maibec Architectural

SUBMITTAL PACKAGE

Aluminum Panels MAP-12 / 16

Aluminum

From Nature to Architecture

maibec®
Architectural

INTRODUCTION

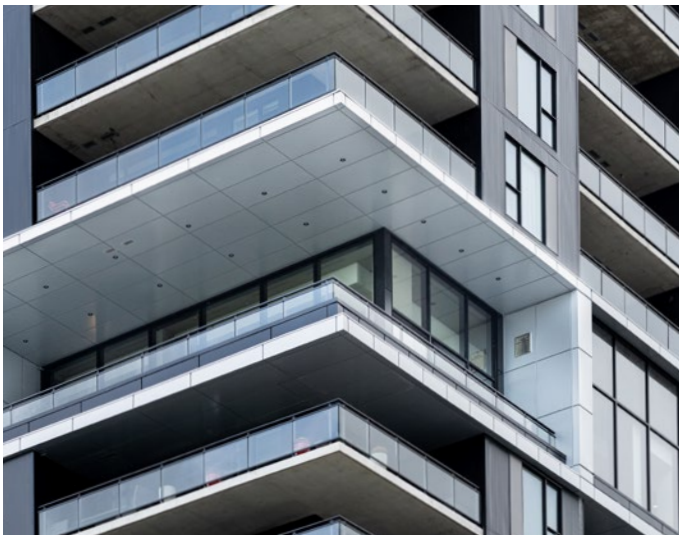
Welcome to our Submittal Package, designed to provide a simple, fast, and efficient experience when selecting your exterior cladding. Whether you're a contractor, architect, or distributor, you'll find all the information you need here to make an informed decision about our products.

Technical data sheets, installation guides, typical details, specifications, maintenance tips, and warranties — everything is gathered in one place to save you time and give you peace of mind at every stage of your project.

Our commitment is clear: to offer you durable, visually appealing, and easy-to-install solutions, supported by attentive customer service and tools designed to simplify your work.

"Quality is never an accident.
It is always the result of intelligent effort."

— John Ruskin



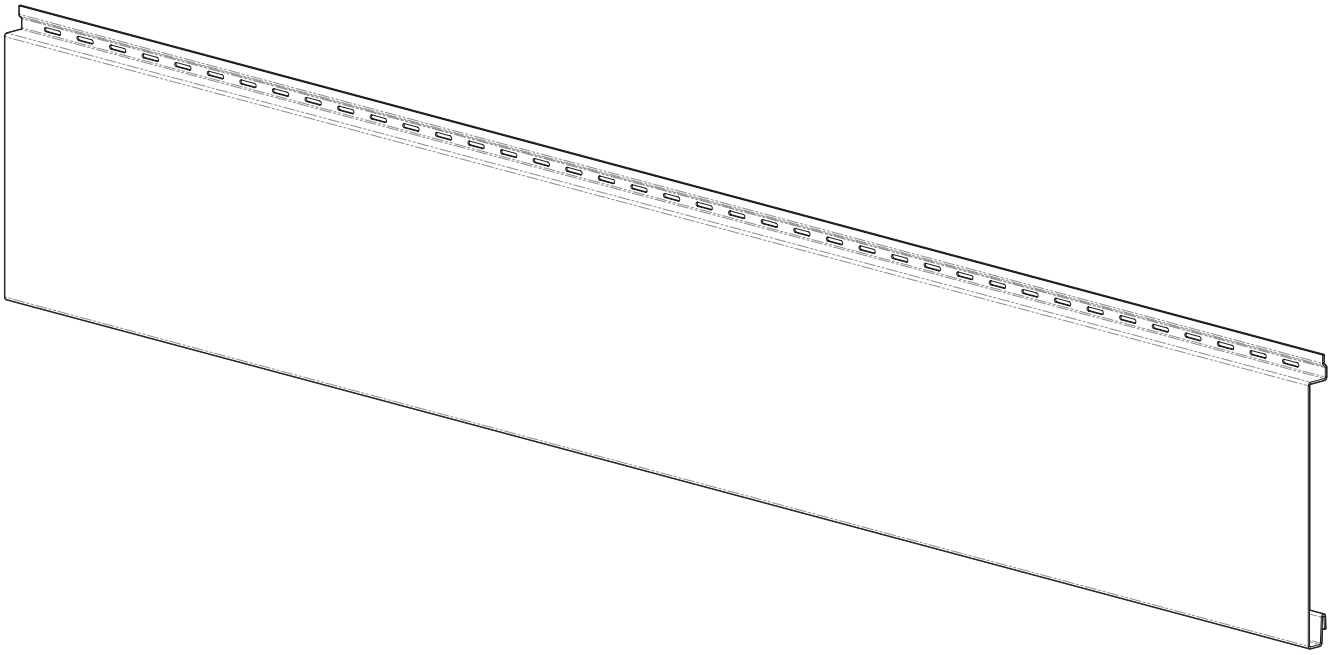
Technical documentation

MAP Serie
Data sheet MAP-12 / MAP-16

Siding board for drained and back ventilated rainscreen systems

MAP-12 / MAP-16 are a durable aluminum architectural boards, which can be installed both vertically and horizontally.

ISOMETRIC VIEW



General Specifications

SPECIFICATIONS

- Quick installation; customizable on site.
- Non-combustible panels.
- Durable and fully recyclable once it reaches the end of its useful life.
- Eco-friendly (solvent-free) powder coating providing more stable and resistant colours over time.

PERFORMANCE CRITERIA

- Maximum transverse deflection under service loads is limited to L/60.
- Maximum axial deflection under service loads is limited to L/180.

MATERIAL

- Aluminum 5000 series 2 mm (0.080") thick.

FINISH/COLOUR

- Electrostatic powder coating in accordance with AAMA 2604, and 2605 standards.
- Colour at the customer's choice.

USAGE

- Indoor use as decorative boards.
- Outdoor use as exterior wall siding.*†

*To use these panels in a rainscreen system, the backing wall must be designed according to local building codes and standards in force by a competent building envelope professional.
† For buildings of 20 m (65'-6") or less in height with static wind pressures of 1.25 kPa (26 psf) or less. For buildings taller than 20m, an engineer must approve the strength of the panel substructure.

For any other application, contact Maibec's technical service.

MAP Serie
Data sheet MAP-12 / MAP-16 (continued)

Technical Specifications

DIMENSIONS

- Height:
  MAP-12 - 304,8 mm (12") and
  MAP-16 - 406,4 mm (16").
- Lenght:
  304.8 mm to 3632.2 mm (12" to 143").
- Other dimensions can be achieved on request.

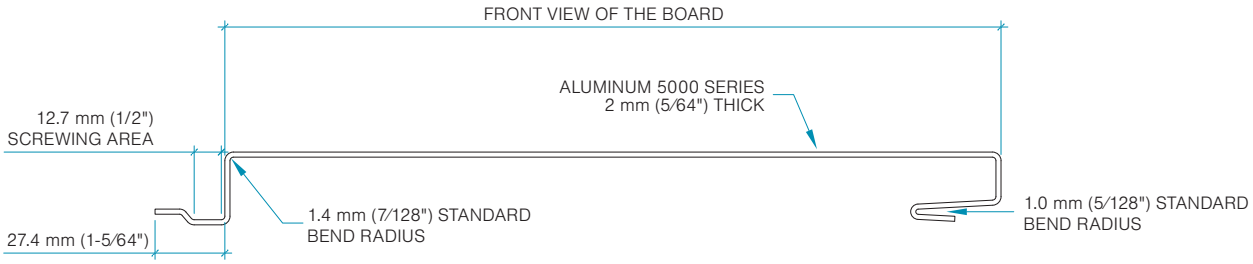
TOLERANCES

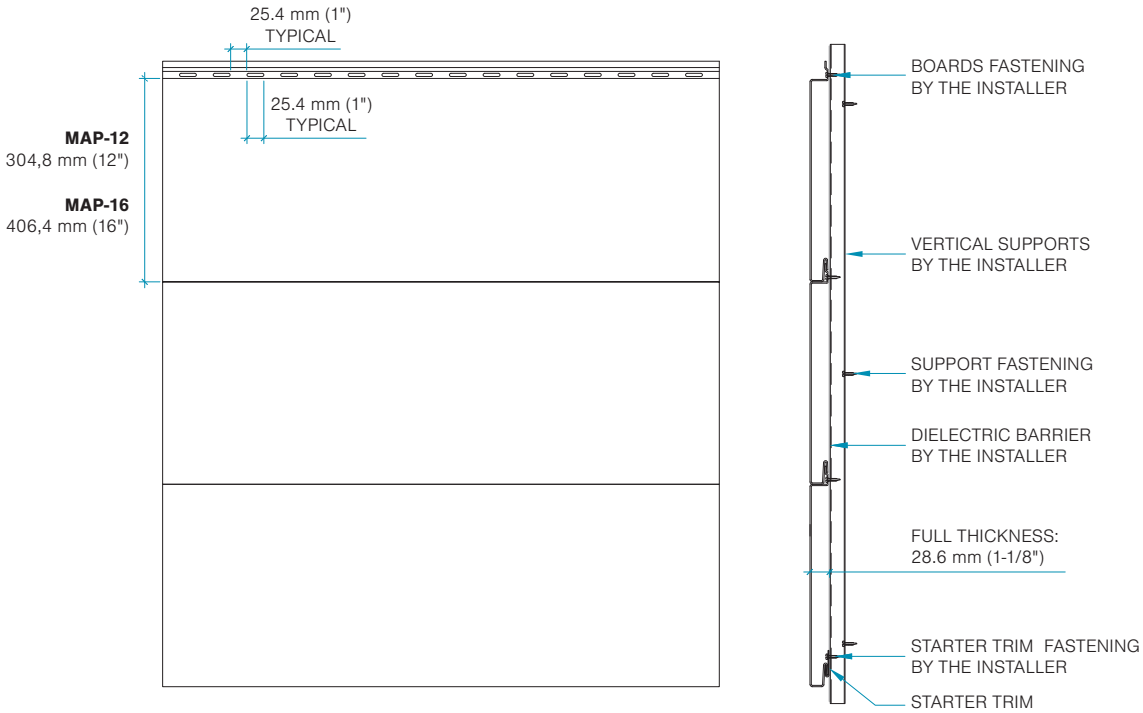
- ±0.127 mm (±1/1064") over the board's length.

INSTALLATION

- The installer is responsible for sizing the board's substrate.
- He is also responsible for choosing minimum spacing and sizing of the board fasteners.

Technical Details





Specifications

WORD Document

To access the document in Word format, click the link below and download from our website:

074616_Maibec_MAP-12-16 Panels_Specifications_EN

SPECIFIER NOTE: The purpose of this guide specification is to assist the specifier in correctly specifying aluminum siding with a digitally printed finish and their installation. The specifier needs to edit the guide specifications to fit the needs of specific projects. Contact MAIBEC to assist in appropriate product selections and for detailing assistance. Red text in brackets indicates a selection needs to be made.

maibec® Architectural Aluminum

SECTION **07 46 16**
ALUMINUM CLADDING

PART 1 - GENERAL

1.1 SECTION INCLUDES [EDIT AS REQUIRED]

A. Specifications for 2 mm (0.08") thick folded aluminum cladding with concealed fastening system.

1.2 RELATED SECTIONS

A. [01 74 21] - Management and disposal of construction/demolition waste

B. [05 41 00] - Structural steelwork

C. [06 10 00] - Rough carpentry

D. [06 16 00] – Plywood

E. [07 20 00] - Thermal protection

F. [07 25 00] - Sealing barriers

G. [07 60 00] - Flashing and cladding sheet

H. [07 92 00] - Sealing compounds

1.3 REFERENCES

A. National Research Council Canada (NRC)
   1. National Building Code of Canada 2020 (NBC-2020)

B. International Code Council (ICC)
   1. International Building Code 2021 (IBC-2021)

C. Association canadienne de normalisation (CSA)
   1. CSA-S157 : Conception de la résistance en aluminium

D. American Architectural Manufacturers Association (AAMA)
   1. AAMA 2604: Voluntary specification, performance requirements and test procedures for high-performance organic coatings on aluminum extrusions and panels.

2. AAMA 2605: Voluntary specification, performance requirements and test procedures for high-performance organic coatings on aluminum extrusions and panels.

E. American Society for Testing and Materials (ASTM)
1. ASTM D3359 - Standard Test Methods for the Evaluation of Adhesion by Tape Test.
2. ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test.
3. ASTM D968 - Standard Test Methods for Abrasion Resistance of Organic Drop Coatings.
4. ASTM D2247 - Standard practice for testing the water resistance of coatings at 100% relative humidity.
5. ASTM B117 - Standard Practice for the Use of Salt Spray (Fog) Apparatus.
6. ASTM G7 - Standard practice for atmospheric environmental exposure testing of non-metallic materials.
7. ASTM D523 - Standard Test Method for Specular Gloss.
8. ASTM B244 - Standard test method for measuring the thickness of anodic coatings on aluminum and other non-conductive coatings on non-magnetic metals using eddy current instruments.
9. ASTM B209-10 - Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate.

F. Underwriters Laboratories Canada (ULC)
1. CAN/ULC-S102 - Standard Test Method for Surface Burning Characteristics of Building Materials and Assemblies.
2. CAN/ULC-S114 - Standard Test Method for Determining Noncombustibility of Building Materials.
3. CAN/ULC-S135 - Standard Test Method for the Determination of Combustibility Parameters of Building Materials Using an Oxygen Consumption Calorimeter.

1.4 PERFORMANCE REQUIREMENTS

A. Design cladding to extend continuously over structural supports with attachment to structural supports to support factorial loads in accordance with authority having jurisdiction

B. Provide a system to compensate for thermal movement of components and structural movement for installation without warping, wind vibration, seal failure and excessive stress on fasteners.

C. Include expansion joints to accommodate movement within the wall system and between the wall system and the building structure caused by structural movement without permanent distortion, damage to fills, joint twisting, seal failure or water penetration.

1.5 SUBMITTALS [EDIT AS REQUIRED]

A. Actions for submittals - Submit the required documents in accordance with the general conditions set out in section [01 33 00]
1. Product Data: For each type of product, include the following:
a. Technical data sheet
b. Installation Instructions or typical details
c. Standard drawing details and application
d. Aluminum material information
e. Cladding dimensions

B. Samples: Submit two (2) 300 mm × 300 mm wall cladding samples corresponding to the proposed materials, colors and finishes

C. INFORMATIONAL SUBMITTALS
1. Product test reports : Submit all relevant test results from a qualified testing agency

D. CLOSEOUT SUBMITTALS
   1. Maintenance data: For each product type, including related accessories. Include in maintenance manuals.
   2. Warranty: Signed copy of manufacturer's warranty.

1.6 QUALITY ASSURANCE [EDIT AS REQUIRED]

A. Coordinate requirements with Section 01 45 00 “Quality Control”.

B. Test Reports: Certified testing reports showing compliance with specified performance characteristics and physical properties, including laboratory reports showing compliance with specified tests and standards.

C. Installer Qualifications: Engage experienced installer, with a minimum of five years’ experience, who has completed systems similar in material, design, and extent to that indicated for Project and with record of successful performance.

D. Pre-installation meeting:
   1. Conduct meeting at Project Site [Insert location].
   2. Review project drawings and requirements, manufacturer’s installation instructions, and manufacturer’s warranty requirements.
   3. Review wall framing for potential interference and conflicts; coordinate layout and support provisions for interfacing work.
   4. Review field quality control procedures.

E. Mockups: Build mockups to verify selections made and to demonstrate aesthetic effects and to set quality standards for fabrication and installation.
   1. Build mockups for siding [and soffit] including accessories:
      a. Include all possible planks style as reference to avoid repetition of pattern.
      b. Include outside corner on one end of mockup and inside corner on opposite end.

1.7 SCHEDULE

A. If on-site measurements cannot be guaranteed, additional time must be provided to confirm the needed measurements. Doors and windows, as well as all other relevant elements, must be installed to guarantee on-site measurements.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials and components in the manufacturer's unopened boxes or pallets, properly labeled and identified by product name and brand. Prevent damage during unloading, storage and installation.

B. Store, protect and handle materials and components in accordance with the manufacturer's recommendations to prevent twisting, bending, mechanical damage, contamination or deterioration.

C. Store materials and components off the ground, clean, dry and free of dirt and debris. Store away from areas where falling objects or other construction activities may cause damage.

D. Stack materials and components horizontally on platforms or pallets, covered with a suitable ventilated waterproof tarpaulin. Store materials so that they remain dry, with a positive slope for water drainage. Do not store materials and components in contact with other materials likely to cause stains, dents or other surface damage.

1.9 SITE CONDITIONS

A. On-site measurements: Verify the location of structural elements and substrate openings by field measurements prior to fabrication, and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid installation delays.

B. Entreprendre les travaux d'installation lorsque les conditions permettent d'effectuer les travaux conformément aux recommandations du fabricant et aux exigences de garantie.

1.10 WASTE MANAGEMENT AND DISPOSAL [EDIT AS REQUIRED]

A. Séparer les matériaux de déchet pour recyclage conformément à la Section 01 74 21 « Gestion et élimination des déchets ».

1.11 WARRANTY [EDIT AS REQUIRED]

A. Substrate warranty: 5 years against defects in materials and workmanship, as well as for mechanical stability and flatness.

B. Finish Coating Warranty:

1. [Powder coated 2605 solid color finish]: XX-year warranty from date of substantial completion. Subject to maintenance of material and finish as recommended by the manufacturer. The finish is warranted to have the following properties:
   a. Resistance to Cracking and Crazing.
   b. Resistance to Chalking: The finish will not chalk more than a numerical rating of 8.
   c. Color stability: No change in the color of the finish exceeding 5 (five) CIE Lab units. CIE illuminant D65.
   d. Gloss Retention: Finish will retain at least 50% of the initial gloss,
   e. Adhesion: The finish will not peel at a rate inferior to class 4B according to ASTM D3359.
   f. See Manufacturer Warranty Sheet for full product and finish warranty details

2. [Powder coated 2604 solid color finish]: XX-year warranty from date of substantial completion. Subject to maintenance of material and finish as recommended by the manufacturer. The finish is warranted to have the following properties:
   a. Resistance to Cracking and Crazing.
   b. Resistance to Chalking: The finish will not chalk more than a numerical rating of 8.
   c. Color stability: No change in the color of the finish exceeding 5 (five) CIE Lab units. CIE illuminant D65.
   d. Gloss Retention: Finish will retain at least 30% of the initial gloss,
   e. Adhesion: The finish will not peel at a rate inferior to class 4B according to ASTM D3359.
   f. See Manufacturer Warranty Sheet for full product and finish warranty details

3. [Liquid coated 2604 / 2605 solid color finish]: XX-year Warranty from date of Substantial Completion. Pending maintenance of the material and finishes as recommended by the manufacturer Finish warranted to have the following properties:
   a. Resistance to Cracking and Crazing.
   b. Resistance to Chalking: The finish will not chalk more than a numerical rating of 8.
   c. Color stability: No change in the color of the finish exceeding 5 (five) CIE Lab units. CIE illuminant D65.
   d. Gloss Retention: Finish will retain at least 30/50% of the initial gloss,
   e. Adhesion: The finish will not peel at a rate inferior to class 4B according to ASTM D3359.
   f. See Manufacturer Warranty Sheet for full product and finish warranty details

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Maibec Inc., 984 5e Rue #202, Levis, Quebec Canada G6W 5M6. www.MAIBEC.com

2.2 MATERIAL

A. Aluminum plate: 5052-H32 alloy complying with ASTM B209 standard.

2.3 ALUMINUM CLADDING [AND SOFFIT] PLANKS [EDIT AS REQUIRED]

A. General: Provide as recommended by siding manufacturer for building configuration.

SPECIFIER NOTE:
Select the desired profile specific to the project and delete the other indicated profiles. Where more than one profile or size is selected coordinate with drawings for clarity. Not all profiles are available in all exposed face dimensions. Select accordingly.

B. MAP-12 Profile
   1. MAP-12; Exposed face: 12 inches (304.8 mm)
      a. Minimum metal thickness: 0.078 inch (2 mm)
      b. Plank length: [143 inches (3 632,2 mm)]

C. MAP-16 Profile
   1. MAP-12; Exposed face: 16 inches (406,4 mm)
      a. Minimum metal thickness: 0.078 inch (2 mm)
      b. Plank length: Plank length: [143 inches (3 632,2 mm)]

D. Acceptable Materials: All folded aluminum board profiles are complete with a set of 1“ (25mm) x 0.187” (4.7mm) factory-punched slotted screw holes, repeated every 2” (51mm)

E. Substitutions: Not Permitted.

F. Requests for substitutions will be considered in accordance with the guidelines outlined in Section 01 60 00 “Product requirements”.

2.4 ACCESSORIES [EDIT AS REQUIRED]

A. General: Provide as recommended by siding manufacturer for building configuration.

B. Flashings: Provide aluminum flashings conforming to Section 07 62 00 “Sheet Metal Flashings and Trim” at sills, window and door heads and where indicated.

C. Fasteners: 1-1/2 inch (38 mm) long #8 stainless steel screws or other types with corrosion resistance appropriate for substrate application and environmental conditions and exposure, supplied by other manufacturers.
   1. Les attaches à clip ne sont pas acceptables.

2.5 FINISHES [EDIT AS REQUIRED]

A. [Solid Color Finish]
   1. Powder-coat finish: AAMA 2605 compliant.
   2. Color according to color reference XXXXXXX from [AkzoNobel] [Tiger] [IFS] [PPG]

B. [Solid Color Finish]
   1. Powder-coat finish: AAMA 2604 compliant.
   2. Color according to color reference XXXXXXX from [AkzoNobel] [Tiger] [IFS] [PPG]

C. Solid Color Finish]
   1. Liquid-coat finish: [AAMA 2605] [AAMA 2604] compliant.
   2. Color according to color reference XXXXXXX from [PAINT MANUFACTURER].

D. Flashing: Provide aluminum flashing complying with Section 07 62 00 "Sheet Metal Flashing and Trim" at sill, window and door heads and where indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with installation tolerances and other conditions affecting the performance of aluminum cladding [and soffit] and related accessories.

B. Install only when unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of spatter and substances harmful to application.

B. Inspect products before installation and check for transport damage.

C. Ne pas installer de produits endommagés ou douteux ; les réparer ou les remplacer si nécessaire pour obtenir un aspect lisse, cohérent et de haute qualité.

3.3 INSTALLATION

A. General: Comply with the manufacturer's written installation instructions and shop drawings applicable to the products and applications indicated, unless more stringent requirements apply.

B. install aluminum cladding and related accessories in accordance with AAMA 1402.
   1. Installer les fixations à une distance maximale de 16 pouces (406mm) au centre.
   2. Laisser un espace de 3/16” (4.7mm) entre la garniture et les planches pour permettre un mouvement thermique.
   3. Lorsque les planches sont jointes bout à bout :
      a. Fixer directement à travers le métal chaque joint de planche avec une (1) vis de verrouillage.
   4. Placer la vis de verrouillage près du joint de planche pour permettre le mouvement thermique aux extrémités opposées. Le reste de la planche doit être fixé au centre des trous oblongs.

C. When aluminum cladding is in contact with dissimilar metals, protect against galvanic action by painting the contact surfaces with primer, applying sealant or tape, or installing non-conductive spacers.

D. Coordonner l'installation des solins comme spécifié dans la section 07 60 00 “Solins et Tôles” et des autres composantes extérieures qui concernent le système de revêtement.

E. Installer les scellants pour joints comme spécifié dans la section 07 92 00 "Scellants pour Joints" pour assurer une installation étanche aux intempéries

3.4 ADJUSTING AND CLEANING

A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.

B. Periodically clean exposed surfaces of battens that are not protected by temporary covering to remove fingerprints and soil during construction period. Do not let soil accumulate until final cleaning.

C. Protect battens from damage during construction. Use temporary protective coverings where needed and approved by the manufacturer. Remove protective covering at the time of Substantial Completion.

D. Clean and touch up minor abrasions in finishes with air dried coating that matches color and gloss of, and is compatible with, factory applied finish coating.

E. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

END OF SECTION

Typical details

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

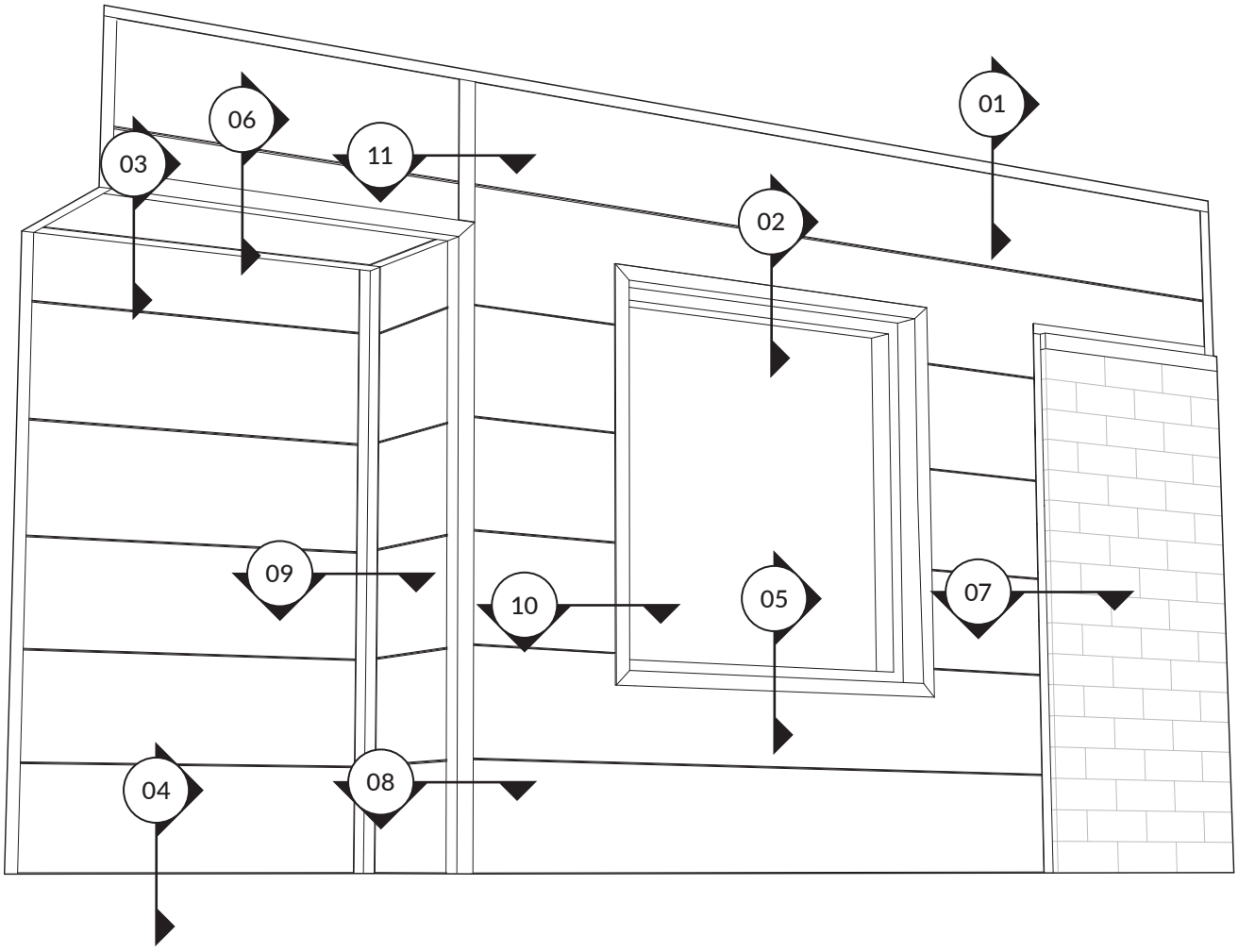
1/16

ALUMINUM SIDING FOR DRAINED AND VENTILATED TYPE RAIN SCREEN SYSTEM

Installation

The installer is responsible for sizing substructure supports and their fasteners.

The MAP12 and MAP-16 are a durable, lightweight and easily handled aluminum siding with concealed fasteners.



GENERAL VUE

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

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MAP-12/MAP-16 - HORIZONTAL INSTALLATION

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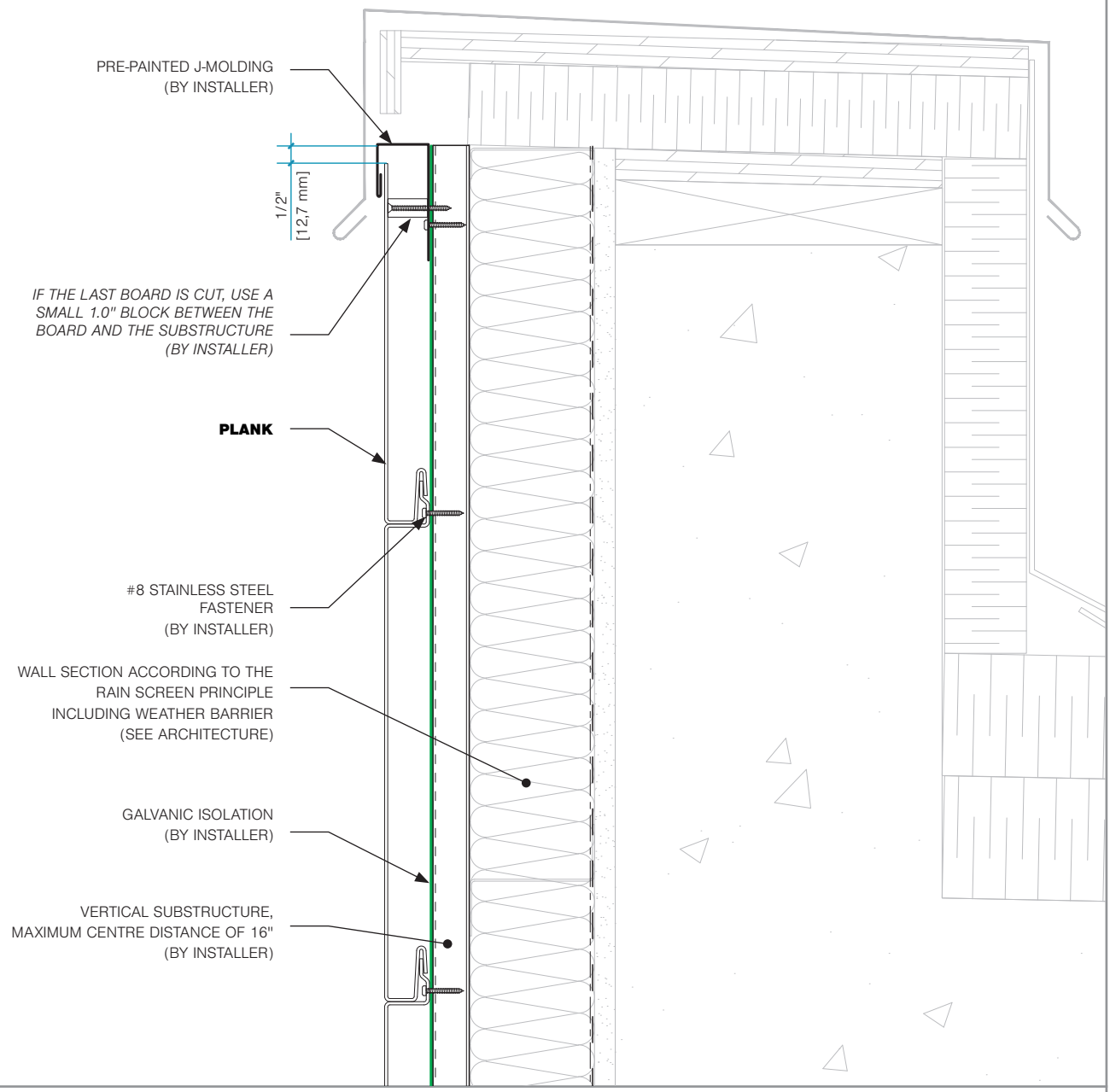
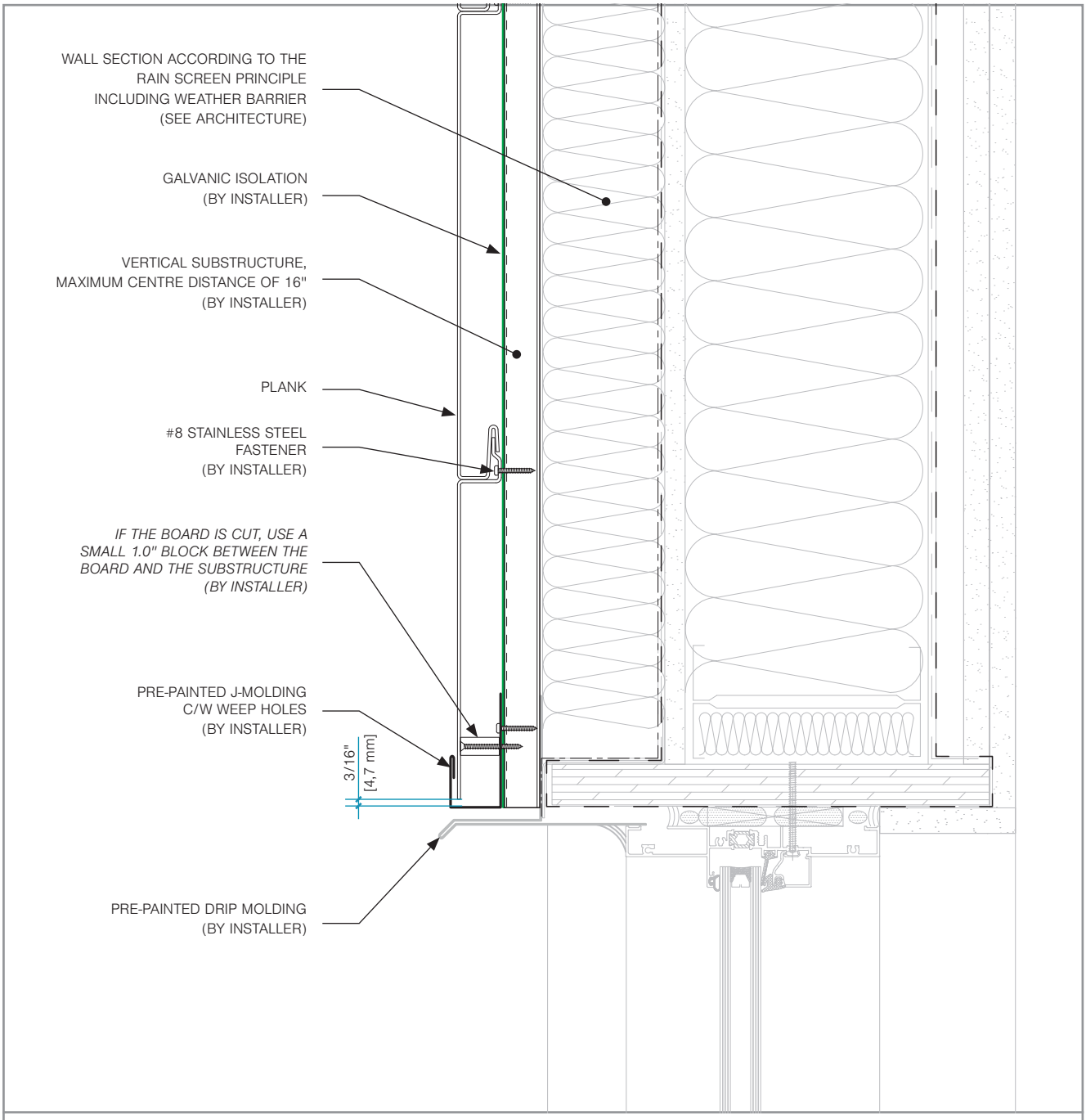


01 **WALL OR PARAPET HEADER**

SIDE VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

4/16

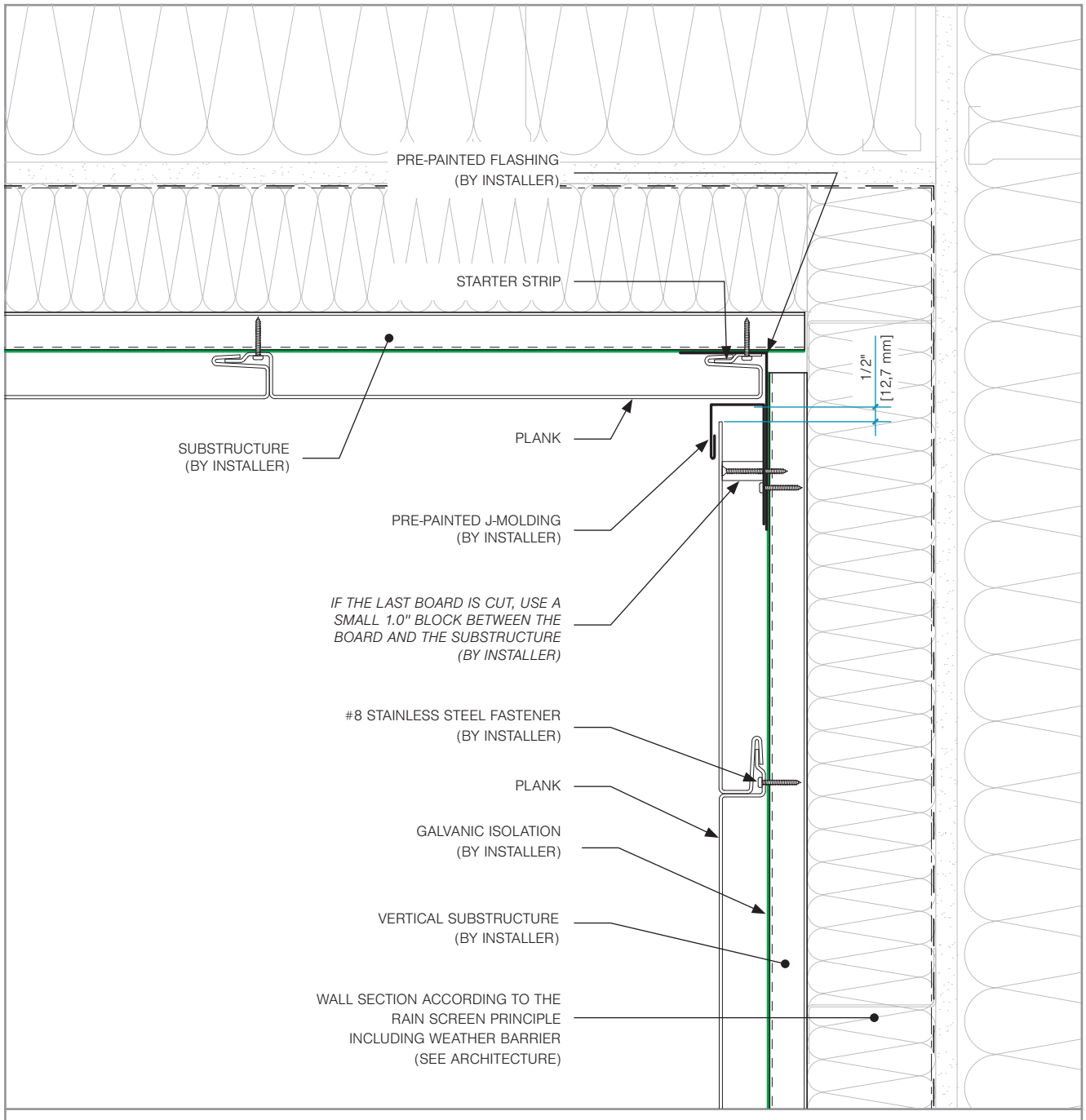


02 **WINDOW AND DOOR HEAD**

SIDE VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

5/16

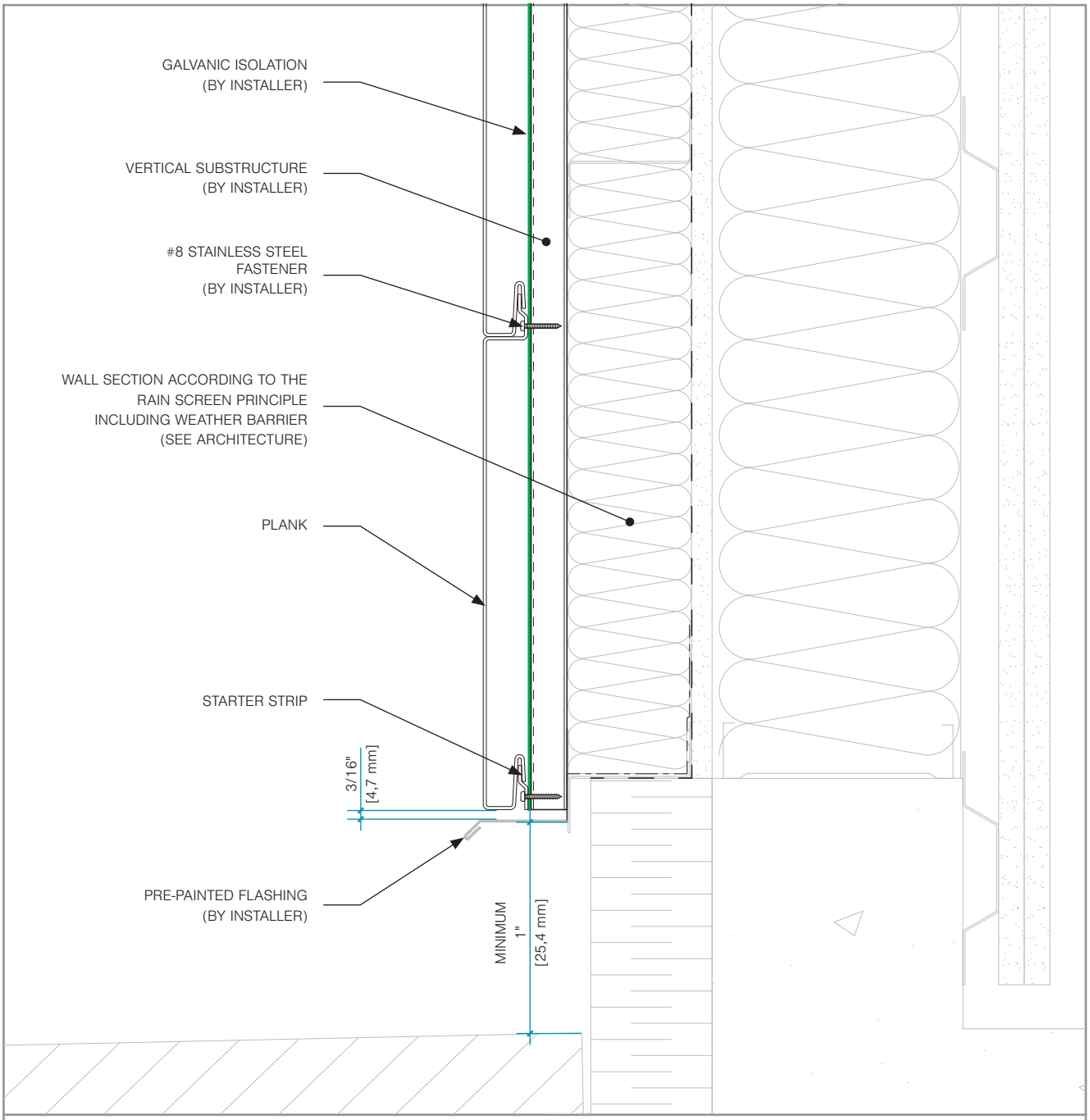


03 **WALL HEAD AND SOFFIT**

SIDE VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

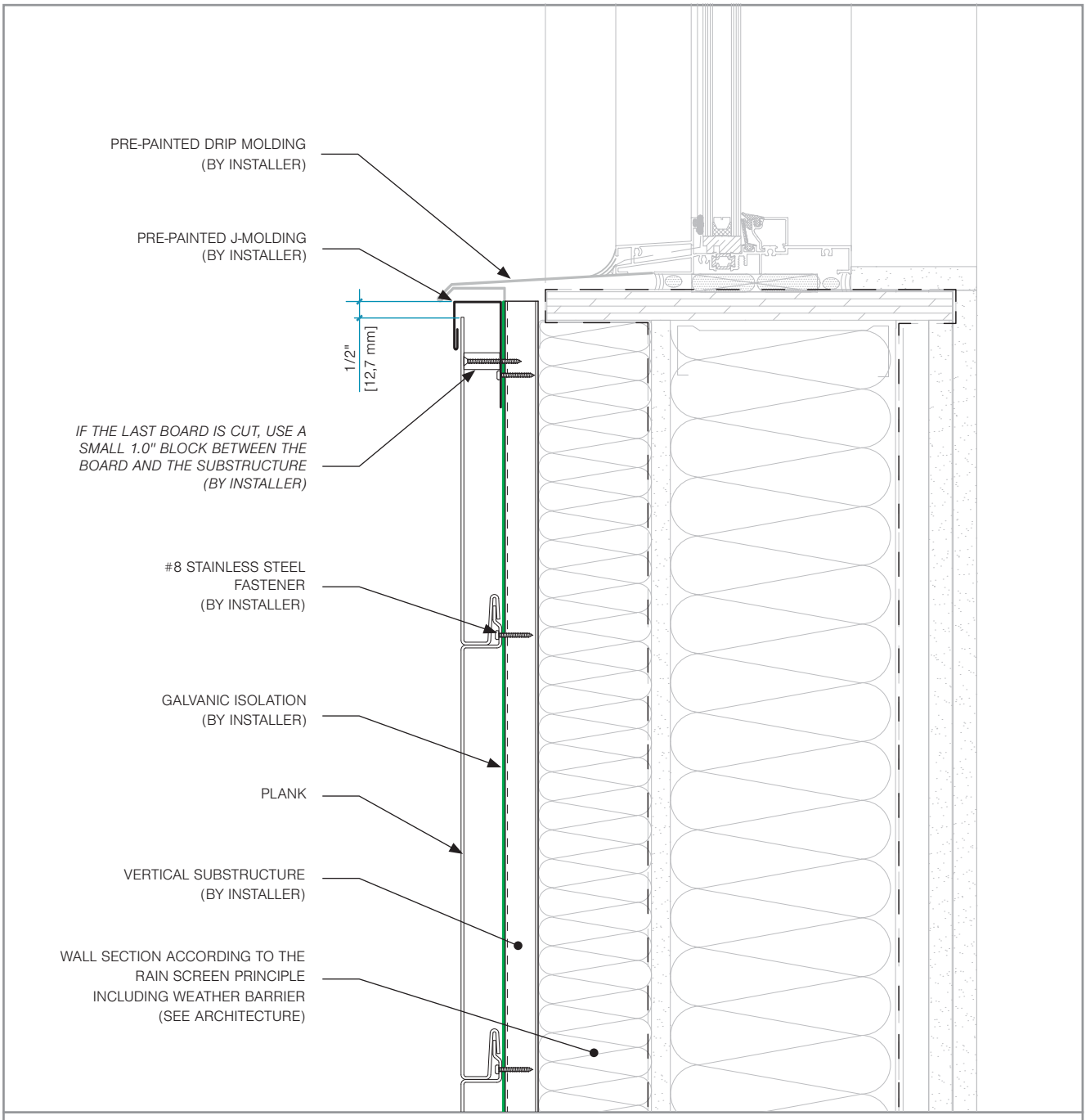
6/16



04 **WALL BASE**
SIDE VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

7/16

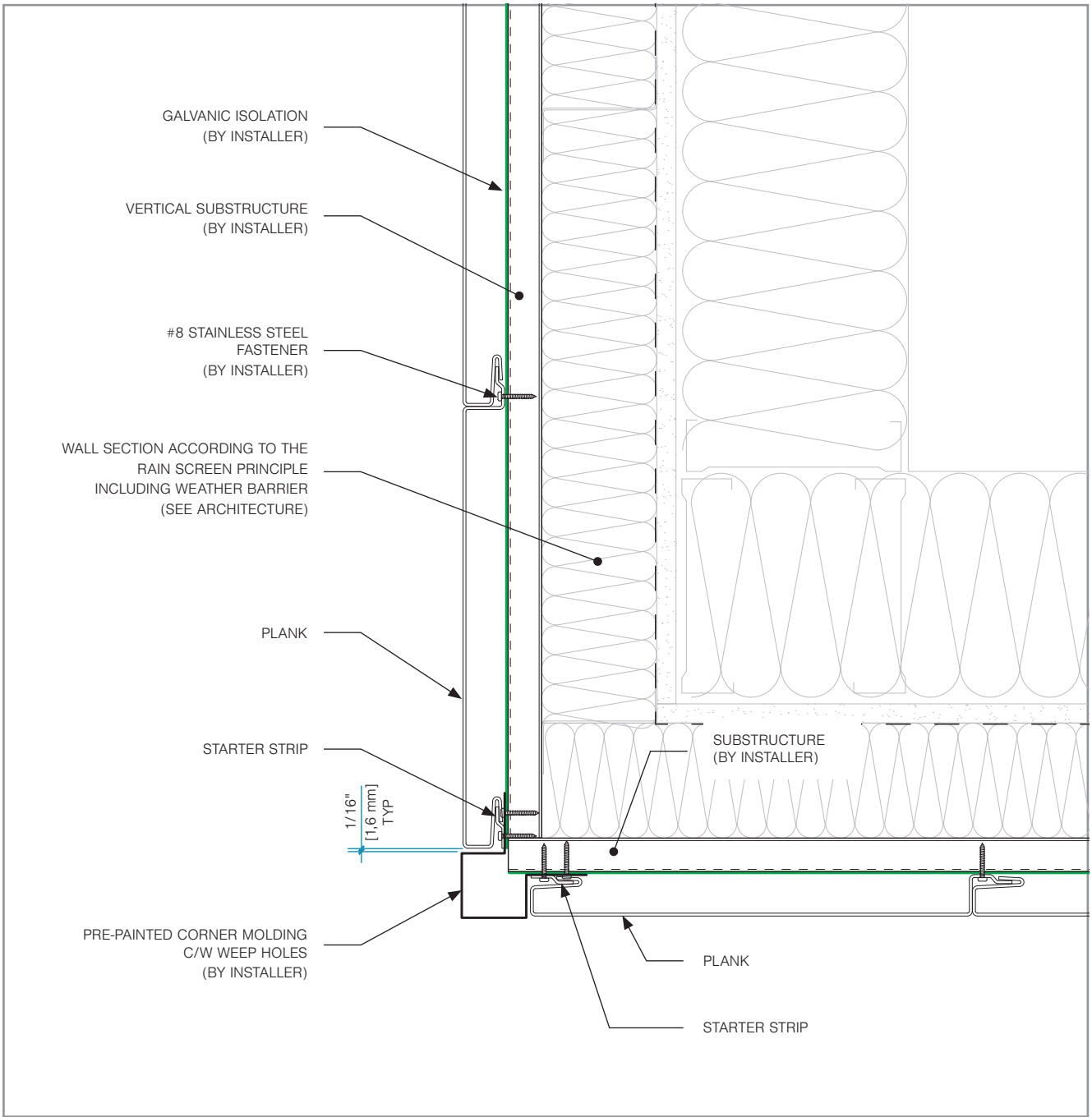


05 **WINDOW SILL**

SIDE VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

8/16



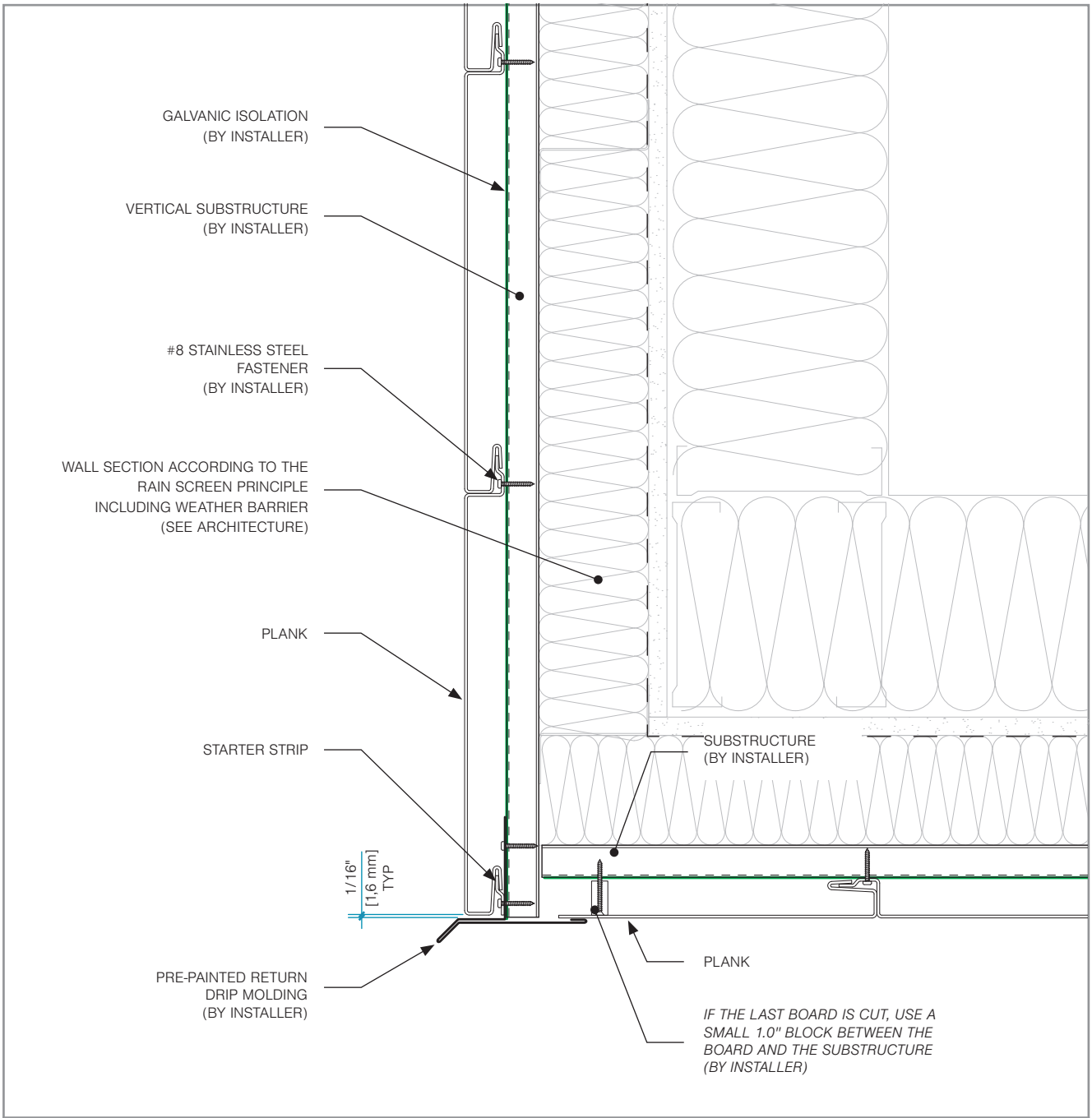
06a

WALL AND SOFFIT

SIDE VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

9/16



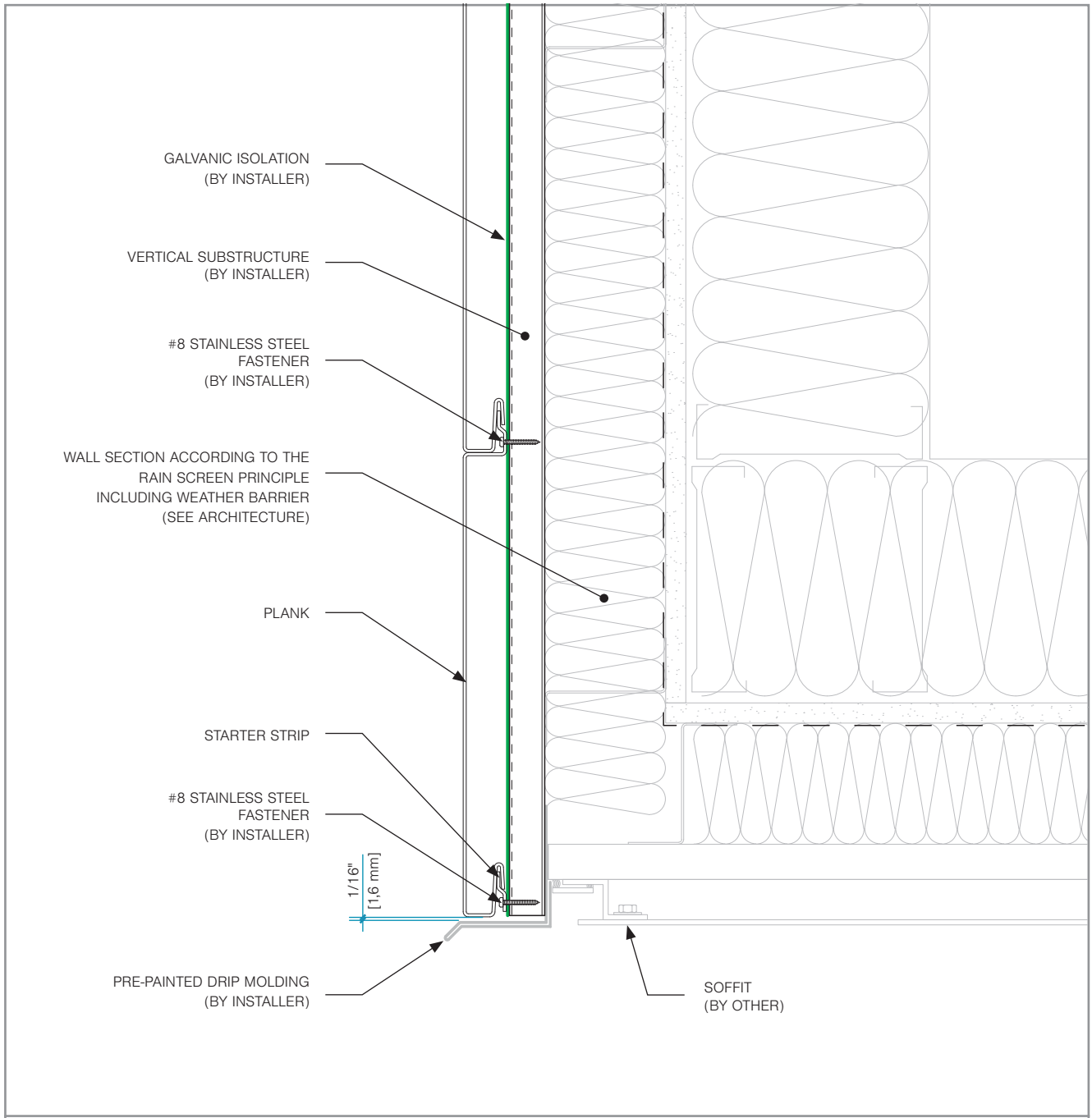
06b

WALL AND SOFFIT (ALTERNATIVE)

SIDE VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

10/16



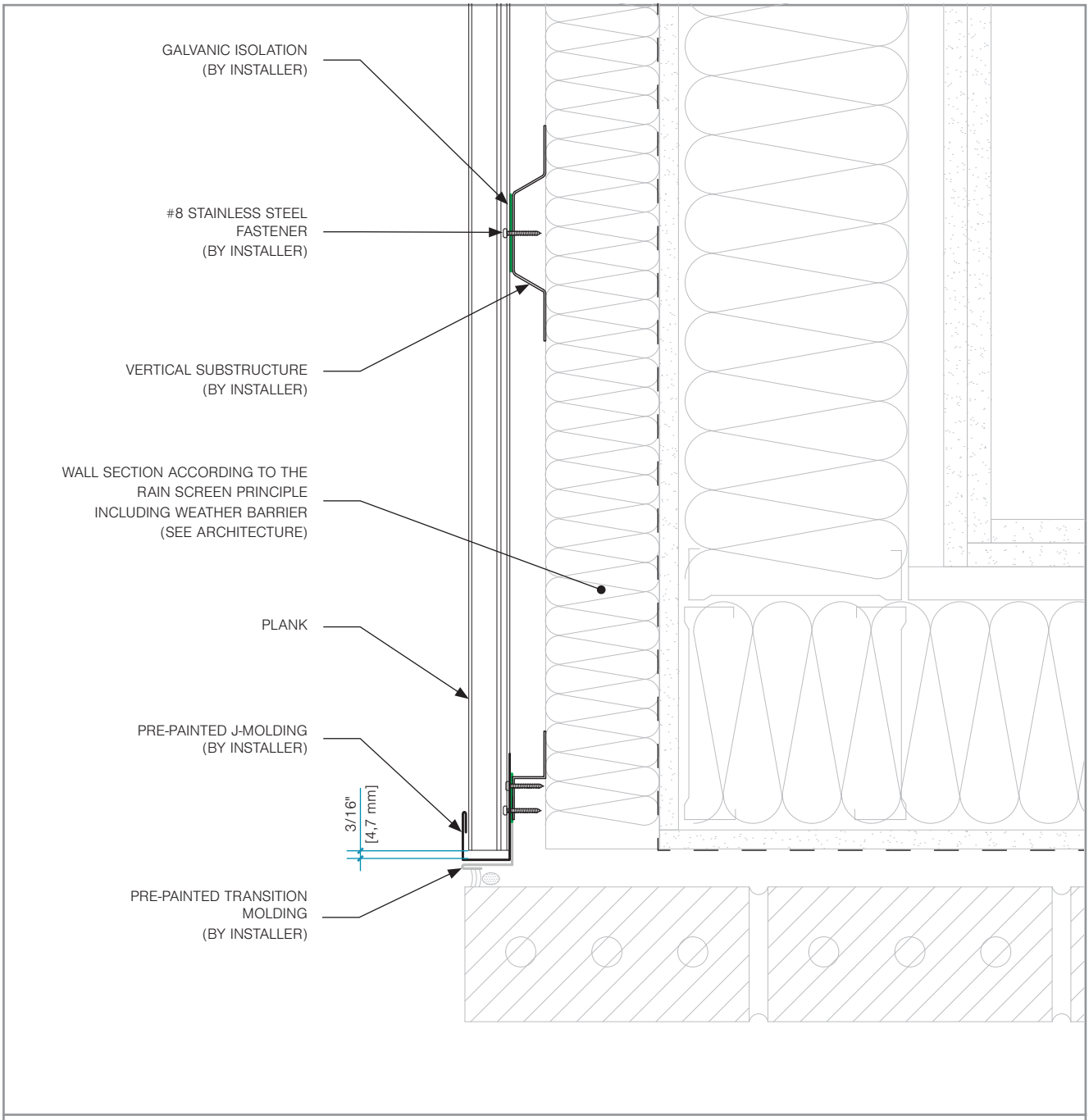
06c

WALL AND OTHER SOFFIT

SIDE VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

11/16



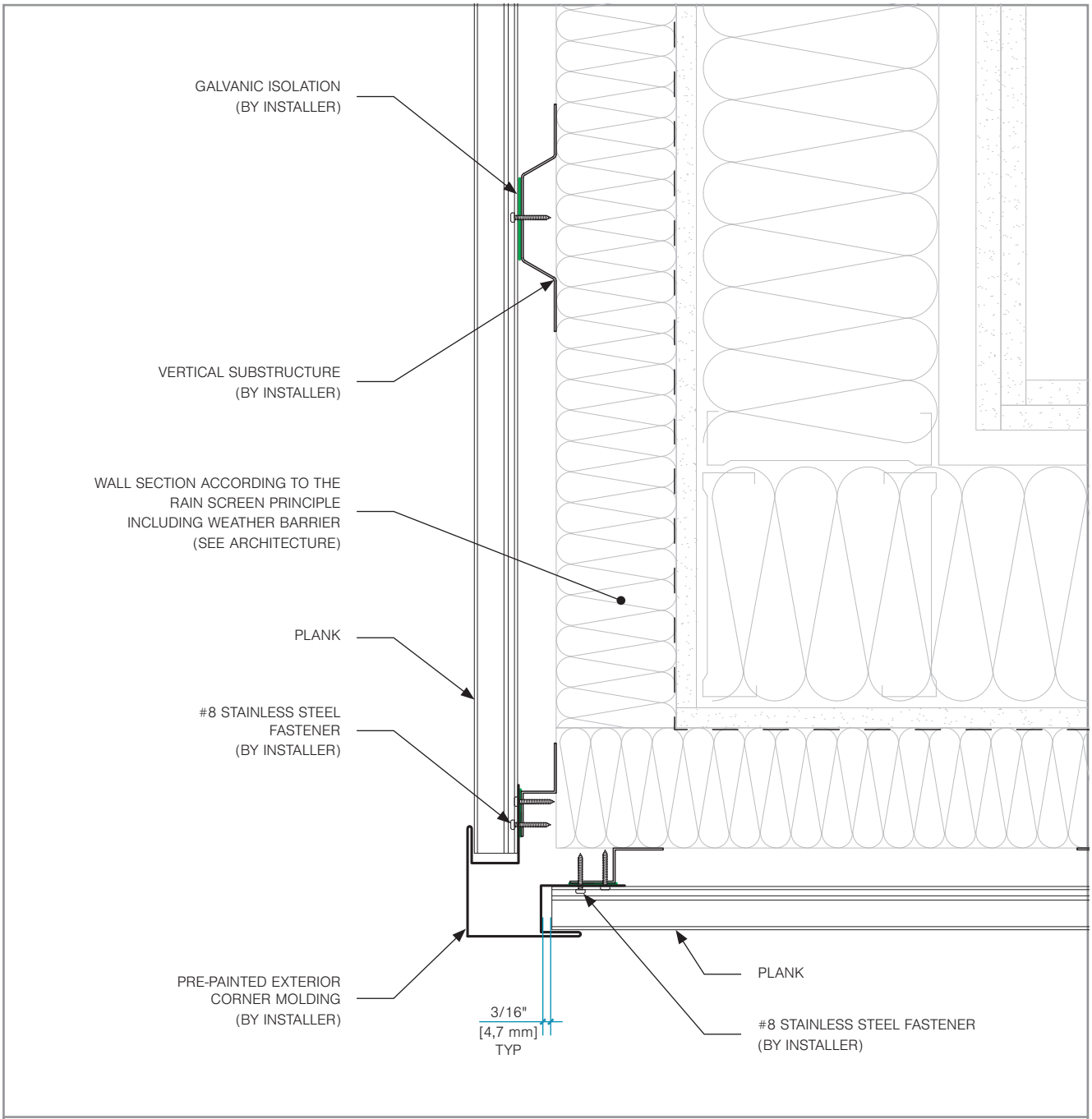
07

END OF WALL OR TRANSITION

TOP VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

12/16

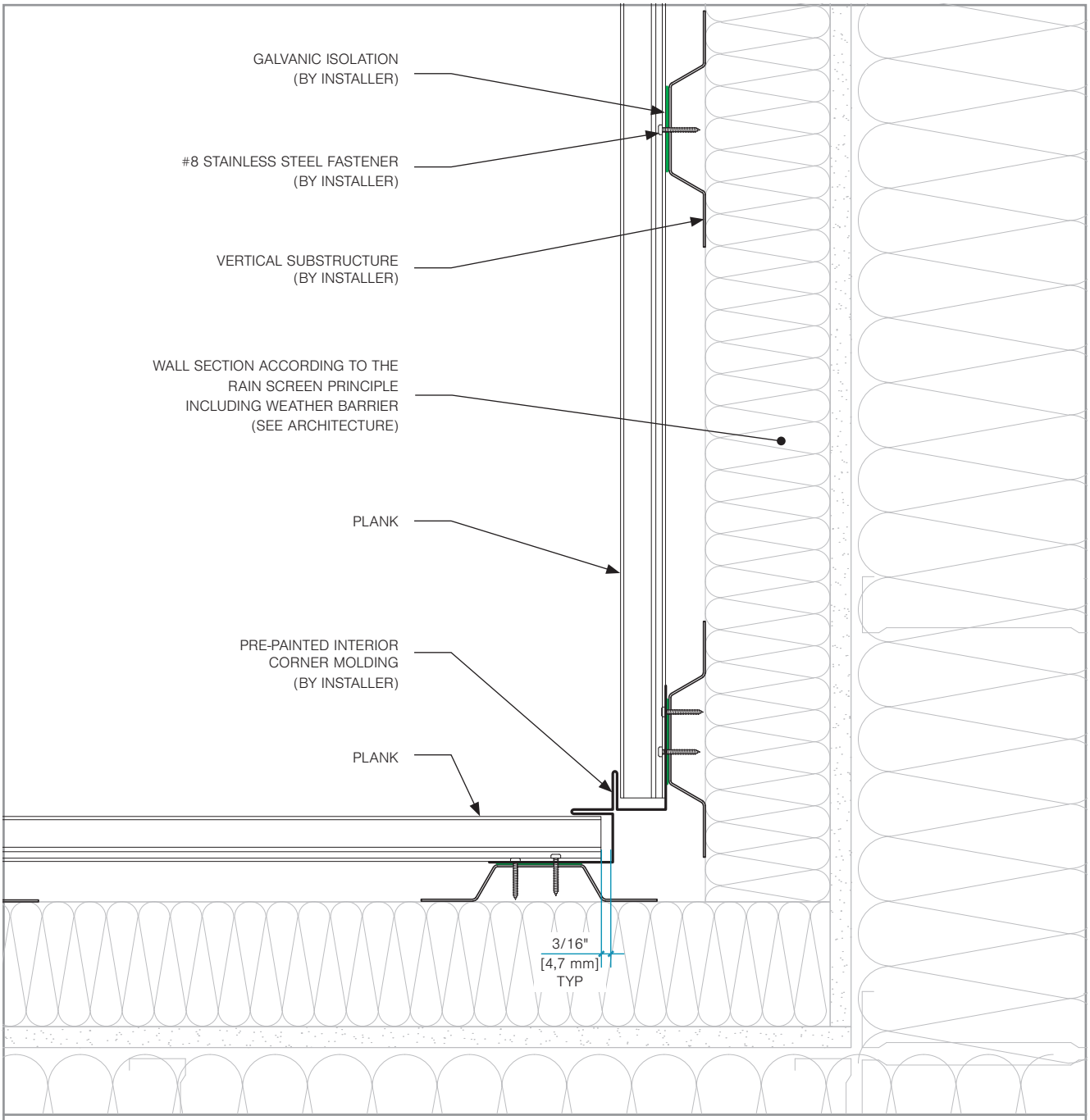


08 **EXTERIOR CORNER**

TOP VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

13/16



09a **INTERIOR CORNER**

TOP VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

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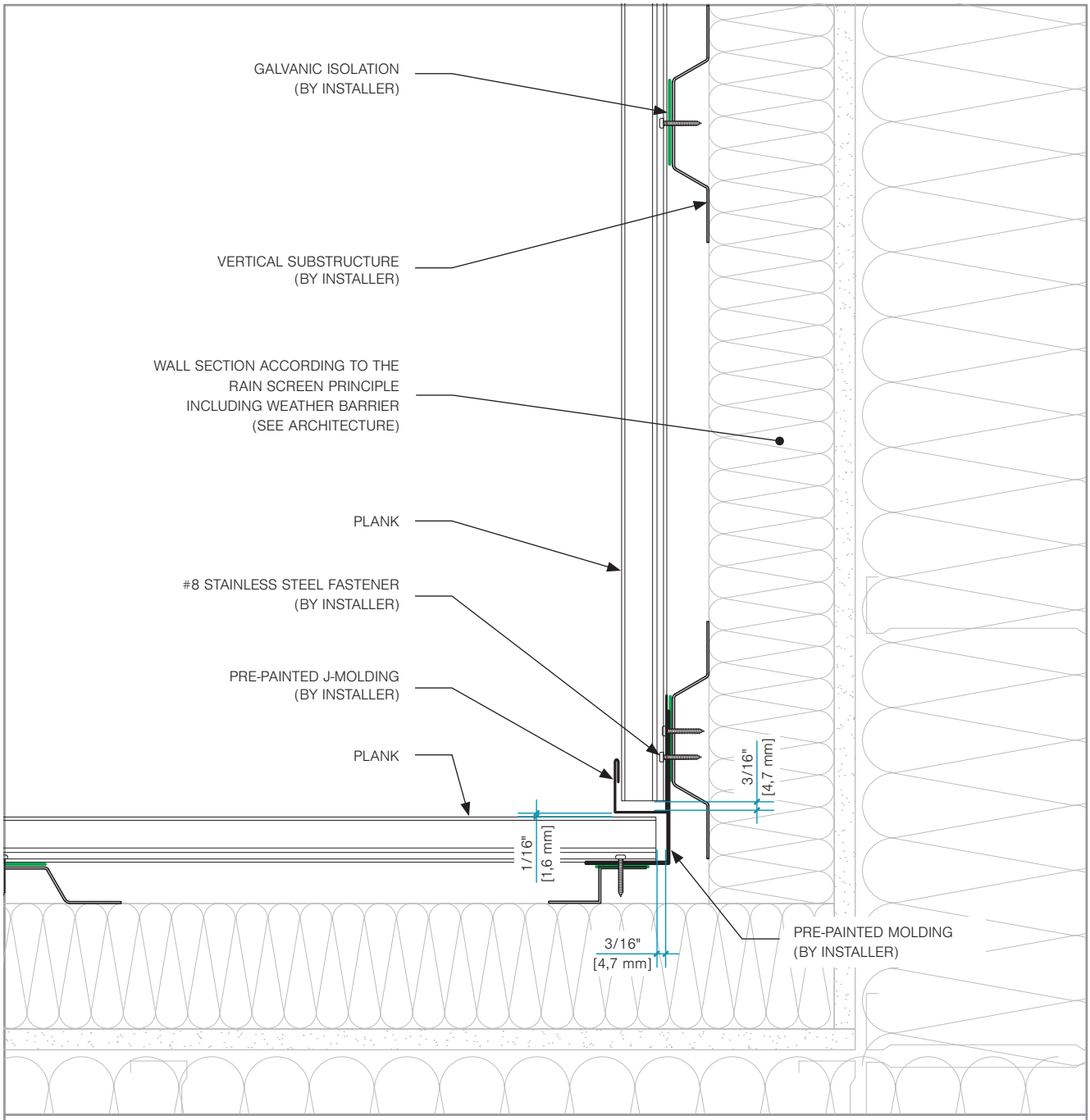


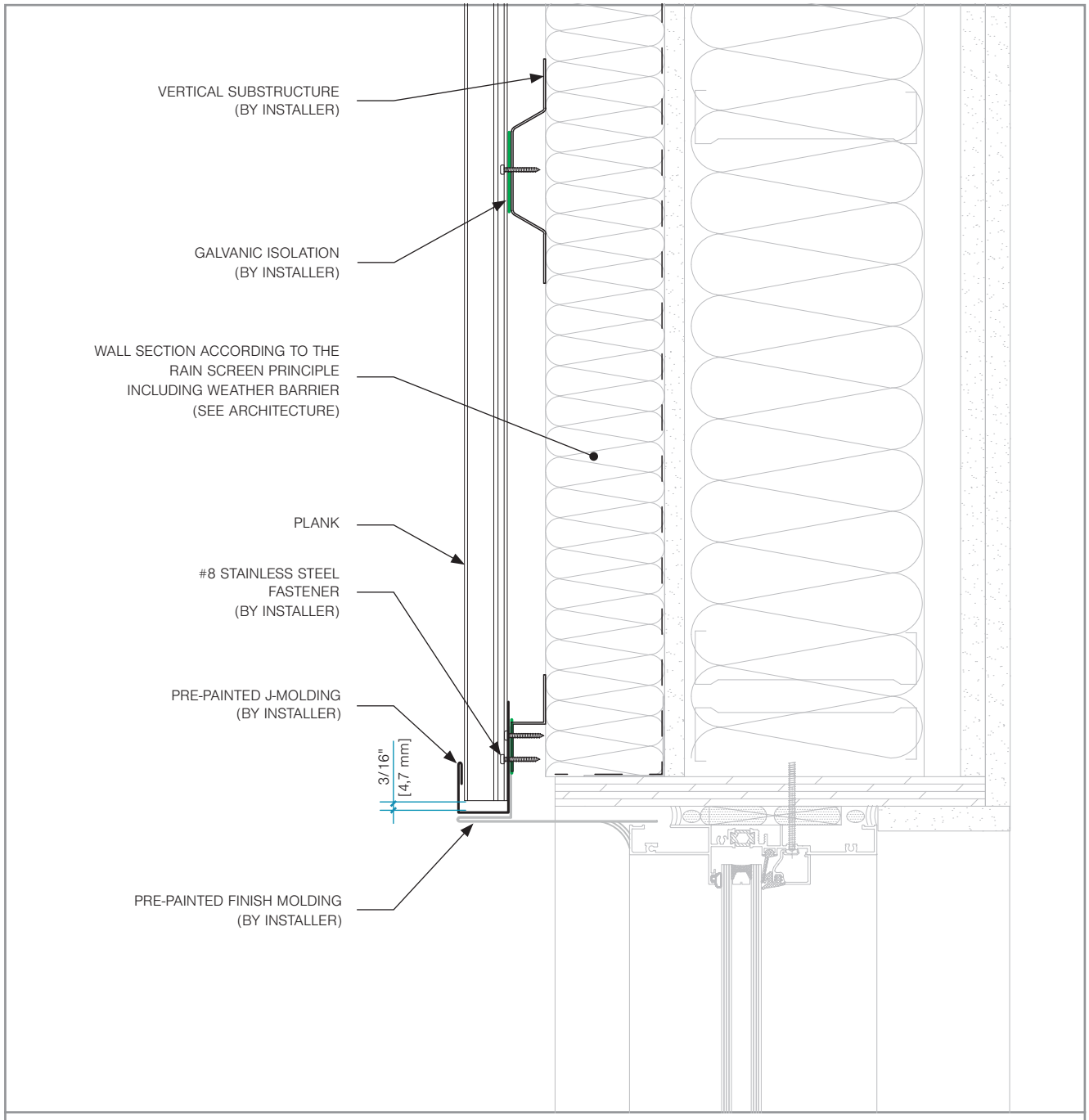
09b

INTERIOR CORNER (ALTERNATIVE)

TOP VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

15/16

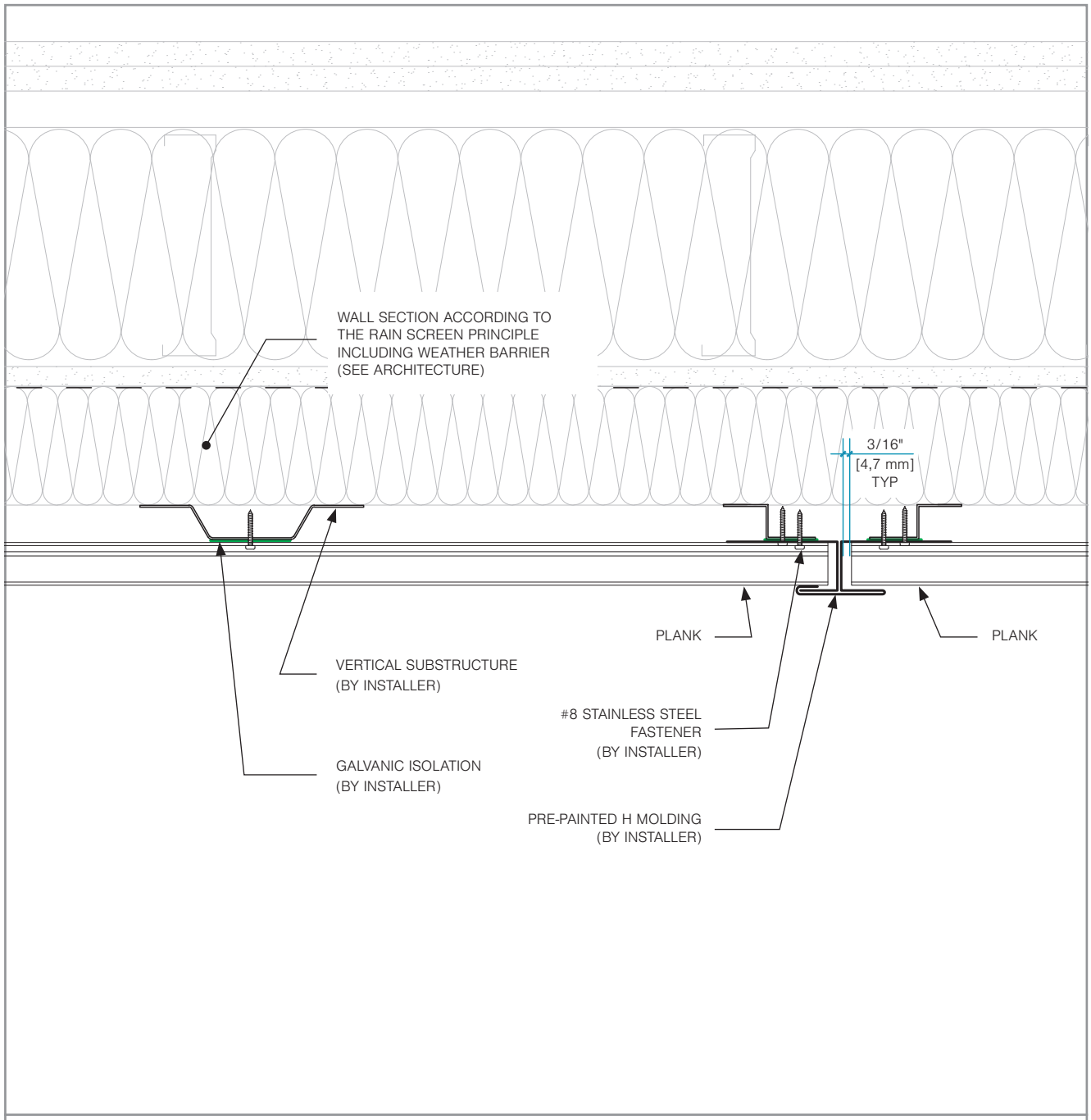


10 **WINDOW AND DOOR JAMB**

TOP VIEW

MAP-12/MAP-16 - HORIZONTAL INSTALLATION

16/16



11 **TRANSITION WITH H MOLDING**

TOP VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

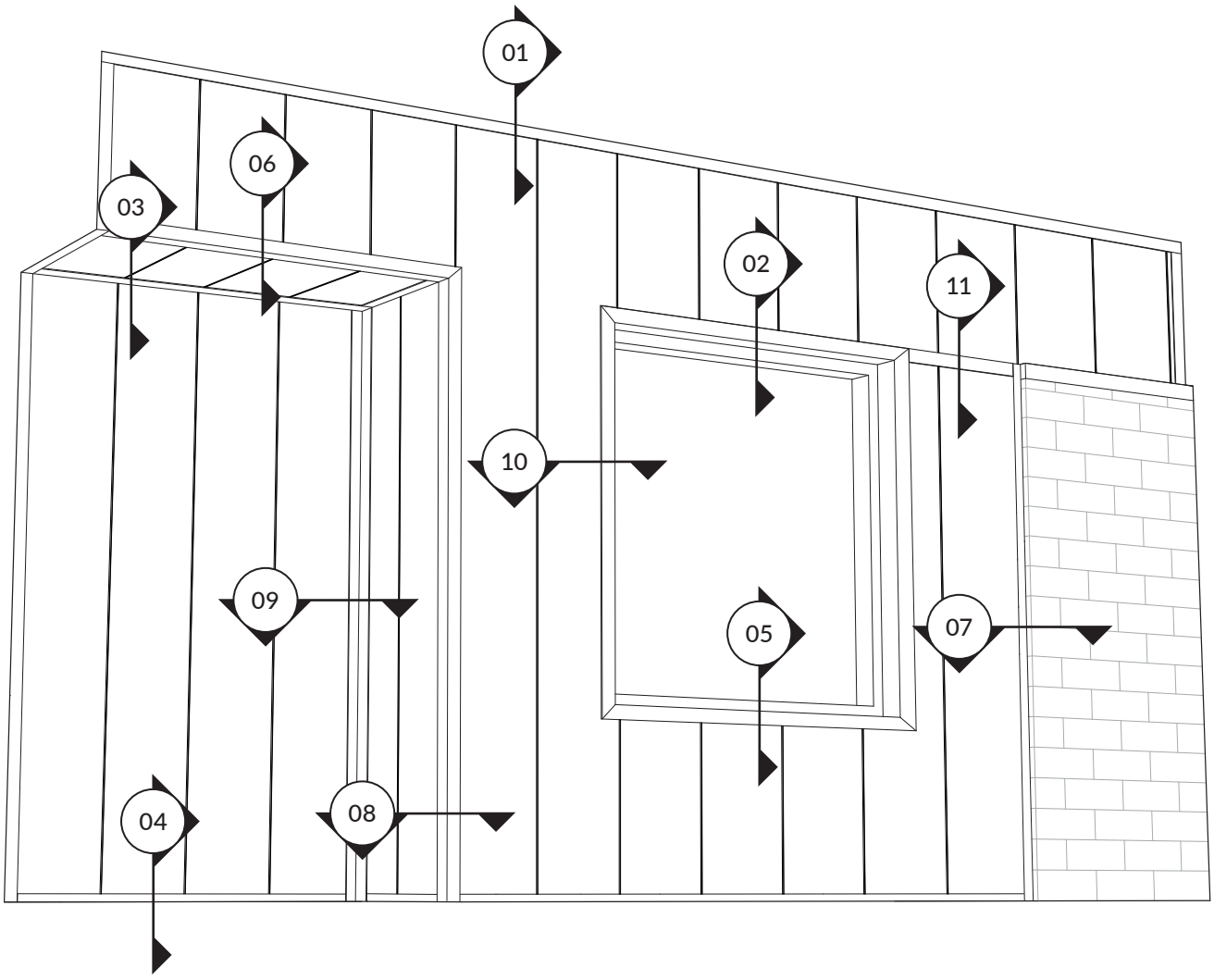
1/17

ALUMINUM SIDING FOR DRAINED AND VENTILATED TYPE RAIN SCREEN SYSTEM

Installation

The installer is responsible for sizing substructure supports and their fasteners.

The MAP12 and MAP-16 are a durable, lightweight and easily handled aluminum siding with concealed fasteners.



GENERAL VUE

MAP-12/MAP-16 - VERTICAL INSTALLATION

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MAP-12/MAP-16 - VERTICAL INSTALLATION

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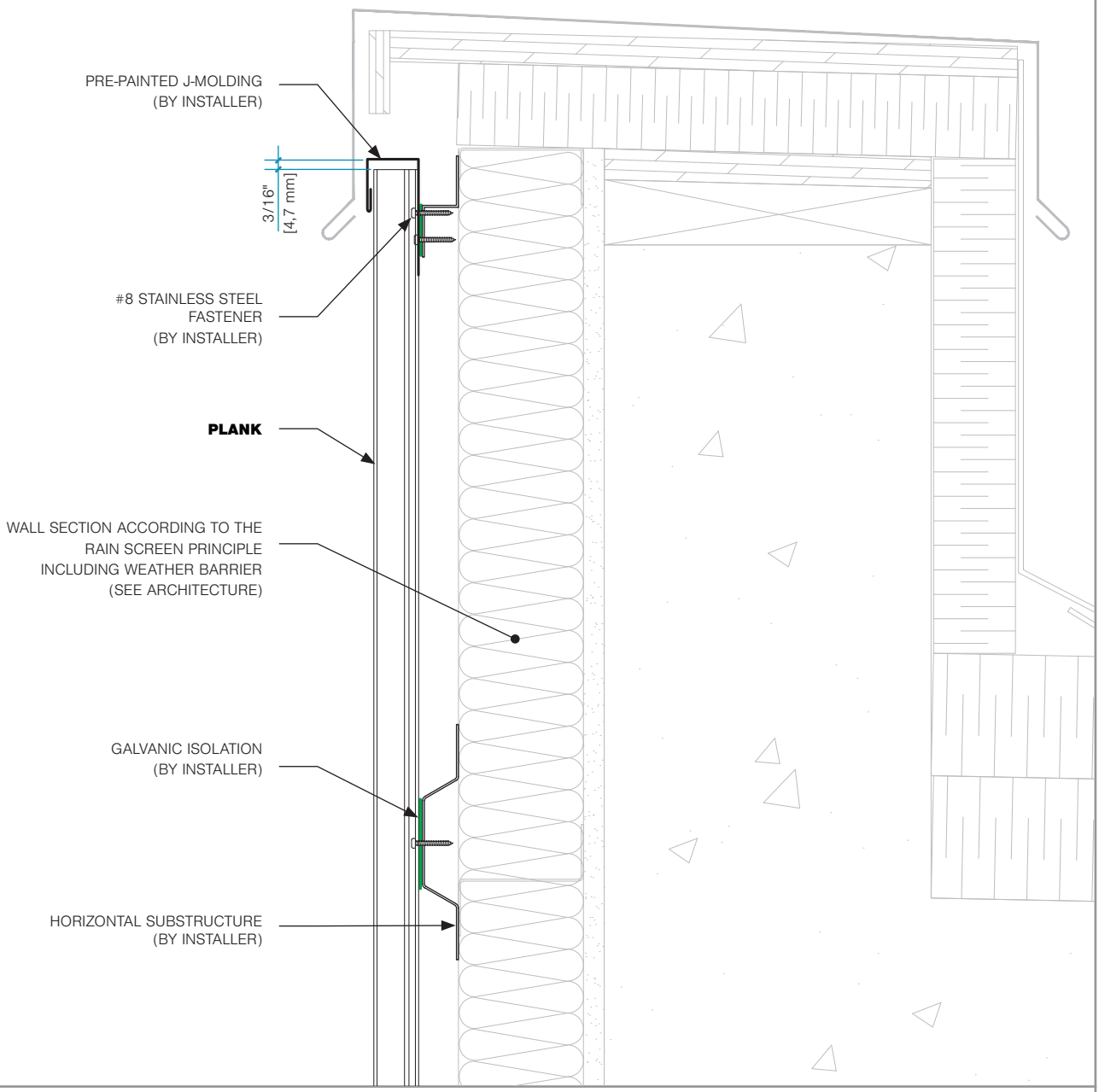

01 **WALL OR PARAPET HEADER**

SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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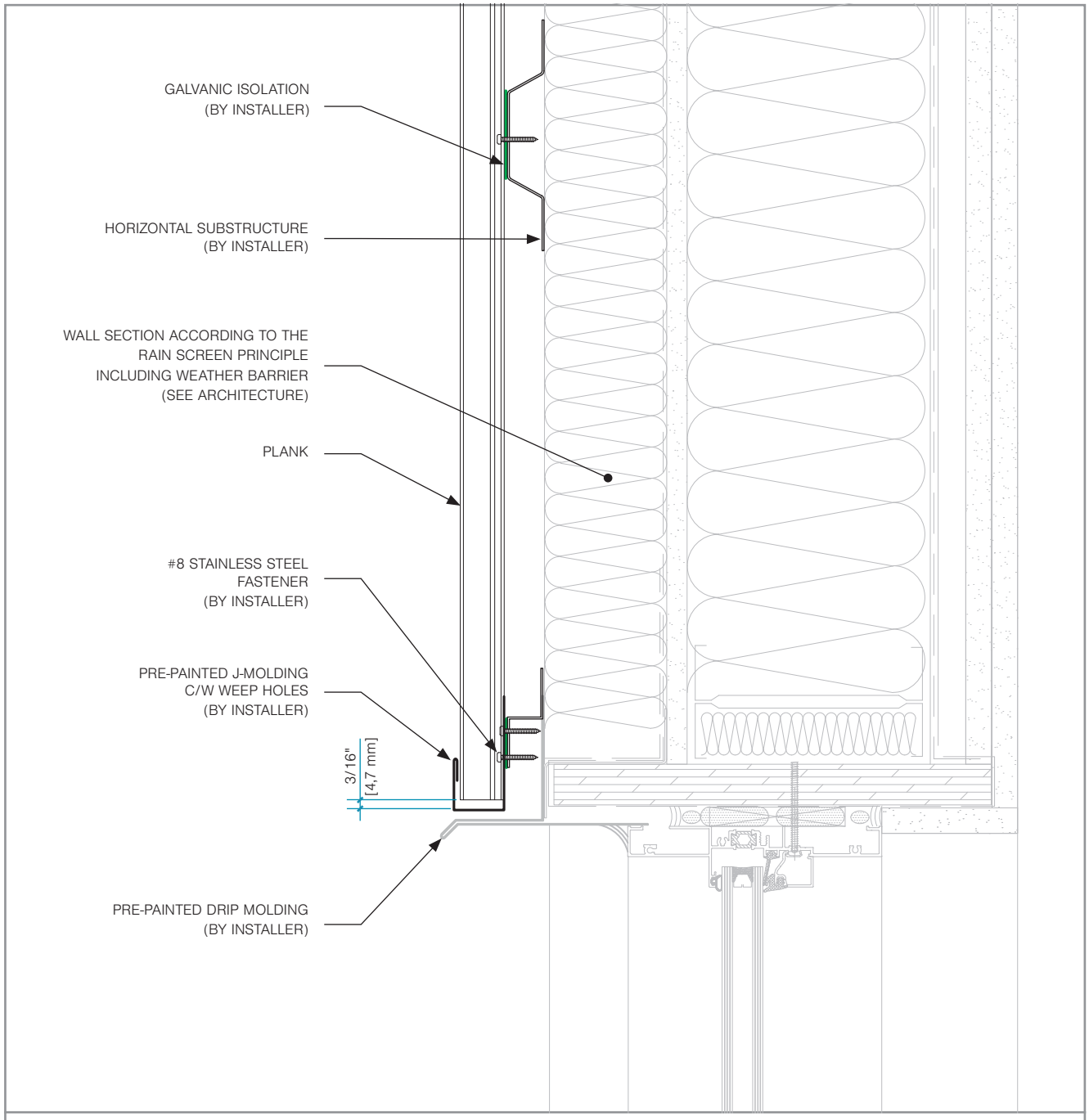

02 **WINDOWS AND DOORS HEAD**

SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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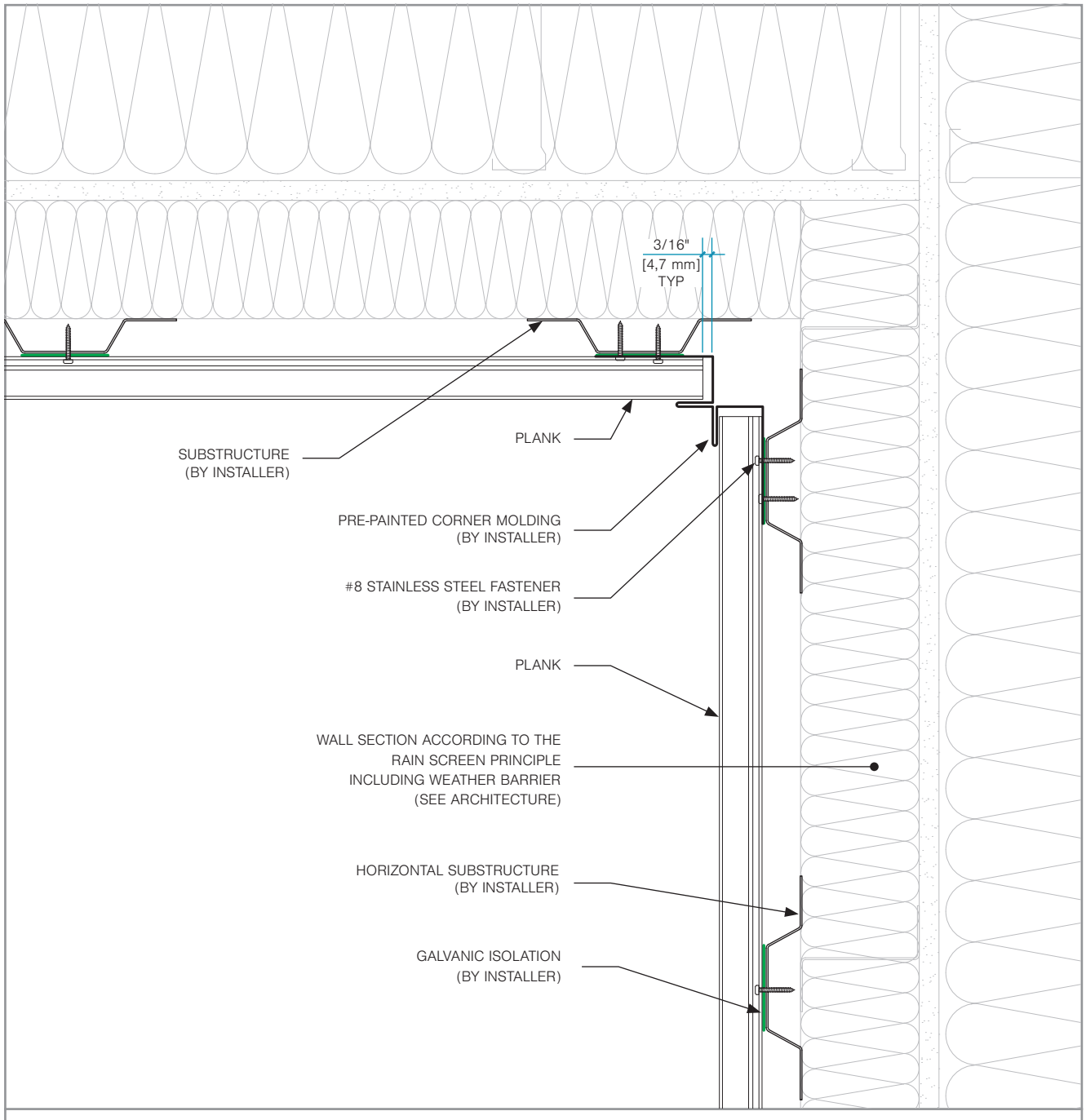

03a **WALL HEAD AND SOFFIT**

SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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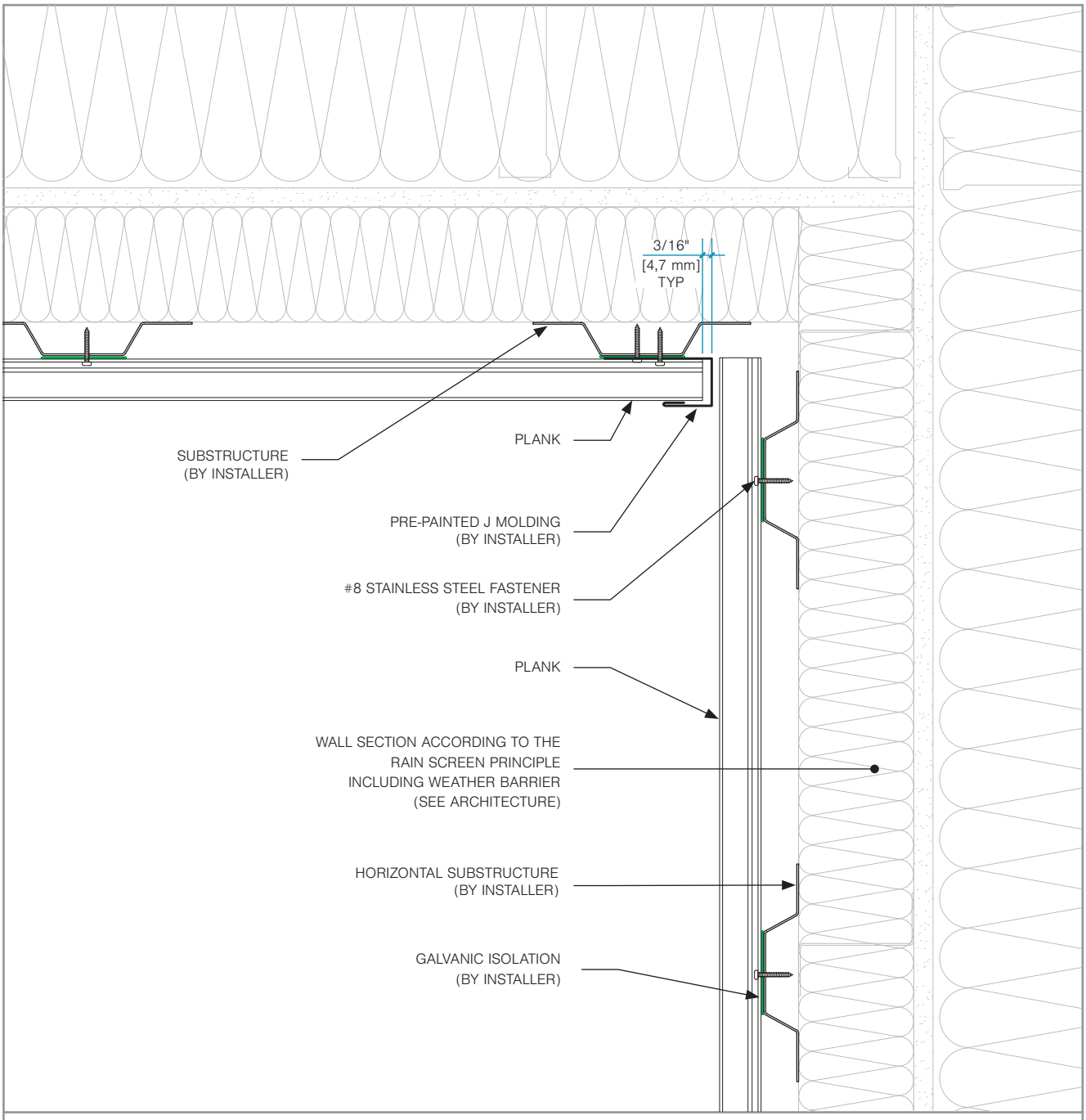

03b

WALL HEAD AND SOFFIT (ALTERNATIVE)

SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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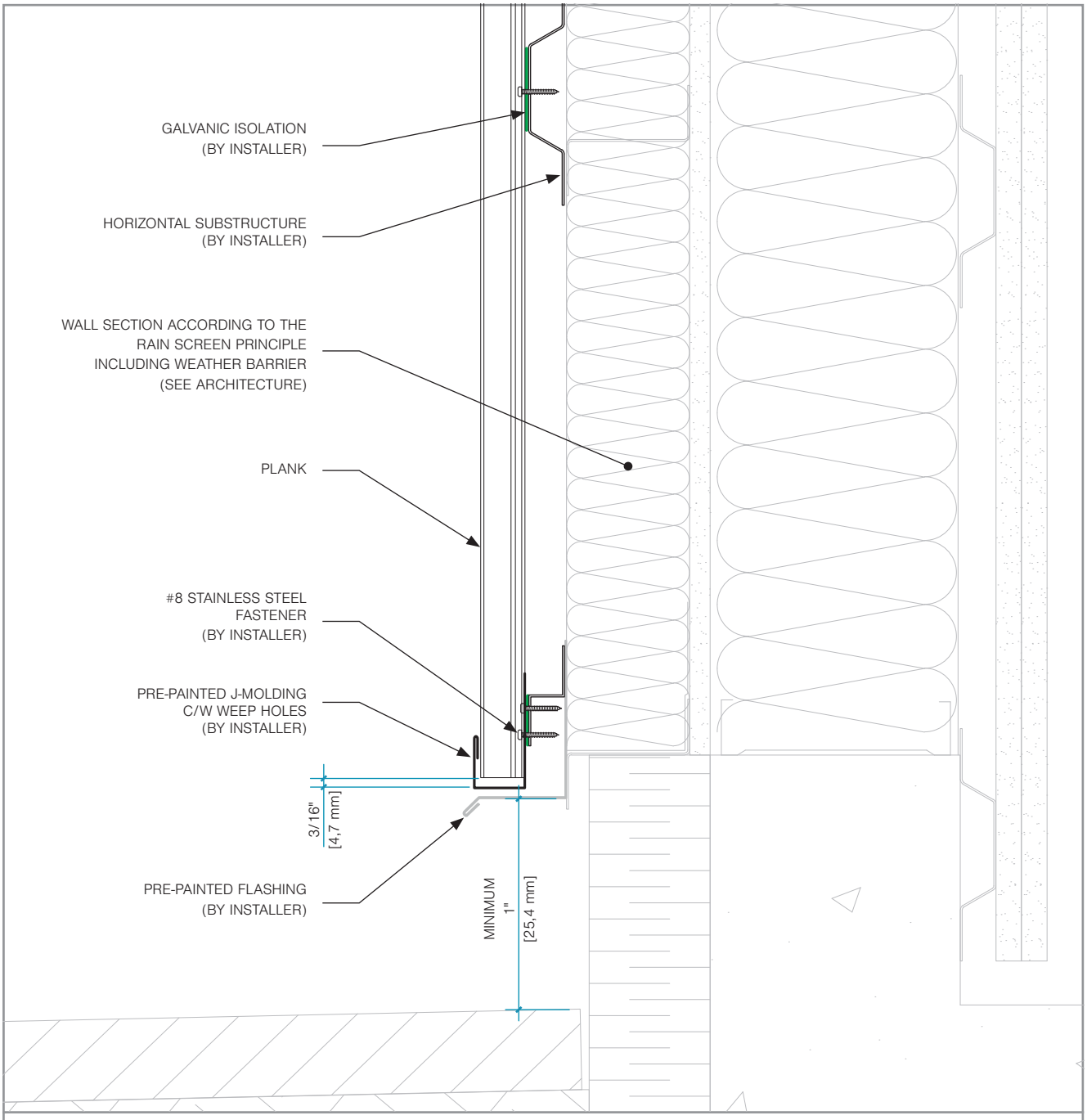

04 **WALL BASE**
SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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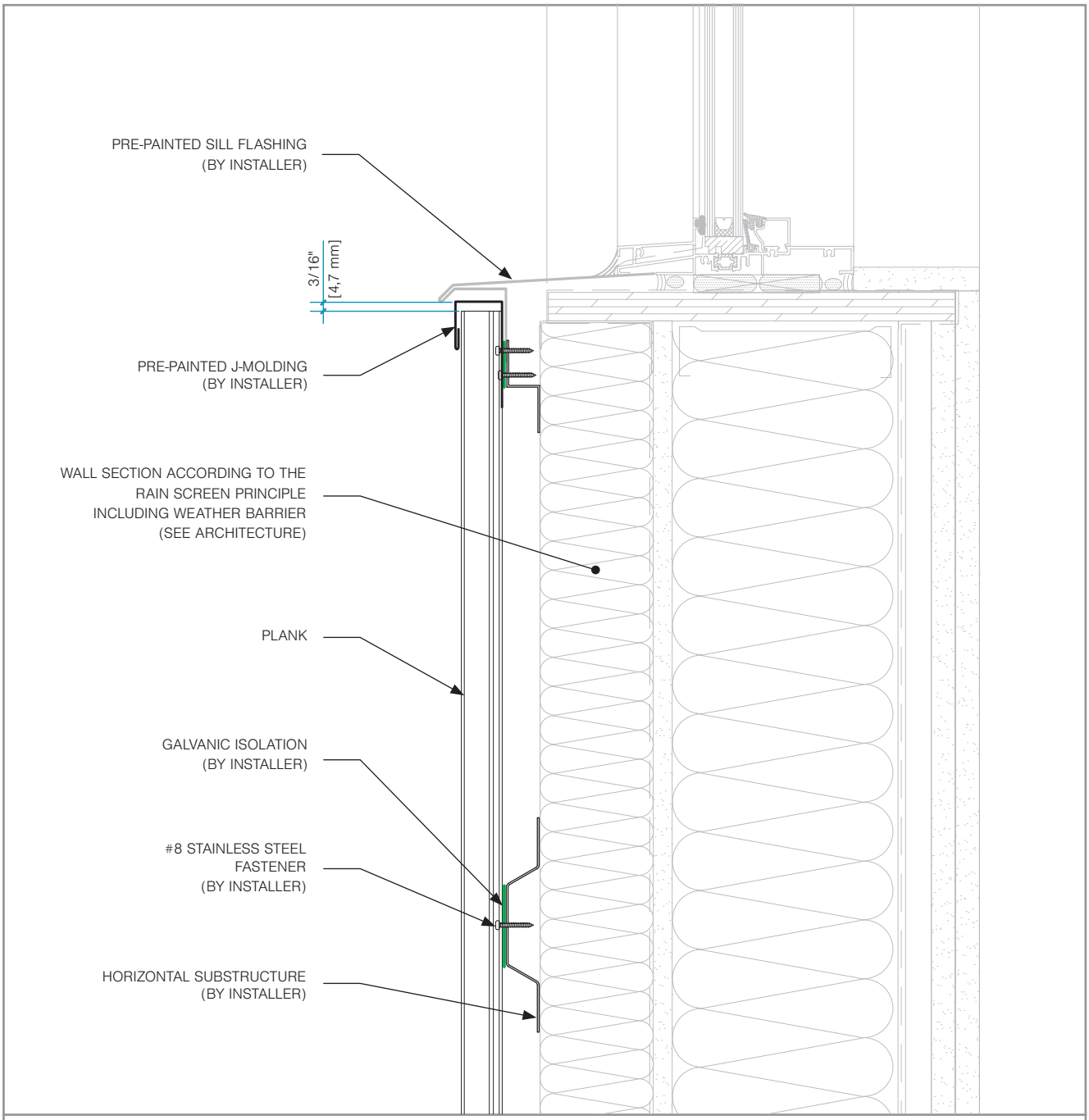

05 **WINDOW SILL**

SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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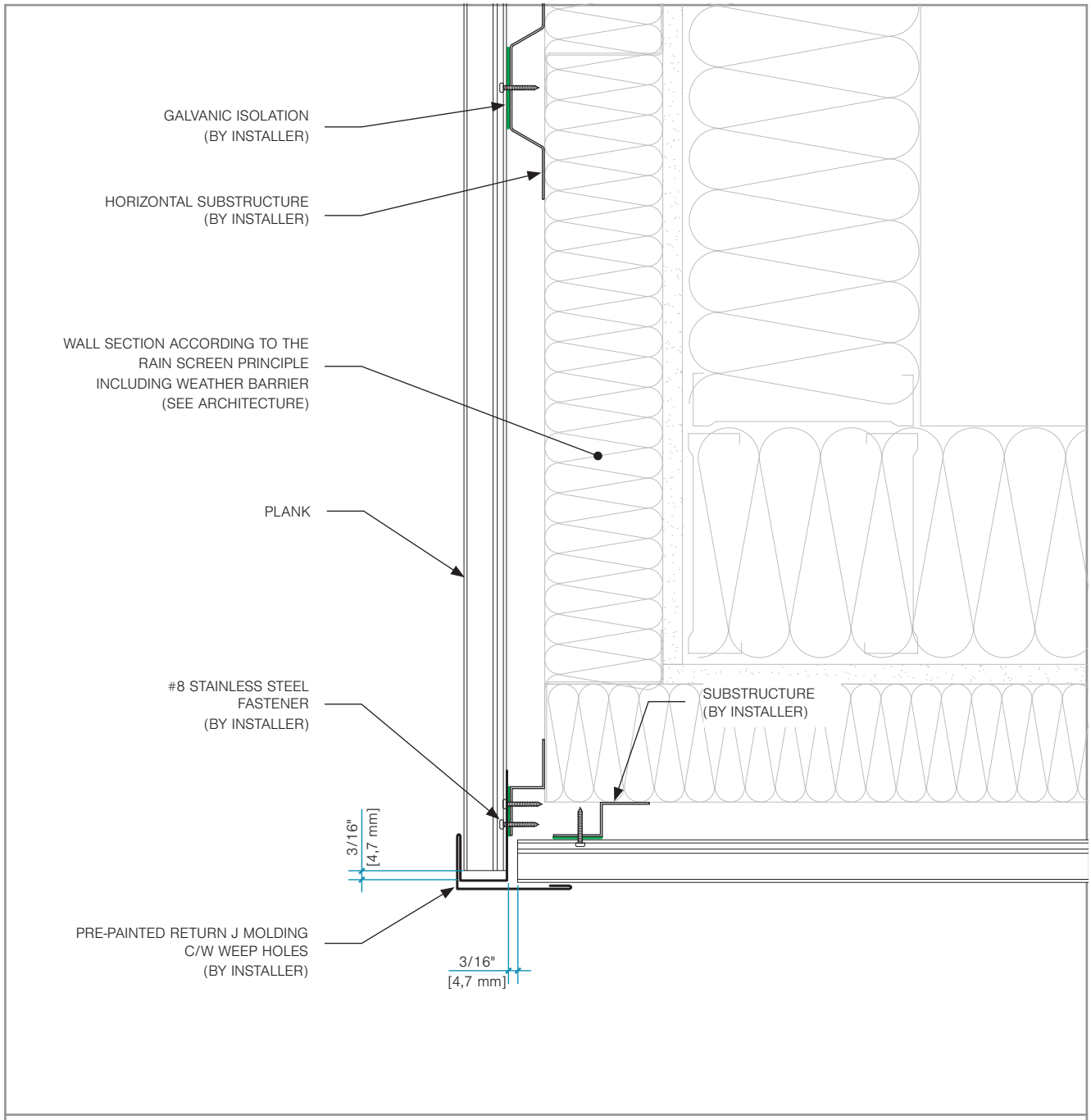

06a

WALL AND SOFFIT

SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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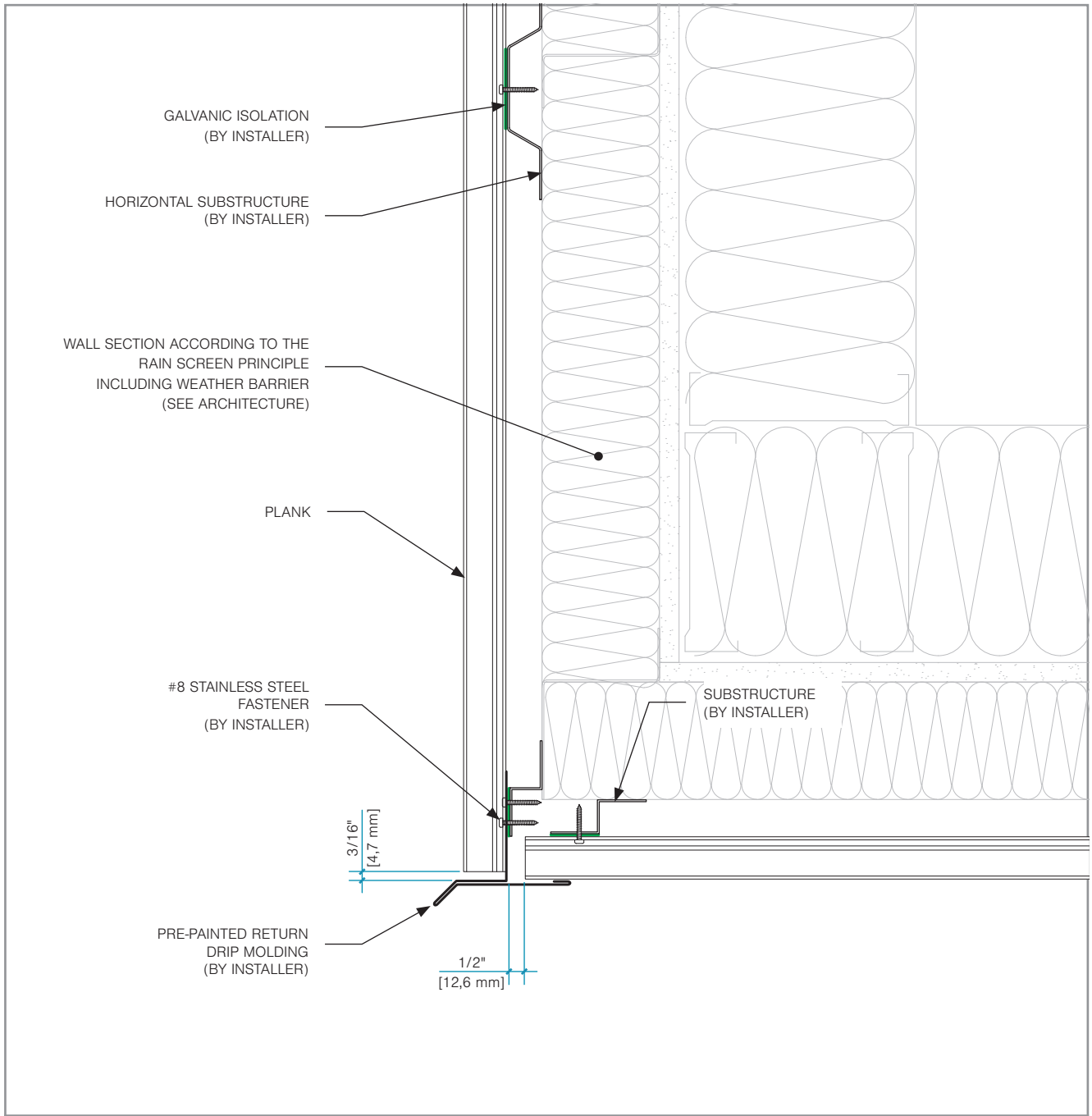

06b

WALL AND SOFFIT (ALTERNATIVE)

SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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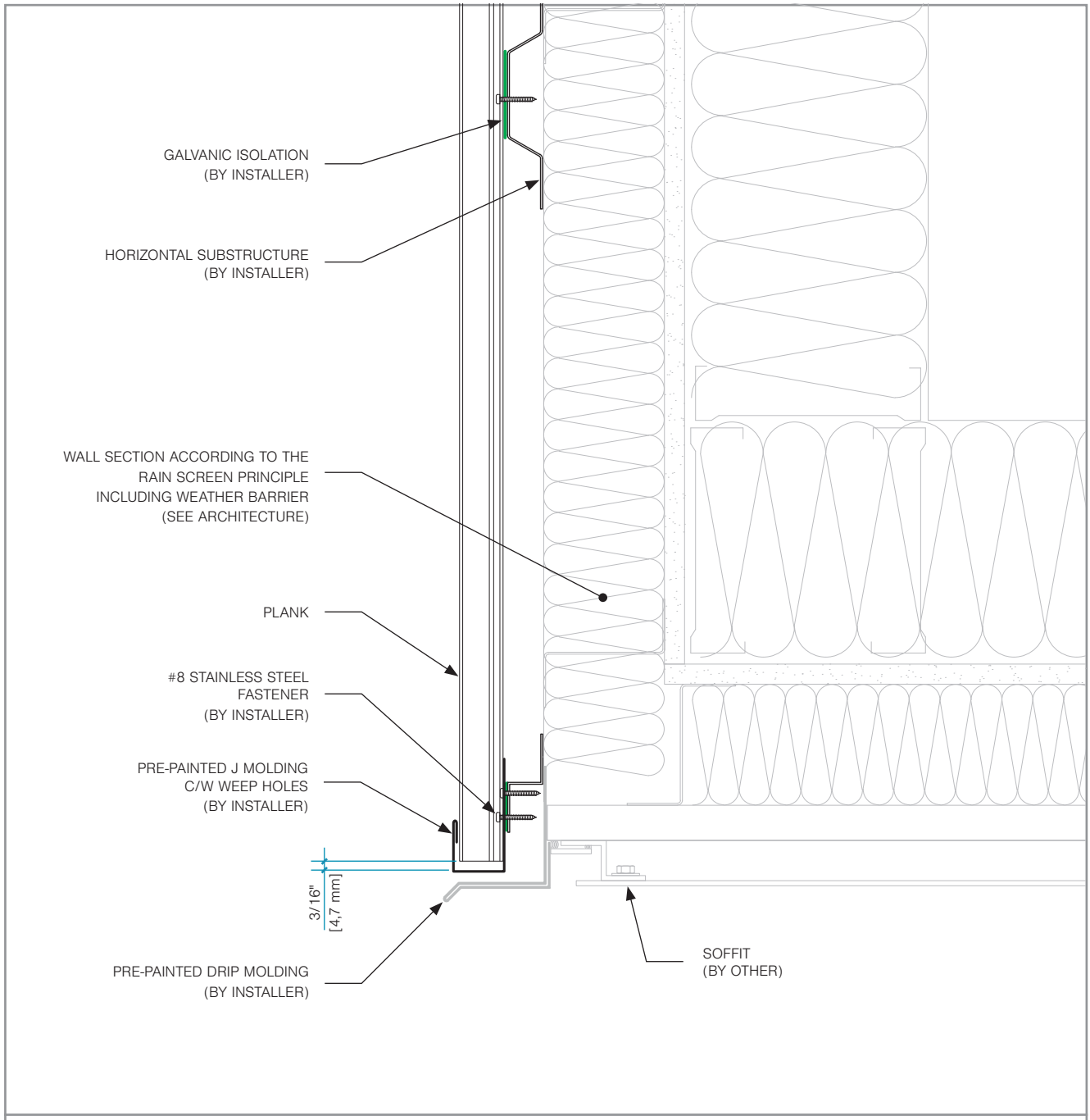


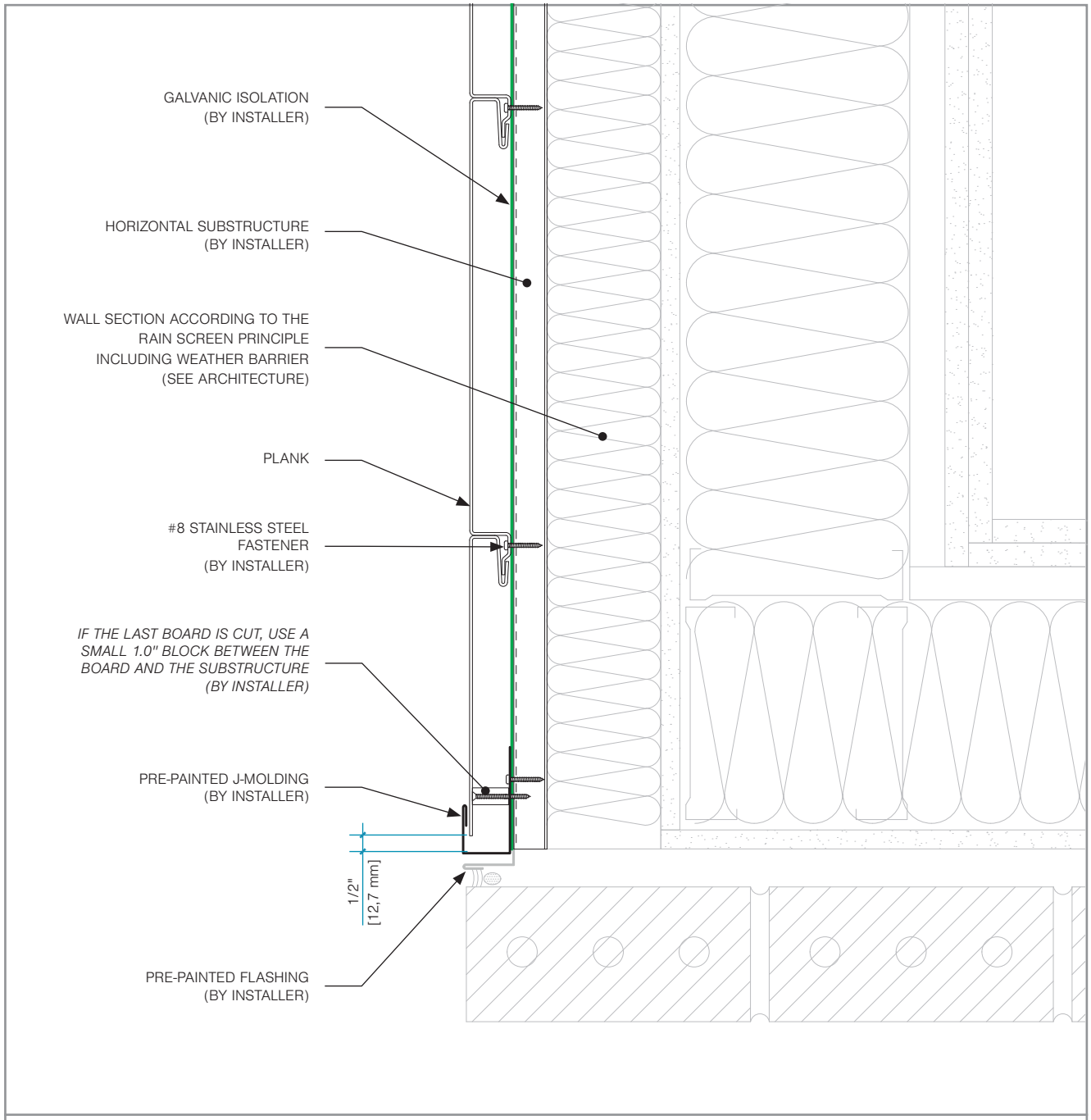
06c

WALL AND OTHER SOFFIT

SIDE VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

12/17



07 **END OF WALL OR TRANSITION**

TOP VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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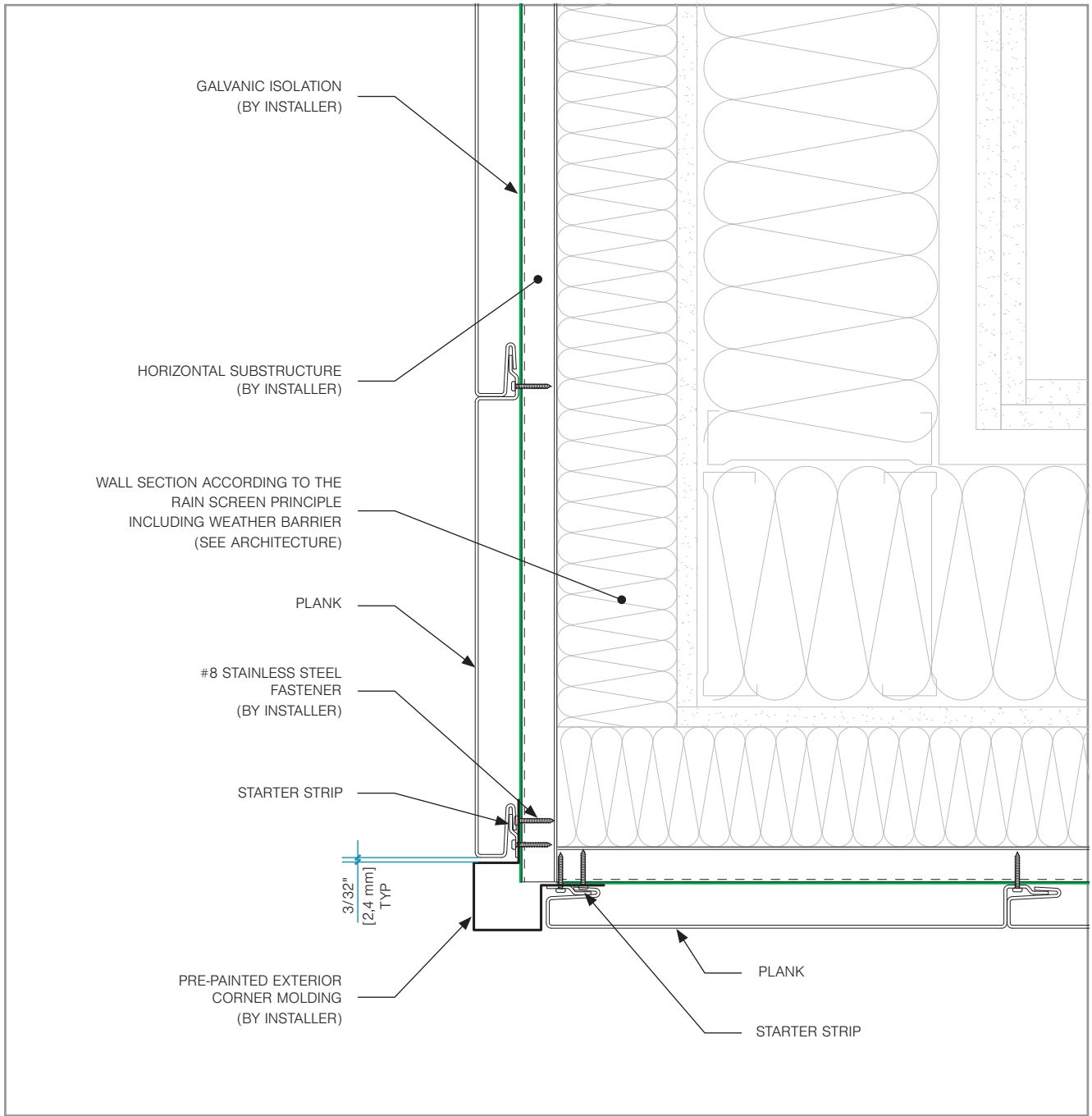

08 **EXTERIOR CORNER**

TOP VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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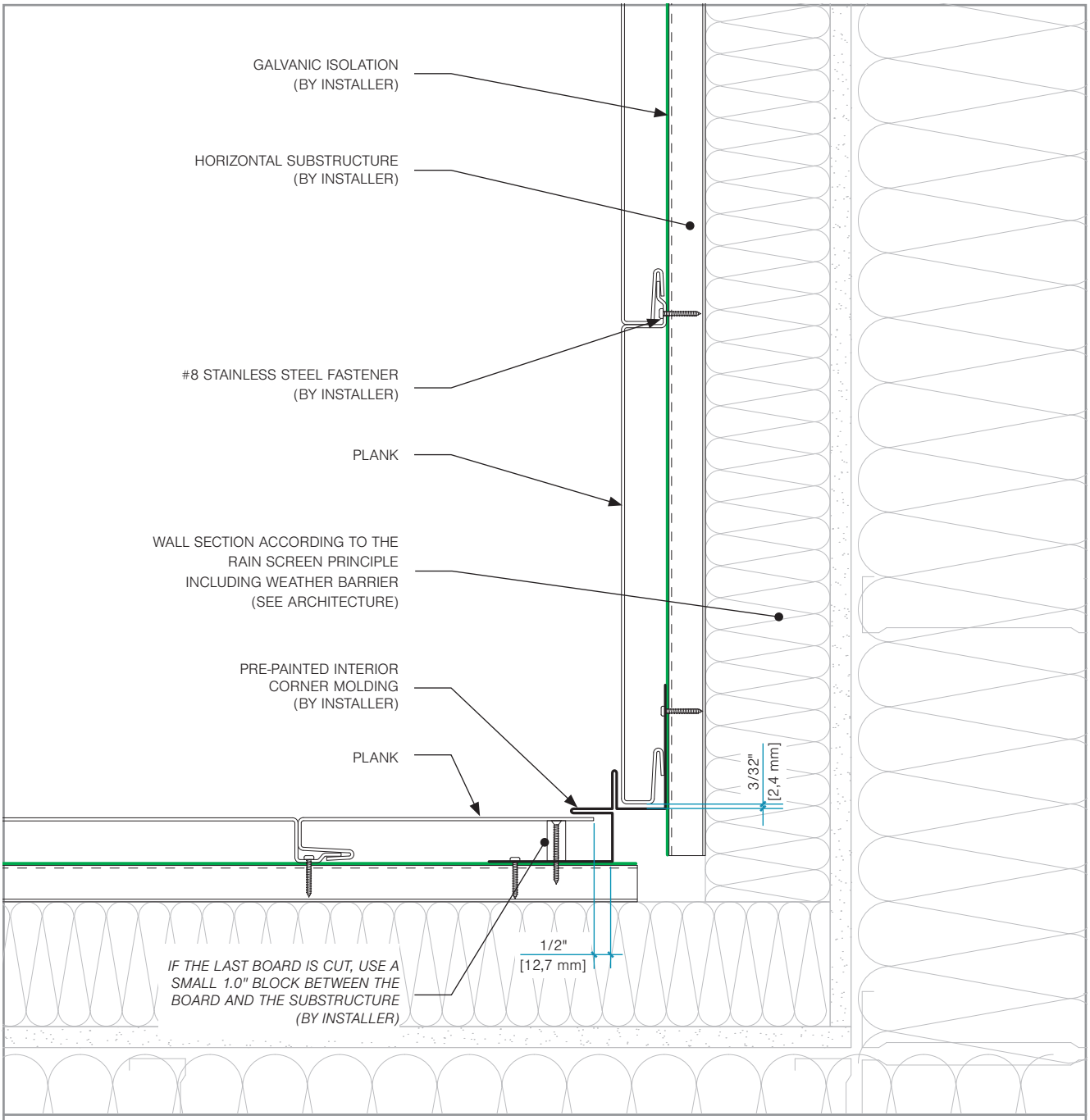

09a **INTERIOR CORNER**
TOP VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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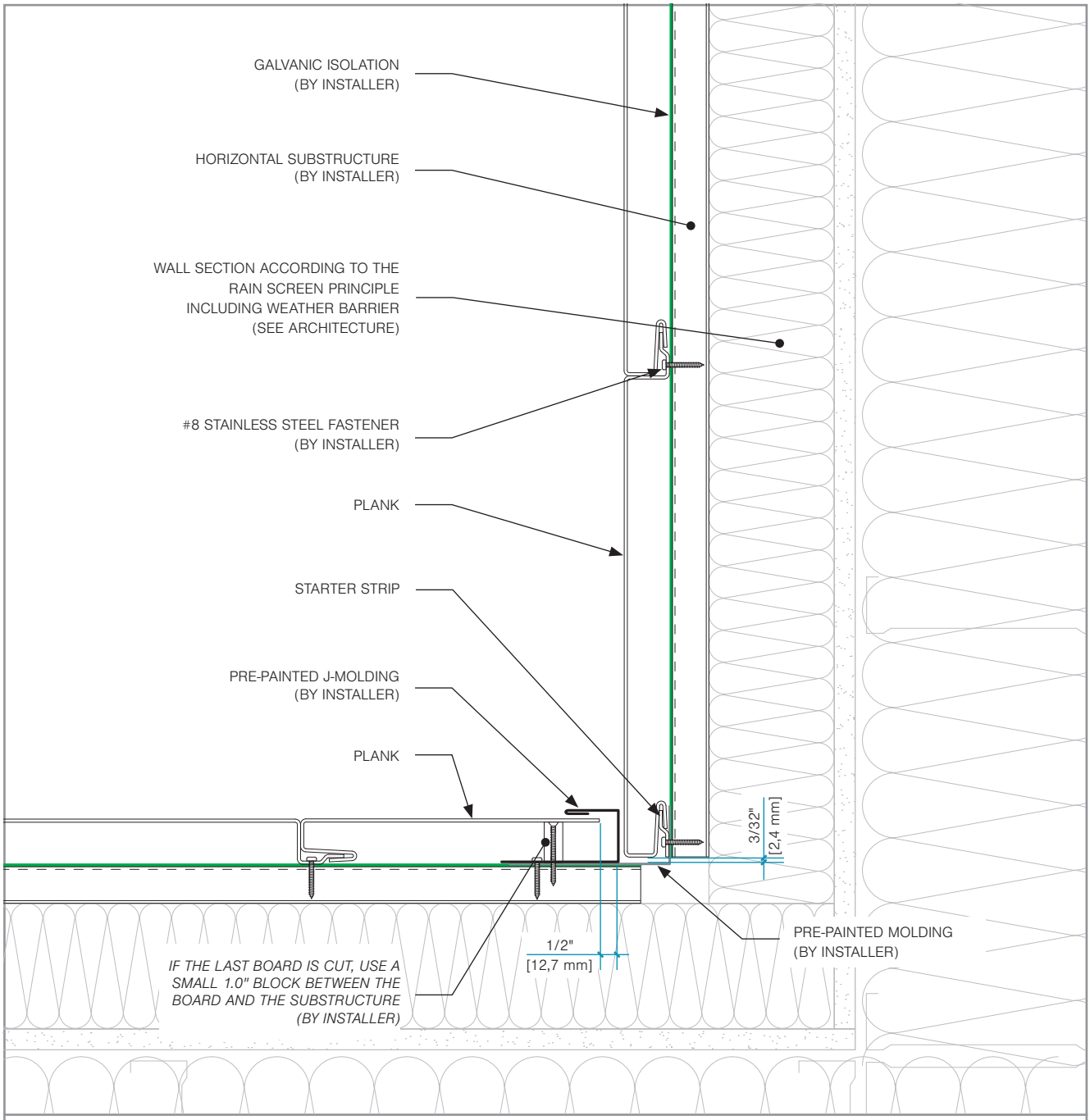

09b

INTERIOR CORNER (ALTERNATIVE)

TOP VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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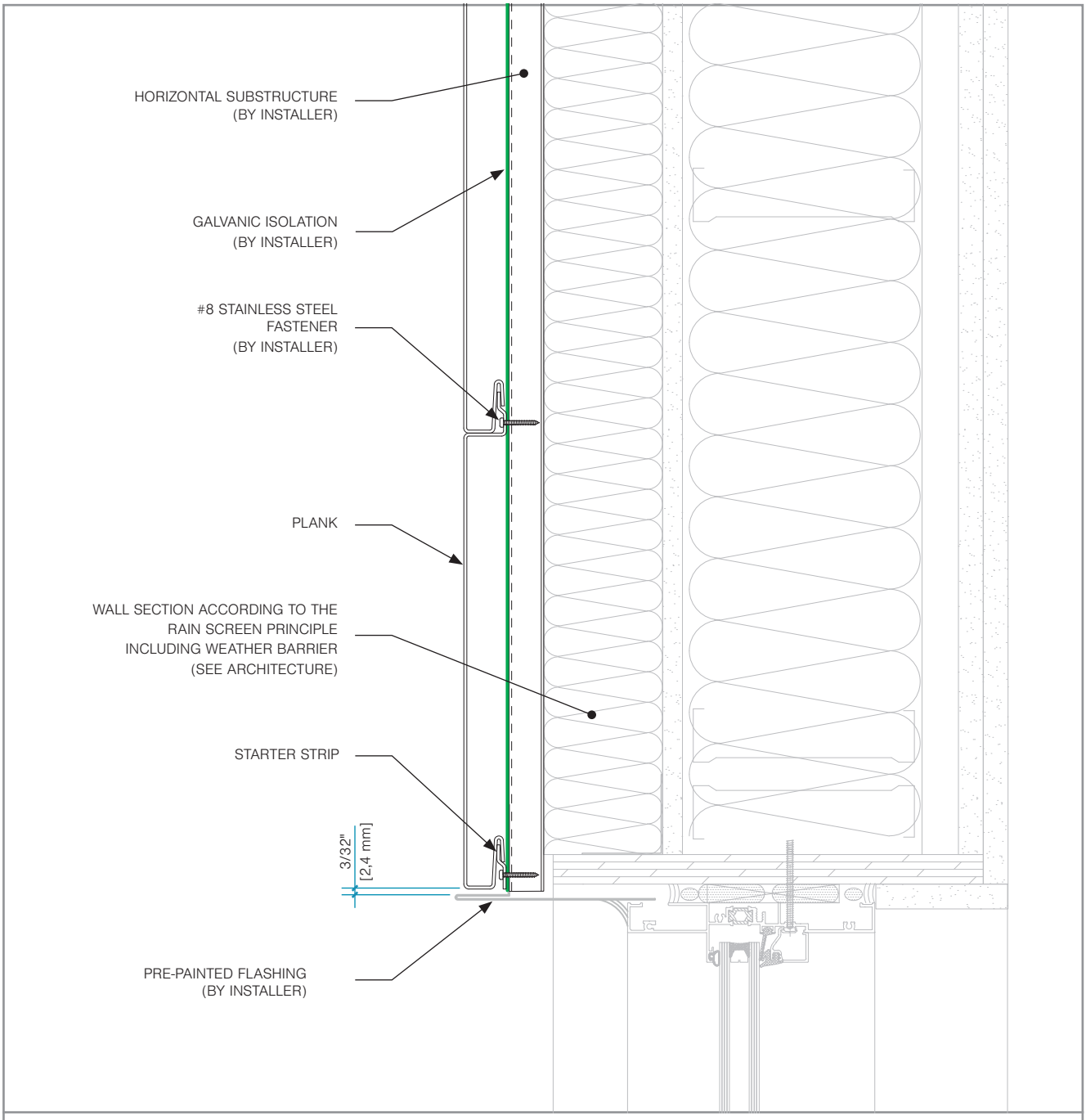

10 **WINDOW AND DOOR JAMB**

TOP VIEW

MAP-12/MAP-16 - VERTICAL INSTALLATION

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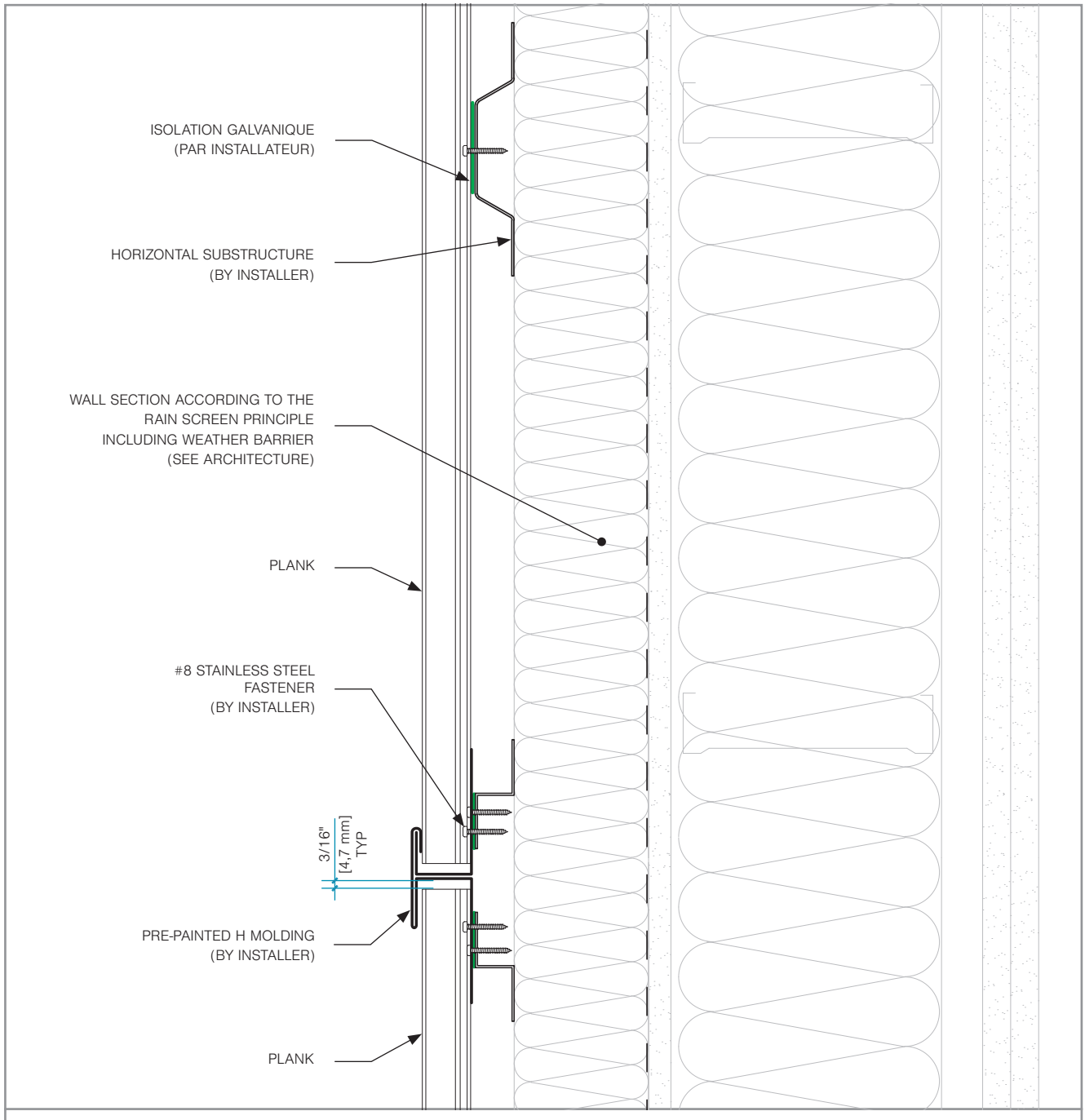


11 **TRANSITION WITH H MOLDING**

SIDE VIEW

Environmental Product Declaration

Environmental Product Declaration

Aluminium exterior cladding

Participating manufacturers:

CLERMONT

EPSYLON
Façades architecturales
Architectural façades

maibec

LES INDUSTRIES PANFAB INC.

3D PANNEAUX

Shalwin
Portes, fenêtres et murs rideaux en aluminium

STEKAR

AluQuébec, the Quebec Aluminium Industrial cluster, is pleased to present this **industry-average (sector)** environmental product declaration EPD for **aluminium exterior cladding manufactured in Québec, Canada**.

This EPD was developed in compliance with CAN/CSA-ISO 14025 and ISO 21930 by **Groupe AGÉCO** and has been verified by Industrial Ecology Consultants.

This EPD includes life cycle assessment (LCA) results for raw material supply, transport and manufacturing modules (cradle-to-gate). The LCA was performed by **Groupe AGÉCO**.

For more information about AluQuébec, please go to www.aluquebec.com.

Issue date: October 4, 2024

Environmental Product Declaration

CSA Group Registered Based on ISO 14025 and Other Requirements
For more information visit
csaregistries.ca/epd

3434-0731
October 2024-October 2029

Photo: Panfab

This environmental product declaration (EPD) is in accordance with CAN/CSA-ISO 14025 and the PCR noted below.

General information

PROGRAM OPERATOR	CSA Group 178 Rexdale Blvd, Toronto, ON, Canada M9W 1R3 www.csagroup.ca
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	CSA Group Environmental Product Declaration (EPD) Program Requirements, version 2013-07
LOCATION OF EXPLANATORY MATERIAL	www.aluquebec.com
DECLARATION HOLDER	AluQuébec 625 Président-Kennedy Avenue #505, Montréal, Québec H3A 1K2, Canada www.aluquebec.com
DECLARATION NUMBER	#3434-0731
DECLARED PRODUCT AND DECLARED UNIT	Aluminium exterior cladding 100 m^2 of aluminium exterior cladding covering a flat surface
PRODUCT DEFINITION	Aluminium cladding for exterior applications on buildings
REFERENCE PCR	ISO 21930 standard serve as the core PCR Product Category Rule (PCR) Guidance for Building-Related Products and Services. Part A: Life Cycle Assessment Calculation Rules and Report Requirements, v.4 (UL 10010), valid from 2022-03-28, to 2027-03-28. Part B: Insulated Metal Panels, Metal Composite Panels, and Metal Cladding: Roof and Wall Panels, v 2.0 (UL 10010-5), valid from 2022-06-12, to 2024-12-31. UL Environment
MARKETS OF APPLICABILITY	North America
DATE OF ISSUE (APPROVAL)	October 4, 2024
PERIOD OF VALIDITY	October 4, 2024 to October 3, 2029
EPD TYPE	Industry average
EPD SCOPE	Cradle to gate
YEAR OF REPORTED MANUFACTURER PRIMARY DATA	2022-2023
LCA SOFTWARE	SimaPro 9.5
LCI DATABASE	ecoinvent 3.9

LCIA METHODOLOGY	TRACI 2.1 and CML 3.09
Applicable green building certification schema	LEED certifications
The PCR review was conducted by the following critical review panel:	Lindita Bushi, PhD, Chair Athena Sustainable Materials Institute lindita.bushi@athenasmi.org Hugues Imbeault-Tétreault, Eng., M.A.Sc. Groupe AGÉCO hugues.i-tetreault@groupeageco.ca Jack Geibig Ecoform jgeibig@ecoform.com
The Part B was reviewed by the following:	Thomas Gloria, PhD (chair) Industrial Ecology Consultants t.gloria@industrial-ecology.com Lindita Bushi, PhD Athena Sustainable Materials Institute lindita.bushi@athenasmi.org Bob Zabcik, P.E., LEED AP BD+C NCI Building Systems BobZ@ncigroup.com
This declaration was independently verified in accordance with ISO 14025: 2006. The UL Environment "Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report," v4 (March 2022), based on ISO 21930:2017, serves as the core PCR, with additional considerations from the USGBC/UL Environment Part A Enhancement (2017).	__ Internal **x External** Thomas Gloria Tom P. Gloria, Ph.D. Industrial Ecology Consultants 35 Bracebridge Rd., Newton, MA 02459-1728, USA www.industrial-ecology.com
This life cycle assessment was conducted in accordance with ISO 14044:2006 and the reference PCR by:	Groupe AGÉCO www.groupeageco.ca | ageco@groupeageco.ca

	__ Internal **x External**
This life cycle assessment was independently verified in accordance with ISO 14044:2006 and the reference PCR by:	Thomas Gloria Tom P. Gloria, Ph.D. Industrial Ecology Consultants 35 Bracebridge Rd., Newton, MA 02459-1728, USA www.industrial-ecology.com

LIMITATIONS

Environmental declarations from different programs (ISO 14025) may not be comparable.

Comparison of the environmental performance of metal panel and cladding products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building use phase as instructed under this PCR.

Full conformance with the PCR for metal panels and cladding allows EPD comparability only when all stages of a life cycle have been considered when they comply with all referenced standards, use the same sub-category PCR, and use equivalent scenarios with respect to construction works. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.

AluQuébec
Environmental Product
Declaration
Summary Sheet

Aluminium exterior cladding

This is a summary of the industry-wide environmental product declaration (EPD) describing the environmental performance of **aluminium exterior cladding** manufactured in Quebec, Canada.

EPD commissioner and owner	Period of validity	Program operator and registration number	Product Category Rule	LCA and EPD consultants
AluQuebec	October 4, 2024 to October 3, 2029	CSA Group #3434-0731	PCR for Building-Related Products and Services. Part B: Insulated Metal Panels, Metal Composite Panels, and Metal Cladding: Roof and Wall Panels. v 2.0 (2022)	Groupe AGÉCO

Product description

Aluminium exterior cladding destined to industrial, commercial, institutional or apartment buildings.

Declared unit

100 m^2 of aluminium exterior cladding covering a flat surface

Material content (% of total product mass)

Aluminium: 99.6%
Hardware: 0.1%
Adhesives: 0.3%

Life cycle stages included:

Cradle-to-gate: Extraction and upstream production (A1), transport to factory (A2), manufacturing (A3) modules.

What is a Life Cycle Assessment (LCA)?

LCA is a science-based and internationally recognized tool to evaluate the relative potential environmental impacts of products and services throughout their life cycle, beginning with raw material extraction and including all aspects of transportation, production, use, and end-of-life treatment. The method is defined by the International Organization for Standardization (ISO) 14040 and 14044 standards. For EPD development, Product Category Rules (PCR) give additional guidelines on how to conduct the LCA of the product.

Why an Environmental Product Declaration (EPD)?

AluQuébec and its members are seeking to communicate the environmental performance of aluminium products to clients and to position their products through a rigorous and recognized communication tool, the EPD. By selecting products with an EPD, building projects can earn credits towards the Leadership in Energy and Environmental Design (LEED) rating system certification. In LEED v4 and v4.1, points are awarded in the Materials and Resources category.

This EPD summary provides an overview of the full ISO 14025 compliant EPD registered with CSA Group

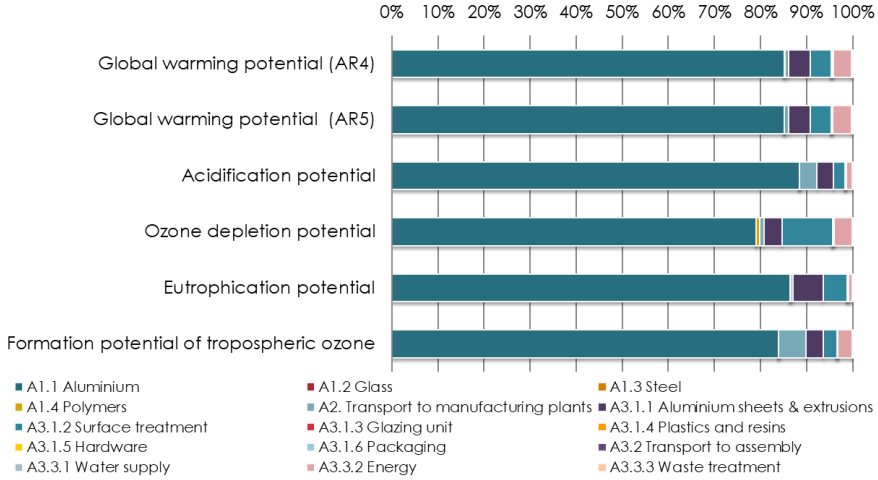
Aluminium exterior cladding

Environmental impacts

The environmental impacts of 100 square metre of aluminium exterior cladding over the production stage (A1 to A3 modules) are summarized below for the main environmental indicators (based on life cycle impact assessment methods TRACI 2.1 and CML baseline 3.09). Refer to the LCA report or full EPD for more detailed results. Results on resource use, generated waste and output flows are also presented in the full EPD.

Indicators	Results for 100 m² of aluminium exterior cladding Total (A1-A3)
Global warming potential (GWP 100, AR4) (kg CO_2 eq.)	1.75E+04
Global warming potential (GWP 100, AR5) (kg CO_2 eq.)	1.78E+04
Acidification potential (kg SO_2 eq.)	1.00E+02
Ozone depletion potential (kg CFC-11 eq.)	2.71E-04
Eutrophication potential (kg N eq.)	3.79E+01
Formation potential of tropospheric (ground level) ozone (kg O_3 eq.)	1.20E+03
Abiotic depletion potential (fossil) (MJ)	1.79E+05

Relative contribution of each life cycle stage to the overall environmental impacts



These results are representative of aluminium exterior cladding manufactured in Quebec, Canada. They are based on data provided by 7 manufacturers which represent approximately 23% of the Québec aluminium exterior cladding production.

Data was collected from aluminium exterior cladding manufacturers for their operations occurring during 12 consecutive months within the period from January 2022 to September 2023.

Additional environmental information

The recyclable content is 99.6% (aluminium content).

For more information: www.aluquebec.com

1. DESCRIPTION OF ALUQUÉBEC

AluQuébec, the "Quebec Aluminium Cluster", gathers aluminium producers, processors, equipment and specialized suppliers, R&D centres as well as educational institutions associated with the industry. AluQuébec's role is to act as a lever for Québec's aluminium industry by ensuring the consistency and convergence of stakeholders to facilitate and encourage global and promising actions that cater to the industry's needs with beneficial repercussions in Québec all while ensuring a worldwide outreach.

As part of this Environmental Product Declaration (EPD) project, AluQuébec aims to support the competitiveness of Quebec's companies by enabling them to stand out in the industry, to position themselves in the marketplace and to facilitate obtaining a LEED certification, in green building projects.

This industry-wide EPD presents the cradle-to-gate life cycle environmental impacts of average aluminium exterior cladding manufactured in Quebec. Data for this EPD were collected from 7 manufacturers operating in the province to determine an average environmental profile for aluminium exterior cladding. These manufacturers account for approximately 23% of the total aluminium exterior cladding production in Quebec. This EPD takes into account the fact that rolled aluminium for exterior cladding manufactured in Quebec is imported from outside the province. Since aluminium production contributes to most to the environmental impacts of this product category, the EPD is considered representative.

This EPD will enable AluQuébec manufacturers to contribute to earning credits towards a LEED® v4 or v4.1 (Leadership in Energy and Environmental Design) certification (i.e. Material and Resource credits), as well as to respond to requests from consultants for data/information on environmental performance.

2. DESCRIPTION OF PRODUCT

2.1. Product identification and specification

Aluminium exterior cladding is classified under UNSPSC Code 4299. The products covered by this EPD are aluminum exterior cladding. These covered products are destined to industrial, commercial, institutional or apartment buildings, and are manufactured in Quebec (Canada).

Figure 1: Example of an aluminium exterior cladding

The main production processes are presented in Figure 2.

2.2. Application

The aluminium exterior cladding referenced in this EPD can be used for exterior wall and wall covering applications.

2.3. Technical data

Refer to the manufacturer for technical data (see section 8 for contact information).

2.4. Properties of the declared product

Aluminium exterior panels are delivered in a variety of sizes and thicknesses.

2.5. Material composition

A description of the composition of an aluminium exterior cladding is provided in Table 1. One hundred square meters of cladding weigh about 946.6 kg on average.

Table 1: Materials in an average aluminium exterior cladding

Materials	Weight (% by mass)
Aluminium (primary)	67.0%
Aluminium (secondary)	32.6%
Hardware	0.05%
Adhesives	0.3%

2.6. Manufacturing of aluminium exterior cladding

The production of aluminium exterior cladding starts with the extraction and transformation of the raw materials it is composed of, such as aluminium, steel and polymers. They are then shipped to the cladding component manufacturing plants to be transformed into aluminium sheets, aluminium extrusions, and other products. The components are then assembled at the cladding manufacturing plant. Aluminium cladding components are surface treated (anodized or painted) either before or after assembly. Figure 2 illustrates the cradle-to-gate life cycle modules included in this EPD.

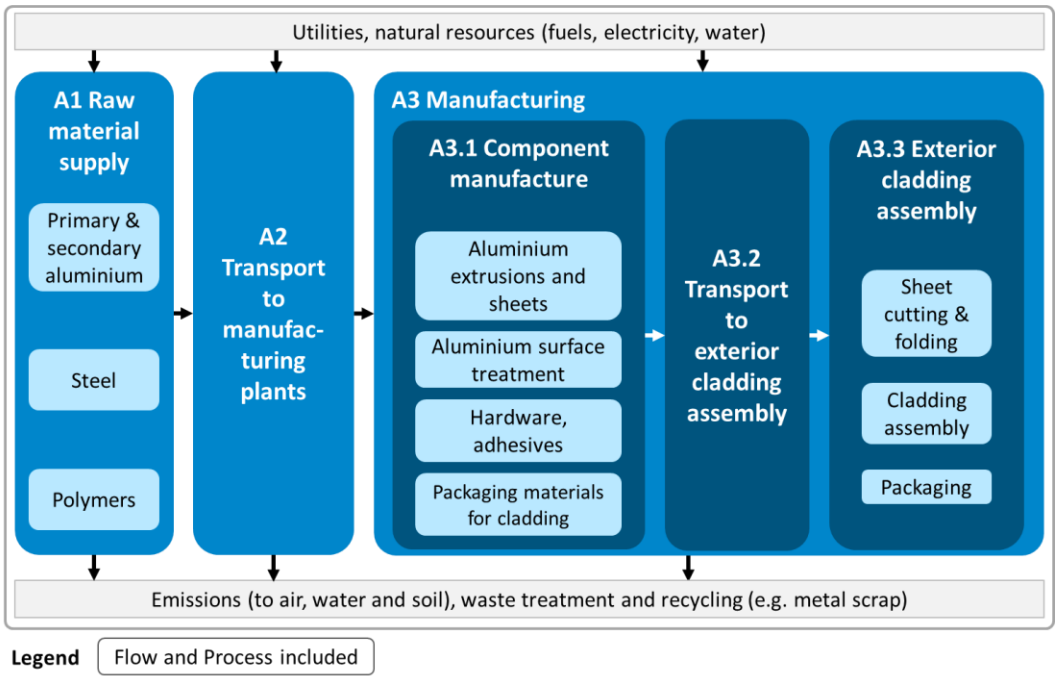


Figure 2: Process flow for the production of aluminium exterior cladding

2.7. Packaging

Aluminium exterior cladding is packaged with expanded polystyrene (EPS), cardboard, polyethylene (PE) wrapping, metal and plastic strips and wood.

3. SCOPE OF EPD

3.1. Declared unit

As per the PCR, the declared unit (i.e. the reference unit on which the quantities of material inputs, energy inputs, emissions and waste are based for the modelling of the life cycle of aluminum exterior cladding) is defined as follows:

100 m² (1076.4 ft²) of aluminium exterior cladding covering a flat area

3.2. System boundary

The production modules included in this cradle-to-gate EPD are shown in Table 2.

Table 2: Life cycle stages considered according to ISO 21930

Production stage			Construction stage		Use stage							End-of-life stage				Optional
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Extraction and upstream production	Transport to factory	Manufacturing	Transport to site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction, demolition	Transport	Waste processing	Disposal of waste	Potential net benefits from reuse, recycling and/or energy recovery beyond the system boundary
x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Legend: **x** - Considered in the cradle-to-gate LCA *MND* - Module not declared

More precisely, the life cycle stages include the following processes:

A1. Raw material Supply

The production of raw materials includes the extraction of resources and their refining into materials that are used during aluminium product manufacturing. They include materials such as aluminium, steel and polymers. The aluminium is supplied from manufacturers located in Quebec (Canada).

A2. Transport of raw materials to the manufacturing plant

This module includes fuel consumption, emissions and the infrastructure related to the transportation of materials to component manufacturing plants by train and container ship.

A3. Aluminium exterior cladding manufacturing


Photo: Panfab

A3.1 – Component manufacture

For all products, electricity and fuel consumption, waste generation and emissions during component, ancillary material and packaging production are included in this sub-module. Exterior cladding components include aluminium extrusions and sheets, hardware, and adhesives. Capital goods (i.e., manufacturing facility) are also included. Aluminium components undergo a surface treatment (anodization or coating). In some cases, unanodized or uncoated extrusions are delivered to the assembly plant and are sent to a subcontractor for surface treatment either before or after assembly. This surface treatment is included in this module either way. The additional transport is included in the A3.2 module.

No substances required to be reported as hazardous are associated with the production of this product.

A3.2 – Transport to assembly

This module includes fuel consumption, emissions and the infrastructure related to the transportation by truck of components and packaging to the assembly plant, as well as to surface treatment for aluminium components when treated in a different plant.

A3.3 – Assembly

Surface treated aluminium sheets are cut and folded. Then, they are assembled with hardware and sealed with adhesives. The assembled product is packaged with wood, EPS, PE wrapping, cardboard, and metal strips. Capital goods were also included.

This module covers the exterior cladding assembly plant and includes the production of electricity and fuels (natural gas, propane, gasoline, and diesel). Waste management and emissions from fuel combustion are also included. No water consumption was considered at assembly plants since it is consumed mainly by offices.

Geographical and temporal boundaries

The geographical boundaries are representative of current equipment and processes associated with aluminium exterior cladding manufacturing in Québec (Canada). Since the data were collected for the years 2022 and 2023, they are considered temporally representative (i.e. less than 5 years old).

3.3. Estimates and assumptions

The main assumptions included in this LCA were related to transportation parameters (distance and empty haul-back) and water consumption at the assembly plant.

3.4. Cut-off criteria

As per the PCR, no known flows are deliberately excluded from this assessment. No single flow representing more than 1% of the total inflows was excluded and the total excluded input flows did not exceed a maximum of 5% of energy usage and mass. Based on Groupe AGÉCO's experience or the

relatively low contribution of the life cycle stages to which they pertain, the following processes were excluded: Personnel impacts (travel to and from work, human emissions) and business travel.

3.5. Data sources

Table 1 presents the main sources of data used for this EPD. Producer-specific data were collected from seven (7) aluminium exterior cladding manufacturers for operations occurring between January 2022 and September 2023 (less than 3 years old). Generic data collected for the raw material supply processes, transportation and manufacturing of aluminium were representative of the Canadian context and used technologies.

Table 3: Data sources for the LCA of aluminium exterior cladding

Module	Main processes	Data source	Region	Year
A1	Raw material extraction and processing	ecoinvent 3.9	Multiple	2022
A2	Transportation to manufacturing plants	Aluminium: AluQuébec manufacturers' answers to a data collection questionnaire Other: ecoinvent 3.9	Multiple	2022-2023
A3.1	Component manufacture	ecoinvent 3.9	Multiple	2022
A3.2	Transport to exterior cladding assembly	AluQuébec manufacturers' answers to a data collection questionnaire	Quebec	2022-2023
A3.3	Exterior cladding assembly	AluQuébec manufacturers' answers to a data collection questionnaire	Quebec	2022-2023

The LCA model was developed with the SimaPro 9.5 software using ecoinvent 3.9 database which was released in 2022 (less than 2 years). Since most of the data within ecoinvent is of European origin and represent European industrial conditions and processes, several data were adapted to enhance their representativeness of the products and contexts being examined. ecoinvent is the most complete and recognized internationally LCA database.

3.6. Data quality

The overall data quality ratings show that the data used were good. This data quality assessment confirms the sufficient reliability, representativeness (technological, geographical and time-related), completeness and consistency of the information and data used for this study.

3.7. Allocation

When a process in the life cycle of aluminium exterior cladding generated co-products or is directly connected to another system (i.e. the life cycle of another product), the following allocation methods were applied to distribute the impacts between the co-products or linked systems.

Allocation of multi-output processes

As prioritized in the PCR used in this study, allocation for multi-output processes was done on a mass basis. Economic value allocation was not used.

Allocation for end-of-life processes

A recycled content approach (i.e. cut-off approach) was applied when a product is recycled. The impacts associated with the recycling process are thus attributed to the products using these materials. As stated in the PCR, there are no credits allowed for displacement nor system boundary expansion or consequential analysis.

ecoinvent processes with allocation

Many of the processes in the ecoinvent database also provide multiple functions, and allocation is required to provide inventory data per function (or per process). This study accepts the allocation method used by ecoinvent for those processes. The ecoinvent system model used was "Allocation, cut-off by classification". It should be noted that the allocation methods used in ecoinvent for background processes (i.e. processes representing the complete supply chain of a good or service used in the life cycle of aluminium) may be inconsistent with the approach used to model the foreground system (i.e. to model the manufacturing of aluminum exterior cladding with data collected in the literature and from manufacturers). While this allocation is appropriate for foreground processes, continuation of this methodology into the background datasets would add complexity without substantially improving the quality of the study.

3.8. Comparability

As per the PCR: "Comparison of the environmental performance of metal panel and cladding products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building use phase as instructed under this PCR.

Full conformance with the PCR for metal panels and cladding allows EPD comparability only when all stages of a life cycle have been considered when they comply with all referenced standards, use the same sub-category PCR, and use equivalent scenarios with respect to construction works. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared."

Photo: Clermont Ltee

4. ENVIRONMENTAL IMPACTS

The results presented in this cradle-to-gate EPD are representative of an average performance, i.e. a weighted average based on the production volume of the participating manufacturers. Table 4 presents the results for 100 square metres of aluminium exterior cladding over the product stage (A1 to A3). Environmental impacts were calculated with the impact assessment method TRACI 2.1. The description of these indicators reported is provided in the glossary (section 6).

Table 4: Cradle-to-gate results for the production of 100 m² of aluminium exterior cladding

Indicators	Units	Total (A1 to A3)
Impact Categories		
Global warming potential (GWP 100) (AR4)	kg CO_2 eq.	**1.75E+04**
Global warming potential (GWP 100) (AR5)	kg CO_2 eq.	**1.78E+04**
Acidification potential	kg SO_2 eq.	**1.00E+02**
Ozone depletion potential	kg CFC-11 eq.	**2.71E-04**
Eutrophication potential	kg N eq.	**3.79E+01**
Formation potential of tropospheric (ground level) ozone	kg O_3 eq.	**1.20E+03**
Resource use		
Abiotic depletion potential for fossil resources	MJ, net calorific value (LHV)	**1.79E+05**
Renewable primary energy demand	MJ, net calorific value (LHV)	**3.06E+04**
Non-renewable primary energy demand	MJ, net calorific value (LHV)	**1.62E+05**
Renewable primary material resources	MJ, net calorific value (LHV)	**3.35E+01**
Non-renewable primary material resources	MJ, net calorific value (LHV)	**2.26E+04**
Secondary materials	kg	**1.08E+03**
Renewable secondary fuels	MJ, net calorific value (LHV)	**0.00E+00**
Non-renewable secondary fuels	MJ, net calorific value (LHV)	**0.00E+00**
Recovered energy	MJ, net calorific value (LHV)	**0.00E+00**
Water consumption		
Freshwater consumption	m^3	**1.33E+02**
Output flows and waste categories		
Hazardous waste disposed	kg	**1.30E+01**
Non-hazardous waste disposed	kg	**1.07E-01**
High-level radioactive waste, conditioned, to final repository	kg	**6.26E-06**
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	**2.71E-05**
Components for re-use	kg	**0.00E+00**
Materials for recycling	kg	**1.22E+03**
Materials for energy recovery	kg	**0.00E+00**
Exported energy	MJ, net calorific value (LHV)	**0.00E+00**

The aluminium exterior claddings are produced at several facilities; thus, the PCR requires that the variation in GWP-GHG results for modules A1-A3 between the reported result and the results for the underlying sites to be reported in the EPD. For 35% of production sites, the variation is below 10%; for 65% of sites, variation is 15%.

4.1. LCA interpretation

Impact categories

Figure 3 shows the contribution of each module and submodule to the impact categories (dominance analysis). For all categories, the raw material supply module (A1) accounts for most of the potential environmental impacts of aluminium cladding, dominated by primary and secondary **aluminium production** (A1.1; between 79% and 88%). The aluminium panels under study are mostly made with aluminium from China, Russia and Quebec (Canada). Outside module A1, the three most important submodules are **surface treatment** (A3.1.2; between 3% and 11%), **manufacturing of aluminium sheets and extrusions** (A3.1.1; between 4% and 6%) and **energy consumption** (A3.3.2; between 1% and 4%).

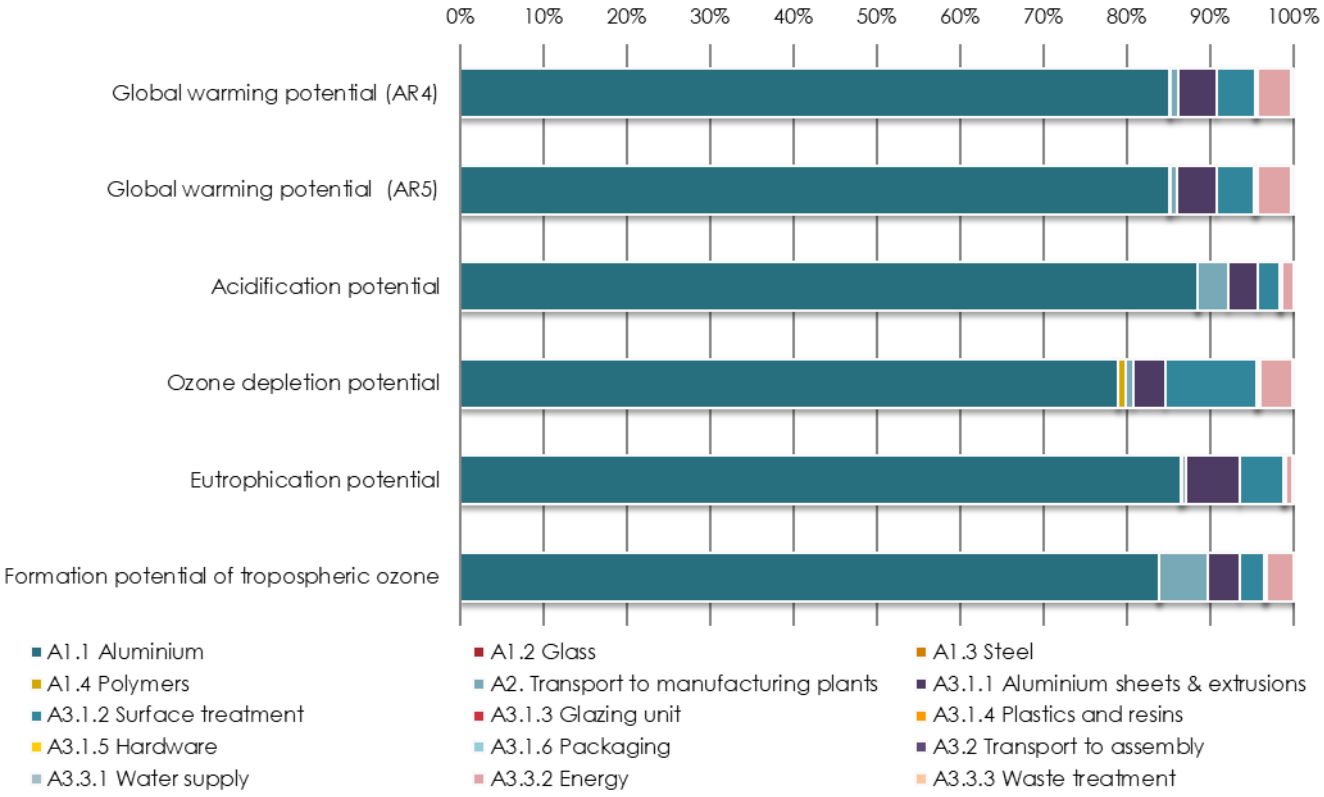


Figure 3: Relative contribution of the main processes in the production of aluminium exterior cladding

Resource use

Aluminium production (A1.1) is the submodule using by far the largest amount of renewable primary energy (63%) because of its high consumption of hydroelectricity. Renewable primary materials with energy content are contained in **packaging**. Eighty-four percent (84%) of non-renewable primary energy is used during **aluminium production** (A1.1). Non-renewable primary materials with energy content are contained in the energy (A3.3.2; 97%). Secondary materials are used during **aluminium production** (A1.1; 41%) and **aluminium sheets and extrusions production** (A3.1.1; 59%). No secondary fuel or recovered energy were used by the manufacturers.

Output flows and waste categories

These output flows and waste categories were evaluated for the foreground processes only (A3.1 aluminium cladding assembly). Most waste generated is **materials for recycling** (aluminium scrap

generated at the plant). The rest is non-hazardous waste disposed as well as the disposal of a small amount of waste defined as hazardous according to Canadian laws. No radioactive waste, components for re-use, materials for energy recovery or exported energy were neither used, disposed of nor produced. **Energy consumption** (A3.1.2) and **aluminium production** (A1.1) are the submodules consuming by far the largest net quantity of fresh water (35% and 56%, respectively).

5. ADDITIONAL ENVIRONMENTAL INFORMATION

The recyclable content is 99.6% (aluminium content).

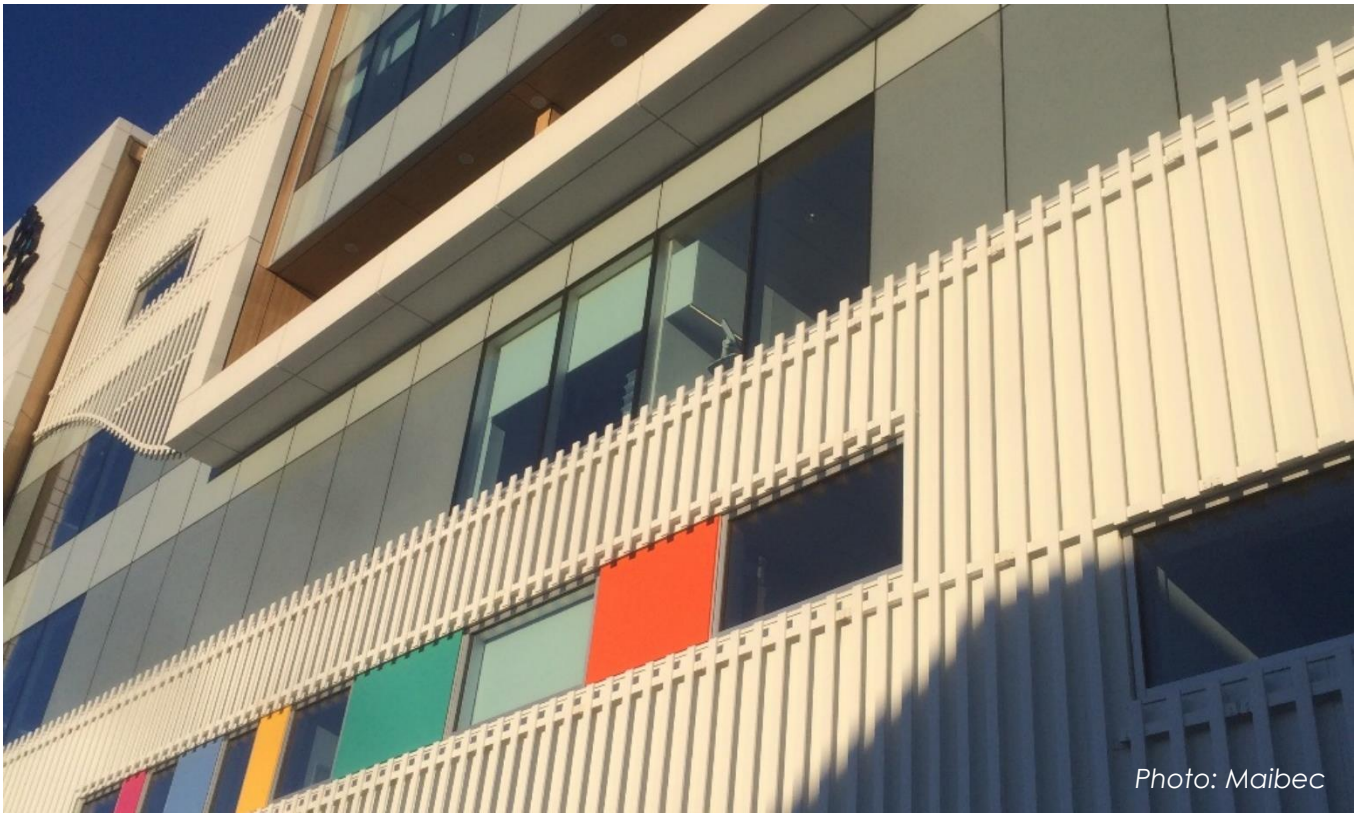


Photo: Maibec

6. GLOSSARY

6.1. Acronyms

CSA	Canadian Standards Association
EPD	Environmental Product Declaration
GHG	Greenhouse gas
ISO	International Organization for Standardization
kg CFC-11 eq.	Kilogram of trichlorofluoromethane equivalent
kg CO_2 eq.	Kilogram of carbon dioxide equivalent
kg N eq.	Kilogram of nitrogen equivalent
kg O_3 eq.	Kilogram of ozone equivalent
kg SO_2 eq.	Kilogram of sulfur dioxide equivalent
LCA	Life cycle assessment
LCI	Life cycle inventory
LEED	Leadership in Energy and Environmental Design
LHV	Lower heating value
MJ	Megajoule
m^2	Square metre
m^3	Cubic metre
NO_x	Nitrogen oxide
PCR	Product category rules
PE	Polyethylene
VOC	Volatile organic compound

6.2. Environmental impact categories and parameters assessed

The **abiotic depletion potential for fossil resources** is an indicator extracted from the CML method using the Lower Heating Value (LHV) of the resource (in MJ/kg) to represent the energy depletion in MJ. Fossil fuels are non-renewable resources. Their extraction therefore contributes to their depletion (**MJ, LHV**).

The **acidification potential** indicator refers to the change in acidity (i.e. reduction in pH) in soil and water due to human activity. The increase in NO_x and SO_2 emissions generated by the transportation, manufacturing and energy sectors are the main causes of this impact category. The acidification of land and water has multiple consequences: degradation of aquatic and terrestrial ecosystems, endangering numerous species and food security. The concentration of the gases responsible for the acidification is expressed in sulphur dioxide equivalents (**kg SO_2 equivalent**).

The **eutrophication potential** indicator measures the enrichment of an aquatic or terrestrial ecosystem due to the release of nutrients (e.g. nitrates, phosphates) resulting from natural or human activity (e.g. the discharge of wastewater into watercourses). In an aquatic environment, this activity results in the growth of algae which consume dissolved oxygen present in water when they degrade and thus affect species sensitive to the concentration of dissolved oxygen. Also, the increase in nutrients in soils makes it difficult for the terrestrial environment to manage the excess of biomass produced. The concentration of nutrients causing this impact is expressed in nitrogen equivalents (**kg N equivalent**).

Freshwater consumption parameter accounts for the imbalance in the natural water cycle created by the water evaporated, consumed by a system or released to a different watershed (i.e. not its original source). This imbalance can cause water scarcity and affect biodiversity. This indicator refers to the waste of the resource rather than its pollution. Also, it does not refer to water that is used but returned to the original source (e.g. water for hydroelectric turbines[1], cooling or river transportation) or lost from a natural system (e.g. due to evaporation of rainwater). The net quantity of freshwater consumed is expressed as a volume of water in cubic metre (**m^3 of water consumed**).

The **global warming potential** indicator refers to the impact of a temperature increase on the global climate patterns (e.g. severe flooding and drought events, accelerated melting of glaciers) due to the release of greenhouse gases (GHG) (e.g. carbon dioxide and methane from fossil fuel combustion). GHG emissions contribute to the increase in the absorption of radiation from the sun at the earth's surface. These emissions are expressed in units of kg of carbon dioxide equivalents (**kg CO_2 equivalent**).

The **ozone depletion potential** indicator measures the potential of stratospheric ozone level reduction due to the release of some molecules such as refrigerants used in cooling systems (e.g. chlorofluorocarbons). When they react with ozone (O_3), the ozone concentration in the stratosphere diminishes and is no longer sufficient to absorb ultraviolet (UV) radiation which can cause high risks to human health (e.g. skin cancers and cataracts) and the terrestrial environment. The concentration of molecules that are responsible for ozone depletion is expressed in kilograms of trichlorofluoromethane equivalents (**kg CFC-11 equivalent**).

The **photochemical smog formation potential** indicator covers the emissions of pollutants such as nitrogen oxides and volatile organic compounds (VOCs) into the atmosphere. They are mainly generated by motor vehicles, power plants and industrial facilities. When reacting with the sunlight, these pollutants

[1] Only the water evaporated by hydroelectric reservoirs is considered consumed.

create smog which can affect human health and cause various respiratory problems. The concentration of pollutants causing smog is expressed in kg of ozone equivalents (**kg O_3 equivalent**).

The **secondary materials** parameter represents the quantity of recycled materials used to manufacture a product (**kg**).

The **use of renewable/non-renewable material resources** parameters represent the quantity of material made from renewable resources or non-renewable resources used to manufacture a product, excluding recovered or recycled materials. The quantity of these resources is reported in megajoules (**MJ, LHV**).

The **use of renewable/non-renewable primary energy** parameters refer to the use of energy from renewable resources (e.g., wind, solar, hydro) and non-renewable resources (e.g., natural gas, coal, petroleum). The quantity of primary energy used is expressed in megajoules, on the basis of the net calorific value of the resources (**MJ, LHV**).

7. REFERENCES

CSA Group (2013). CSA Group Environmental Product Declaration (EPD) Program. Program Requirements. Retrieved from http://www.csaregistries.ca/assets/pdf/EPD_Registry_Program_Requirements.pdf

CSA (2009). CAN/CSA-ISO 14020:99 Environmental labels and declarations — General principles

CSA (2007). CAN/CSA-ISO 14025:07. Environmental labels and declarations – Type III environmental declarations – Principles and procedures.

ecoinvent (2022). ecoinvent 3.9. https://ecoinvent.org/the-ecoinvent-database/

Groupe AGÉCO (2024). Life cycle assessment of aluminium doors, windows, curtain walls and exterior cladding for environmental product declaration.

ISO (2006a). ISO 14040. Environmental management – life cycle assessment – principles and framework. International Standard Organization, Geneva, Switzerland.

ISO (2006b). ISO 14044. Environmental management – life cycle assessment – requirements and guidelines. International Standard Organization, Geneva, Switzerland.

ISO (2018). ISO 14067. Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification. International Standard Organization. Geneva, Switzerland.

ISO (2017). ISO 21930. Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services. International Standard Organization, Geneva, Switzerland.

UL Environment (2022). Product Category Rule (PCR) Guidance for Building-Related Products and Services. Part A: Life Cycle Assessment Calculation Rules and Report Requirements, version 4 (UL 10010).

UL Environment (2022). Product Category Rule (PCR) Guidance for Building-Related Products and Services. Part B: Insulated Metal Panels, Metal Composite Panels, and Metal Cladding: Roof and Wall Panels. version 2.0 (UL 10010-5).

[US EPA] United States Environmental Protection Agency (2012). Tool for the Reduction and Assessment of Chemical and other Environmental Impacts (TRACI) User's Manual. Retrieved from http://nepis.epa.gov/Adobe/PDF/P100HN53.pdf

8. PARTICIPATING MANUFACTURERS

All participating manufacturers in this study operate from one manufacturing plant. The addresses shown below are both the headquarters and the manufacturing plants where the activities took place.

CLERMONT

270, Boulevard Industriel,
Châteauguay (Québec), J6J 4Z2
https://clermontltee.com/

EPSYLON
Façades architecturales
Architectural façades

1010, Avenue Nordique,
Québec (Québec), G1C 0H9
https://www.epsylon.ca

maibec

1984 5e Rue #202,
Lévis, (Québec), G6W 5M6,
https://maibec.com/fr/

LES INDUSTRIES PANFAB INC.

49, Boulevard de la Seigneurie Est,
Blainville (Québec), J7C 4G6
http://www.panfab.com

3D PANNEAUX

755, Rue Boucher,
St-Jean-sur-Richelieu (Québec), J3B 8P4
https://panneaux3d.com

Shalwin
Portes, fenêtres et murs rideaux en aluminium

4565, Avenue Georges-Bornais,
Shawinigan (Québec), G9N 6T5
http://shalwin.ca

STEKAR

668, 5e Avenue,
Beauceville, (Québec), G5X 1L6
https://stekar.com/en/

Warranty

Warranty Registration Form

Maibec Architectural Aluminum Cladding

Printed Finish | Paint Finish

Detail and description of the products used on the construction site

Order(s)	Product	Series	Finish/Colour	Paint/Applicator
-	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

This form warrants to:

Insert the name of the owner of the building here

That Maibec Inc. will comply, for MAE/MAA Series, with the standards set out in Sections 1, 2 and 3, subject to the conditions set out in Section 4 of this warranty (attached) and, for MAP Series, with the standards set out in Sections 1 and 2, subject to the conditions set out in Section 3 of this warranty (attached), for Maibec aluminum products including plank siding, vented planks, architectural battens, panels, assembled panels and accessories.

Name and address of Contractor who perform the work:

Insert here

Project Name:

Insert here

Property Address:

Insert here

Email Address:

Insert here

Phone Number:

Insert here

Installation Completion Date:

Insert here

I have read and accept the conditions of the warranty on the product (Section 1), the warranty on the printed finish (Section 2 - MAE/MAA Series) and the warranty on the painted finish (Section 2 - MAP Series and Section 3 MAE/MAA Series), subject to the terms and conditions of Sections 3 (MAP Series) and 4 (MAE/MAA Series) with respect to the products that have been installed on the project or building identified above.

I acknowledge receipt of the copy of the warranty certificate.

Insert here

Owner or Contractor name

Insert here

Date

Signature

Duly authorized on behalf of Maibec Inc.

Insert here

Name and title

Insert here

Date

Signature

Summary of Warranties – MAE and MAA Series

<table>
<tr><td colspan="2">WARRANTIES APPLICABLE TO THE PRODUCT/SUBSTRATE:
(see details in the warranties text)</td><td colspan="5">MAIBEC ALUMINIUM Line
Extruded Planks and Battens MAE Series, Assembled Battens and Panels MAA Series</td></tr>
<tr><td colspan="2">Warping Warranty</td><td colspan="5">50 years</td></tr>
<tr><td colspan="2">Corrosion Warranty</td><td colspan="5">50 years</td></tr>
<tr><td colspan="7">TERMS OF THE PRODUCT/SUBSTRATE WARRANTIES DURING THE COVERED PERIOD:</td></tr>
<tr><td rowspan="2">0 - 3 years</td><td>Product/Substrate Warranty:</td><td colspan="5">Defective portions are covered 100% by Maibec.</td></tr>
<tr><td>Labor Warranty for replacing defective portions:</td><td colspan="5">Labor cost assumed by Maibec up to a maximum of USD 10/ft² or CAD 13/ft² depending on the project location (United States or Canada).</td></tr>
<tr><td rowspan="2">4 - 50 years</td><td>Product/Substrate Warranty:</td><td colspan="5">Defective portions are covered 100% by Maibec.</td></tr>
<tr><td>Labor Warranty for replacing defective portions:</td><td colspan="5">No warranty (labor at the customer’s expense).</td></tr>
<tr><td colspan="2" rowspan="2">WARRANTIES APPLICABLE TO THE FINISH:
(see details in the warranties text)</td><td>PRINTED FINISH</td><td colspan="2">PAINTED FINISH
MAIBEC EXPRESS and MAIBEC Selection*</td><td>PAINTED FINISH
Other Powder /
MAIBEC Application**</td><td>PAINTED FINISH
Subcontracted</td></tr>
<tr><td>Maibec Print</td><td>Opaque Powder
AAMA 2604</td><td>Opaque Powder
AAMA 2605</td><td>Opaque Powder from supplier outside selection</td><td>Application performed by subcontractor</td></tr>
<tr><td colspan="2">Adhesion Warranty</td><td>20 years</td><td>20 years</td><td>25 years</td><td rowspan="5">The paint manufacturer’s warranty for the paint used will apply.</td><td rowspan="5">The warranty of the subcontractor who performed the painting work will apply.</td></tr>
<tr><td colspan="2">Cracking and Crazing Warranty</td><td>20 years</td><td>20 years</td><td>25 years</td></tr>
<tr><td colspan="2">Color Stability Warranty</td><td>20 years</td><td>15 years</td><td>20 years</td></tr>
<tr><td colspan="2">Gloss Retention Warranty</td><td>20 years</td><td>15 years</td><td>20 years</td></tr>
<tr><td colspan="2">Chalking Warranty</td><td>Not applicable</td><td>15 years</td><td>20 years</td></tr>
<tr><td colspan="7">TERMS OF THE FINISH WARRANTIES DURING THE COVERED PERIOD:</td></tr>
<tr><td rowspan="2">0 - 3 years</td><td>Finish Warranty:</td><td colspan="3">← Defective portions are covered 100% by Maibec. →</td><td colspan="2" rowspan="6">The warranty of the paint manufacturer for the paint used or of the subcontractor who performed the painting work will apply for its duration and according to its terms and conditions.</td></tr>
<tr><td>Labor Warranty for replacing defective portions:</td><td colspan="3">← Labor cost covered by Maibec up to USD 10/ft² or CAD 13/ft² depending on the project location (United States or Canada). →</td></tr>
<tr><td rowspan="2">4 - 15 years</td><td>Finish Warranty:</td><td colspan="3">← Defective portions are covered 100% by Maibec. →</td></tr>
<tr><td>Labor Warranty for replacing defective portions:</td><td colspan="3">← No warranty (labor at the customer’s expense). →</td></tr>
<tr><td rowspan="2">16 - 20 years</td><td>Finish Warranty:</td><td>Defective portions are covered by Maibec at 80% during the 16th year, 60% during the 17th year, 40% during the 18th year, 20% during the 19th year, and 10% during the 20th year.</td><td colspan="2">← For warranties that still apply, defective portions are covered 100% by Maibec. →</td></tr>
<tr><td>Labor Warranty for replacing defective portions:</td><td colspan="3">← No warranty (labor at the customer’s expense) →</td></tr>
<tr><td rowspan="2">21 years +
(up to 25 years)</td><td>Finish Warranty:</td><td>Not applicable</td><td>Not applicable</td><td>For warranties that still apply, defective portions are covered 100% by Maibec.</td></tr>
<tr><td>Labor Warranty for replacing defective portions:</td><td>Not applicable</td><td>Not applicable</td><td>No warranty (labor at the customer’s expense)</td></tr>
</table>

All warranties are subject to the Terms and Conditions detailed in the MAIBEC Architectural warranty document, which takes precedence over the table above and over any other information communicated in the event of conflict or contradiction.

* The MAIBEC Selection includes colors from selected manufacturers' catalogs for which MAIBEC is a certified applicator.

** For a powder coating from a supplier outside the MAIBEC selection catalogs, MAIBEC undertakes to follow the supplier’s application specifications (certified by them).

Summary of Warranties – MAP Series

WARRANTIES APPLICABLE TO THE PRODUCT/SUBSTRATE: (see details in the warranties text)		**MAIBEC ALUMINIUM Line** Panels **MAP Series**			
Warping Warranty		**10 years**			
Corrosion Warranty		**10 years**			
TERMS OF THE PRODUCT/SUBSTRATE WARRANTIES DURING THE COVERED PERIOD:					
0 - 3 years	Product/Substrate Warranty:	Defective portions are covered 100% by Maibec.			
	Labor Warranty for replacing defective portions:	Labor cost assumed by Maibec up to a maximum of USD 10/ft² or CAD 13/ft² depending on the project location (United States or Canada).			
4 - 10 years	Product/Substrate Warranty:	Defective portions are covered 100% by Maibec.			
	Labor Warranty for replacing defective portions:	No warranty (labor at the customer's expense).			
WARRANTIES APPLICABLE TO THE FINISH: (see details in the warranties text)		**PAINTED FINISH MAIBEC EXPRESS and MAIBEC Selection***		**PAINTED FINISH Other Powder / MAIBEC Application****	**PAINTED FINISH Subcontracted**
		Opaque Powder AAMA 2604	**Opaque Powder AAMA 2605**	**Opaque Powder from supplier outside selection**	**Application performed by subcontractor**
Adhesion Warranty		20 years	25 years	The paint manufacturer's warranty for the paint used will apply. (see Appendix)	The warranty of the subcontractor who performed the painting work will apply. (see Appendix)
Cracking and Crazing Warranty		20 years	25 years		
Color Stability Warranty		15 years	20 years		
Gloss Retention Warranty		15 years	20 years		
Chalking Warranty		15 years	20 years		
TERMS OF THE FINISH WARRANTIES DURING THE COVERED PERIOD:					
0 - 3 years	Finish Warranty:	← Defective portions are covered 100% by Maibec. →		The warranty of the paint manufacturer for the paint used or of the subcontractor who performed the painting work will apply for its duration and according to its terms and conditions. (see Appendix)	
	Labor Warranty for replacing defective portions:	← Labor cost covered by Maibec up to USD 10/ft² or CAD 13/ft² depending on the project location (United States or Canada). →			
4 - 15 years	Finish Warranty:	← Defective portions are covered 100% by Maibec. →			
	Labor Warranty for replacing defective portions:	← No warranty (labor at the customer's expense). →			
16 - 20 years	Finish Warranty:	← For warranties that still apply, defective portions are covered 100% by Maibec. →			
	Labor Warranty for replacing defective portions:	← No warranty (labor at the customer's expense) →			
21 years + (up to 25 years)	Finish Warranty:	Not applicable	For warranties that still apply, defective portions are covered 100% by Maibec.		
	Labor Warranty for replacing defective portions:	Not applicable	No warranty (labor at the customer's expense)		

All warranties are subject to the Terms and Conditions detailed in the MAIBEC Architectural warranty document, which takes precedence over the table above and over any other information communicated in the event of conflict or contradiction.

* The MAIBEC Selection includes colors from selected manufacturers' catalogs for which MAIBEC is a certified applicator.

** For a powder coating from a supplier outside the MAIBEC selection catalogs, MAIBEC undertakes to follow the supplier's application specifications (certified by them).

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Limited Warranty
Extruded Aluminum Products
MAE and MAA Series

50 YEARS on substrate
20 YEARS on printed finish
3 YEARS on labour

Maibec Architectural Aluminum Cladding

Extruded Aluminum Profiles (MAE Series) - Maibec Aluminum Assembled Products (MAA Series)
Printed Finish | Paint Finish

WARRANTY APPLICABLE IN CANADA TO PRODUCTS SOLD THROUGH MAIBEC INC.

DEFINITIONS

The term «PRODUCT» refers to the extruded aluminum profile and assembled products of extruded profiles and aluminum composite panels with aluminum core. It excludes any finish or material applied to it.

The term «PRINTED FINISH» refers to the primer coat, the high-definition printed coat, and the clear protective coating at section 2.

The term «PAINTED FINISH» refers to the opaque plain layer of paint that meets the FGIA/ AAMA 2604-13 or AAMA 2605-13 standard (MAIBEC EXPRESS and MAIBEC Selection* only), as applicable, and the performance criteria described in Section 3.

The term «FINISH» is used to refer collectively to «PRINTED FINISH» and «PAINTED FINISH».

* The MAIBEC Selection includes colors from selected manufacturers' catalogs for which MAIBEC is a certified applicator.

SECTION 1 - PRODUCT

MAIBEC expressly warrants that its aluminum PRODUCTS are free of physical and manufacturing defects.

During the warranty period, when the PRODUCT is installed and maintained according to MAIBEC's instructions, it is guaranteed against the following:

1.1. Warping. The PRODUCT is guaranteed to be free from inherent warping. This warranty does not cover warping resulting from external factors, including but not limited to the structure or support to which the product is attached. For the purposes of this warranty, warping is defined as a deformation exceeding 1.6 mm (1/16 in) out of plane per linear foot or 304.8 mm (12 in).

1.2. Corrosion. When installed and maintained according to MAIBEC's instructions, the PRODUCT is also warrantied against rust and corrosion.

1.3. The "warranty period" for the warranties detailed in section 1 is valid for ten (50) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 4.2.

1.4. In the event that the PRODUCT has a physical or manufacturing defect::

1.4.1. For three (3) years following the installation completion date: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT and reimburse labor costs up to a maximum of US$10 or Can$13 per square foot of replaced product, depending on the project location (United States or Canada), to the owner or subsequent purchaser of the building where the PRODUCT is installed, as applicable.

1.4.2. From the fourth (4th) year until the fiftieth (50th) year following the installation completion date: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT to the owner or subsequent purchaser of the building where the PRODUCT is installed, as applicable. MAIBEC will not assume any labor costs.

SECTION 2 - PRINTED FINISH

During the warranty period, the PRINTED finish will be warrantied as follows:

2.1 Resistance to cracking and crazing. The PRINTED FINISH will be free of any visible cracking or crazing when observed from a distance of 3 m (10 feet) from the metal surface and inspected at a 90-degree angle to the surface.

2.2 Color stability. No change in the color of the PRINTED FINISH exceeding 5 (five) CIE Lab units measured according to Section 6.3 of the ASTM D2244 standard. Color change will be measured on the exposed surface after it has been cleaned to remove oil, grease, or other contaminants. The corresponding values will be compared to the values measured on the original batch.

2.3 Gloss retention. The PRINTED FINISH will have a gloss retention of at least 50% of the original. Gloss retention will be measured on the exposed finish surface after it has been cleaned to remove oil, grease, or other contaminants. The corresponding values will be compared to the values measured on the original manufactured product.

2.4 Adhesion. The PRINTED FINISH, whose adhesion is initially measured on reference samples, will not show any detachment inferior to class 4B as per method "B" of the ASTM D3359 standard.

2.5 The "warranty period" for the warranties detailed in section 2 is valid for twenty (20) years, commencing on the date shown on the warranty registration form, and for as long as the "owner" named owns the property where the product was originally installed, subject to section 4.2 and in accordance with the terms described in section 2.6.

2.6 In the event of a PRINTED FINISH defect:

2.6.1 For three (3) years following the date of installation: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT and reimburse labor costs up to a maximum of US$10 or Can$13 per square foot of replaced product, depending on the project

location (United States or Canada), to the owner or subsequent purchaser of the building where the PRODUCT is installed, as the case may be.

2.6.2 For the fourth (4th) to fifteenth (15th) years following the date of installation: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT to the owner or subsequent purchaser of the building where the PRODUCT is installed, as the case may be. MAIBEC will not assume any labor costs.

2.6.3 For the sixteenth (16th) to twentieth (20th) years following the date of installation: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT to the owner or subsequent purchaser of the building where the PRODUCT is installed, as the case may be, up to an amount based on the PRODUCT's remaining lifespan (please refer to the table below). MAIBEC will not assume any labor costs..

Years	Covered by Maibec
16	80%
17	60%
18	40%
19	20%
20	10%

SECTION 3 - PAINTED FINISH (AAMA 2604-13 OR AAMA 2605-13 POWDER COATING)

During the warranty period, the PAINTED FINISH will be warrantied as follows:

3.1 Resistance to cracking and crazing. This PAINTED FINISH on the building will be free of any visible cracking or crazing when observed from a distance of 3 m (10 feet) from the metal surface and inspected at a 90-degree angle to the surface.

3.2 Color stability. No change in the color of the PAINTED FINISH exceeding 5 (five) CIE Lab units measured according to Section 6.3 of the ASTM D2244 standard. Color change will be measured on the exposed surface after it has been cleaned to remove oil, grease, powder, oxide film, or other contaminants. The corresponding values will be compared to the values measured on the original batch.

3.3 Color stability. No change in the color of the PAINTED FINISH exceeding 5 (five) CIE Lab units measured according to Section 6.3 of the ASTM D2244 standard. Color change will be measured on the exposed surface after it has been cleaned to remove oil, grease, powder, oxide film, or other contaminants. The corresponding values will be compared to the values measured on the original batch.

3.4 Gloss retention. The coated surface will have a gloss retention of at least 30% of the original for the **AAMA 2604-13 powder coating** or at least 50% of the original for the **AAMA 2605-13 powder coating**, measured at 60° in accordance with the ASTM D523 standard. Gloss retention will be measured on the exposed PAINTED FINISH surface after it has been cleaned to remove oil, grease, powder, or other contaminants. The corresponding values will be compared to the values measured on the original manufactured product.

3.5 Resistance to chalking. The PAINTED COATED FINISH coat will not chalk in excess of a numerical rating of 8 measured according to method A of the ASTM D4214 standard.

FOR AAMA 2604-13 POWDER COATING

3.6 The "warranty period" for the warranties detailed at length in sections 3.1 (cracking and crazing) and 3.2 (adhesion) is valid for twenty (20) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 4.2 and in accordance with the terms described in section 3.10.

3.7 The "warranty period" for the warranties detailed at length in sections 3.3 (color stability), 3.4 (gloss) and 3.5 (chalking) is valid for fifteen (15) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 4.2 and in accordance with the terms described in section 3.10.

FOR AAMA 2605-13 POWDER COATING

3.8 The "warranty period" for the warranties detailed at length in sections 3.1 (cracking and crazing) and 3.2 (adhesion) is valid for twenty-five (25) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 4.2 and in accordance with the terms described in section 3.10.

3.9 The "warranty period" for the warranties detailed at length in sections 3.3 (color stability), 3.4 (gloss) and 3.5 (chalking) is valid for twenty (20) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 4.2 and in accordance with the terms described in section 3.10.

3.10 In the event that the PAINTED FINISH has a physical or manufacturing defect::

3.10.1 For three (3) years following the installation completion date: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT and reimburse labor costs up to a maximum of US$10 or Can$13 per square foot of replaced product, depending on the project location (United States or Canada), to the owner or subsequent purchaser of the building where the PRODUCT is installed, as applicable

3.10.2 From the fourth (4th) year until the end of the warranty period (15, 20, or 25 years, depending on the warranty): MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT to the owner or subsequent purchaser of the building where the PRODUCT is installed, as applicable. MAIBEC will not assume any labor costs.

SECTION 4 - WARRANTY TERMS AND CONDITIONS

4.1 Registration of the warranty is mandatory to give it effect, otherwise it is void. The warranty is only valid upon reception of the duly completed warranty registration form. The warranty must be registered within one hundred eighty (180) days of completion of installation. Warranty registration confirms the date of purchase and helps MAIBEC process claims.

4.2 This warranty may be transferred (once) from the original owner. To transfer the warranty, submit written notice within ninety (90) days of when the building changed hands. The notice must include the building address, the name, and mailing address (if different) of the new owner(s), and the date of the transfer.

4.3 Proof of purchase of the PRODUCT must be retained, as it is required when submitting any claim under this warranty.

4.4 The warranty does not cover damage resulting from abnormal atmospheric conditions exceeding C-1, C-2, C-3 classes as defined in ISO 12944-2, including corrosive, saline or particularly polluted atmospheres, such as, but not limited to, atmospheres contaminated by chemical fumes or sea spray.

4.5 The warranty does not cover damage to the coated metal caused by handling, shipping, transportation, workmanship, or installation.

4.6 The warranty does not cover damage to the coated metal caused by scratching or abrasion after installation.

4.7 The warranty does not cover damage to the coated metal caused by standing water in horizontal installations.

4.8 The warranty does not cover damage to the coated metal resulting from improper storage. To prevent damage to the PRODUCT and its FINISH, it must be stored flat and kept dry. A humid environment is contraindicated.

4.9 The warranty does not cover damage to the coated metal caused by improper maintenance. It is required that dust, dirt and other deposits on the coated part be cleaned annually using a soft sponge or cloth, water and mild detergent or soap with a pH between 5 and 9. Do not pressure-wash or use harsh detergents or chemicals. Include the following in your maintenance log: date, time, name of the person in charge of maintenance and his/her designation, specific products used, name of the maintenance company and general condition of the FINISH. MAIBEC can request a copy of said maintenance log for the processing of claims under the warranty.

4.10 The warranty does not apply to damage caused by natural disasters, falling objects, external forces, explosions, fires, riots, public demonstrations, acts of war, or other similar or different events beyond the control of MAIBEC.

4.11 The warranty does not apply to damage caused by exposure to temperatures in excess of sixty (60) degrees Celsius, to acids harmful to the type of finish applied to the siding, or to areas of salt water.

4.12 The warranty does not apply to damage caused by the use of tape, putty or sealant, vise marks or attachment points, or work - such as bending, stretching, cutting, sawing, milling or countersinking - performed after the transfer of ownership of the parts from MAIBEC to the customer.

4.13 The warranty does not cover damage to the PRODUCT resulting from a problem with the design or structure of the building where the PRODUCT is installed.

4.14 The warranty does not cover damage caused by a third party not affiliated with MAIBEC.

4.15 The warranty does not cover damage resulting from abnormal use of the PRODUCT or negligent conduct toward it.

4.16 Claims must be submitted to MAIBEC in writing within a reasonable timeframe (no more than 90 days) after the problem has been identified and be accompanied by proof of purchase of the PRODUCT. Upon receipt of such notice, MAIBEC must be given a reasonable period to inspect and verify the claim. Authorization from MAIBEC must be obtained before starting any repair or refinishing work.

4.17 MAIBEC assumes only limited responsibility for transportation and labor costs required to disassemble defective parts, return them to its facilities and have them reinstalled. The same applies for material costs related to the factory production of defective parts that cannot be recovered for re-covering. For all this specific works, MAIBEC's liability is limited to an amount equal to a maximum of two hundred percent (200%) of the contract value.

4.18 MAIBEC shall not be liable for any claim, contractual or otherwise, for any damage, direct or indirect, resulting from a defect of the PRODUCT, including, without limiting the generality of the foregoing, loss of profit, revenue, market, goodwill, business or production, loss of time, enjoyment of life or any other type of claim by the customer or any third party.

4.19 The warranty on any repaired or replaced coated metal is valid for the remainder of the original product warranty period. All work will be performed by a company or contractor selected or authorized by MAIBEC. Color variation between repaired or replaced products and original products will not be considered a defect.

4.20 This warranty represents the entire agreement between the parties relating to its subject matter and supersedes any prior agreement, verbal or written, between the parties relating to its subject matter. The limited warranties specify MAIBEC's full liability for the products they cover. No person is authorized to make any statements about the warranty on behalf of MAIBEC except as expressly stated above, and such statements will not be binding on MAIBEC, including any declaration made by its representatives, as the case may be.

4.21 Except as expressly stated above, MAIBEC makes no warranties of any kind, express or implied, including but not limited to warranties of merchantability or fitness for a particular purpose. Warranties are valid for the duration of the limited warranty, or the shorter period provided for by local law.

4.22 NOTHING IN THIS WARRANTY SHALL BE CONSTRUED AS A WARRANTY OF THE QUALITY OF THE INSTALLER'S WORKMANSHIP, OR AS REQUIRING MAIBEC TO BE LIABLE FOR UNSATISFACTORY PERFORMANCE DUE TO FAULTY WORKMANSHIP OR INSTALLATION. THE WARRANTY IS VOID IF MAIBEC'S INSTALLATION INSTRUCTIONS ARE NOT FOLLOWED.

4.23 This warranty is governed by the laws in force in the province of Quebec and its interpretation is subject to these same laws. Any dispute between the parties in connection with this warranty must be heard by the courts of the place where the contract was formed, to the exclusion of any other jurisdiction.

This warranty gives you specific legal rights, which can vary from a state/province to another. The provisions of this warranty do not prevent the application of any applicable provincial or state law which, in certain circumstances, may prohibit certain limitations and exclusions provided by these warranties.

MAIBEC SHALL NOT BE LIABLE IN ANY EVENT FOR INCIDENTAL, SPECIAL, MULTIPLE, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT IN THE PRODUCT(S) PROVIDED, INCLUDING BUT NOT LIMITED TO DAMAGE TO PROPERTY OR LOSS OF PROFITS.

For more information about the products, please contact Customer Service:

Maibec Inc.
202 – 1984, 5th Street
Levis (Quebec)
G6W 5M6 Canada

Phone: 418 659-3323
Toll-Free-Number: 1 800 363-1930
info@maibec.com

Limited Warranty
Folded Aluminum Profiles
MAP Series

10 YEARS on substrate

3 YEARS on labour

Maibec Architectural Aluminum Cladding

Maibec Aluminum Plate (MAP Series)

Paint Finish

WARRANTY APPLICABLE IN CANADA TO PRODUCTS SOLD THROUGH MAIBEC INC.

DEFINITIONS

The term «product» refers to the Folded Aluminum Profiles. It excludes any finish or material applied to it.

The term «finish» refers to the opaque plain layer of paint that meets the FGIA/ AAMA 2604-13 or AAMA 2605-13 standard (MAIBEC EXPRESS and MAIBEC Selection* only), as applicable, and the performance criteria described in Section 2.

*The MAIBEC Selection includes colors from selected manufacturers' catalogs for which MAIBEC is a certified applicator.

SECTION 1 - PRODUCT

MAIBEC expressly warrants that its aluminum PRODUCTS are free of physical and manufacturing defects.

During the warranty period, when the PRODUCT is installed and maintained according to MAIBEC's instructions, it is guaranteed against the following:

1.1 Warping. The PRODUCT itself will remain whole and free of any distortion or deformation that may affect its profile or durability during the warranty period, provided that the product is installed under normal conditions and subjected to normal atmospheric loads and pressure. For the purposes of this warranty, warping is defined as a deformation exceeding 1.6 mm (1/16 in) out of plane per linear foot or 304.8 mm (12 in).

1.2 Corrosion. When installed and maintained according to MAIBEC's instructions, the PRODUCT is also warrantied against rust and corrosion.

1.3 The "warranty period" for the warranties detailed in section 1 is valid for ten (10) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 3.2.

1.4 In the event that the PRODUCT has a physical or manufacturing defect:

1.4.1 For three (3) years following the installation completion date: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT and reimburse labor costs up to a maximum of US$10 or Can$13 per square foot of replaced product, depending on the project location (United States or Canada), to the owner or subsequent purchaser of the building where the PRODUCT is installed, as applicable

1.4.2 From the fourth (4th) year until the tenth (10th) year following the installation completion date: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT to the owner or subsequent purchaser of the building where the PRODUCT is installed, as applicable. MAIBEC will not assume any labor costs.

SECTION 2 - FINISH

During the warranty period, the FINISH will be warrantied as follows::

2.1 Resistance to cracking and splitting. This FINISH on the building will be free of any visible cracking or splitting when observed from a distance of 3 m (10 feet) from the metal surface and inspected at a 90-degree angle to the surface.

2.2 Adhesion. The FINISH, with adhesion initially measured on samples according to Section 8.4 of the **AAMA 2604-13 or AAMA 2605-13** standard, as applicable, will not peel at a rate inferior to class 4B as per Method B of the ASTM D3359 standard.

2.3 Color stability. No change in the color of the FINISH exceeding 5 (five) CIE Lab units measured according to Section 6.3 of the ASTM D2244 standard. Color change will be measured on the exposed surface after it has been cleaned to remove oil, grease, powder, oxide film, or other contaminants. The corresponding values will be compared to the values measured on the original batch.

2.4 Gloss retention. The coated surface will have a gloss retention of at least 30% of the original for the **AAMA 2604-13 powder coating** or at least 50% of the original for the **FAAMA 2605-13 powder coating**, measured at 60° in accordance with the ASTM D523 standard. Gloss retention will be measured on the exposed FINISH surface after it has been cleaned to remove oil, grease, powder, or other contaminants. The corresponding values will be compared to the values measured on the original manufactured product.

2.5 Resistance to chalking. The FINISH coat will not chalk in excess of a numerical rating of 8 measured according to method A of the ASTM D4214 standard.

FOR AAMA 2604-13 POWDER COATING

2.6 The "warranty period" for the warranties detailed at length in sections 2.1 (cracking and splitting) and 2.2 (adhesion) is valid for twenty (20) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 3.2 and in accordance with the terms described in section 2.10.

2.7 The "warranty period" for the warranties detailed at length in sections 2.3 (color stability), 2.4 (gloss) and 2.5 (chalking) is valid for fifteen (15) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 3.2 and in accordance with the terms described in section 2.10.

FOR AAMA 2605-13 POWDER COATING

2.8 The "warranty period" for the warranties detailed at length in sections 2.1 (cracking and splitting) and 2.2 (adhesion) is valid for twenty-five (25) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 3.2 and in accordance with the terms described in section 2.10.

2.9 The "warranty period" for the warranties detailed at length in sections 2.3 (color stability), 2.4 (gloss) and 2.5 (chalking) is valid for twenty (20) years, commencing on the date shown on the warranty registration form and continuing for as long as the "owner" named above owns the property where the product was originally installed, subject to section 3.2 and in accordance with the terms described in section 2.10.

2.10 In the event that the FINISH has a physical or manufacturing defect:

2.10.1 For three (3) years following the installation completion date: MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT and reimburse labor costs up to a maximum of US$10 or Can$13 per square foot of replaced product, depending on the project location (United States or Canada), to the owner or subsequent purchaser of the building where the PRODUCT is installed, as applicable.

2.10.2 From the fourth (4th) year until the end of the warranty period (15, 20, or 25 years, depending on the warranty): MAIBEC will, at its sole discretion, replace, repair, or refund the defective portion of the PRODUCT to the owner or subsequent purchaser of the building where the PRODUCT is installed, as applicable. MAIBEC will not assume any labor costs.

SECTION 3 - WARRANTY TERMS AND CONDITIONS

3.1 Registration of the warranty is mandatory to give it effect, otherwise it is void. The warranty is only valid upon reception of the duly completed warranty registration form. The warranty must be registered within one hundred eighty (180) days of completion of installation. Warranty registration confirms the date of purchase and helps MAIBEC process claims.

3.2 This warranty may be transferred (once) from the original owner. To transfer the warranty, submit written notice within ninety (90) days of when the building changed hands. The notice must include the building address, the name, and mailing address (if different) of the new owner(s), and the date of the transfer.

3.3 Proof of purchase of the PRODUCT must be retained, as it is required when submitting any claim under this warranty.

3.4 The warranty does not cover damage resulting from abnormal atmospheric conditions exceeding C-1, C-2, C-3 classes as defined in ISO 12944-2, including corrosive, saline or particularly polluted atmospheres, such as, but not limited to, atmospheres contaminated by chemical fumes or sea spray.

3.5 The warranty does not cover damage to the coated metal caused by handling, shipping, transportation, workmanship, or installation.

3.6 The warranty does not cover damage to the coated metal caused by scratching or abrasion after installation.

3.7 The warranty does not cover damage to the coated metal caused by standing water in horizontal installations.

3.8 The warranty does not cover damage to the coated metal resulting from improper storage. To prevent damage to the PRODUCT and its FINISH, it must be stored flat and kept dry. A humid environment is contraindicated.

3.9 The warranty does not cover damage to the coated metal caused by improper maintenance. It is required that dust, dirt and other deposits on the coated part be cleaned annually using a soft sponge or cloth, water and mild detergent or soap with a pH between 5 and 9. Do not pressure-wash or use harsh detergents or chemicals. Include the following in your maintenance log: date, time, name of the person in charge of maintenance and his/her designation, specific products used, name of the maintenance company and general condition of the FINISH. MAIBEC can request a copy of said maintenance log for the processing of claims under the warranty.

3.10 The warranty does not apply to damage caused by natural disasters, falling objects, external forces, explosions, fires, riots, public demonstrations, acts of war, or other similar or different events beyond the control of MAIBEC.

3.11 The warranty does not apply to damage caused by exposure to temperatures in excess of sixty (60) degrees Celsius, to acids harmful to the type of finish applied to the siding, or to areas of salt water.

3.12 The warranty does not apply to damage caused by the use of tape, putty or sealant, vise marks or attachment points, or work - such as bending, stretching, cutting, sawing, milling or countersinking - performed after the transfer of ownership of the parts from MAIBEC to the customer.

3. 13 The warranty does not cover damage to the PRODUCT resulting from a problem with the design or structure of the building where the PRODUCT is installed.

3.14 The warranty does not cover damage caused by a third party not affiliated with MAIBEC.

3.15 The warranty does not cover damage resulting from abnormal use of the PRODUCT or negligent conduct toward it.

3.16 Claims must be submitted to MAIBEC in writing within a reasonable timeframe (no more than 90 days) after the problem has been identified and be accompanied by proof of purchase of the PRODUCT. Upon receipt of such notice, MAIBEC must be given a reasonable period to inspect and verify the claim. Authorization from MAIBEC must be obtained before starting any repair or refinishing work.

3.17 MAIBEC assumes only limited responsibility for transportation and labor costs required to disassemble defective parts, return them to its facilities and have them reinstalled. The same applies for material costs related to the factory production of defective parts that cannot be recovered for re-covering. For all these specific works, MAIBEC's liability is limited to an amount equal to a maximum of two hundred percent (200%) of the contract value.

3.18 MAIBEC shall not be liable for any claim, contractual or otherwise, for any damage, direct or indirect, resulting from a defect of the PRODUCT, including, without limiting the generality of the foregoing, loss of profit, revenue, market, goodwill, business or production, loss of time, enjoyment of life or any other type of claim by the customer or any third party.

3.19 The warranty on any repaired or replaced coated metal is valid for the remainder of the original product warranty period. All work will be performed by a company or contractor selected or authorized by MAIBEC. Color variation between repaired or replaced products and original products will not be considered a defect.

3.20 Cette garantie représente l'entente intégrale entre les parties relative à son objet et prévaut sur toute entente antérieure, verbale ou écrite, entre les parties relatives à son objet. Les garanties limitées précisent la responsabilité entière de MAIBEC en ce qui a trait aux produits qu'elles couvrent. Nul n'est autorisé à faire de déclaration concernant la garantie au nom de MAIBEC à l'exception de ce qui est expressément énoncé ci-dessus, et de telles déclarations n'auront pas d'effet obligatoire pour MAIBEC, y incluant toute déclaration émanant de ses représentants, le cas échéant.

3.21 This warranty represents the entire agreement between the parties relating to its subject matter and supersedes any prior agreement, verbal or written, between the parties relating to its subject matter. The limited warranties specify MAIBEC's full liability for the products they cover. No person is authorized to make any statements about the warranty on behalf of MAIBEC except as expressly stated above, and such statements will not be binding on MAIBEC, including any declaration made by its representatives, as the case may be.

3.22 NOTHING IN THIS WARRANTY SHALL BE CONSTRUED AS A WARRANTY OF THE QUALITY OF THE INSTALLER'S WORKMANSHIP, OR AS REQUIRING MAIBEC TO BE LIABLE FOR UNSATISFACTORY PERFORMANCE DUE TO FAULTY WORKMANSHIP OR INSTALLATION. THE WARRANTY IS VOID IF MAIBEC'S INSTALLATION INSTRUCTIONS ARE NOT FOLLOWED.

3.23 This warranty is governed by the laws in force in the province of Quebec and its interpretation is subject to these same laws. Any dispute between the parties in connection with this warranty must be heard by the courts of the place where the contract was formed, to the exclusion of any other jurisdiction.

This warranty gives you specific legal rights, which can vary from a state/province to another. The provisions of this warranty do not prevent the application of any applicable provincial or state law which, in certain circumstances, may prohibit certain limitations and exclusions provided by these warranties.

MAIBEC SHALL NOT BE LIABLE IN ANY EVENT FOR INCIDENTAL, SPECIAL, MULTIPLE, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT IN THE PRODUCT(S) PROVIDED, INCLUDING BUT NOT LIMITED TO DAMAGE TO PROPERTY OR LOSS OF PROFITS.

For more information about the products, please contact Customer Service:

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202 – 1984, 5th Street
Levis (Quebec)
G6W 5M6 Canada

Phone: 418 659-3323
Toll-Free-Number: 1 800 363-1930
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Care & Maintenance Guide

Care & Maintenance Guide

Maibec Aluminum Cladding for HD Printed or solid color finishes

Maibec aluminum cladding is engineered for durability and lasting beauty. Proper care is essential to preserve the finish, prevent buildup of contaminants, and ensure long-term performance.

This guide outlines recommended cleaning practices and maintenance intervals based on environmental conditions. Compliance with these guidelines also supports the smooth processing of warranty claims.

MAINTENANCE SCHEDULE

The frequency of cleaning depends on the environment in which the product is installed. Use the table below as a reference:

Environment	Recommended Cleaning Frequency
Aggressive industrial areas	Every 3 months
Pool or chlorinated environments	Every 3 months
Coastal (marine/salt exposure)	Every 3 months
Tropical or high-humidity zones	Every 6 months
All other non-aggressive areas	Annually

Important : Periodic cleaning must be recorded and demonstrable to ensure smooth warranty processing, if required.

CLEANING INSTRUCTIONS

Tools and Materials

- Garden hose
- Soft-bristled brush or microfiber cloth
- Bucket with warm water
- Approved cleaning solution such as **Simple Green Oxy** or other mild, neutral pH detergent

Cleaning Procedure

1. **Rinse** the cladding using a garden hose to remove loose dirt and debris.
2. **Mix** the approved cleaner with water as directed by the manufacturer.
3. **Gently scrub** the surface with a soft brush or cloth, working from top to bottom.
4. **Rinse thoroughly** with clean water to remove all residues.
5. Let the surface **air dry** naturally.

Pressure washers are not recommended. Excessive pressure can damage the finish or force water into panel joints, compromising performance and warranty.

DEALING WITH STAINS OR BUILD-UP

For areas with stubborn grime, soot, or organic residue:

- Use **Simple Green Oxy** or another approved cleaner designed for aluminum siding and neutral pH balance.
- **Do not** use abrasive tools, bleach, strong solvents, or cleaners with high acidity or alkalinity.
- Always test any cleaning product on a discreet area first.

SEASONAL CONSIDERATIONS

- Rinse off salt or de-icing residue promptly during winter months.
- Keep gutters and overhangs free of debris to prevent staining or overflow.

WARRANTY REMINDER

Documenting maintenance activities is essential for warranty support:

- Maintain a cleaning log with dates, products used, and photos if possible.
- Failure to follow recommended care guidelines may void warranty coverage.

Care & Maintenance Guide (cont'd)

MAINTENANCE RECORD

DATE	TIME	COMPANY THAT PERFORMED THE MAINTENANCE	NAME OF THE PERSON	TITLE	CLEANING PRODUCT USED	OBSERVED CONDITION OF THE PRODUCT SURFACE FINISH