

Installation Guide

For Insulated Metal Panels



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Profiles

- ▶ Design-Lok
- ▶ Mesa-Lok
- ▶ Corr-Lok
- ▶ Shadow-Lok

Introduction

Insulated metal panels (IMPs) are premier building products on the leading edge of innovation. The panels are formed by a continuously, foamed-in-place manufacturing process which binds interior and exterior steel facings to a polyisocyanurate, insulating core. With exceptional R-values (R-8/inch), superior spanning capability, accelerated installation times, cost-effective pricing, recycled content, plus a rigid feel and streamlined architectural appearance the applications are limitless.

The in-place performance of the aforementioned panels is critically dependent upon a quality installation hence the creation of the following manual. This installation guide is intended for use in conjunction with the construction drawings. If there is a conflict between this guide and the construction drawings, the construction drawings shall take precedent.

Accountability

As with all construction projects, the contractor is ultimately responsible for the correct installation of the insulated metal panels. A high degree of logic and good judgment is expected and the contractor should be experienced. Most projects have their share of adjustments and changes and the contractor is responsible for addressing field issues. If a particular detail is not expressly addressed in this manual,

the contractor should apply the principles illustrated herein to address the situation. An omission of this manual in no way absolves the installer of his responsibility for a quality, functioning install. If the contractor is presented with an insurmountable issue, he should immediately contact the manufacturer for assistance.

Conditions

The information in this guide is based on the application of standard wall panels on typical building conditions. Required deviations are the responsibility of the installer. Petersen Aluminum does not guarantee and cannot be held liable for the quality of installation. Petersen Aluminum is not responsible for defects attributed to improper installation or the negligence of other parties. Petersen Aluminum makes no expressed or implied warranties pertaining to the fitness of the insulated wall panels or its components and shall not be responsible for any indirect or consequential damages, such

as to building contents, nor for any further loss of any kind to the owner or contractor.

Petersen Aluminum does not warrant any product or material as meeting the ordinance, laws or regulations of any particular stated or local municipality, and Petersen Aluminum is not responsible for conformance to such ordinances, laws or regulations. Petersen Aluminum is not liable for damage or loss of materials at the jobsite.

Heavy Equipment

Unloading the panel bundles will require a suitable fork lift or crane. Please refer to the *Handling & Maintenance Guide* for additional information.

Verifying the Structure/Alignment

Before panel installation begins, the wall structural support framing must be checked for straightness and alignment, and must be checked to verify that the wall panels can be installed without interference. Intermediate framing member's alignment tolerances are as specified below:

- ▶ zero to 1/4" outward of the structural support line for members spaced at 10'-0" or greater

- ▶ zero to 1/8" outward of the structural support line for members spaced between 5'-0" and 10' -0"
- ▶ zero to 1/16" outward of the structural support line for members spaced at less than 5'-0"

Wall framing alignment error and interference must be corrected prior to the start of panel installation. The manufacturer is not responsible for difficult panel joint assembly and panel face rippling or buckling resulting from misaligned wall framing.

Panel Side Joints

Panel side joints are a modified tongue and groove assembly. Every panel joint must be fully engaged. Due to normal fabrication and field tolerances, the actual panel coverage may vary between plus 1/8" to minus 1/16" when panel joints

are fully engaged. The joint gap is the visible vertical space between the edges of the exterior faces on the adjacent panels. When panels are fully engaged, the width of the joint gap is typically plus 1/16" to plus 1/8".

Vapor Barrier

If installed correctly, the combination of sealants and insulated panels forms the buildings vapor barrier. Because of increased thermal efficiency of insulated panel walls over other typical cladding products, there is a potentially greater vapor pressure differential between the exterior and the interior side of the wall. This higher vapor drive requires tremendous attention to detail regarding the application of sealants. Because of the critical requirements of the weather and vapor seals, the installer should understand the principles of vapor drive and water migration and must understand the requirements for the effective moisture and vapor control.

It is the installer's responsibility to ensure that the specified sealants are in good condition and applied in the proper manner. It is the designer's responsibility to understand the project's unique environmental and operating conditions and to specify the appropriate vapor control measures. Location of vapor barrier sealants must be addressed by a design professional.

Sealants

Before wall panels are installed, ensure that all applicable interior trim is sealed and installed per the project drawings. A continuous perimeter sealant barrier is required between the panels and the structure/interior trim. In addition to the perimeter sealant, each panel side-joint must be sealed. These sealants, unless specified otherwise, are non-skinning butyls. All sealant beads must marry to provide continuity. Joint sealant can be field or factory applied. Factory applied sealant must be inspected to ensure it is in place and continuous. If factory applied sealants are observed inadequate, the installer must field apply sealant to any areas of discontinuity.

Field placed sealant must be applied continuously into the bottom of the groove(s). The bead size should be approximately 3/16" to 1/4". However, adjust the bead size

to provide full contact with the tongue(s) of the next panel without extruding sealant onto the panel face. As stated previously, it is critical to ensure continuity of the sealant line at intersections between panel side joints and exterior and interior perimeter flashing assemblies. As each panel is installed, apply sealant pigtails along the panel's cross-section to provide a continuous seal between the side joint and the perimeter sealant. Sealant pigtails are defined as additional beads of sealant which are applied to the panel edge to serve as a bridge between the joint sealant and the perimeter flashing sealant. Pigtails are also used as a bridge between the perimeter flashing sealants and the flashing splice sealants. During panel installation, always check that the joint sealant and pigtail sealants are properly applied before engaging the panel joint.

Field Applied Insulation

To maintain the building's thermal efficiency and continuous insulation barrier, filler insulation is utilized to fill cavities that may occur at the wall corners, wall-to-roof transitions and wall transitions to other construction. Failure to fill the cavities with insulation can result in reduced thermal efficiency as well as moisture and ice damage within the wall construction and frost and condensation problems in the building interior.

The filler insulation must be installed in a manner that maintains thermal efficiency across cavities where expansion/contraction is expected. Fiberglass filler insulation is typically used on commercial industrial work whereas field applied foam is typically utilized in cold-storage applications. The selection and procurement of filler insulation is the responsibility of the designer and installer.

Threaded Fasteners

The connection of the panels to the wall framing members is critical to the wall's load resistance performance and equally important to the wall's weathertight performance. It is the installer's responsibility to ensure that the specified fasteners are used and are installed in the proper manner and at the specified spacing. Reference the project's installation drawings for the specified fasteners and spacing.

For typical applications the panels are attached to the framing members with clips and screws concealed within the panel joint. In some cases the design loads will require backside attachment of the panels to the framing members in addition to the clips. At wall corners, framed openings and

wall termination, the edges of the panels are attached to the framing member with thru-panel screws. Do not overdrive fasteners. Overdriving can cause the fastener threads to strip, sealing washer damage and dimpling of the panel or flashing surface. The panel clip attachment screws must be driven until the panel face is secure against the framing member, but must not be overdriven to cause excessive crushing of the foam core and distortion of the metal panel edge. Distorting the panel edge will cause difficult panel joint assembly and may cause visible rippling of the panel's exterior face and excessive joint gaps.

Strippable Film

Remove any and all strippable films either prior to or directly following installation. Take measures to avoid exposure of the film to direct sunlight for more than 24 hours.

Field Cutting

The panels are easily cut with circular saws using proper metal cutting blades. If the saw cannot cut through the entire panel thickness, or if shears or nibblers are used, cut each panel face and use a knife or handsaw to cut through the remaining foam core. Be sure to properly support the panel during the cutting operation to prevent delamination of the face from

the core or buckling of the panel. When necessary, pad the saw's shoe plate and guides so they do not scuff or scratch the panel surfaces. Abrasive saws are not acceptable for cutting panels or flashing. Flashing is cut with quality shears to provide a precise, undamaged cut.

Appearance

Always cushion the panel surfaces from direct contact with temporary supports of lifting slings and clamps, etc. To prevent bending or crushing damage, ensure that the panels are uniformly supported at adequate spacing. Do not handle the panels in a manner that can cause buckling of the faces, or separation of the faces from the core.

Insulated panels have wide, virtually flat surfaces. Wide, flat metal surfaces are subject to uncontrollable oil canning. Many factors are causes for oil canning and no manufacturer can

realistically assure the total elimination of the phenomenon. Therefore, uncontrollable oil canning is not a cause for rejection.

However rippling and wrinkling caused by improper handling, overdriving clip fasteners or misalignment and deflection of the wall framing members can result in objectionable appearance and must be avoided.

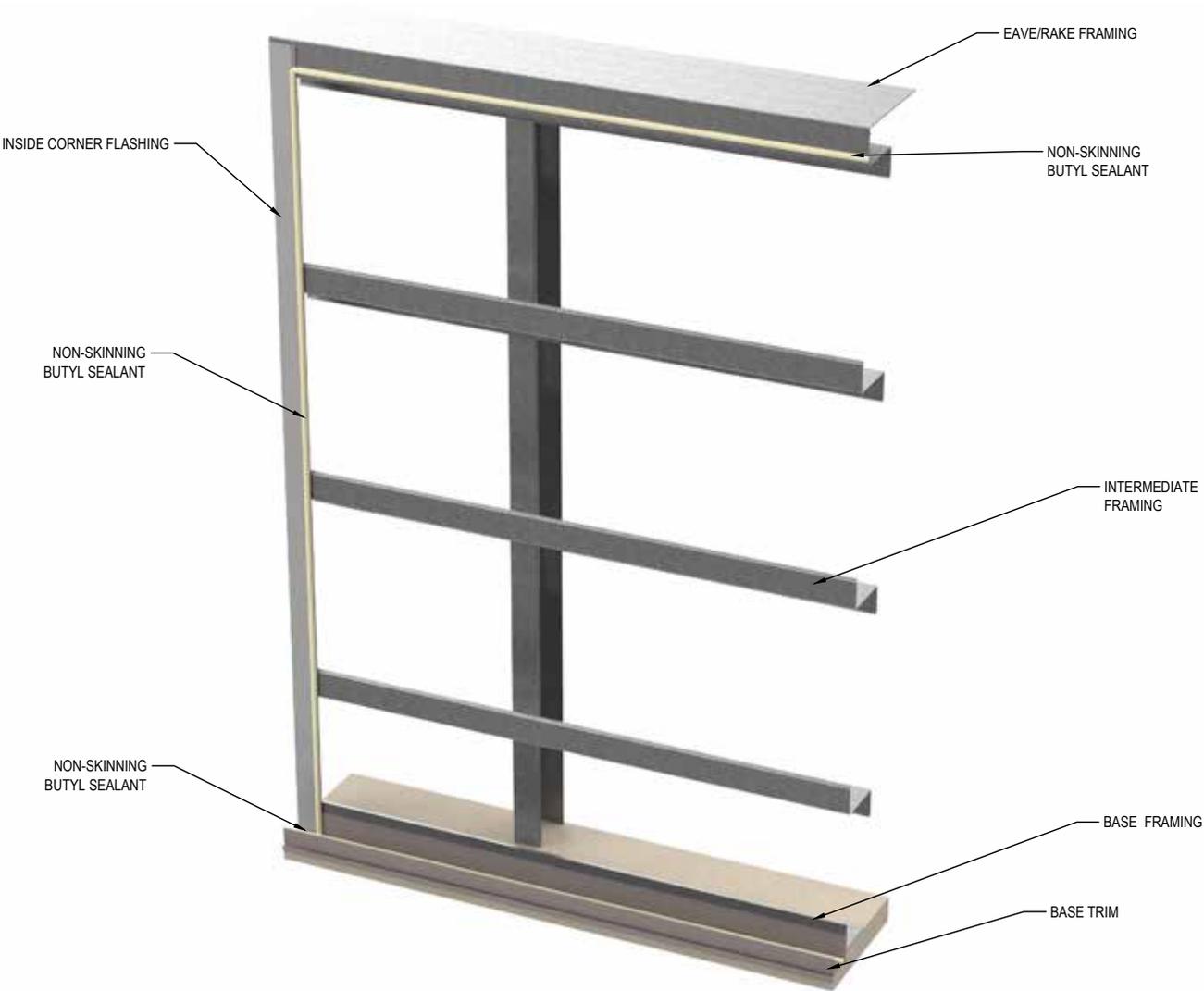
General Installation Sequence

The following section of this manual contains details which address the installation of insulated metal wall panels and their associated flashings. The details are generic, showing typical wall framing and flashing conditions. Because of the many variations of applications and construction conditions, these generic details may vary from the project's actual conditions. Always reference the project's installation drawings for the specified requirements. If there are differences between the installation drawings and these installation guide details, the installation drawings will govern.

1. Install and caulk the appropriate flashing/trims.
2. Measure and cut the first panel
3. Place and plumb the first panel
4. Through-fasten the cut edge.
5. Install clips and fasteners along the factory edge of the panel at the girt locations.
6. Apply sealant pigtails.
7. Field-caulk the second panel.
8. Place and engage the second panel.
9. Install clips and fasteners along the factory edge of the panel at the girt locations.
10. Continue

Installation

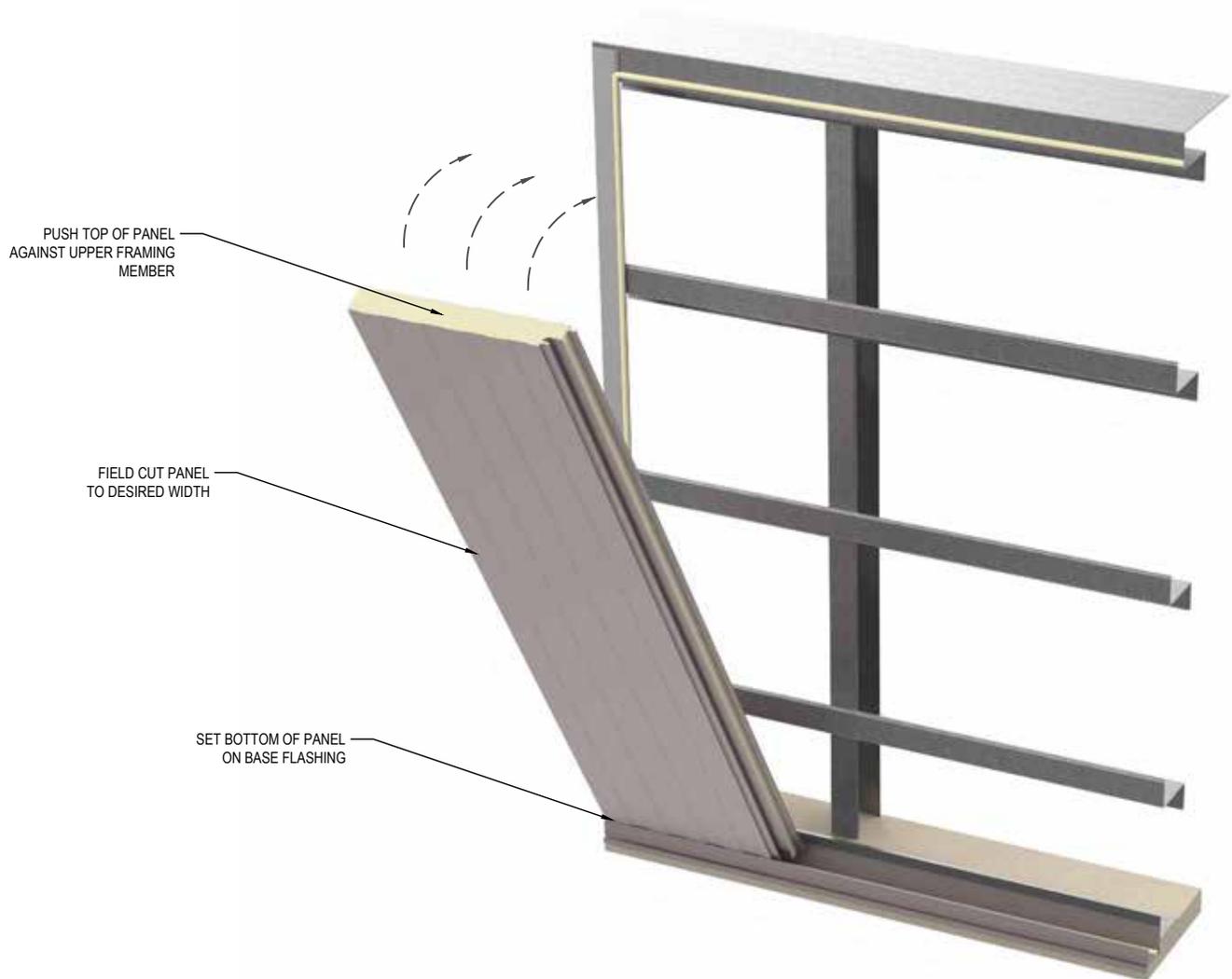
Sequence 1



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Installation

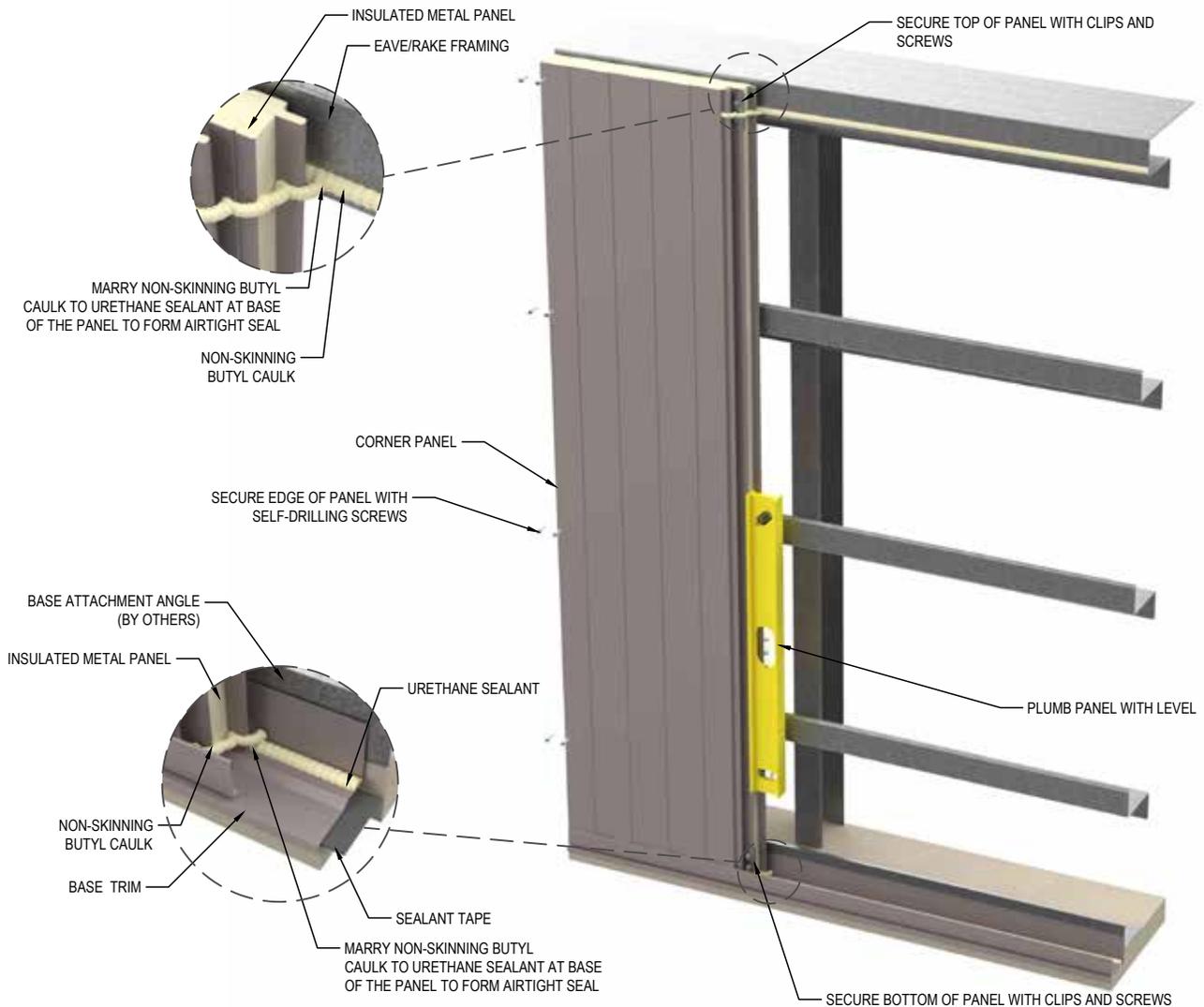
Sequence 2



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Installation

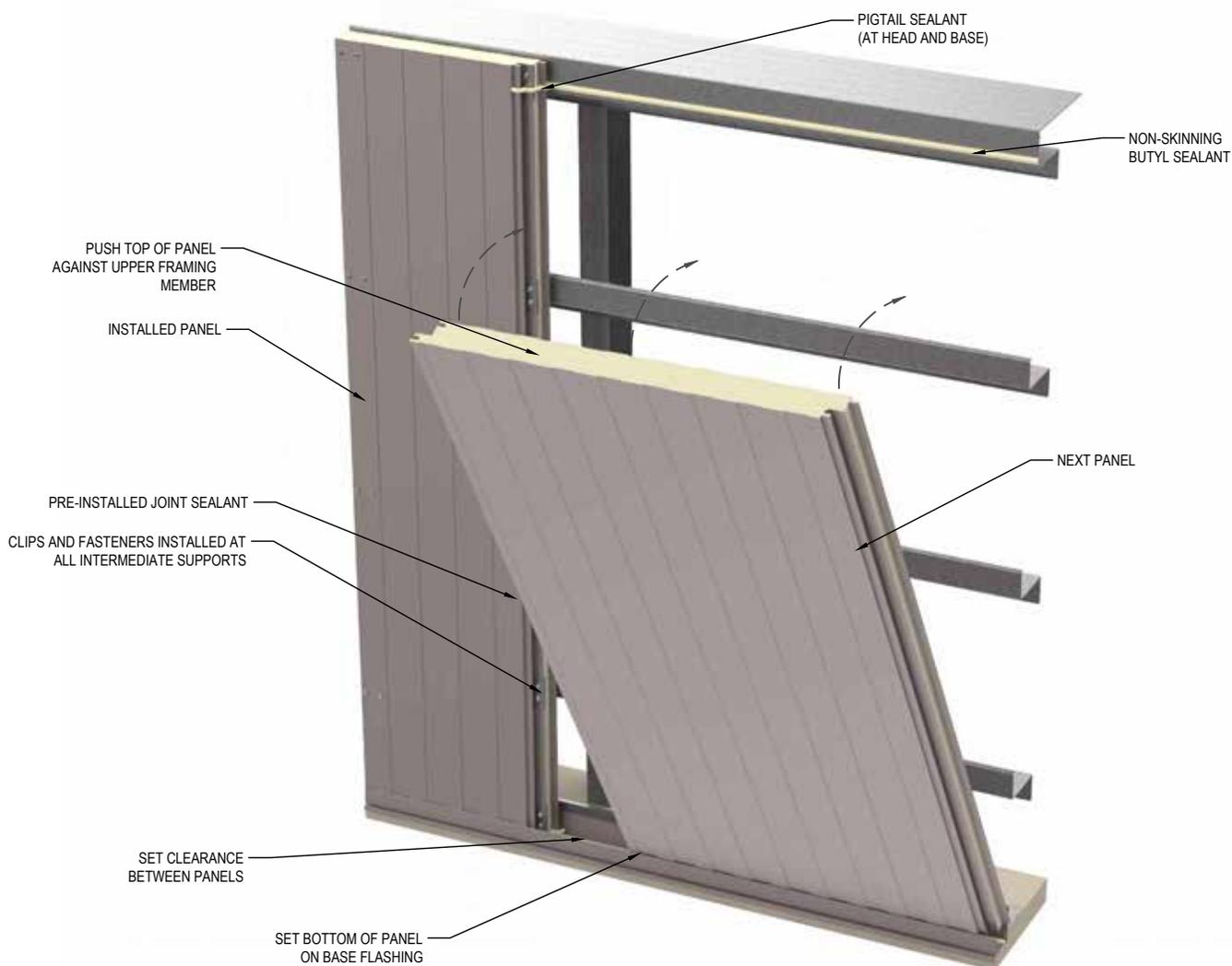
Sequence 3



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Installation

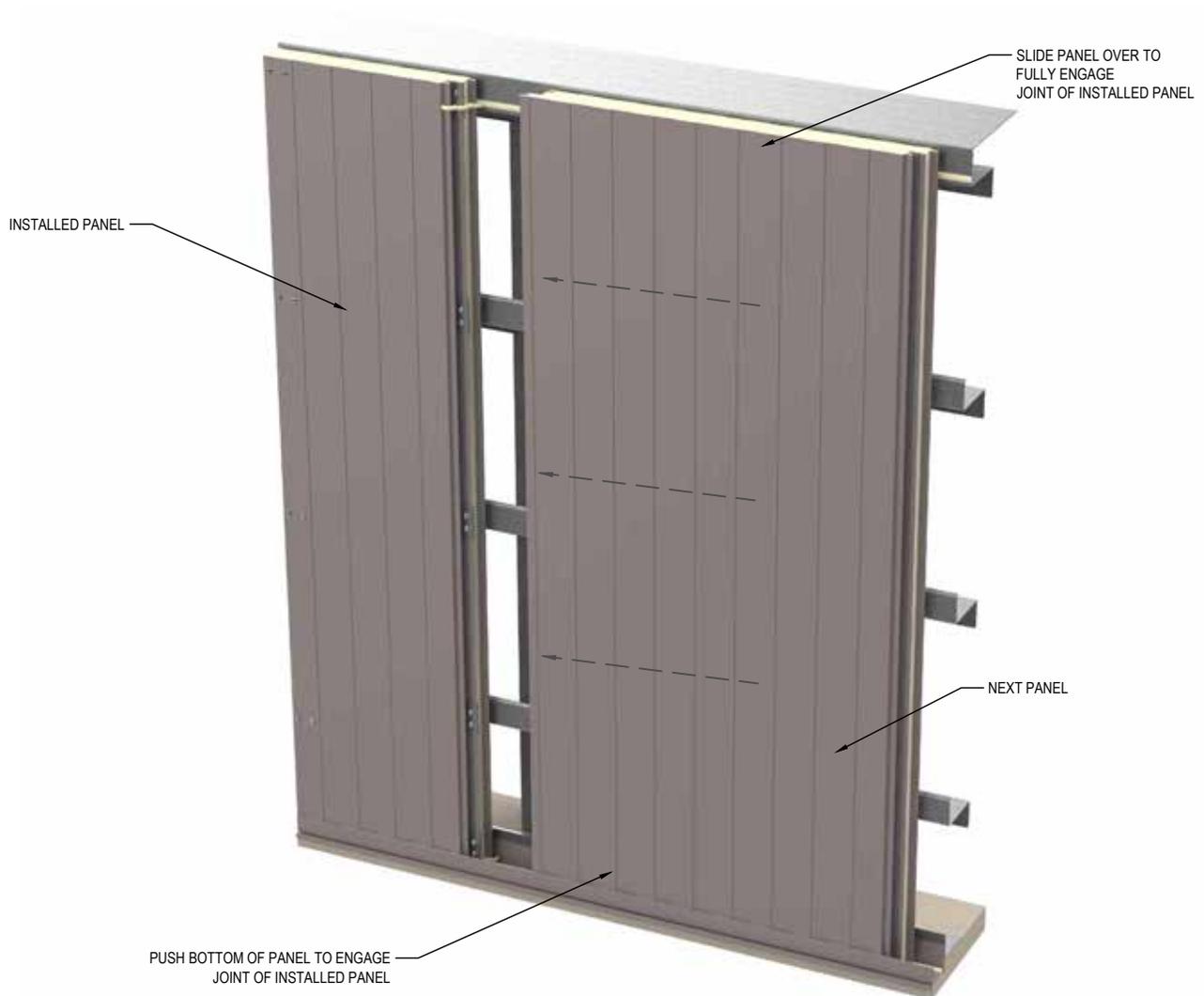
Sequence 4



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Installation

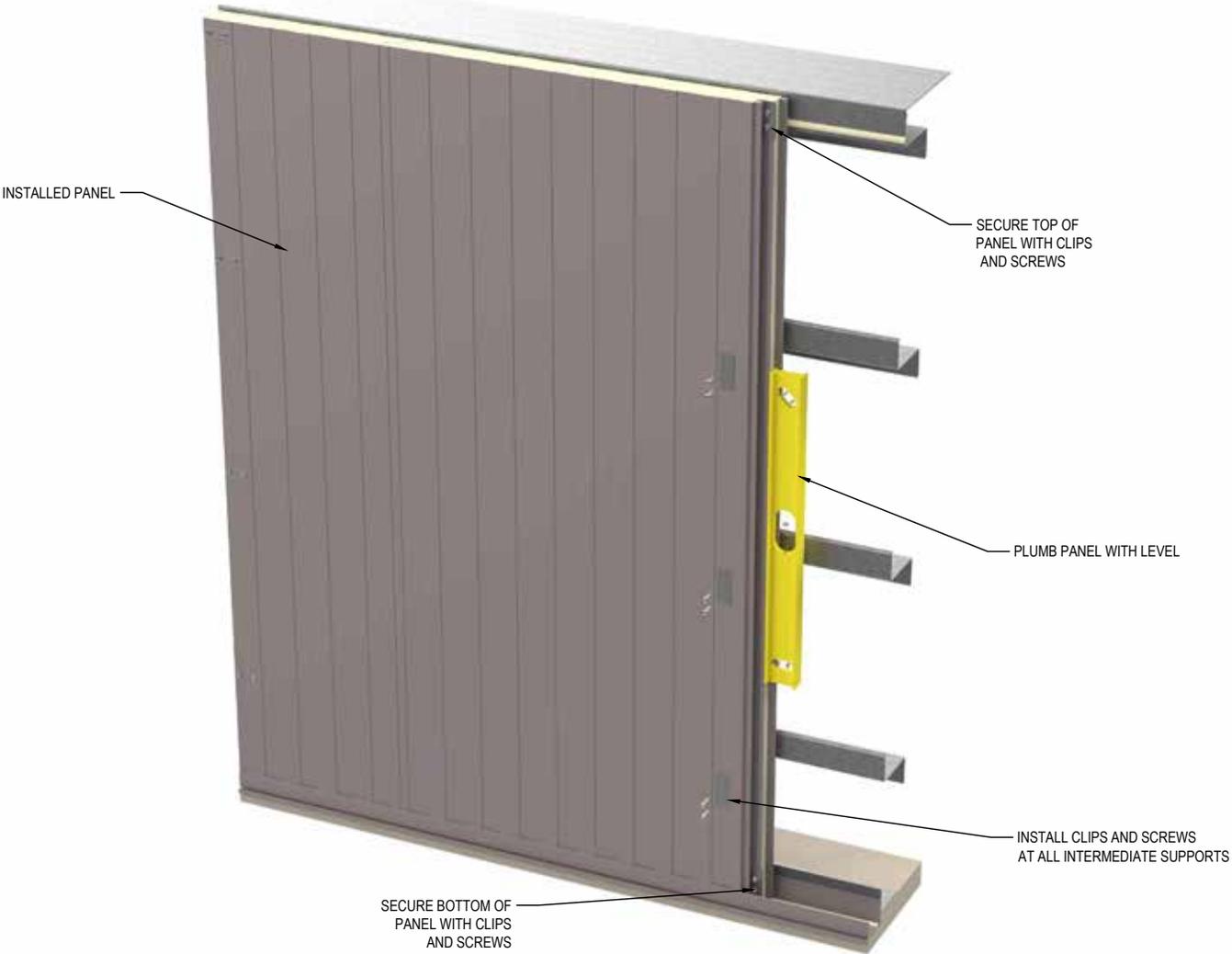
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Installation

Sequence 6



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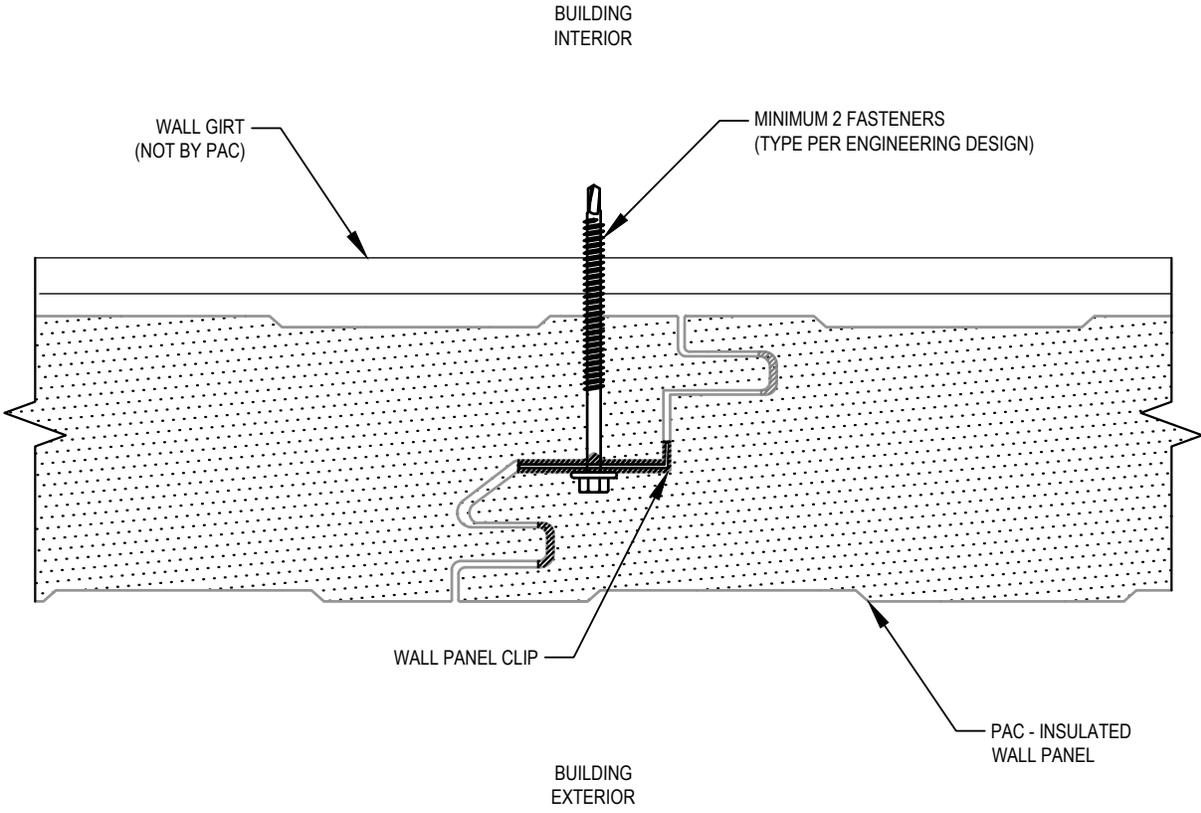
Details

The following section of this manual contains details which address the installation of insulated metal wall panels and their associated flashings. The details are generic, showing typical wall framing and flashing conditions. Because of the many variations of applications and construction conditions, these generic details may vary from the project's actual conditions. Always reference the project's installation drawings for the specified requirements. If there are differences between the installation drawings and these installation guide details, the installation drawings will govern.

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Install

Open Framing Details

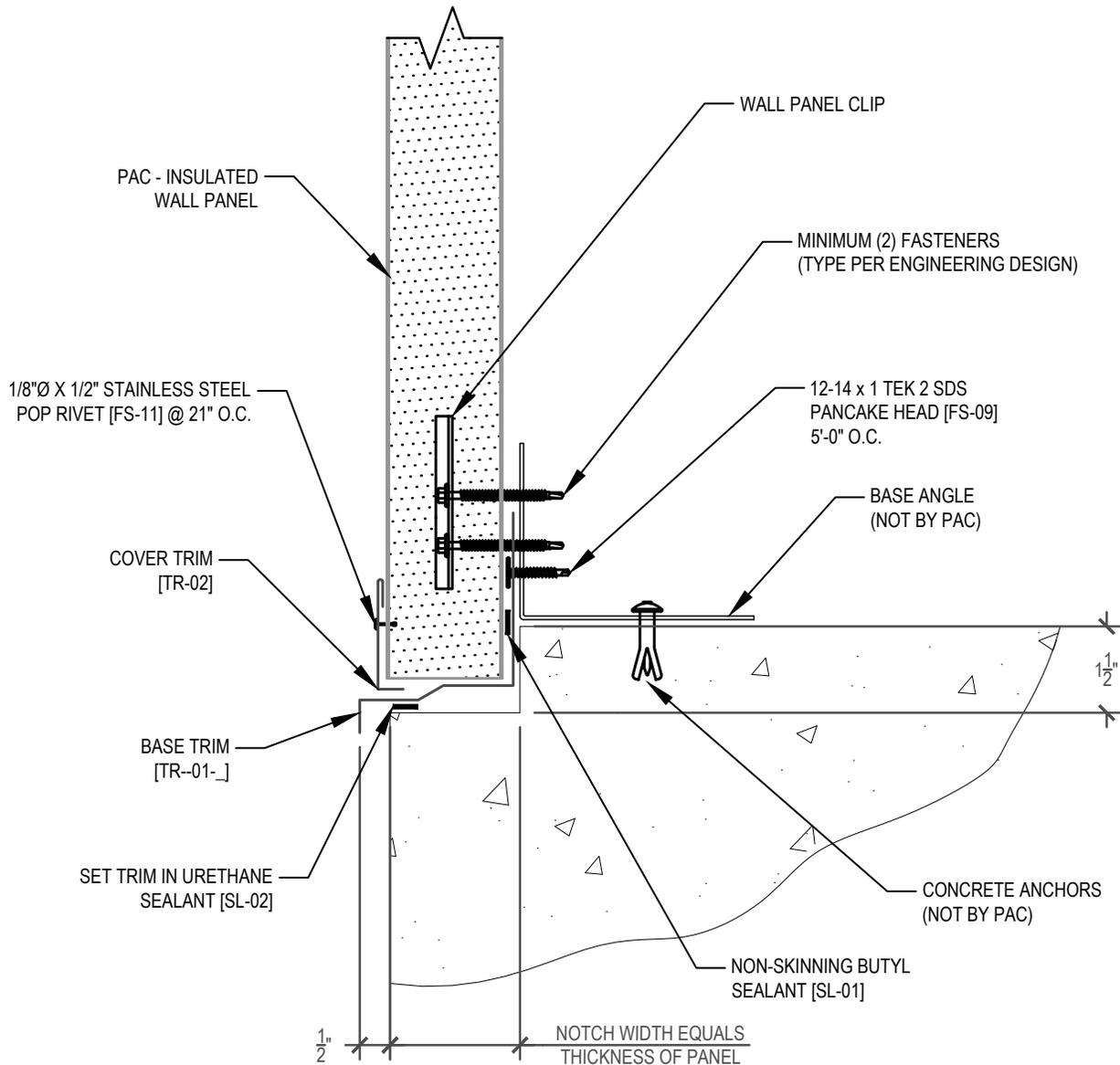


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VS-0001

Sill

Open Framing Details

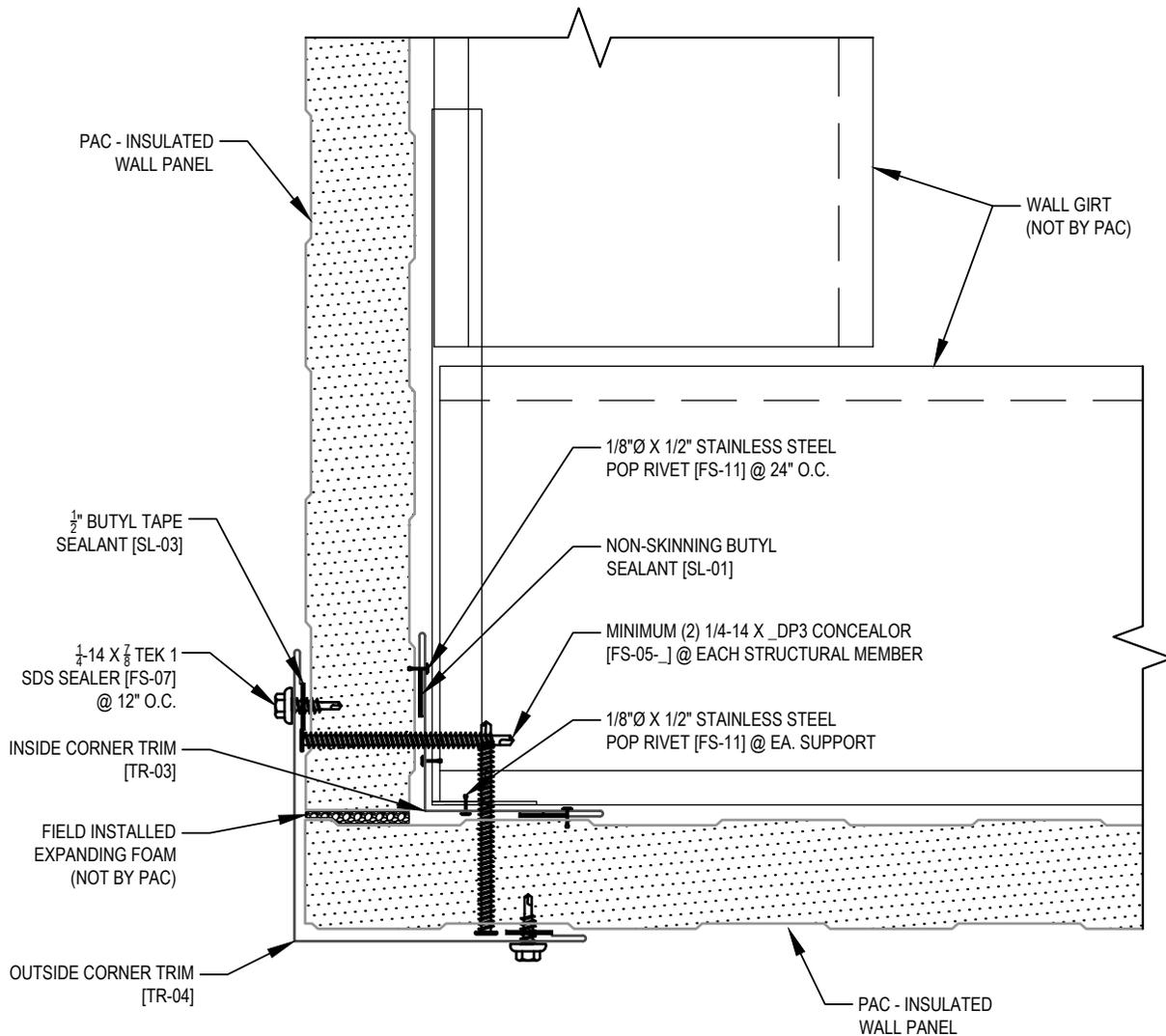


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VS-0002

Outside Corner

Open Framing Details

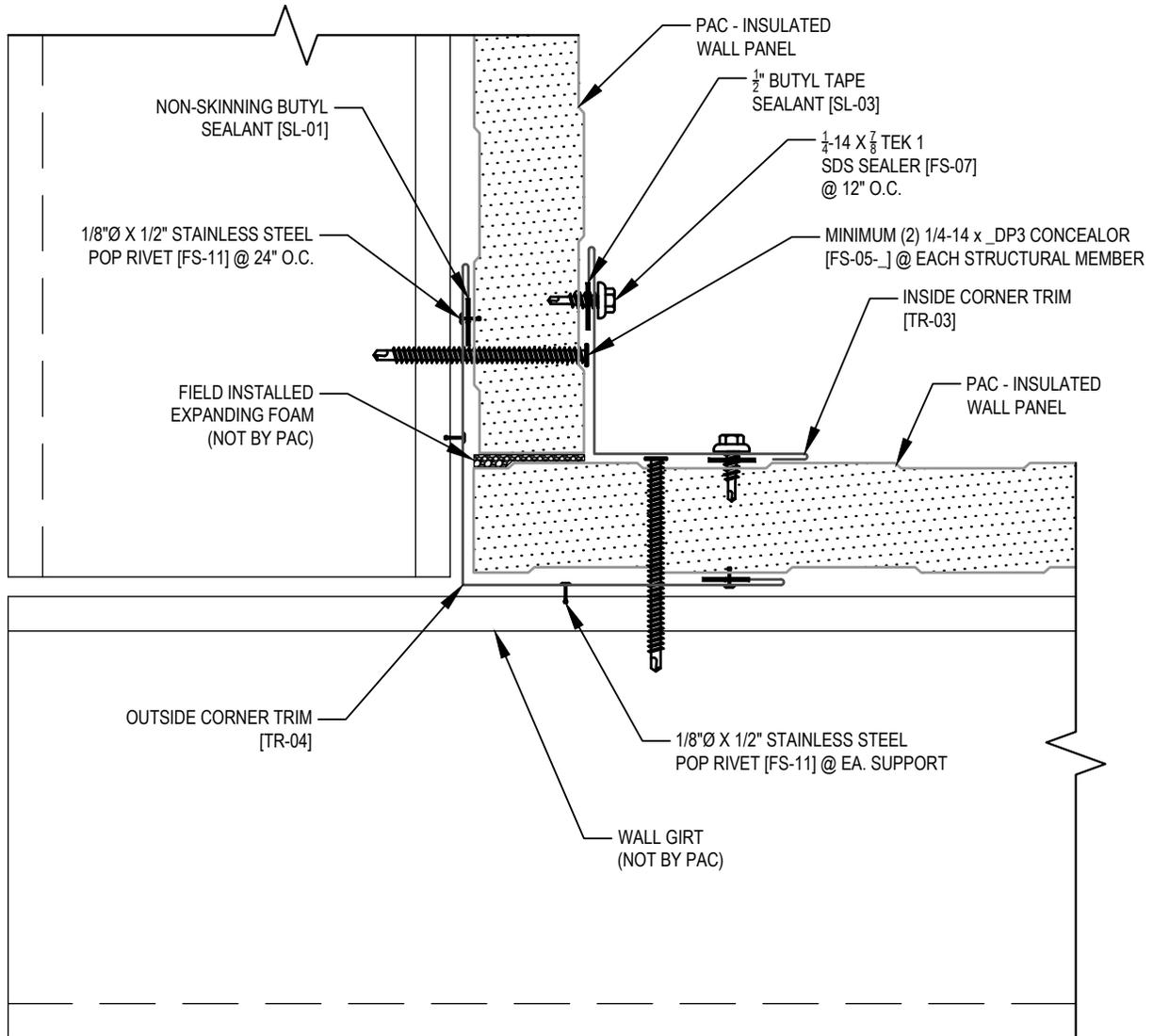


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VS-0003

Inside Corner

Open Framing Details

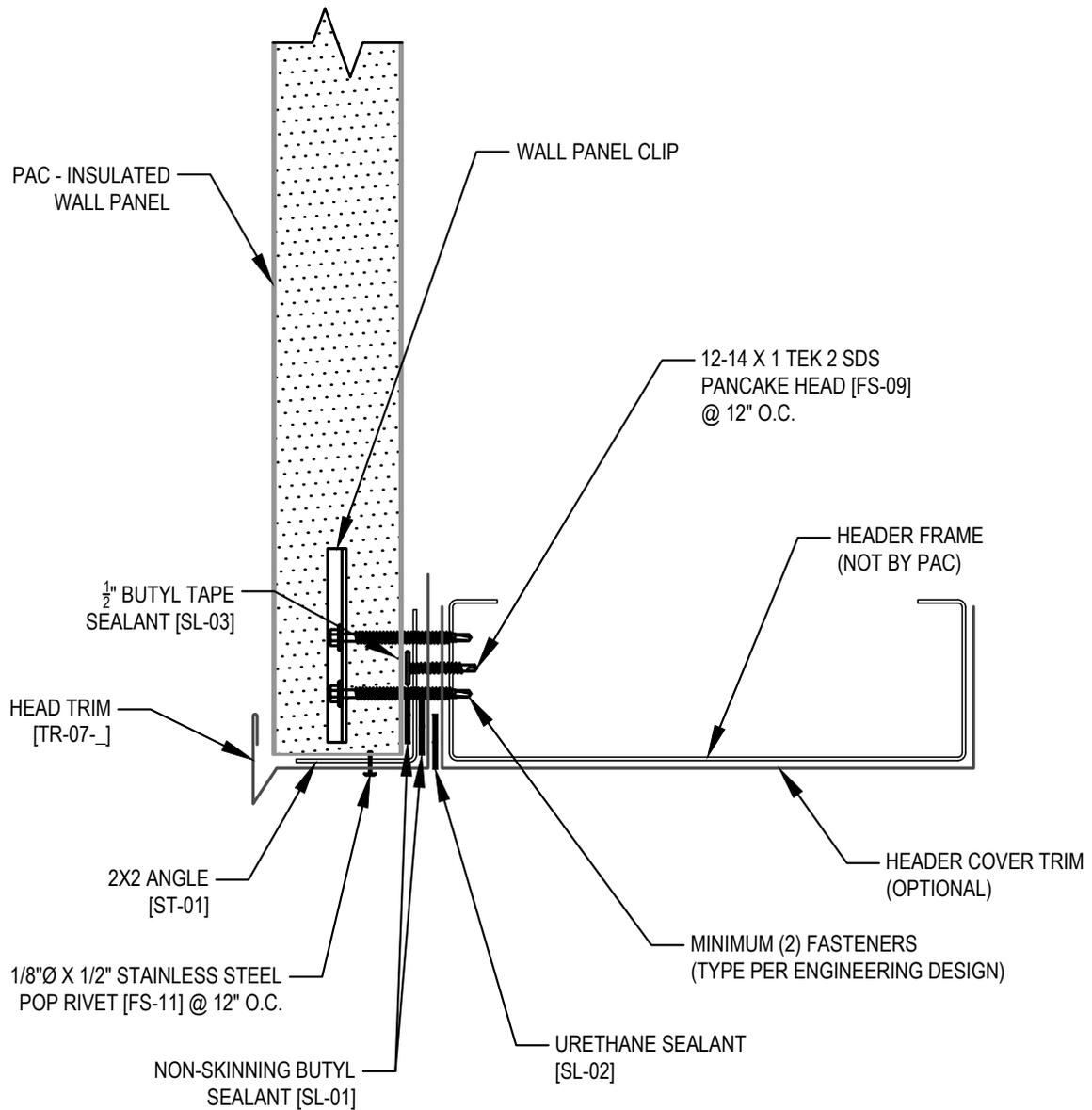


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VS-0004

Door Header w/ Support

Open Framing Details

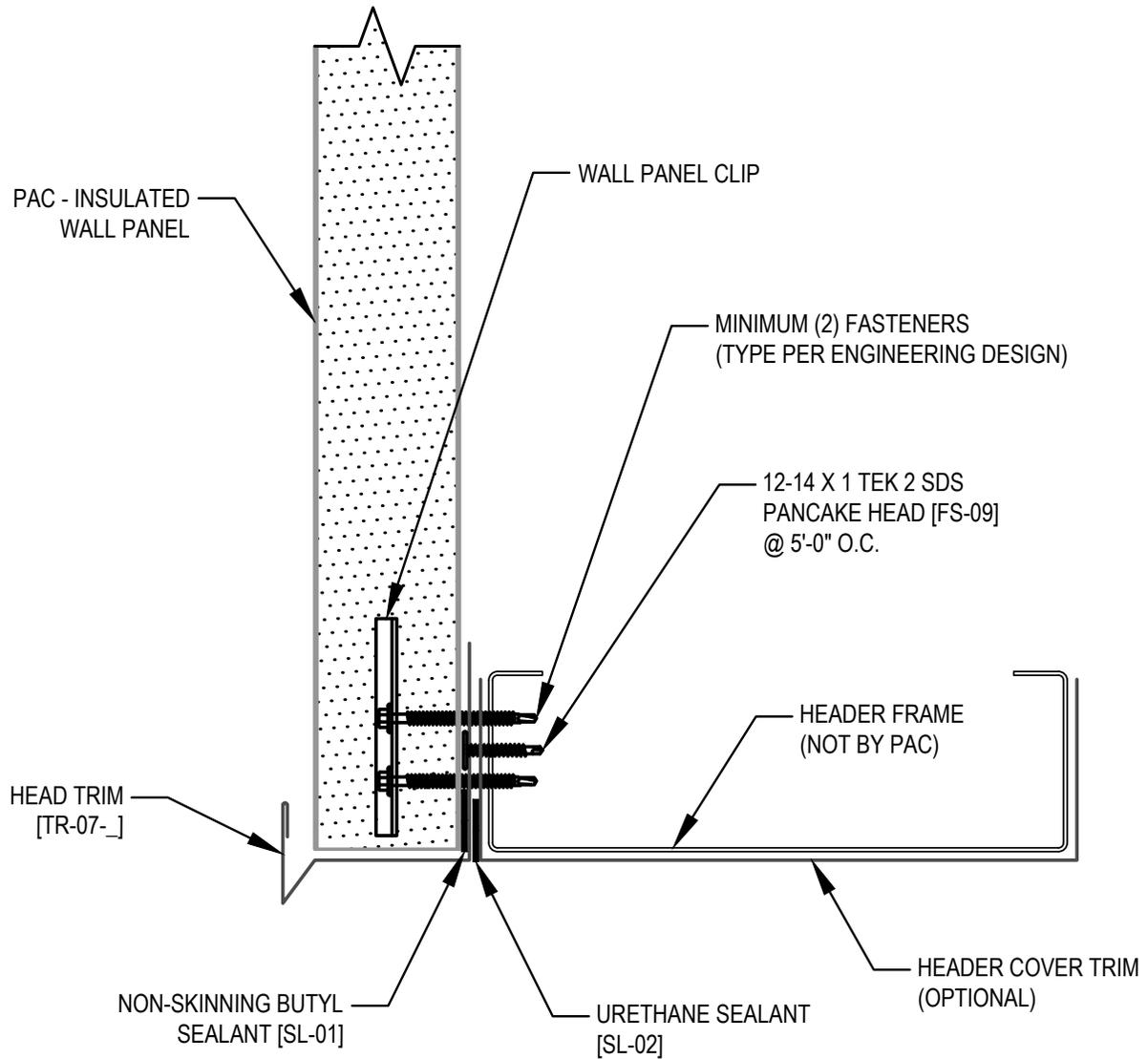


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VS-0005

Door Header

Open Framing Details

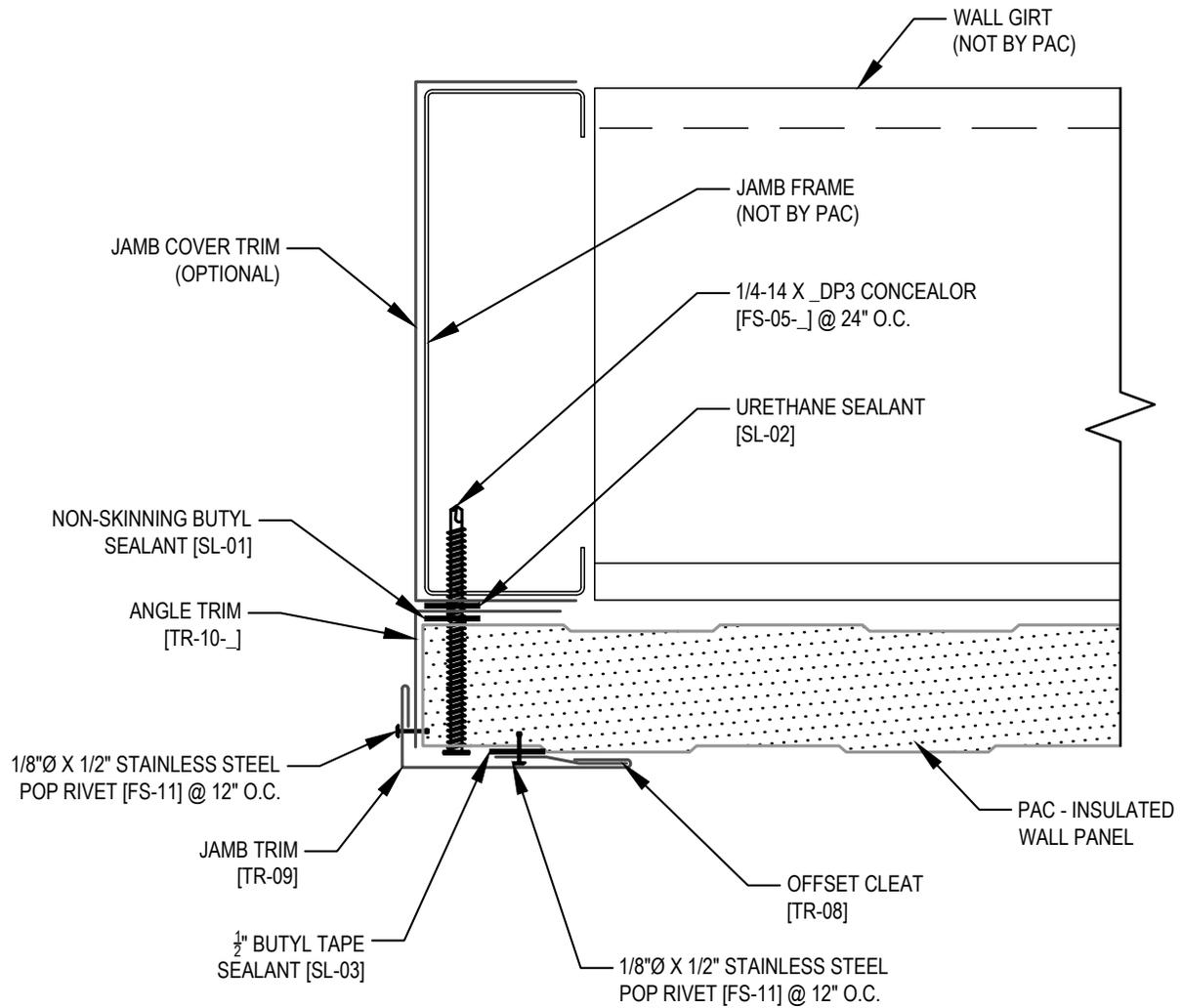


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VS-0006

Door Jamb

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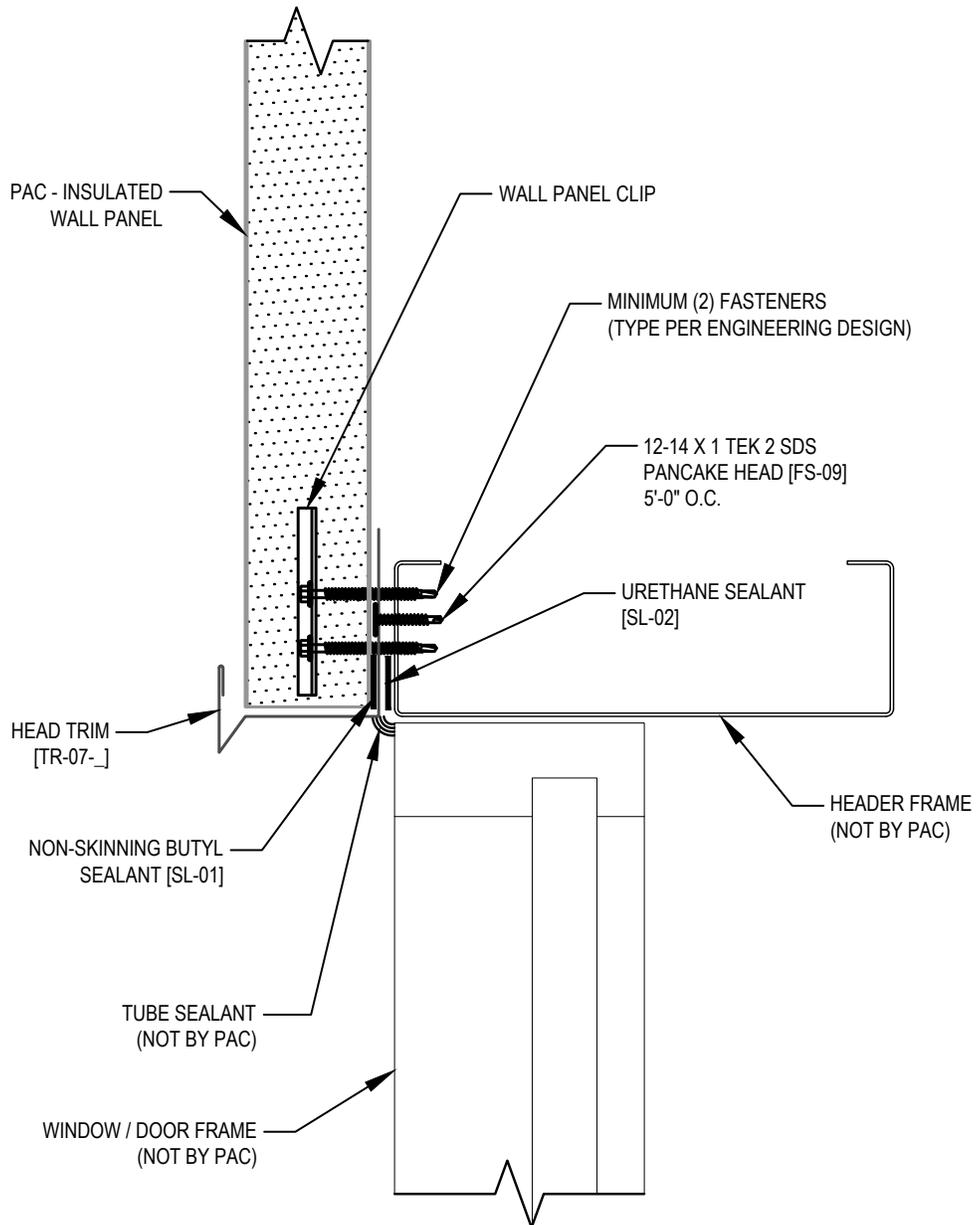


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VS-0007

Window Header

Open Framing Details

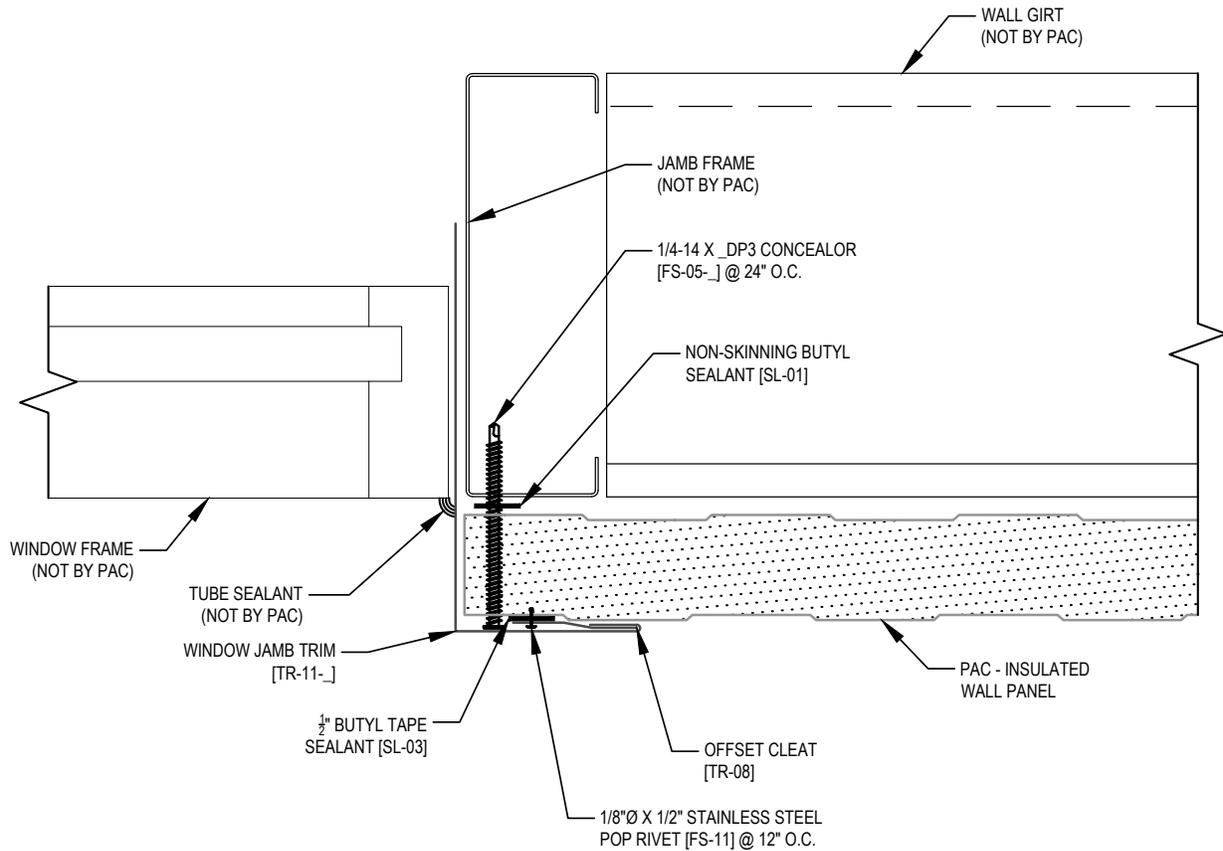


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VS-0008

Window Jamb

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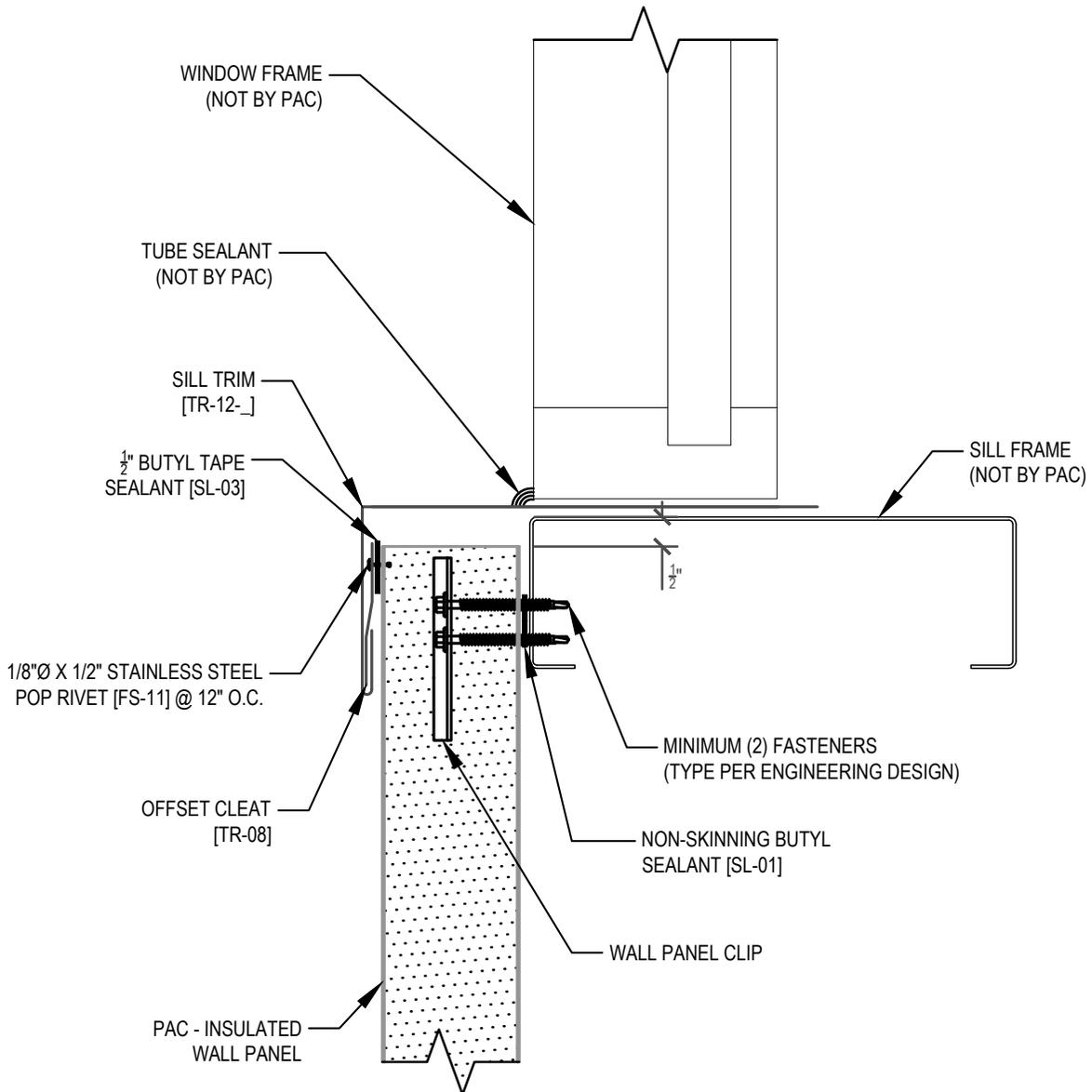


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VS-0009

Window Sill

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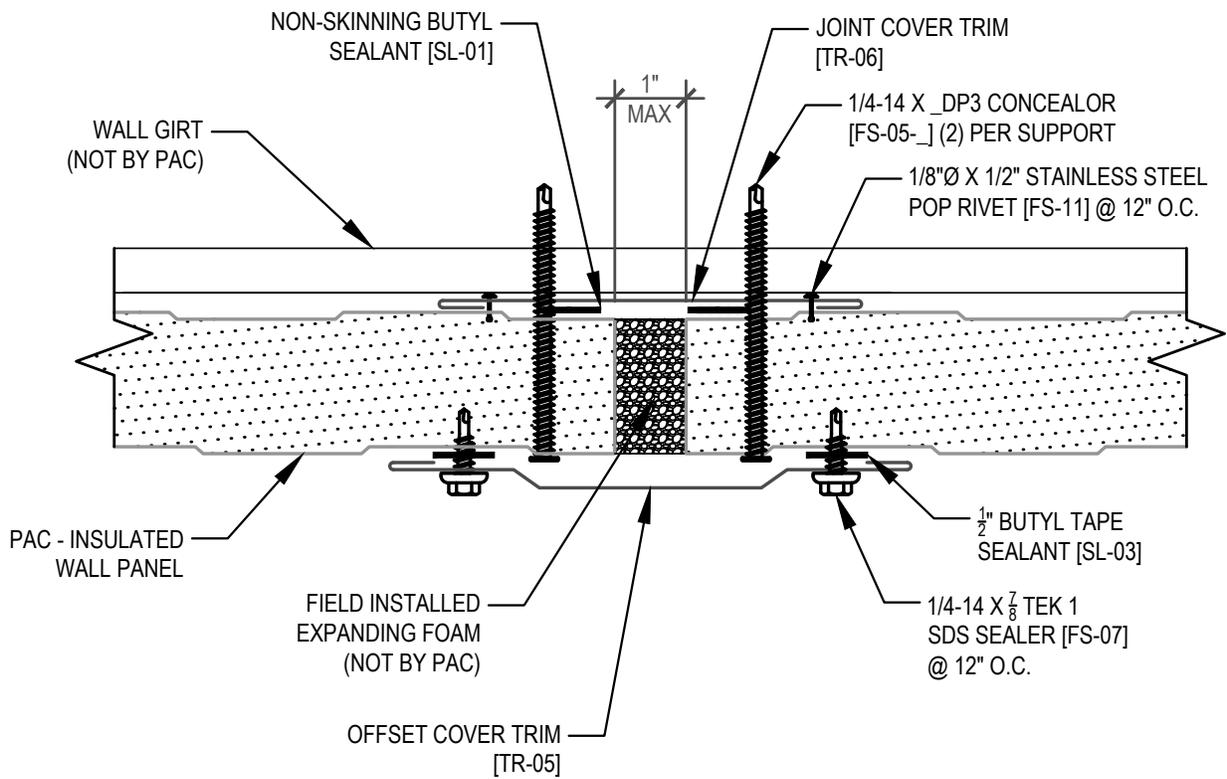


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VS-0010

Side Joint

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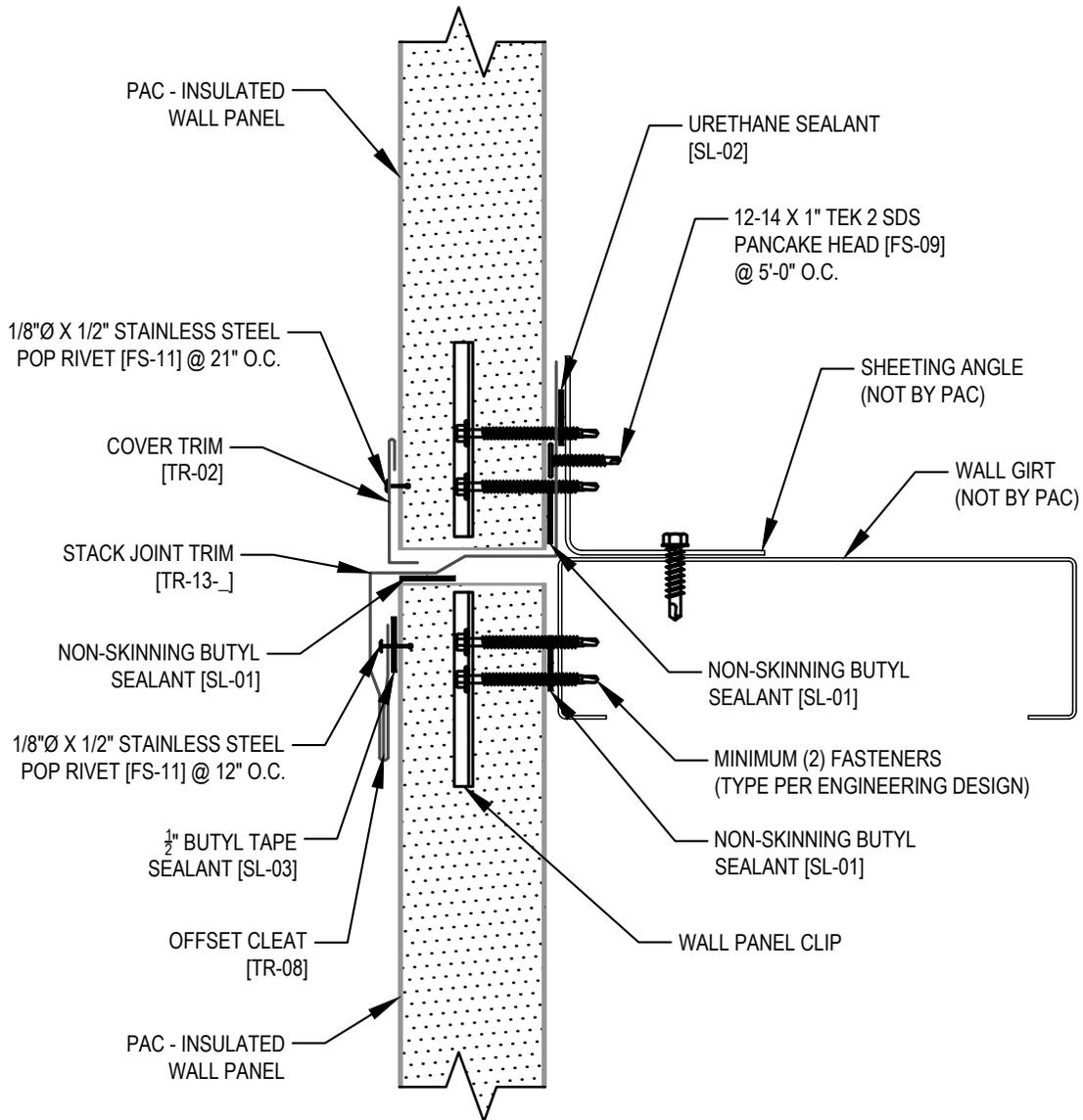


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VS-0011

Stack Joint

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VS-0012



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