC 2022

- **Condensation Control** - Meets the requirements of NCC 2022 Volume 1 F8D3, ABCB Housing Provisions Standard 2022 10.8.1 for pliable building membranes through compliance with AS 4200.1.
- **Non- Combustible Sarking-Type Material Exemption** - This product may be used in accordance with the non-combustible sarking-type material exemption stated in NCC 2022 Volume 1 C2D10(6)(f) and NCC 2022 Volume 2 H3D2(1)(f) – it does not exceed 1mm in thickness and has a Flammability Index ≤5.
- **Non- Combustible Sarking-Type Material Exemption** - The integrated adhesive component of the product has not been tested to AS1530.2.
- **BAL and Fire Hazard Properties** - Where sarking is required by AS 3959 for construction of buildings in bushfire-prone regions BAL 12.5-FZ, this product meets the requirements of section 3.10. It also meets the fire hazard property requirements for sarking-type materials in all locations except exposed installations in fire control rooms or fire-isolated exits, in NCC 2022 Volume 1 S7C7. The product meets these requirements by having a flammability index ≤5.

NCC 2019

- **Condensation Control** - Meets the requirements of the NCC 2019 Volume 1 Amend. 1 F6.2(a), NCC 2019 Volume 2 Amend. 1 3.8.7.2(a) for pliable building membranes through compliance with AS 4200.1.
- **Non- Combustible Sarking-Type Material Exemption** - This product may be used in accordance with the non-combustible sarking-type material exemption stated in NCC 2019 Volume 1 Amend. 1 C1.9(e)(vi) and Volume 2 Amend. 1 3.7.1.1(f) – it does not exceed 1mm in thickness and has a Flammability Index ≤5.
- **Non- Combustible Sarking-Type Material Exemption** - The integrated adhesive component of the product has not been tested to AS1530.2.

Compliance with the NCC cont.

NCC 2019 cont.

- **BAL and Fire Hazard Properties** - Where sarking is required by AS 3959 for construction of buildings in bushfire-prone regions BAL 12.5-FZ, this product meets the requirements of section 3.10. It also meets the fire hazard property requirements for sarking-type materials in all locations except exposed installations in fire control rooms or fire-isolated exits, in NCC 2019 Volume 1 Amend. 1 Specification C1.10. The product meets these requirements by having a flammability index ≤5.

Limitations of Use

- **IMPORTANT:** Do Not Modify This Product: Compliance with the evidence of suitability data referenced in this document is only achieved by the product or configuration listed in this PTS.
- This product is not intended for use as a roof sarking.
- Not suitable for use in tropical NCC Climate Zone 1.
- This product does not provide a reflective R-value.
- This product does not have a Group Number in accordance with AS ISO 9705 and AS 5637.1 (NCC 2019 Volume 1 Amend. 1 Specification C1.10 Clause 4, NCC 2022 Volume 1 S7C4) and is not suitable as an exposed internal wall and ceiling lining.
- This product is not designed to withstand prolonged exposure to the elements - accordingly, the exterior cladding should be installed within 6 weeks. Products exposed during this period should be inspected for damage and repaired or replaced prior to installation of the exterior cladding to comply with the Product Warranty. Products exposed for longer than the recommended periods will not be covered by the Product Warranty.
- Additional mechanical fasteners should be considered for products exposed to harsh weather conditions prior to cladding.
- Products exposed to harsh weather conditions prior to cladding should be inspected for damage and replaced or repaired to ensure compliance with the product warranty.
- Prior to cladding, it is good practice to protect this product from UV exposure and harsh weather conditions which may cause damage.
- This product has not been tested for pressure equalised façade applications.
- This product should not come into contact with wet concrete, or alkaline materials.
- This product is not suitable for submersion in water or continuous contact with soil.

Enviroseal® CW

Specific Design or Installation Instructions

- Isolate power before installation.
- **Application Suitability:** Suitable for installation on the exterior side of the building frame of all wall construction types in NCC Climate Zones 2 to 8. Always check cladding manufacturer's guidance to confirm compatibility and refer to the Condensation Risk Consideration section on this document for further guidance.
- This product is suitable for brick veneer or lightweight cladding construction where the permeability Class is compatible with the wall cladding manufacturer's recommendation.
- Where this product is used with OSB, plywood or other supporting materials it is recommended that suitable ventilation is provided above or below the assembly to manage condensation risk.
- Recommended for use on framed walls that provide membrane support at no greater than 600mm centres. Please refer to Enviroseal HTS or HTS-IT Product Technical Statement for applications having support exceeding 600mm centres.
- When installed for vapour and/or air control, this product should be sealed at overlaps (minimum 50mm), end laps, discontinuities and penetrations by suitable means such as heat and moisture resistant adhesive tape.
- When installed for water control, this product must have overlaps of minimum 150mm, or 50mm and be taped on the exterior face.
- Where direct fix cladding and/or the profile of the cladding reduces drainage and drying, the incorporation of a cavity for drainage and drying is recommended.
- Always follow the installation instructions in AS 4200.2, and those available on the Bradford website. For inclusion in BAL (Bushfire Attack Level) classified buildings, additionally adhere to the installation requirements of AS 3959.
- To maintain the water barrier properties of the material it should not be punctured, creased, crushed, sharply folded or dragged over the building structure during installation.
- **Condensation Risk Consideration:** As there are many factors which can influence condensation risk it is highly recommended that designers undertake a hygrothermal analysis of the building design to further reduce condensation risk.

For general installation guidance refer to the product installation guide at Bradfordinsulation.com.au

Evidence of Suitability

Testing to AS/NZS 4200.1 across the following reports-

- AWTa Report 19-005150 – *Resistance to Dry Delamination.*
- AWTa Report 19-005152 – *Resistance to Wet Delamination.*
- AWTa Report 19-005154 – *Moisture Shrinkage.*
- SCION Report 33876587 – *Folding Endurance.*
- AWTa NATA Report 19-005143 – *Burst Strength.*
- AWTa NATA Report 19-005145 – *Edge Tearing.*
- AWTa Report 20-005792 – *Electrical Conductivity.*
- AWTa NATA Report 19-00953 – *Vapour Control Classification.*
- AWTa Report 19-005147 – *Water Control Classification.*
- AWTa NATA Report 22-001560 – *Flammability Classification.*
- SGS Report SGS-IPS 00736-18-C – *Air Control Classification.*
- CSR Lab Report R-20078 – *Thickness.*

Conditions of Storage & Maintenance

- Store in the original packaging in a cool, dry area, away from UV light (direct sunlight).
- Do not pressure clean or use mineral-based cleaners on this product.

Refer to the product SUIs/MSDS at Bradfordinsulation.com.au for more information.

Enviroseal® CW

Applicable Product Codes

PRODUCT NAME	WIDTH (mm)	LENGTH (m)	m ² PER ROLL	WEIGHT (kg)	PRODUCT CODE
Enviroseal CW	1500	50	75	10.7	114175
Enviroseal CW-IT	1500	50	75	10.8	134863

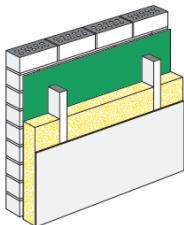
Additional Product Data - AS 4200.1

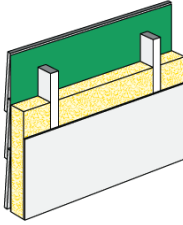
Duty Classification (AS/NZS 4200.1)	Light Wall	
Burst Strength (AS/NZS 4200.1 and AS 2001.2.19)	≥ 200 N	
Edge Tear Resistance (AS/NZS 4200.1 and TAPPI T470)	≥ 45 N	Machine Direction
	≥ 45 N	Lateral Direction
Water Control Classification (AS/NZS 4201.4)	Water Barrier	
Vapour Control Classification (ASTM E96)	Class 4 Vapour Permeable	
Air Control Classification (ISO 5636-5)	Air Barrier	
Emittance Classification (AS/NZS 4200.1 and AS/NZS 4201.5)	Non-Reflective, 0.9	Inward Facing
	Non-Reflective, 0.9	Outward Facing
Flammability Index (AS 1530.2)	≤ 5 (Low)	
Electrical Conductivity	Non-Conductive	
Resistance to Dry Delamination (AS/NZS 4201.1)	Pass	
Resistance to Wet Delamination (AS/NZS 4201.2)	Pass	
Moisture Shrinkage (AS/NZS 4201.3)	≤ 0.5 %	
Thickness	< 1.0 mm	

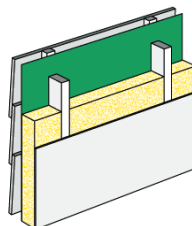
Enviroseal® CW

Application Tables

Valid for NCC 2016 Volumes 1 & 2, and NCC 2019 Volume 2

	Brick Veneer Wall	
	Insulation	
	R2.5	
	Summer	Winter
	R_t 3.0	R_t 3.2

	Lightweight Clad (Direct Fix)	
	Insulation	
	R2.5	
	Summer	Winter
	R_t 2.6	R_t 2.9

	Lightweight Clad (Battened)	
	Insulation	
	R2.5	
	Summer	Winter
	R_t 2.8	R_t 3.1

R-Value Assumptions

Product performance is calculated in accordance with AS/NZS 4859.2 and the stated thermal performance is the depicted application's Total R-Value. The contribution of this product to the Total R-Value depends upon installation and environmental conditions, and will be reduced in those cavities which are ventilated. No thermal bridging is considered in these calculations.

Calculations are based upon:

- A temperature difference of 6°C for heat flow out and 12°C for heat flow in.
- Reflective surface emittance of ≤ 0.05, non-reflective surface emittance of ≥ 0.90.

FABRICATION MANUAL

Folding should only be carried out in an environment where panels are at a minimum of 16° Celsius. In cooler environments heaters may be required.



CUTTING

ProClad SOLID 3mm Aluminium panels can be easily cut to size or shape using standard woodworking panel or circular hand saws. A carbide tip blade manufactured for use on light metal is suitable for cutting ProClad SOLID Aluminium panels.

Example of suitable Carbide Tipped saw blade:

Blade Diameter	255 - 305mm
Tooth Pitch	10 - 12mm
Rake Angle	-5°
Clearance Angle	15°
Max. Cutting Speed	20m/min
Tooth Geometry	Trapeze / Flat
Number of Teeth	80 - 100
Speed of Circular Saw Blade	2000 - 4000 RPM

NOTE:

- Carry out cutting with external side facing up to prevent panel scratches and removal of the protective film
- Remove any debris from the panel face carefully after cutting to avoid dents during storage and assembly
- Sharpen and or replace saw blade at regular intervals as it becomes blunt. Blunt blades will result in large burrs or distortion at the cut edge

ProClad SOLID can also be cut to shape or size with water jet, CNC routers and Jigsaws. The use of coolant is recommended.

Always carry out a test trial to ensure that the equipment you use is suitable for the intended fabrication.



SHEARING

Can be carried out with a guillotine. Shearing causes a slight roll down along the cut edge. Ensure that the blanking tools are padded.



ROUTING, GROOVING & FOLDING

V Groove Routing into the rear of the aluminium face following potential fold lines can be carried out by CNC or hand routers. The panel can then be hand folded along the groove creating a precise and even fold. The outer radius of the folded edge can be determined by the shape and width of the routed groove.

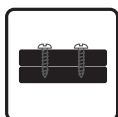
A simple hand folder can easily be constructed to make the folding process easier.

Ensure that there is 0.7mm aluminium left at the base of the routed groove. Greater than this can cause stress and a larger radius fold than desired. It will also make folding the panel more difficult and prevent the required folded angle being achieved.



ROLL FORMING

ProClad SOLID aluminium panels can be curved with metal roll forming machines. Use clean, polished rollers free of imperfections only. Minimum radius is 200mm. Carry out a trial to ensure your equipment is appropriate.



FIXING

ProClad SOLID aluminium panels can be screwed with conventional Stainless Steel or galvanised screws suitable for use with aluminium. Always allow for thermal movement in design and spacing i.e. expansion and contraction. Ensure that the gauge of the screw is appropriate for the intended use. Fixing holes may need to be oversized or slotted to accommodate thermal movement. Colour matched screws can be used for direct flat sheet face fixing if required.

Riveting is possible with the usual tools and equipment. Solid or Blind rivets suitable for use on aluminium in an exterior application are required. Always allow for thermal movement i.e. expansion and contraction.



BENDING

This is possible with a folding table or brake press. The internal bending radius is roughly five (5) times the ProClad SOLID aluminium panel thickness. Use protective foils and always carry out a production trial on sample panels.

1.5 times

GLUING

Use double sided VHB tapes or metal adhesives that allow for thermal movement with a flexible bond. For example, 3M 4991F 2.3mm thick will allow 300% movement which is up to 6.9mm movement.

PROTECTIVE FILM

The white on black co-extruded protective film is to help protect the panel during transportation, fabrication and installation. It should be removed from the panel after installation as soon as is possible and within a maximum of 45 days.

Do not apply any PVC tapes, polyurethane or silicone sealants onto the protective film as plasticisers may penetrate the film and damage the painted surface. Likewise do not use permanent markers/pens or spray paint/markers on the protective film.

All sheets should be installed in the one direction following arrows printed onto the protective film to avoid possible sheet to sheet finish/colour variation.

BATCH TO BATCH ORDERS

Minor colour variation may occur from batch to batch orders. It is recommended to order a project's total requirement for a specific project so that all panels will come from the same batch. Always consider adding a few sheets for project spares.

ACCESSORIES

A variety of accessories are also available including aluminium high and low, extruded 'Z' sections, isolation tape, top hats, panel stiffeners and silicone sealants.

HANDLING & STORAGE

Care should be taken in handling ProClad SOLID to eliminate the risk of damage.

ProClad SOLID 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.

Care must be taken to ensure that no scratching occurs during stacking or moving sheets by sliding one sheet across another. A minimum of two people are required to handle effectively.

Pallets of ProClad SOLID should be stored in a dry, cool, clean area where the temperature is relatively stable. Stack pallets horizontally and ensure that stacks are of equal size. Do not stack more than FOUR pallets high. Ensure that all pallets are adequately supported to prevent sagging.

SUSTAINABILITY

ProClad SOLID 3mm aluminium panels and offcuts are 100% recyclable.



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.

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 Prosil 41LM

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

Admil Sealants & Adhesives

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 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.

A handwritten signature in black ink, appearing to read 'Adrian Brocken', with a horizontal line underneath.

Adrian Brocken
Business Manager



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:

Admil Sealants & Adhesives

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



ProClad™ Mill Finish Product LIMITED WARRANTY & Maintenance Policy

PROJECT	
ADDRESS	
CONTRACTOR	
CUSTOMER/BUILDER	
CONTACT & Phone number	
PRODUCT	ProClad 3mm Solid Aluminium
COLOURS/Finish	
INSTALLATION DATE	
DISTANCE TO OCEAN	

PROJECT SUMMARY

Supply of ProClad Mill Finish 3mm Solid Aluminium panels

INTRODUCTION TO THE LIMITED WARRANTY

Aluminium Façade Systems Pty Ltd supplies ProClad SOLID Aluminium subject to this ProClad LIMITED WARRANTY and maintenance policy.

Aluminium Façade Systems Pty Ltd warrants that ProClad will maintain it's integrity for a minimum of **twenty (20) years** from the date of installation and strictly in accordance with the conditions contained within this document.

MATERIALS

Aluminium Façade Systems Pty Ltd warrants that the material has been manufactured in accordance with - **AS/NZS 1734:1997** - Aluminium and aluminium alloys Flat sheet, coiled sheet and plate.

COATINGS

Where Mill Finish Materials supplied only By Aluminium Façade System.

Other finishes approved and applied to ProClad such as Powdercoat, Anodised or Wet Spray applied finishes will be subject to the Warranty Supplied by applicator of coating.

CLEANING AND MAINTENANCE

ProClad Aluminium panels when used as an exterior cladding will accumulate atmospheric fall-out which may include residual acids in Industrial environments, automobile exhaust contamination, organic matter from neighbouring vegetation etc. Most of these contaminants will be washed off when exposed to rainfall.

As per PPG recommendations there should be a systematic fresh water rinse maintenance program in effect in areas of high salt concentration (such as adjacent to the seashore and/or in Industrial atmospheres) so as to prevent the accumulation of concentrated salt deposits.

LIMITATIONS

This ProClad SOLID Aluminium Warranty and Maintenance Policy is **not applicable** where:-

- A) ProClad is damaged caused by moisture or other contamination detrimental to ProClad because of improper packaging, storage or handling, prior to installation; improper handling, shipping, processing (such as **fabrication below 16° Celsius**) and/or installation; scratching or abrasion of the ProClad during or after installation; standing or ponding water; improper cleaning and /or pre-treatment of the ProClad or improper application, corrosion, acts of god, hail damage, falling objects, explosions, fire, smoke, flood, impact, abuse, malicious damage, graffiti, or other similar or dissimilar occurrences beyond Aluminium Façade Systems control.
- B) Panels have not been fabricated or installed in accordance with the Aluminium Façade Systems ProClad fabrication, installation and manufacturers guidelines or have been used in an application not recommended by Aluminium Façade Systems.
- C) Any panels that have had permanent pens or markers used on the face Protective film.
- D) ProClad is modified or coated in any way not authorised by the company
- E) Panels have been exposed to temperatures exceeding 100°Celsius, radiation, harmful fumes, foreign atmospheric substances, chemical pollution including but not limited to organic solvents, concentrated detergents or wetting agents.
- F) The temporary Face Protective Film has not been removed within 8 weeks of installation.

INSPECTIONS AND DEFECTS

The ProClad SOLID Aluminium panels supplied by Aluminium Façade Systems Pty Ltd must be inspected by the customer immediately following delivery. Defects noted by this inspection may only be claimed within 30 days after delivery. Concealed defects must be claimed immediately upon discovery. The rights to claim concealed defects will expire at the end of the warranty period stipulated.

LIABILITY

In case any panel should be found not to be in conformity with this warranty agreement, Aluminium Façade Systems Pty Ltd, upon accepting the existence of such non-conformity, reserves the right and option to either repair or resupply (Including the resupply if necessary of suitable coating materials) defective ProClad Aluminium Panels at Aluminium Façade Systems Pty Ltd cost.

REPLACEMENTS

Should Aluminium Façade Systems be unable to re-supply ProClad SOLID Aluminium panels, it may substitute with supply of a similar replacement of the same quality.

As specified above, the colour of ProClad SOLID Aluminium panels may change over time. Whilst Aluminium Façade Systems will endeavour to provide colour matched replacement/ProClad Aluminium panels. Aluminium Façade Systems is not liable for any discrepancies between the original ProClad SOLID Aluminium panels and any replacement ProClad panels. (Not applicable if Proclad SOLID Panels supplied as Mill Finish for others to coat).

The foregoing is Aluminium Façade Systems Pty Ltd sole warranty with respect to the ProClad SOLID Aluminium panels.

To the extent permitted by law, Aluminium Façade Systems Pty Ltd shall not be liable to the building or customer either directly or by way of contribution or indemnity for any direct, indirect or consequential loss or profits, damages based on loss of use of panels or damages for cover, or fitness for customers expected purpose, regardless of whether the claim for such damages be based on warranty, express or implied, contract, tort or otherwise

RETURNS

The Company shall be under no obligations to accept the return of any goods that may be excess to the Customer's requirements nor in any other circumstances. Should the Company agree to accept return of NON-DAMAGED goods the Company is entitled to charge the Customer a 20% of panel Invoice price as a handling fee.

ACCOUNTS

Any invoices in relation to the above project (named above) must be paid in full and up to date for this Aluminium Façade Systems Pty Ltd Warranty and Maintenance policy to apply.

STOCK and M.O.Q ORDERS

Should a specific colour be ordered for this project (named above) all material must be purchased by the customer and will be supplied. This will be outlined in our Proposal and in accordance with our Standard Terms and Conditions of Supply

FURTHER WARRANTIES

Aluminium Façade Systems Pty Ltd makes no other Warranties or conditions whether express or implied, including warranties for merchantability or suitability for a particular purpose. The company shall have no liability in respect of any representation, warranty or other statement made by any person or entity on it's behalf

GOVERNING LAW

Any contract between Aluminium Façade Systems Pty Ltd and the customer shall be governed by the law of New South Wales, Australia.

Signature on behalf of;-

Aluminium Façade Systems

The Customer

Print -----

Position -----

.....

Date

.....



ProClad™ Product LIMITED WARRANTY & Maintenance Policy

PROJECT	
ADDRESS	
CONTRACTOR	
CUSTOMER/BUILDER	
CONTACT & Phone number	
PRODUCT	ProClad 3mm Solid Aluminium
COLOURS/Finish	
INSTALLATION DATE	
DISTANCE TO OCEAN	

PROJECT SUMMARY

Supply of ProClad 3mm Pre-Finished Solid Aluminium panels

INTRODUCTION TO THE LIMITED WARRANTY

Aluminium Façade Systems Pty Ltd supplies ProClad SOLID Aluminium subject to this ProClad LIMITED WARRANTY and maintenance policy.

Aluminium Façade Systems Pty Ltd warrants that ProClad will maintain it's integrity for a minimum of **twenty (20) years** from the date of installation and strictly in accordance with the conditions contained within this document.

The governing standard covering this warranty is **AAMA 2605;2020**. *(the highest standard available for organic coatings on architectural aluminium panels, reserved for products that offer superior performance.)*

COATINGS

Subject to fair wear and tear, Aluminium Façade Systems Pty Ltd warrants that the continuously coil coated PVDF **2 and 3 coat** paint system factory machine applied will not :

- A) Peel, check or crack (except for slight crazing or cracking as may occur on normal roll-forming or brake bending and which is accepted as standard, or when cracking or crazing is the result of aluminium metal fracture); or
- B) Chalk in excess of a numerical rating eight (8), as measured using the procedures of ASTM D4 214-89 (Method D-659); or,

- C) Fade or change colour in excess of five (5) ΔE units (Hunter Color Difference), as measured using the procedure of ASTM D-2244, comparing an unexposed retained sample panel to the exposed panel after removal of dirt and chalk.

It is acknowledged that fading or colour changes may NOT be uniform if the surfaces are not equally exposed to the sun and elements.

Prior to fabrication reference should be made to the ProClad SOLID Aluminium fabrication and installation guidelines document. ProClad Continuously coil coated painted panels may have colour directionality. All panels should be fixed in the one direction following the arrows printed on the peel off face protective film. If not carried out visual panel colour variation may occur from one panel to another.

Other finishes approved and applied to ProClad such as Powdercoat, Anodised or Wet Spray applied finishes will be evaluated on a project by project basis. A revised warranty is applicable. Contact Aluminium Façade Systems for further information. Email info@aluminiumfacadesystems.com.au Phone 1300 252 523

CLEANING AND MAINTENANCE

ProClad Aluminium panels when used as an exterior cladding will accumulate atmospheric fall-out which may include residual acids in Industrial environments, automobile exhaust contamination, organic matter from neighbouring vegetation etc. Most of these contaminants will be washed off when exposed to rainfall.

As per PPG recommendations there should be a systematic fresh water rinse maintenance program in effect in areas of high salt concentration (such as adjacent to the seashore and/or in Industrial atmospheres) so as to prevent the accumulation of concentrated salt deposits.

Use the following table to identify the recommended minimum cleaning schedule for your project. The table references AS4312 and ISO12944 Atmospheric corrosivity zones in Australia to define the environmental conditions.

Environment	Conditions	Corrosivity Zone	Example Environments	Recommended Minimum Cleaning
Exterior Environment:	Mild	C2 Low	Arid, urban, inland, city,	Every 12 months
		C3 Medium	Light industrial & coastal	Every 6 months
	Severe	C4 High	Sea shore (calm)	Every 6 months
		C5 Very high Industrial	Heavy industrial	Every 3 months
		C5 Very High Marine	Sea shore (surf)	Every 3 months
	Tropical	Tropical (T)	High, humid and monsoonal	Every 3 months
Interior Environments	General Interior	C1 Very Low	Dry	Every 12 months
		C2 Low	Minor condensation	Every 12 months
	Moderate Interior	C3 Medium	High Moisture	Every 6 months
		C4 High	Significant contamination	Every 3 months

For 25 year Warranties and Coastal Environments it is requirement of our Warranty that Cladding Panels be cleaned a minimum of every 3 months (Ie based on Tropical and or C5 Very High Marine/ Industrial).

Proof of cleaning regime is required to validate any warranty claims.

LIMITATIONS

This ProClad SOLID Aluminium Warranty and Maintenance Policy **is not applicable** where;-

- A) ProClad is damaged caused by moisture or other contamination detrimental to ProClad because of improper packaging, storage or handling, prior to installation; improper handling, shipping, processing (such as **fabrication below 16° Celsius**) and/or installation; scratching or abrasion of the ProClad during or after installation; standing or ponding water; improper cleaning and /or pre-treatment of the ProClad or improper application, corrosion, acts of god, hail damage, falling objects, explosions, fire, smoke, flood, impact, abuse, malicious damage, graffiti, or other similar or dissimilar occurrences beyond Aluminium Façade Systems control.
- B) Panels have not been fabricated or installed in accordance with the Aluminium Façade Systems ProClad fabrication, installation and manufacturers guidelines or have been used in an application not recommended by Aluminium Façade Systems
- C) Any panels that have had permanent pens or markers used on the face Protective film
- D) ProClad is modified or coated in any way not authorised by the company.
- E) Panels have been exposed to temperatures exceeding 100°Celsius, radiation, harmful fumes, foreign atmospheric substances, chemical pollution including but not limited to organic solvents, concentrated detergents or wetting agents.
- F) The temporary Face Protective Film has not been removed within 8 weeks of installation

INSPECTIONS AND DEFECTS

The ProClad SOLID Aluminium panels supplied by Aluminium Façade Systems Pty Ltd must be inspected by the customer immediately following delivery. Defects noted by this inspection may only be claimed within 30 days after delivery. Concealed defects must be claimed immediately upon discovery. The rights to claim concealed defects will expire at the end of the warranty period stipulated.

LIABILITY

In case any panel should be found not to be in conformity with this warranty agreement, Aluminium Façade Systems Pty Ltd, upon accepting the existence of such non-conformity, reserves the right and option to either repair or resupply (Including the resupply if necessary of suitable coating materials) defective ProClad Aluminium Panels at Aluminium Façade Systems Pty Ltd cost.

REPLACEMENTS

Should Aluminium Façade Systems be unable to re-supply ProClad SOLID Aluminium panels, it may substitute with supply of a similar replacement of the same quality.

As specified above, the colour of ProClad SOLID Aluminium panels may change over time. Whilst Aluminium Façade Systems will endeavour to provide colour matched replacement/ProClad Aluminium panels. Aluminium Façade Systems is not liable for any discrepancies between the original ProClad SOLID Aluminium panels and any replacement ProClad panels.

The foregoing is Aluminium Façade Systems Pty Ltd sole warranty with respect to the ProClad SOLID Aluminium panels.

To the extent permitted by law, Aluminium Façade Systems Pty Ltd shall not be liable to the building or customer either directly or by way of contribution or indemnity for any direct, indirect or consequential loss or profits, damages based on loss of use of panels or damages for cover, or fitness for customers expected purpose, regardless whether the claim for such damages be based on warranty, express or implied, contract, tort or otherwise

RETURNS

The Company shall be under no obligations to accept the return of any goods that may be excess to the Customer's requirements nor in any other circumstances. Should the Company agree to accept return of NON-DAMAGED goods the Company is entitled to charge the Customer a 20% of panel Invoice price as a handling fee.

ACCOUNTS

Any invoices in relation to the above project (named above) must be paid in full and up to date for this Aluminium Façade Systems Pty Ltd Warranty and Maintenance policy to apply.

STOCK and M.O.Q ORDERS

Should a specific colour be ordered for this project (named above) all material must be purchased by the customer and will be supplied. This will be outlined in our Proposal and in accordance with our Standard Terms and Conditions of Supply

FURTHER WARRANTIES

Aluminium Façade Systems Pty Ltd makes no other Warranties or conditions whether express or implied, including warranties for merchantability or suitability for a particular purpose. The company shall have no liability in respect of any representation, warranty or other statement made by any person or entity on it's behalf

GOVERNING LAW

Any contract between Aluminium Façade Systems Pty Ltd and the customer shall be governed by the law of New South Wales, Australia.

Signature on behalf of;-

Aluminium Façade Systems

The Customer

Print -----

Position -----

.....

Date

.....

Ian Bennie & Associates

Test Report No. 2022-006-S1

**AFS Proclad solid 3mm aluminium panels;
CSR Bradford Enviroseal vapour permeable
wall wrap**

Specimen tests by the methods of AS/NZS4284

For

Aluminium Facade Solutions

March 2022



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



TEST REPORT NUMBER 2022-006-S1

SUMMARY

Test Client: **Aluminium facade systems**
3 Alspeg Place, Eastern Creek, NSW, 2766

Specimen identification:

An AFS ProClad Solid 3mm aluminium panel with CSR Bradford Enviroseal vapour permeable wall wrap 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 and in Appendix B. Initially the sample was configured as a cavity wall with drainage at the bottom, after preliminary testing the client elected to seal the bottom for the sample making it a fully face sealed direct system. Sample drawings in the final face sealed condition provided by the client received: 10th March 2022

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: 27th January 2022

Sample received: 10th January 2022

Conclusions:

The AFS ProClad Solid 3mm Aluminium panels with CSR Bradford Enviroseal vapour permeable wall wrap cavity drained system was installed by clients, during preliminary testing leakage occurred through the sample. The client made the decision to test as a fully face sealed system and revised performance requirements. Sample passed the performance requirements as specified by the client when following the test method requirements of AS/NZS 4284:2008. 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.

This report shall not be reproduced except in full.

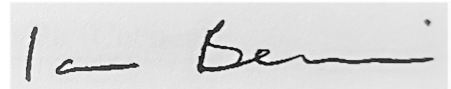
Report distribution:

Ian Bennie & Associates

PDF

AFS

PDF



Ian Bennie 11th march 2022

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 - 21st January 2022

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 ± 1.5 kPa

Water penetration tests were carried out at required serviceability pressures with a max static of 450 Pa and cycling pressure stages of 225-450 Pa, 300-600 Pa with no water penetrating to the internal face of the sample. At the max cycling of 450-900 Pa a failure occurred in the flexible air seal where water was coming through the pores of the paper.

After Preliminary water test 1 on the section of wall where the leak occurred the bottom of the cavity was sealed from the panel to the base flashing closing the cavity.

Preliminary Water test 1 - 24th January 2022

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 ± 1.5 kPa

Water penetration tests were carried out at required serviceability pressures with a max static of 450 Pa where a failure occurred in the flexible wall wrap where water was coming through a puncture in the paper from a screw hole. The test was continued through the cycling stages and at 360 - 720Pa there 3 leaks were found. A continuation of the leak that occurred at the static pressure, water leaks through screw fixings above the box gutter tank & water through the wall wrap tape joint to the box gutter.

After preliminary water test 2 the whole cavity was face sealed making it a closed system & the client requested new target serviceability test pressures of 2.5kPa.

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 – 27th January 2022

The sample passed all the requirements of the test.

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 : 979	Pass
		@	-2.5 kPa =	1 : 997	Pass

Clause 9.2.2 Successive member displacement;

Maximum successive member displacement shall not exceed 3.0 mm

Maximum successive member residual displacement: **-0.3 mm.** Pass

Clause 9.2.3 Maximum deflection;

The maximum displacement of a framing member shall not exceed 20.0 mm

Maximum member displacement: **4.7 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.

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 ± 150 Pa. 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 – 27th January 2022

The sample passed the test requirement.

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

Pressure (Pa)	Leakage (L/m ² *s)		
	Chamber & Sample	Chamber	Sample
+150	0.6	N.R	0.6
-150	0.6	N.R	0.6

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 – 27th January 2022 - Pass

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/NZS 4284:2008, see Appendix A.

Test Results: 27th January 2022

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. Indoor view of the test sample showing the structural measurement locations.

Table A.1 Water penetration test pressure

Table 1. Displacements recorded during Mode 1 of Structural Test 1.

Table 2. Displacements recorded during Mode 2 of Structural Test 1.

Table 3. Displacements recorded during Mode 3 of Structural Test 1.

Table 4. Successive Zero Displacements recorded during Structural Test 1

Table 5. Calculated Deflection/Span Ratios from Structural Test 1.

Table 6. Displacements recorded during Mode 1 of Structural Test 2.

Table 7. Displacements recorded during Mode 2 of Structural Test 2.

Table 8. Displacements recorded during Mode 3 of Structural Test 2.

Table 9. Successive Zero Displacements recorded during Structural Test 2

Table 10. Calculated Deflection/Span Ratios from Structural Test 2.

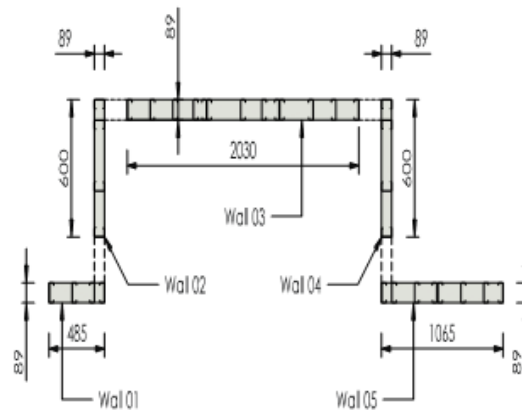
Appendix A. Test Procedures for AS/NZS 4284:2008.

Appendix B. Test Sample drawings provided by the Client.



Displacement measurement locations:

1. Metal Stud - top
2. Metal Stud - centre
3. Metal Stud - bottom



Lower Stud Wall Layout

Scale 1:30

All studs to lower stud wall to be 89 mm x 1.0 BMT G550.
Provide noggins at half height.

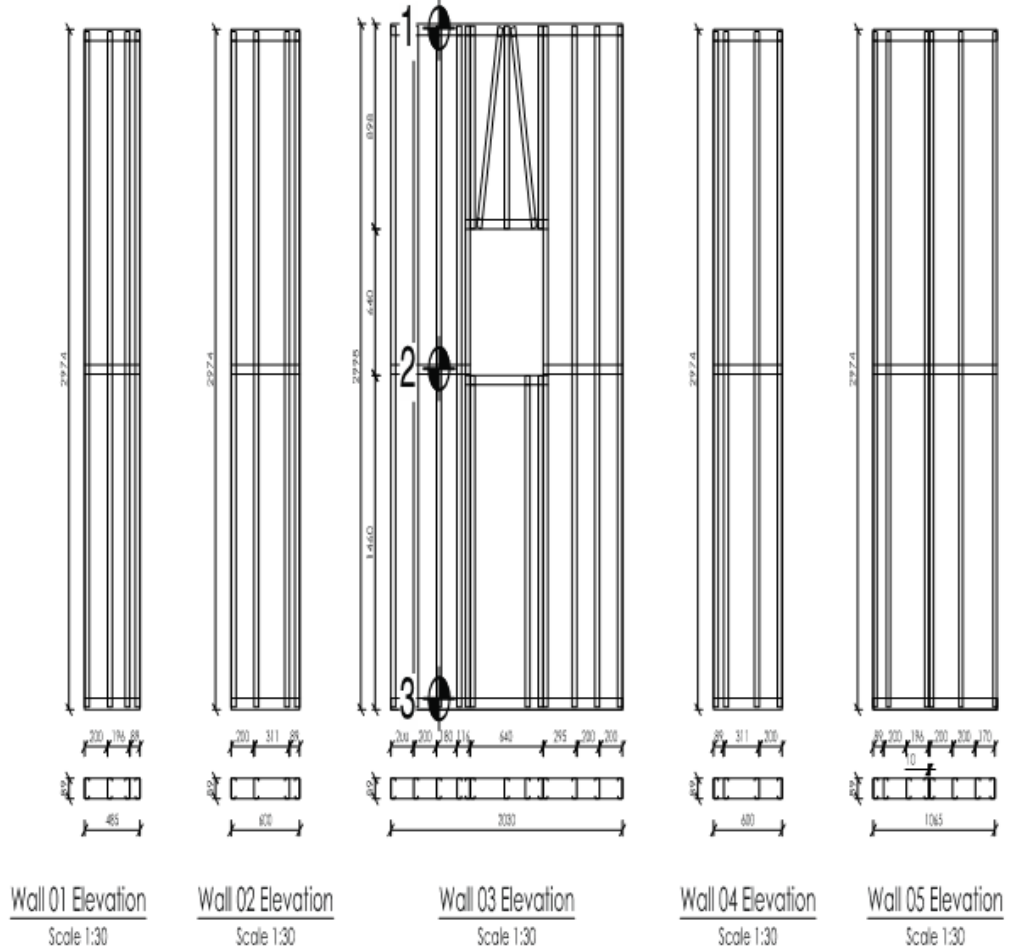


Figure 1. Elevation of the stud frame indicating the structural measurement locations

Table 1

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

Data file	2022-006-S1	Test Number:	ST1 - mode 1	Date: 27/10/21
Reading	Pressure (kPa)	Measurement Location Number		
		1	2	3
Take up	2.53			
Z1	0.00	0	0	0
	Subsequent deflections are referenced to Z1			
P1	0.50	0.3	0.8	0.1
P2	1.00	1.2	1.9	0.1
P3	1.49	1.8	3.0	0.3
P4	2.00	2.4	3.8	0.4
P5	2.50	3.0	4.7	0.6
Z2	0.01	0.0	0.0	0.0
P6	2.50	3.0	4.7	0.6
P7	1.99	2.6	3.9	0.6
P8	1.51	2.0	2.9	0.5
P9	1.02	1.5	2.0	0.4
P10	0.51	0.8	1.1	0.2
Z3	0.01	0.0	-0.2	-0.1

Table 2

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

Data file	2022-006-S1	Test Number:	ST1 - mode2	Date: 27/01/22
Reading	Pressure (kPa)	Measurement Location Number		
		1	2	3
Take up	-2.49			
Z4	0.00	-0.1	-0.3	-0.2
Shift		0.0	-0.1	-0.1
N1	-0.51	-0.4	-0.9	-0.1
N2	-1.01	-1.0	-1.8	-0.3
N3	-1.50	-1.5	-2.7	-0.5
N4	-2.00	-2.1	-3.6	-0.6
N5	-2.51	-2.5	-4.6	-0.8
Z5	0.00	0.0	0.0	0.0
N6	-2.52	-2.5	-4.6	-0.8
N7	-2.00	-2.1	-3.7	-0.8
N8	-1.53	-1.7	-2.7	-0.6
N9	-1.01	-1.1	-1.8	-0.5
N10	-0.50	-0.4	-0.9	-0.2
Z6	0.00	0.0	0.0	-0.1

Table 3

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

Data file	2022-006-S1	Test Number:	ST1-mode 3	Date: 27/01/22
Reading	Pressure (kPa)	Measurement Location Number		
		1	2	3
Take up	2.51			
Z7	0.00	0.2	-0.3	0.0
Shift during take up		0.3	0.0	0.2

Table 4

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

Data file	2022-006-S1	Test Number: ST1	Date: 27/01/22
Reading	Measurement Location Number		
	1	2	3
Z1	0.0	0.0	0.0
Z2	0.0	0.0	0.0
Z3	0.0	-0.2	-0.1
Z4	-0.1	-0.3	-0.2
Z5	-0.1	-0.2	-0.2
Z6	-0.1	-0.3	-0.2
Z7	0.2	-0.3	0.0

Table 5

STRUCTURAL PERFORMANCE

DATAFILE: 2022-006-S1		Test Number:ST1			Date: 27/01/2022		
Member	Pressure (kPa)	Displacements (rounded to 0.1 mm)			Bending Deflection (Rounded to 0.01 mm) $DC - \frac{(D1+D2)}{2}$ DEF (mm)	Span L (mm)	SDR L/DEF
		Left or Top D1 (mm)	Centre DC (mm)	Right or bottom D2 (mm)			
1,2,3							
	0.50	0.3	0.8	0.1	0.6	2900	4619
	1.00	1.2	1.9	0.1	1.3		2260
	1.49	1.8	3.0	0.3	1.9		1543
	2.00	2.4	3.8	0.4	2.4		1225
	2.50	3.0	4.7	0.6	3.0		979
	2.50	3.0	4.7	0.6	2.9		989
	1.99	2.6	3.9	0.6	2.4		1225
	1.51	2.0	2.9	0.5	1.6		1791
	1.02	1.5	2.0	0.4	1.0		2826
	0.51	0.8	1.1	0.2	0.5		5580
	-0.51	-0.4	-0.9	-0.1	-0.6		-4496
	-1.01	-1.0	-1.8	-0.3	-1.2		-2514
	-1.50	-1.5	-2.7	-0.5	-1.7		-1738
	-2.00	-2.1	-3.6	-0.6	-2.3		-1277
	-2.51	-2.5	-4.6	-0.8	-2.9		-997
	-2.52	-2.5	-4.6	-0.8	-2.9		-998
	-2.00	-2.1	-3.7	-0.8	-2.2		-1300
	-1.53	-1.7	-2.7	-0.6	-1.6		-1816
	-1.01	-1.1	-1.8	-0.5	-1.0		-2788
	-0.50	-0.4	-0.9	-0.2	-0.5		-5376

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 (W_s)

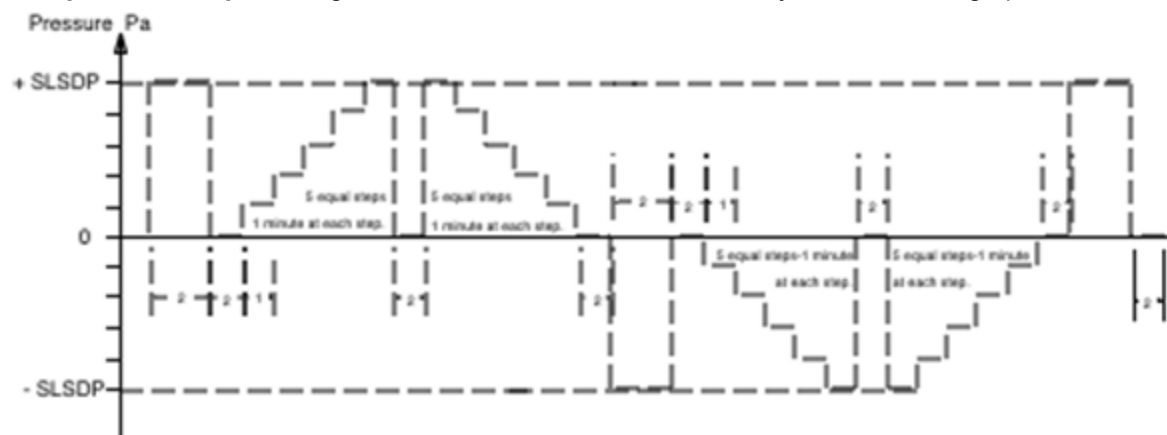
Structural pre-load duration: 10 seconds at each pressure

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 W_s (at least 300 Pa) duration = 15 minutes

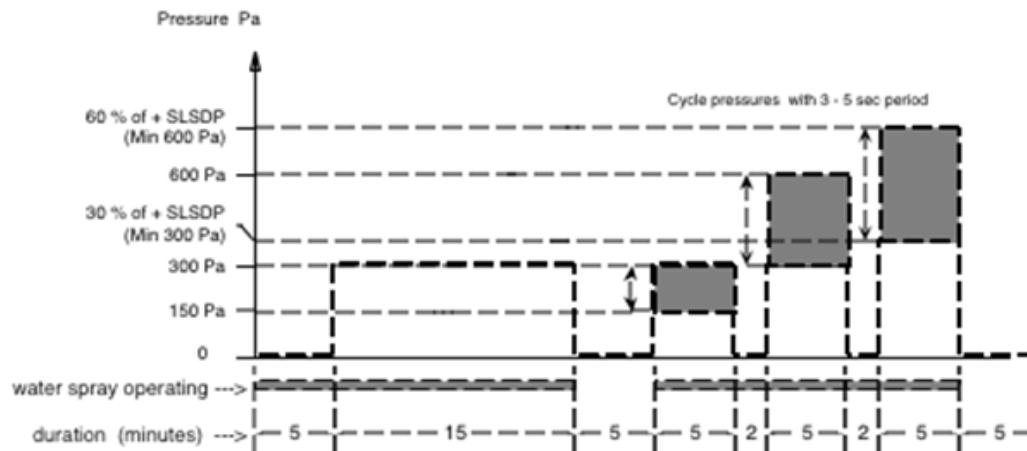
Cyclic 15% - 30% of W_s duration = 5 minutes

20% - 40% of W_s duration = 5 minutes

30% - 60% of W_s 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.

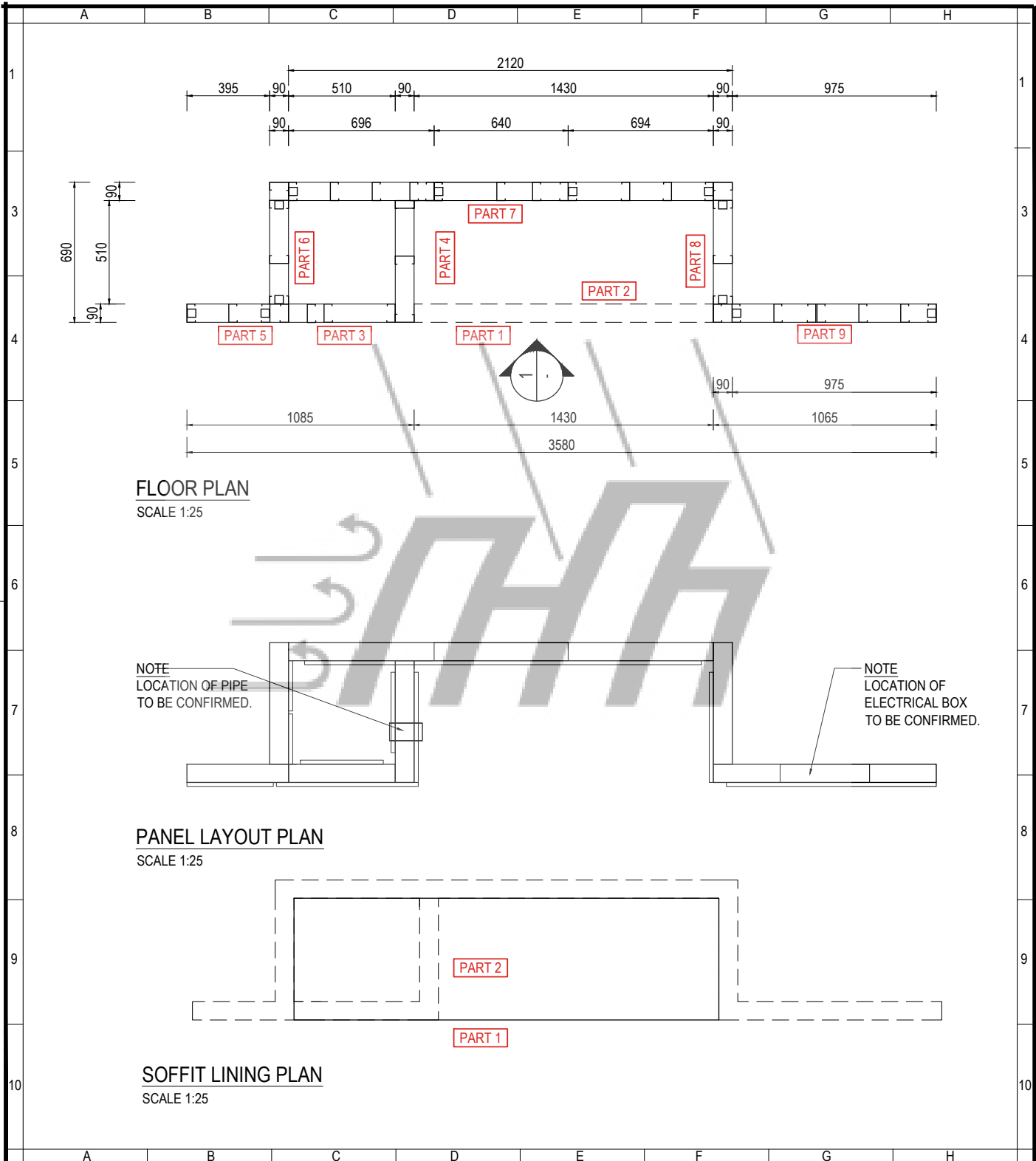
6 Retesting - if required

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



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A	10.03.2022	SOFFIT PLAN UPDATED
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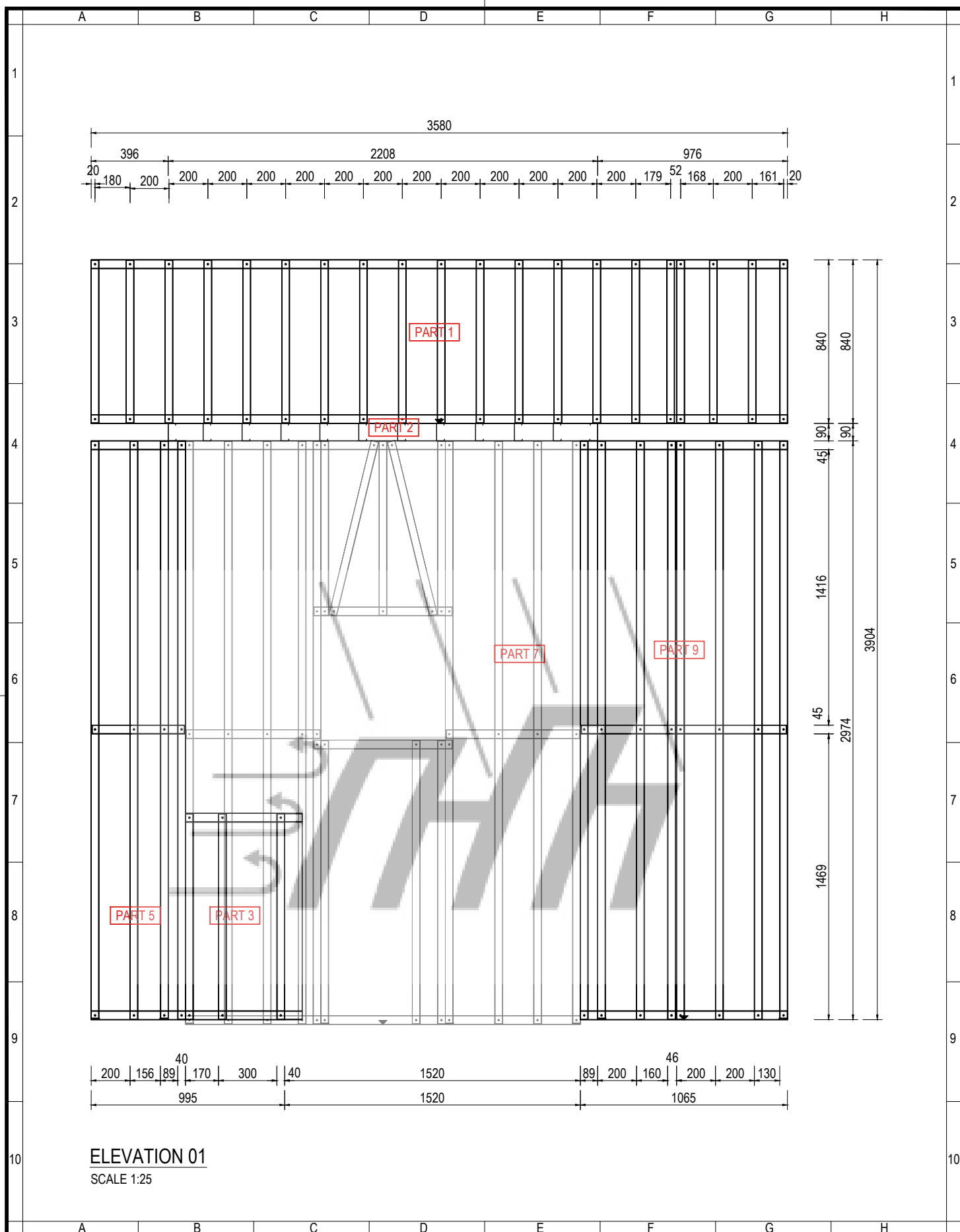
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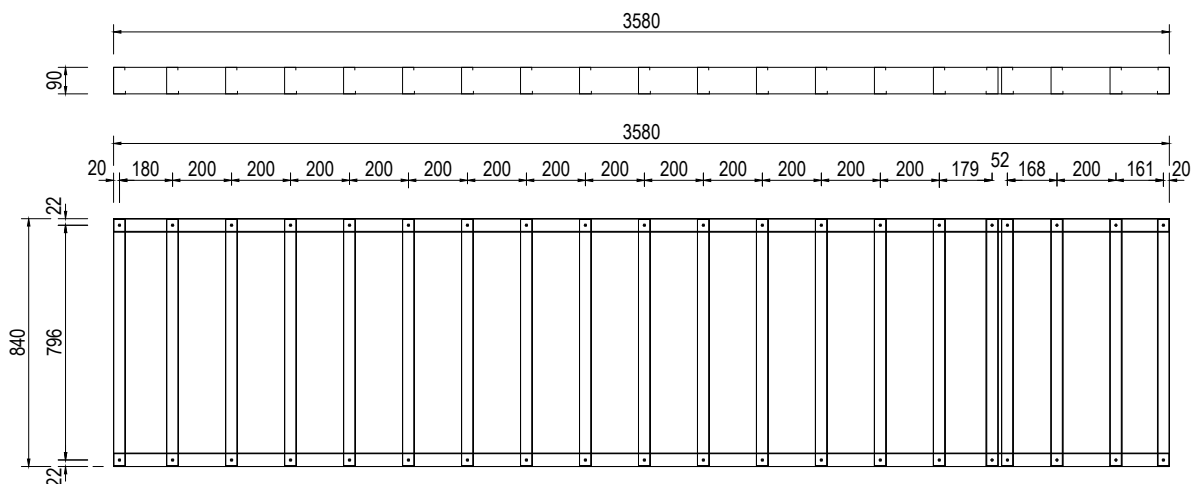
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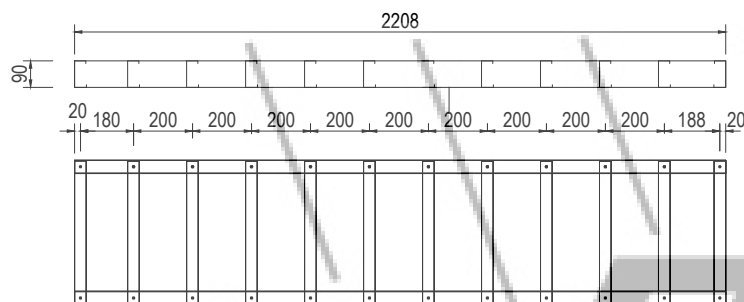


DESCRIPTION	Usage	No.	Length	Mat.	Qty
U904410G550	TOPPLATE	001	3580	1	1
U904410G550	BOTPLATE	002	3580	1	1
C9010ra	STUD	100	836	1	1
C9010ra	STUD	101	836	1	11
C9010ra	STUD	102	836	1.00	7
C9010ra	STUD	103	836	1.00	1
WALLTITE	SCREW	N/A	-	-	80

PART 1 - ELEVATION VIEW

SCALE 1:25

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

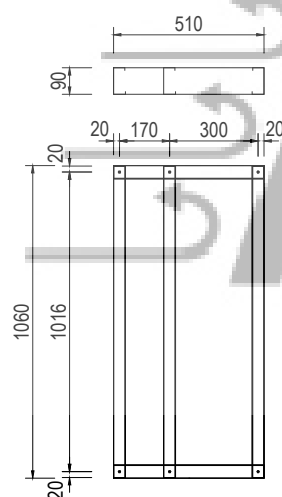


PART 2 - ELEVATION VIEW

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

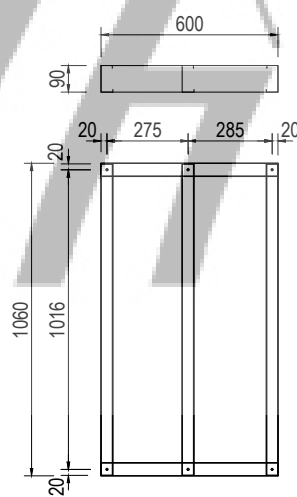


PART 3 - ELEVATION VIEW

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



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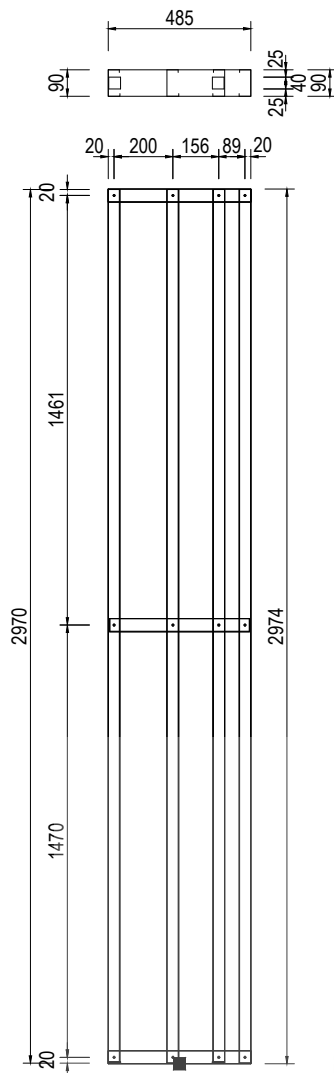
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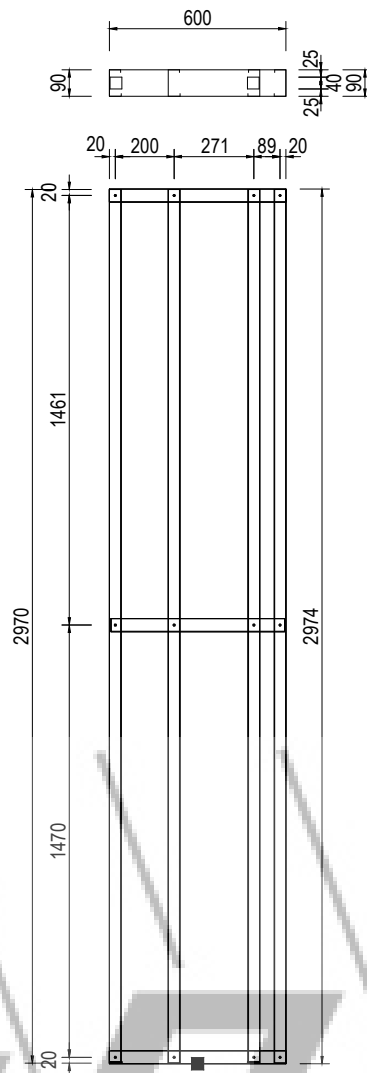
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PART 5 - ELEVATION VIEW
SCALE 1:25

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



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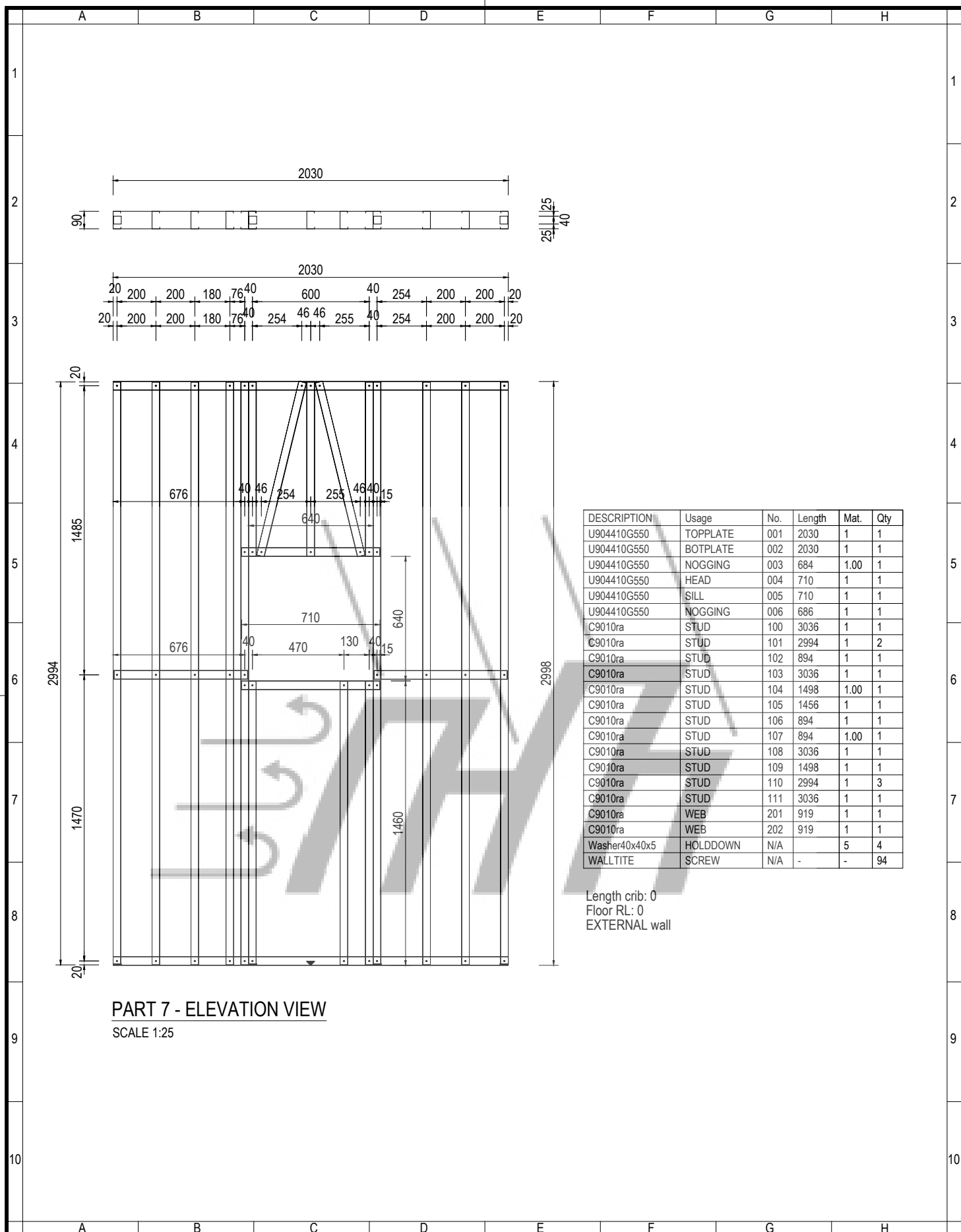
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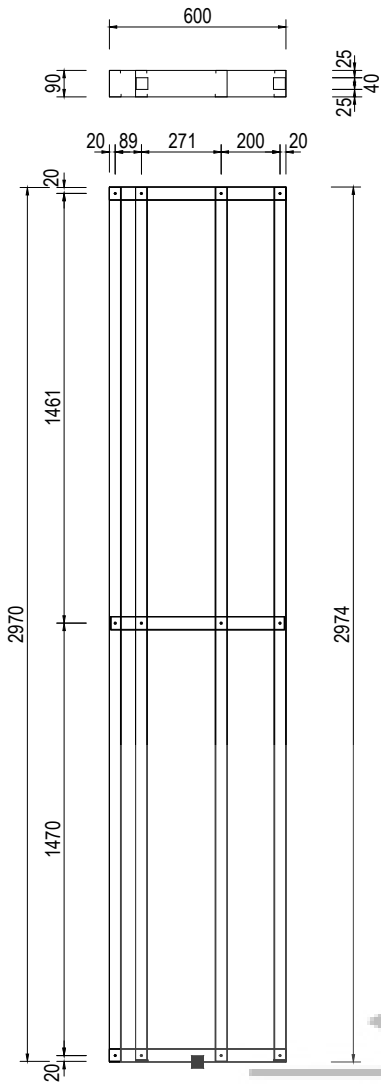
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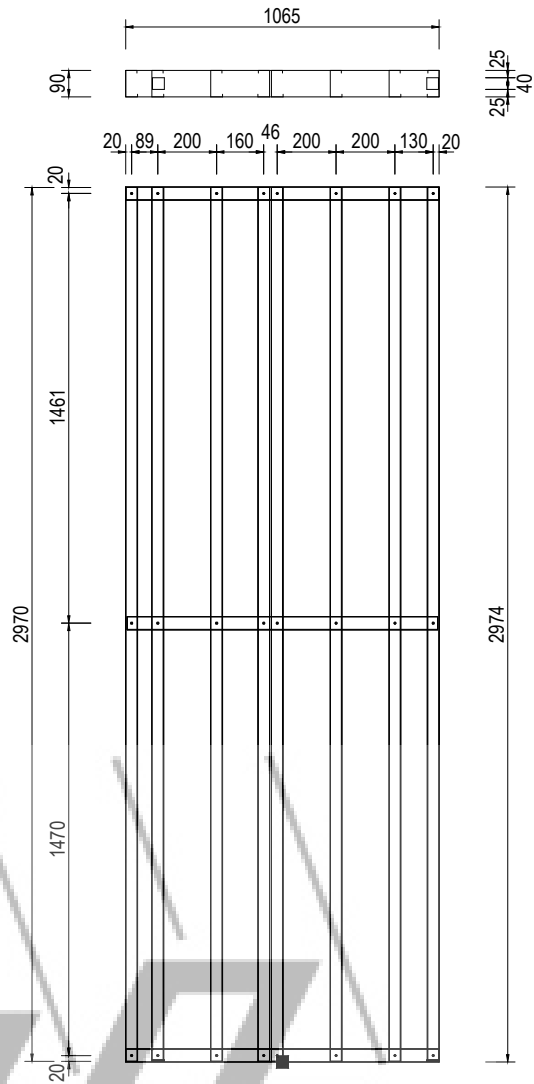


PART 8 - ELEVATION VIEW

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



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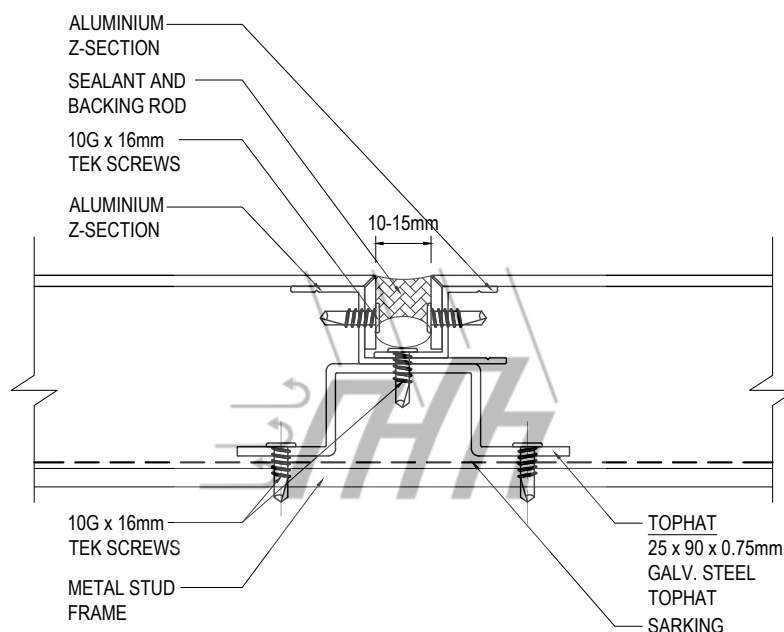
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DETAIL 10
TYPICAL PANEL JOINT DETAIL
 SCALE 1:2

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PROJECT:

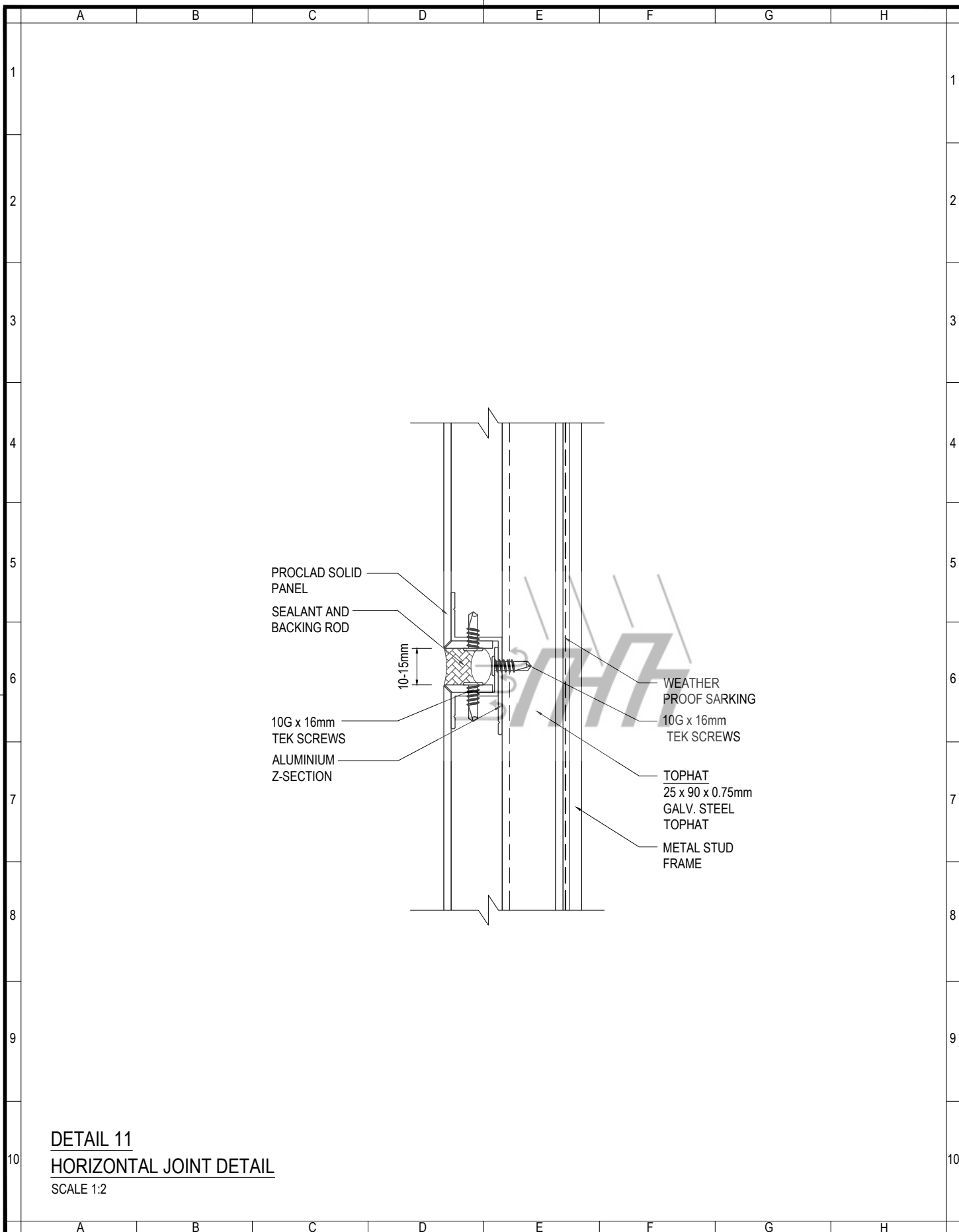
AS4284 - SOLID
DETAILS

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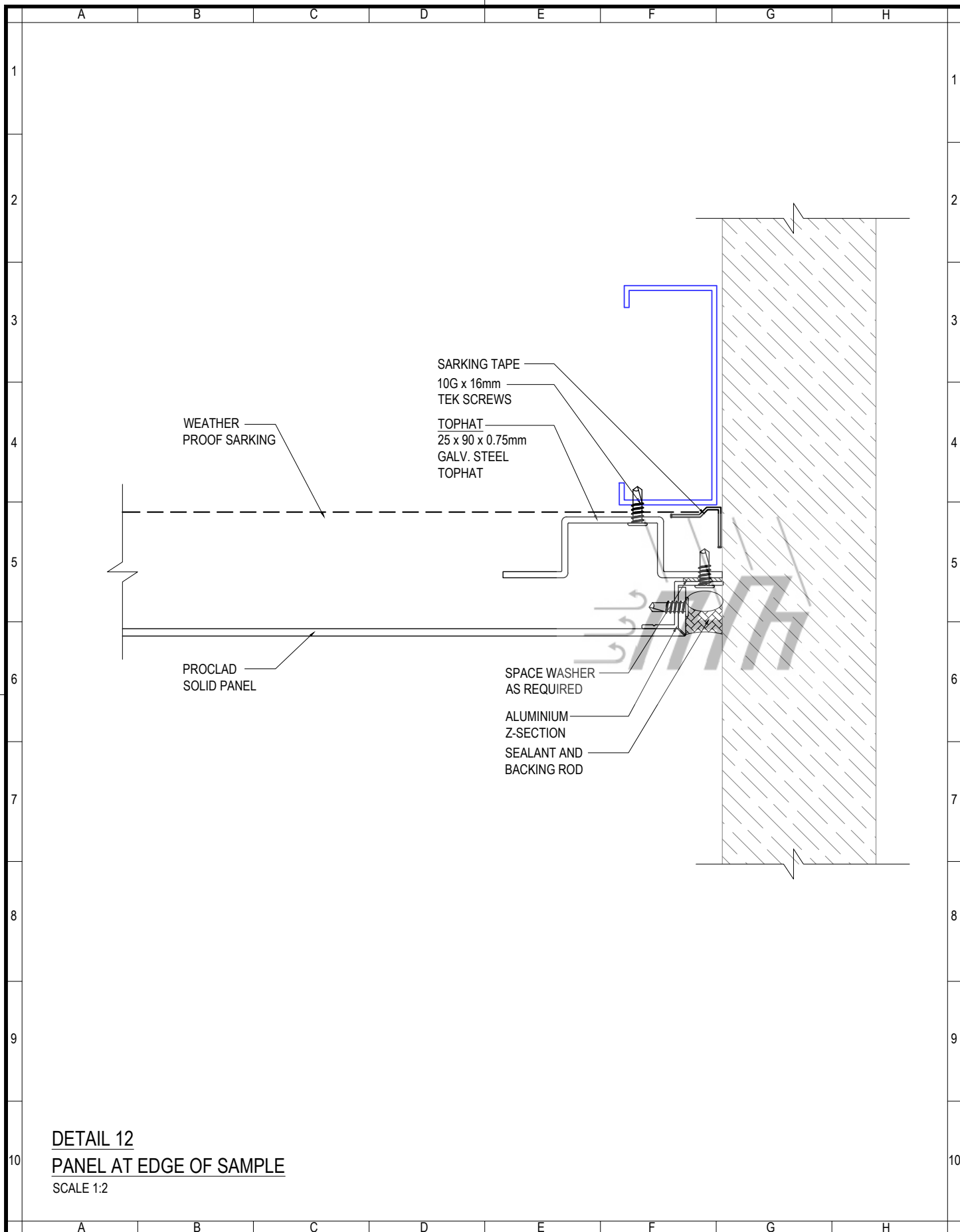
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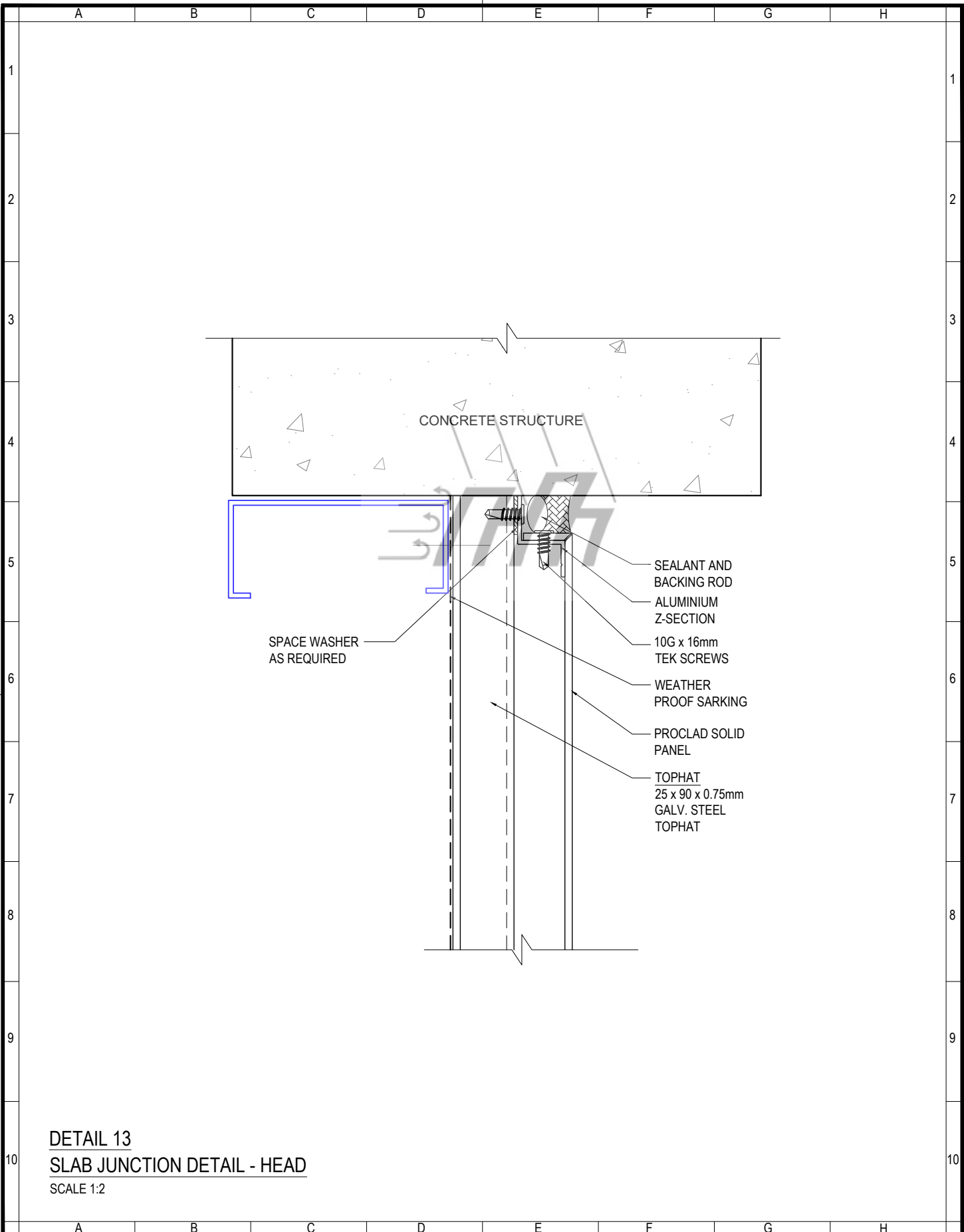


 www.askin.net.au VIC P : 03 8769 4816 WA P : 08 9249 4022 SA P : 08 8252 7188 QLD P : 07 3718 9500 NSW P : 02 8825 2598 NT P : 08 8252 7188	PROJECT: AS4284 - SOLID DETAILS ©ASKIN 2021	Revision <table><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr></table>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Checked By A SHANNON Scale 1:2
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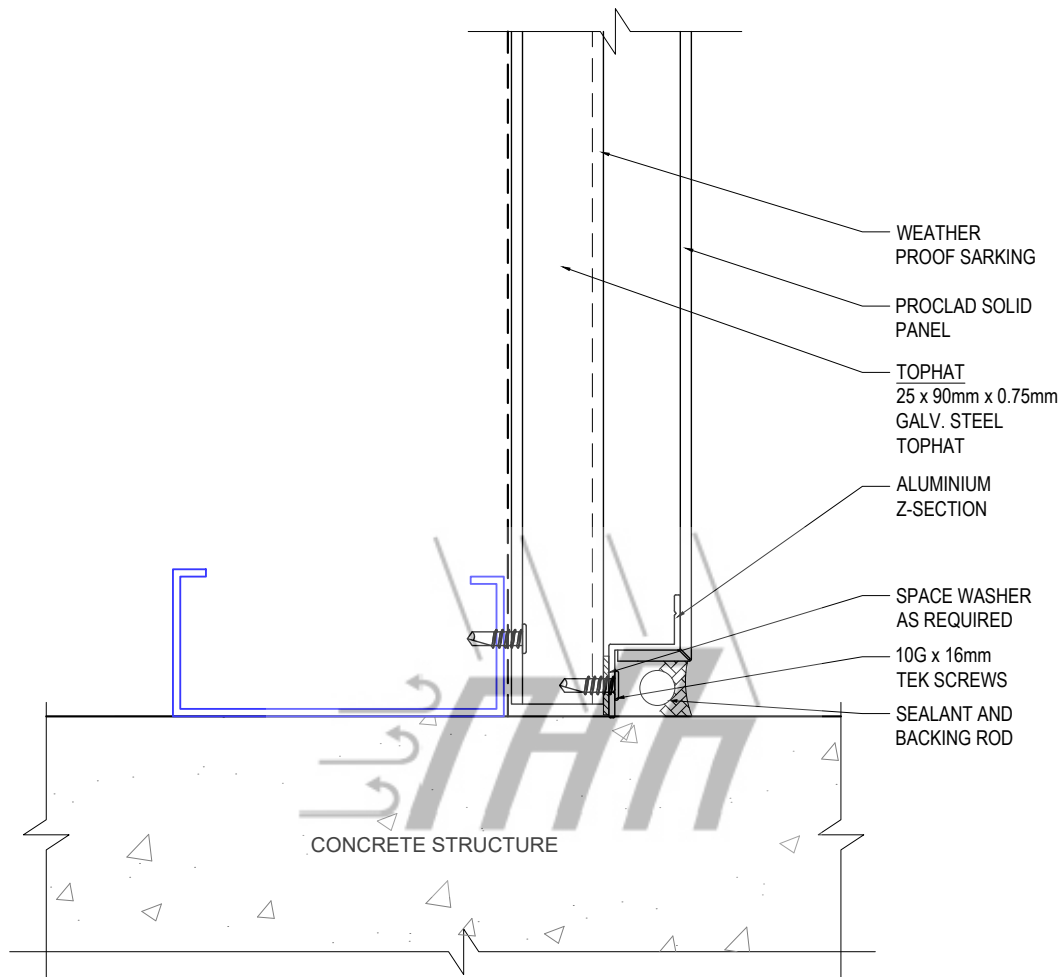


DETAIL 12
PANEL AT EDGE OF SAMPLE
 SCALE 1:2

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DETAIL 14
SLAB JUNCTION DETAIL - BASE
SCALE 1:2

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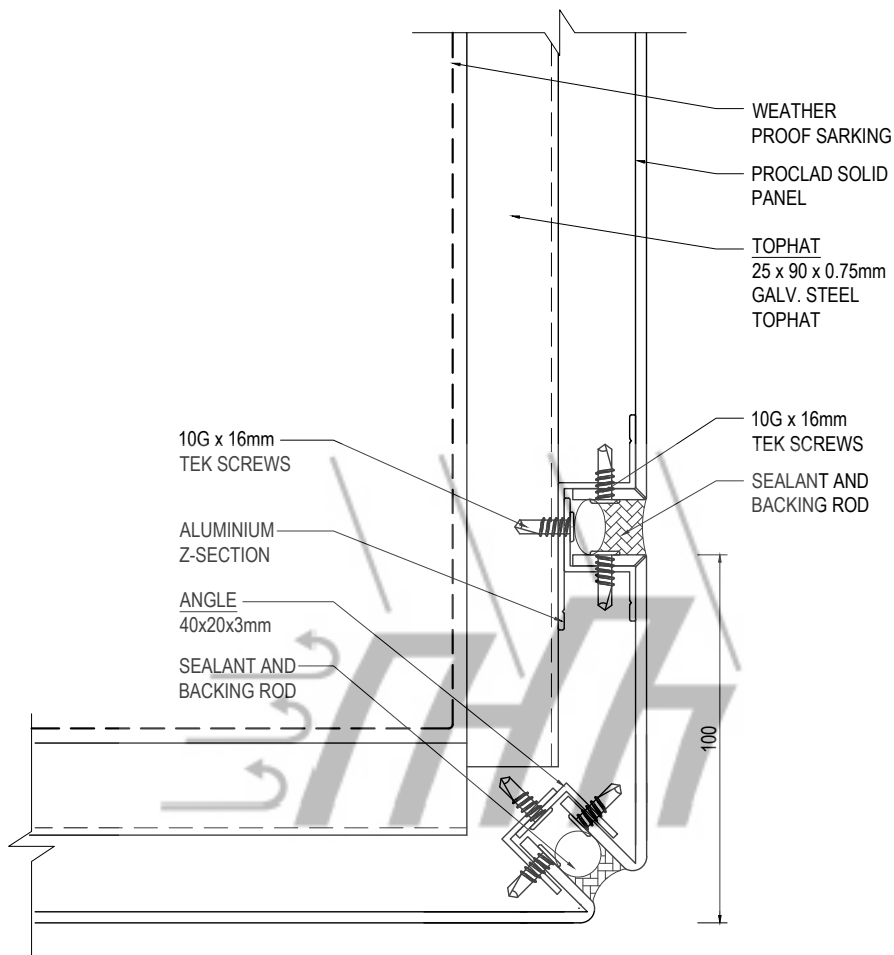
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DETAIL 16
SOFFIT JUNCTION DETAIL
 SCALE 1:2

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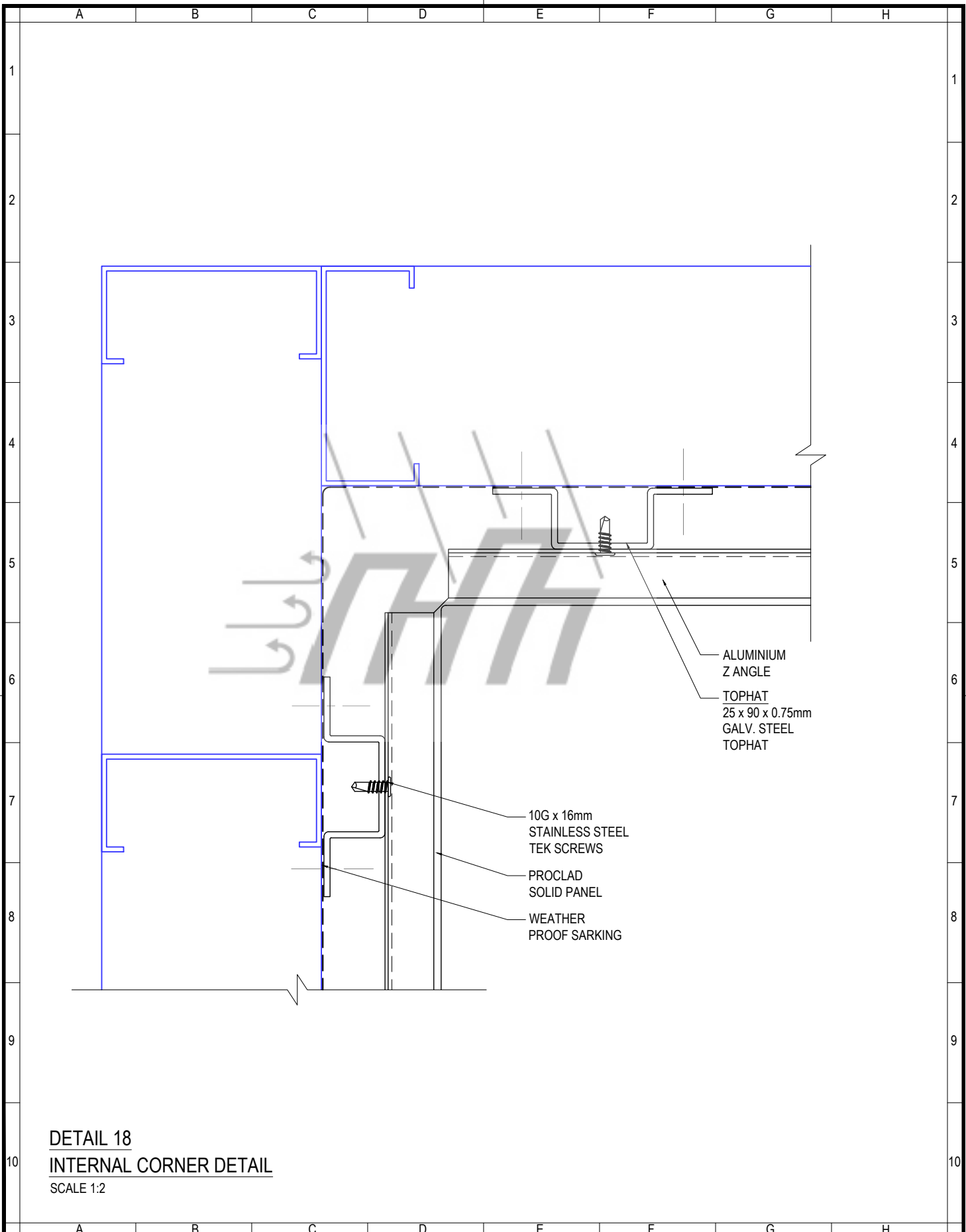
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DETAIL 18
INTERNAL CORNER DETAIL
 SCALE 1:2



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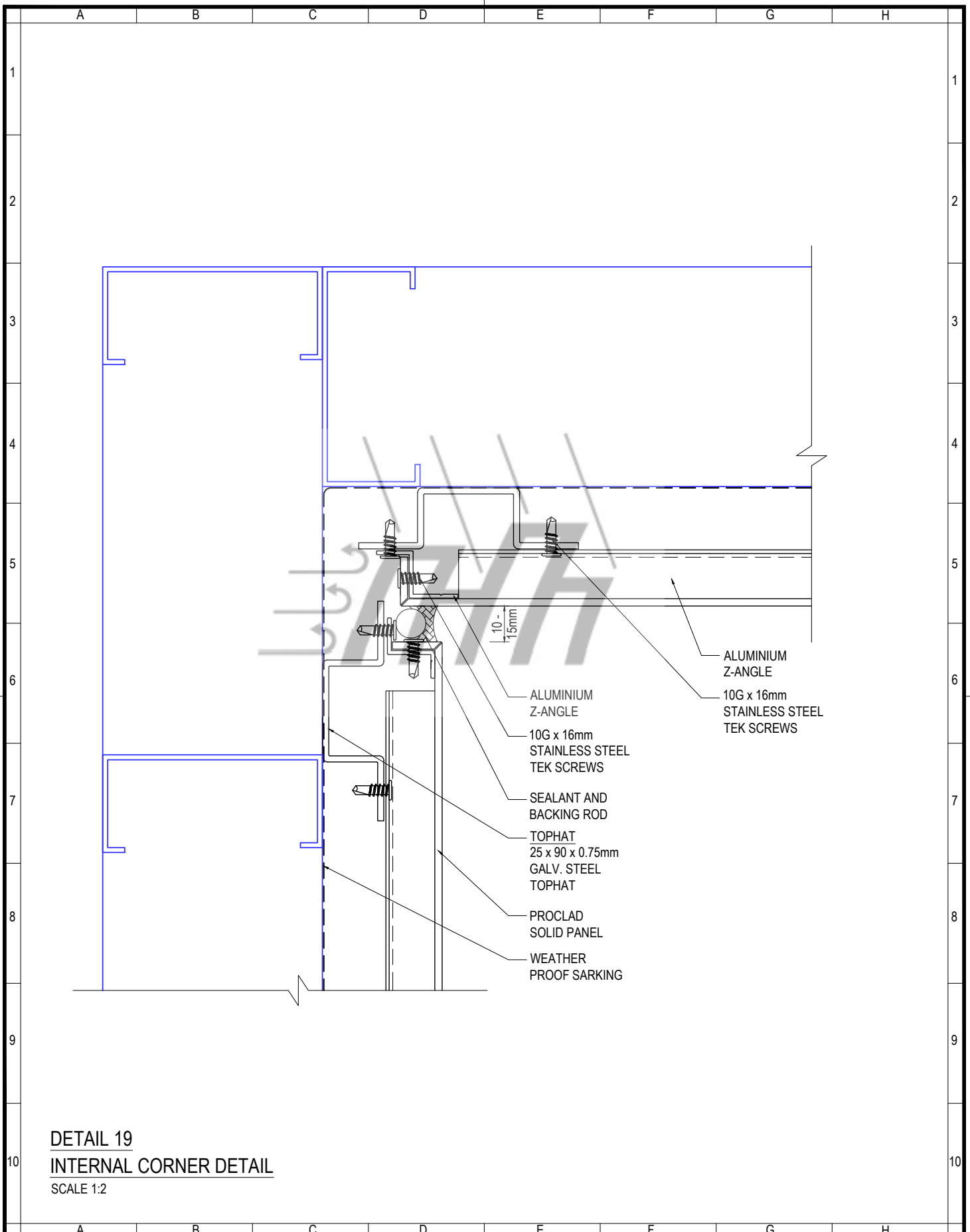
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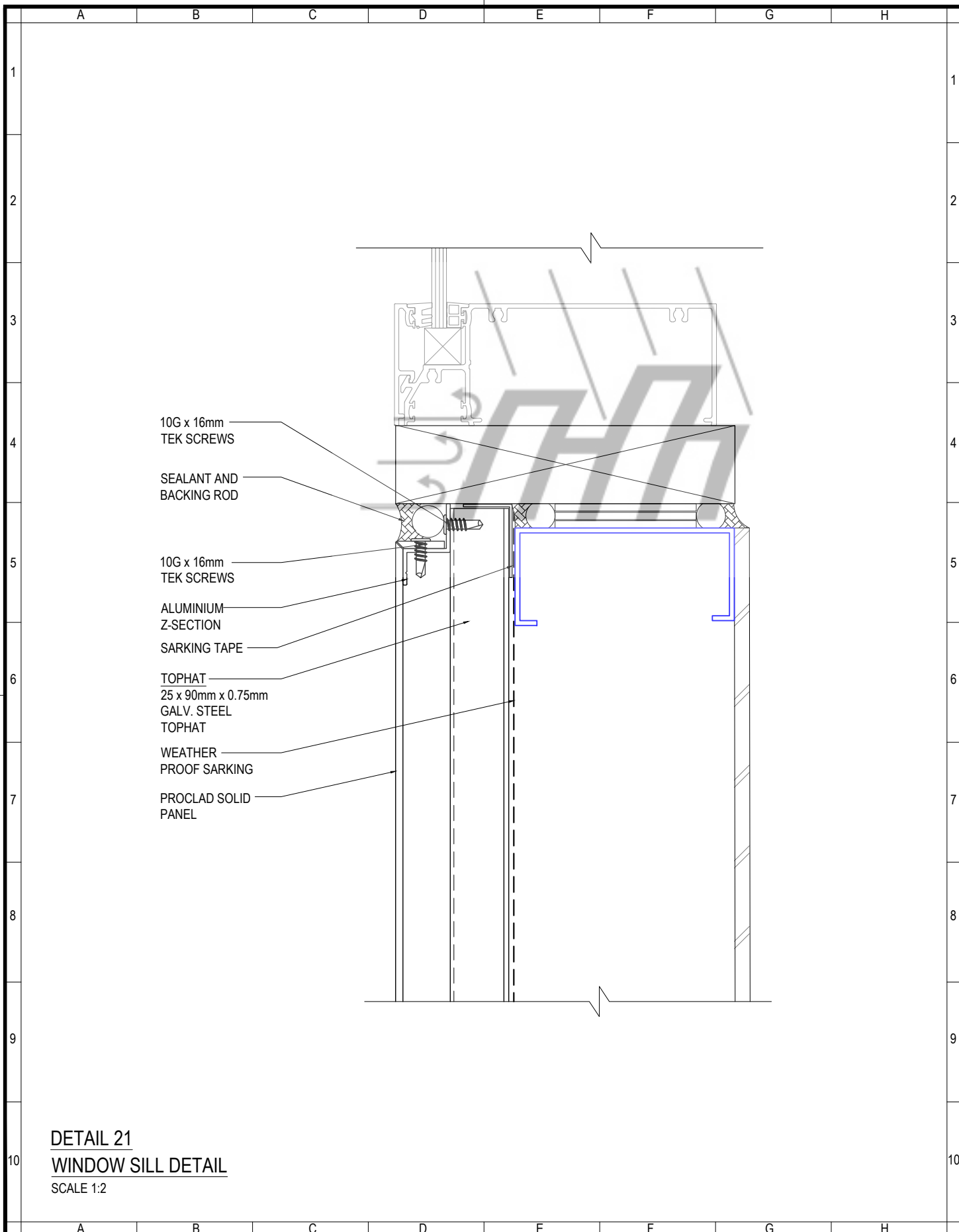
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Revision

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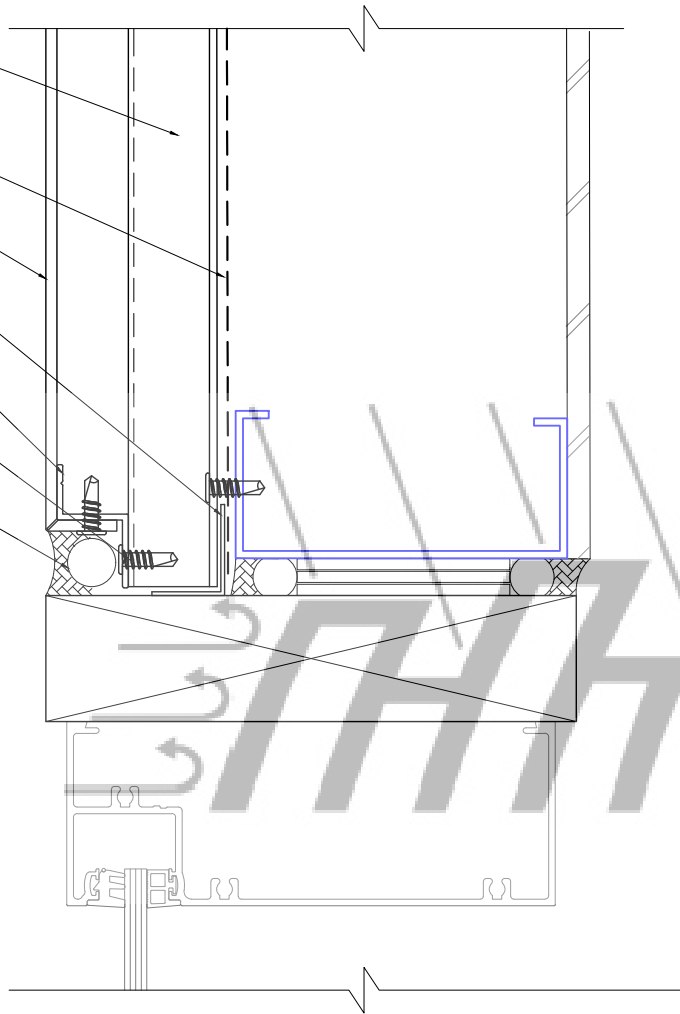
Revision

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Drawing No.

IPVI000000 - 021

TOPHAT
 25 x 90 x 0.75mm
 GALV. STEEL
 TOPHAT
 WEATHER
 PROOF SARKING
 PROCLAD SOLID
 PANEL
 SARKING TAPE
 ALUMINIUM
 Z-SECTION
 10G x 16mm
 TEK SCREWS
 SEALANT AND
 BACKING ROD



DETAIL 22
 WINDOW EXTERNAL CORNER DETAIL
 SCALE 1:2

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PROJECT:

AS4284 - SOLID
 DETAILS

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A	10.03.2022	REVISED PER MARKUP
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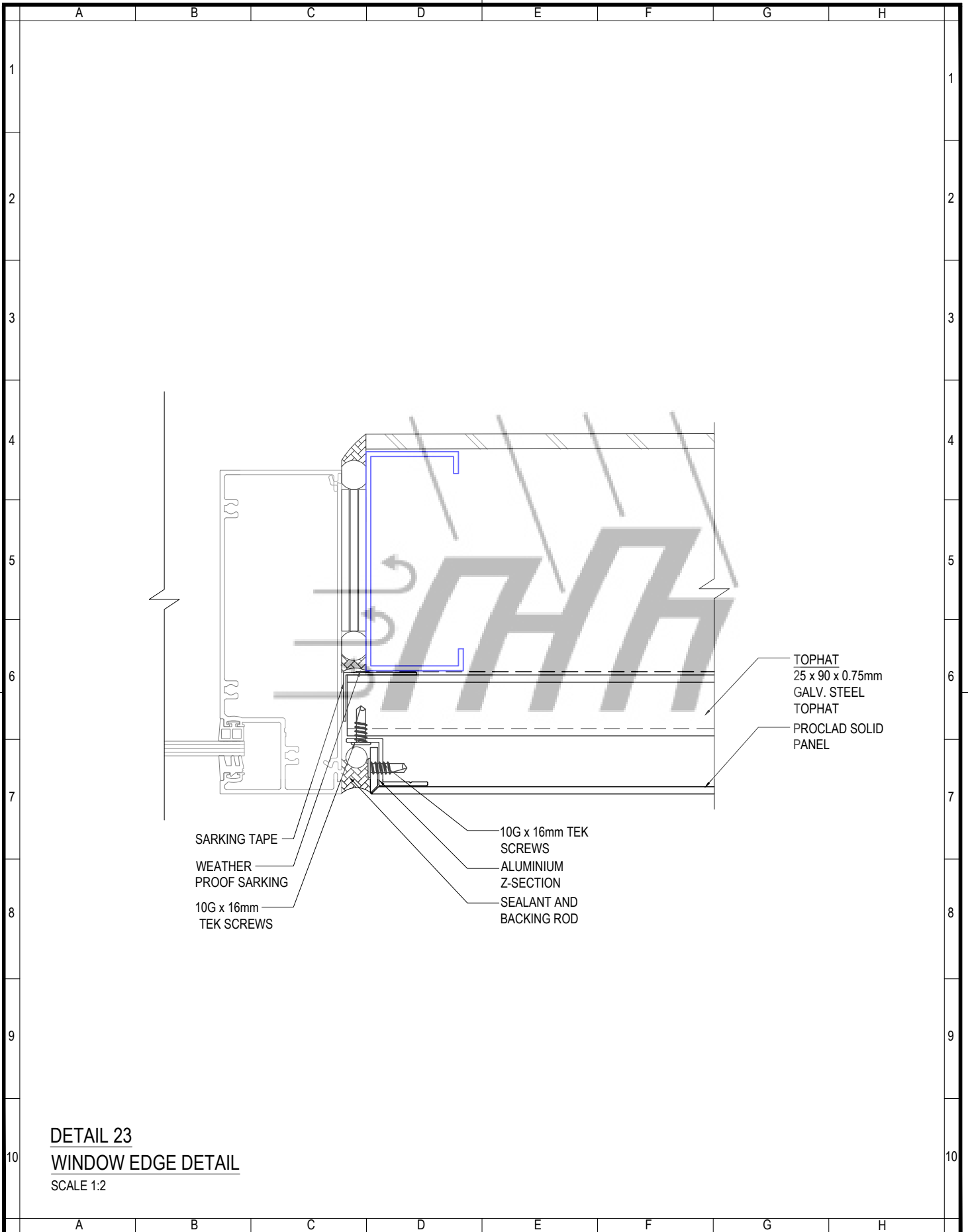
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Revision

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WEATHER
PROOF SARKING

TOPHAT
25 x 90 x 0.75mm
GALV. STEEL
TOPHAT

PROCLAD SOLID
PANEL

ALUMINIUM
Z-SECTION
SEALANT AND
BACKING ROD

10G x 16mm
STAINLESS STEEL
TEK SCREWS

10G x 16mm
STAINLESS STEEL
TEK SCREWS
SILICONE SEAL

DETAIL 24
PARAPET CAPPING DETAIL
SCALE 1:2

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DETAILS

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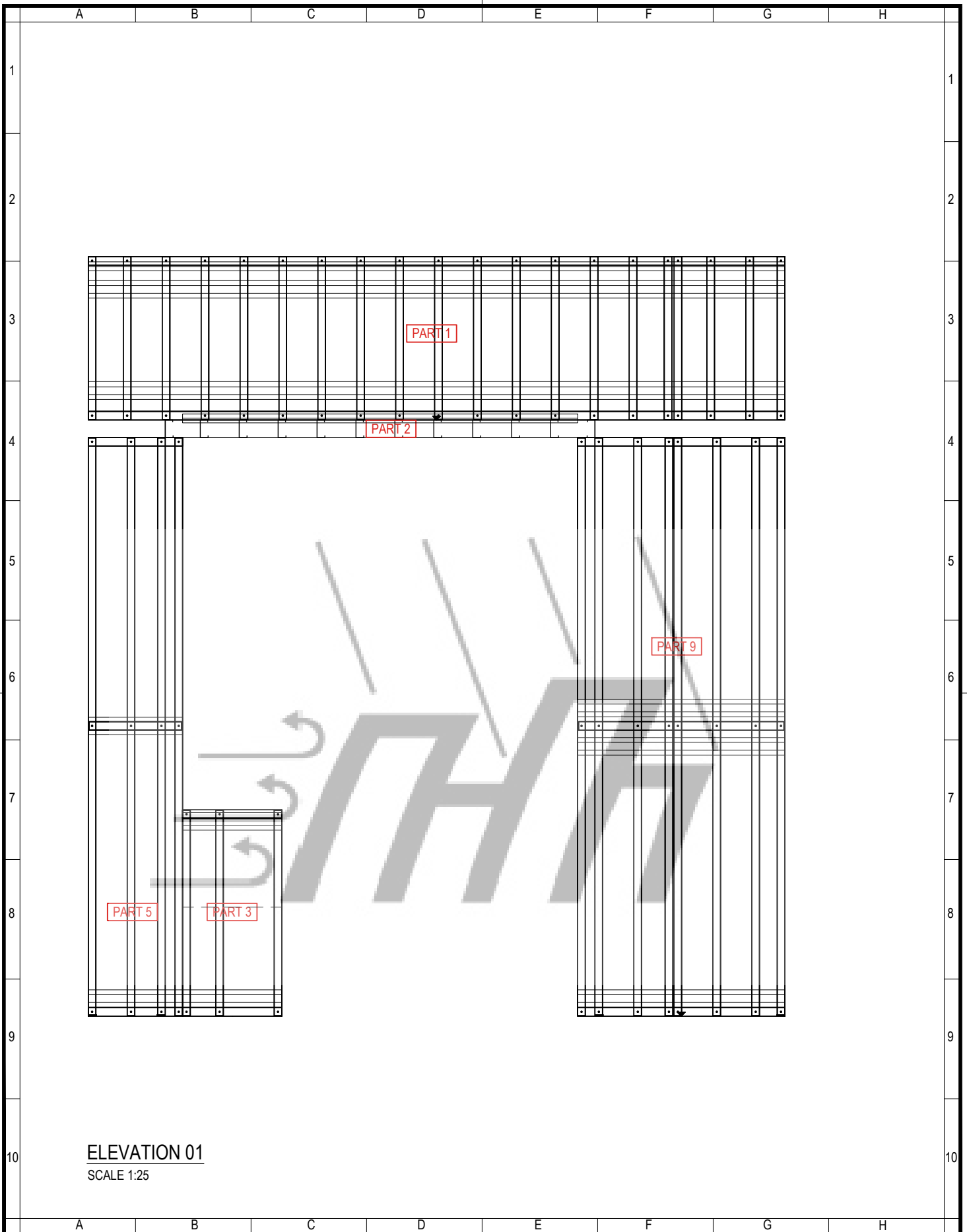
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ELEVATION 01
SCALE 1:25

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PROJECT:

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FIXING LAYOUT

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Revision	Date	Description
A	11.10.2021	PROJECT NAME UPDATED
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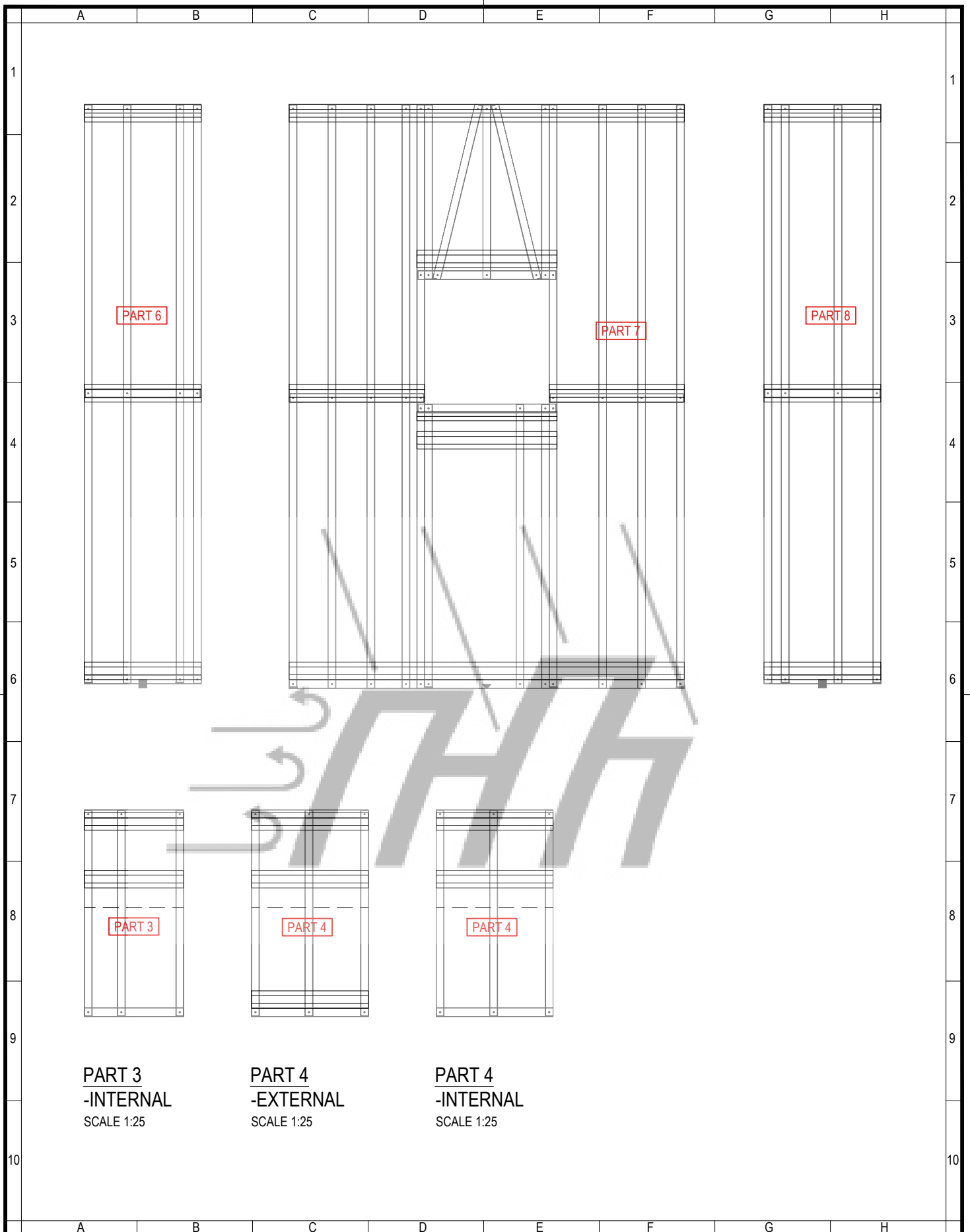
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Drawing No.

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PART 3
-INTERNAL
SCALE 1:25

PART 4
-EXTERNAL
SCALE 1:25

PART 4
-INTERNAL
SCALE 1:25



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FIXING LAYOUT

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Revision	Date	Description
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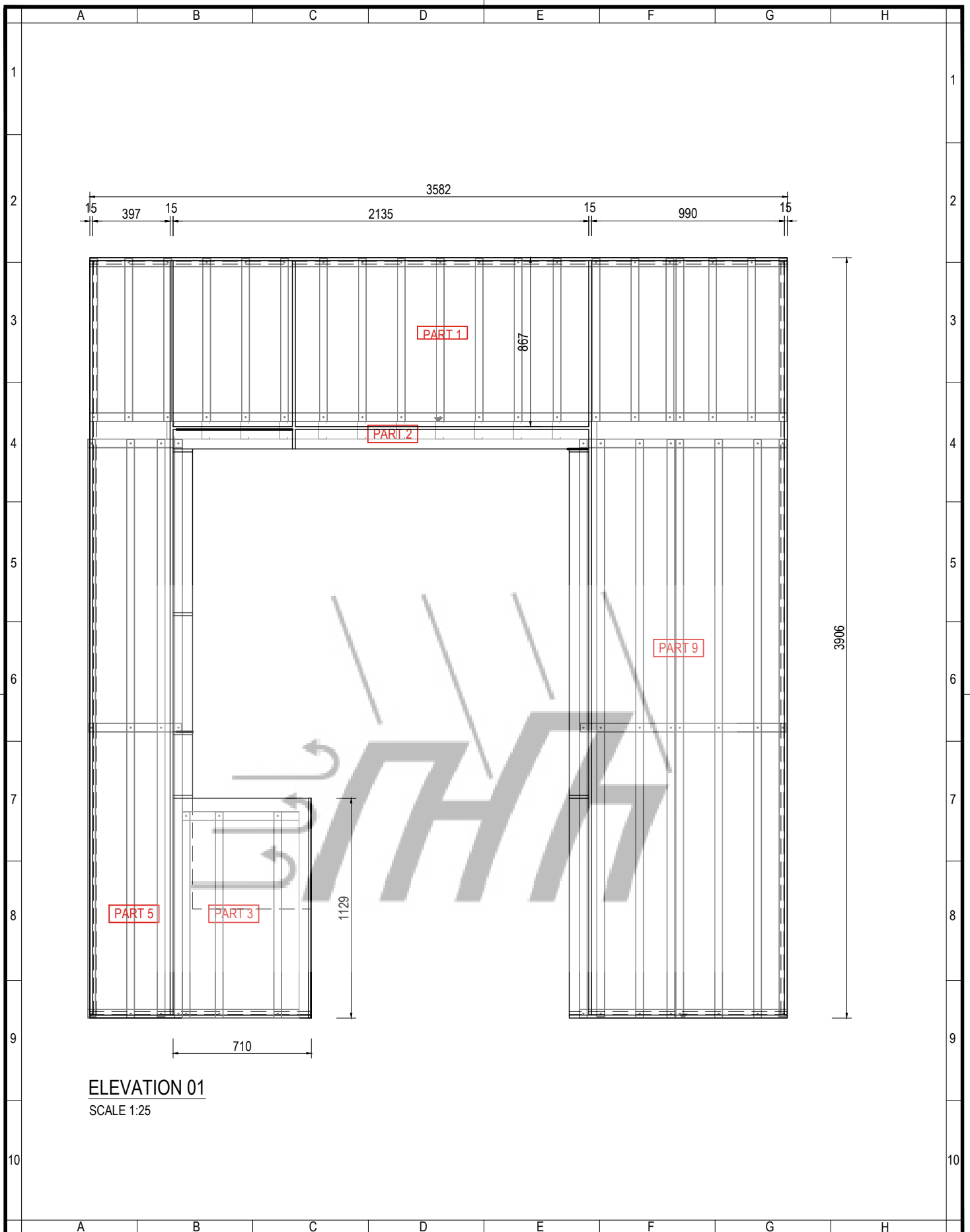
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PANEL LAYOUT

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Drawing No.

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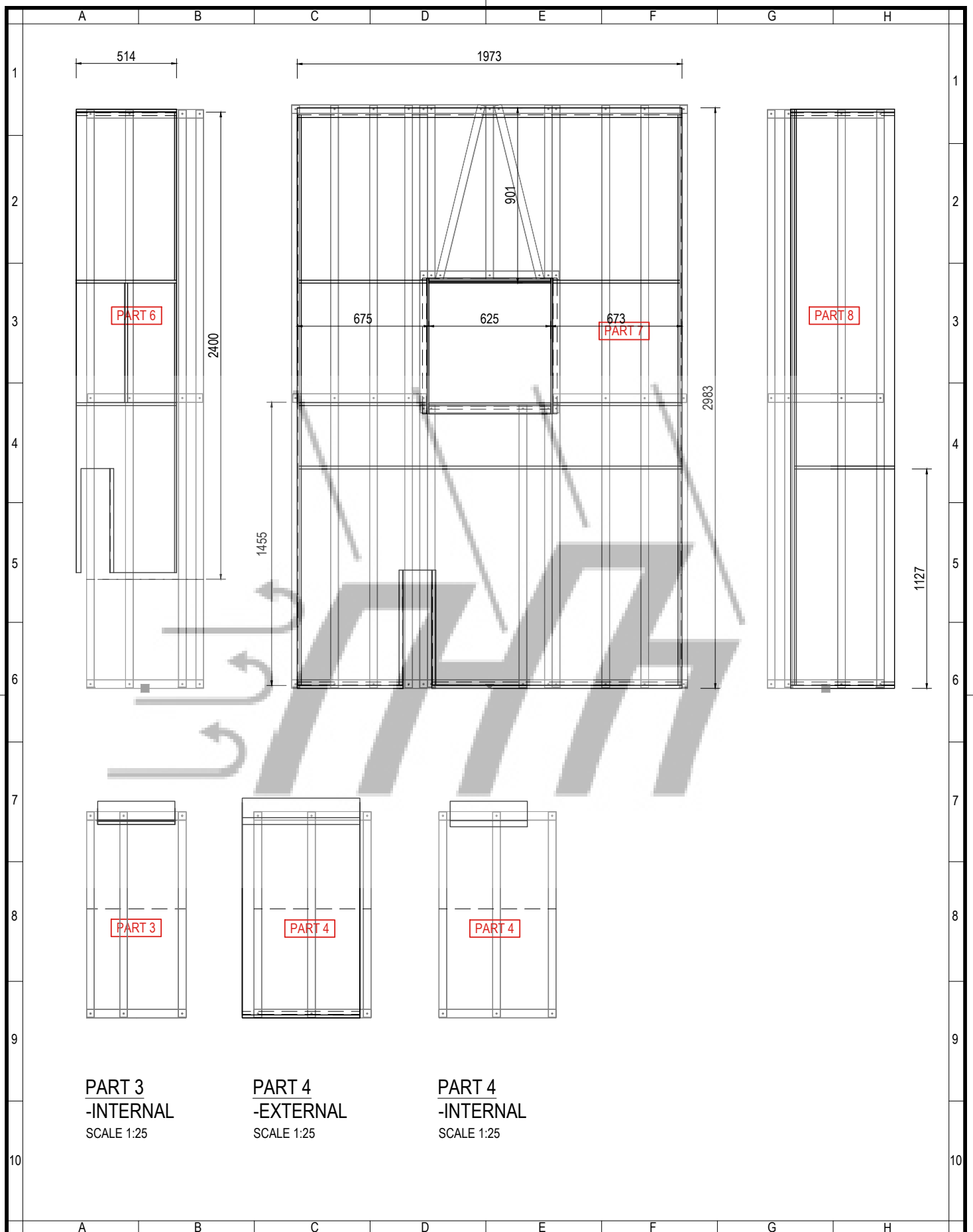
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PART 3
-INTERNAL
SCALE 1:25

PART 4
-EXTERNAL
SCALE 1:25

PART 4
-INTERNAL
SCALE 1:25

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6 F3P1 [vol. 1] / H2P2 [vol. 2] Certification: ProClad™ SOLID Pre-Finished, Solid Aluminium, Folded Cassette Cladding Panel System: Weatherproofing Performance (face sealed with CSR Bradford Enviroseal CW sarking behind cladding line) [BCA 2022]

Certification:

I certify that:

1. We have carried out a detailed review of the ProClad™ SOLID cladding face sealed system; 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.

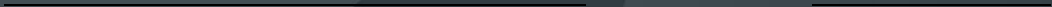
Name:	Simon Jewell	
	IStructE: Meng MStructE CEng	Membership No.: 024402978
	Engineers Australia: MIEAust OPEng NER	Membership No.: 3682713
Qualifications:	Victorian Building Authority (VBA)	Registration No.: BLA:
	Building Licensing Authority (BLA, Victoria):	PE0002157
	Professional Engineer – Civil Engineering	VBA:
	Professional Engineer – Structural Engineering	(EC 38144)

Signature:

—  —

Date:

08/02/24



ATELIER / JV