



PermaCore

Poly-Iso Panels From PermaTherm



Installation Guidelines

PermaCore HF (Hidden Fastener)



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Disclaimer

This installation guide is only to be used in conjunction with panel installation drawings and PermaTherm recommended details. Details shown in the projects shop drawings take precedence over any similar information in this guideline.

Shop drawings may be prepared by your design engineer or the panel contractor. If you need a recommendation for a design engineer, call PermaTherm customer service.

This guide is intended to provide the panel installer with recommended methods, procedures and guidelines for the installation of PermaTherm panels for commercial and industrial cold storage applications. Information presented is accurate but may not cover all situations, building conditions and details of your specific project. Consult the design engineer if this guide does not cover your construction requirements. It is the responsibility of the project engineer and panel installer to ensure specified air tightness of a building using approved drawings and the appropriate type of sealants. It is the sole responsibility of the owner's panel installer to maintain quality workmanship in accordance with approved shop drawings to ensure the best performance of the wall and ceiling system. PermaTherm recommends installers read this document fully before ordering and receiving panels.

Follow the architect's approved shop drawings and engineering calculations for your project specific fastening patterns. The engineer of record is responsible for verifying applicable design loads and panel fastening requirements.

We are glad you have chosen PermaTherm panels for your new project. We believe you have made a great first choice. We know your building is very important to you. That's why we, at PermaTherm suggest that only experienced panel installers install PermaTherm panels. While PermaTherm panels are easy to install, there are certain "tricks of the trade" that an experienced installer will know from years of installation. If our 30+ years of experience in the cold storage warehouse business have taught us one thing it is that panels are only as good as the design engineer and panel installer.

*Choose wisely. You may spend a few more pennies on the front end,
but you will save many dollars in the long run.*

Introduction

Thank you for choosing PermaTherm insulated metal panels. PermaTherm has been manufacturing insulated metal panels for the cold storage industry for over 30 years. Our unique approach to help you and your team construct the best building possible is the cornerstone of what we are about. We manufacture high-quality EPS panels for cold storage that meet strict guidelines for quality and function.

These are just a few of the benefits of using PermaTherm Panels for your project:

- 1. LTTR (long term thermal resistance) R-values as high as 64 without any degradation of R-value over time.**
- 2. PermaTherm has the strongest insulated metal panel on the market today. No panel is stronger than our wall and ceiling panels. Greater spans can cut down on red steel requirements.**
- 3. Easy Hidden Fastener design allows you to construct easily and efficiently.**
- 4. PermaTherm panels are available in different textures, profiles and colors.**
- 5. Large and small jobs, you will get the same attention to detail from our PermaTherm team.**
- 6. We also produce all of the trim and accessories that you will need to complete your job. One call gets you everything you need to complete your project.**
- 7. Available thickness: 2", 3", 4", 5", 6", 8". Lengths up to 50 feet.**
- 8. PermaTherm panels are warranted for one full year from the date of purchase.**
- 9. In most instances, PermaTherm can deliver panels in 4 to 6 weeks.**



Delivery & Inspection of Your PermaTherm Panels

Panels are carefully packaged in large, shrink-wrapped bundles, then shipped on flat bed trailers to the construction site. When a shipment is received, check all items against the shipping document for quantities, dimensions, colors, transit damages, etc. Document any shortage of panels and accessories or panel damage on the bill of lading and have it signed by the driver. It is the receiver's responsibility to make any damage claims immediately. Please note that although every effort is made to prevent shipping damage, PermaTherm is not responsible for damage which may occur during transportation, delivery, storage or on-site handling. Damages must be handled between the receiver and the transportation company. The transportation company may send a representative to inspect damage for your claim.



Material Handling & Storage of PermaTherm Insulated Metal Panels

The recommended loading/unloading method for bundles less than or equal to 30' is to use a single forklift with widely spaced forks placed under the center of the bundle.

Panel bundles over 30' in length may be moved by using two forklifts spaced equally along the length of the bundle. Forks must not extend beyond the width of the panels. Fork length needs to be 45 inches to unload. If the forks are longer than 45 inches use a buffer so as to not allow the forks to extend beyond the width edge of the panels.



PANEL STORAGE

Site must have adequate storage space to receive and store the panel bundles. This space must be level, firm, clean, and free from standing water. Bundles should be stored in a dry condition, with one end slightly elevated to facilitate moisture drainage.

Panels should be inspected upon delivery for presence of moisture. If moisture is present, bundles should be slit open immediately to allow ventilation and drainage. Panels in opened bundles should be covered by a plastic sheet or tarp at the end of the working day.

The covering and bundles must be securely fastened to prevent wind damage.

If panels are not to be used immediately, then they should be stored under a temporary shelter with the plastic removed from the top and sides of the bundles. Recover the bundles with a protective tarp and adequately secure both tarp and panels to prevent wind damage.

Engineering Testing of PermaTherm's Insulated Metal Panels

PermaTherm panels have been thoroughly evaluated and tested by independent third party laboratories to determine all aspects of their performance. The results of these tests, in combination with our comprehensive engineering analysis, enable us to provide design assistance for nearly every project. This includes complete panel analysis of wind, live, and thermal loading as well as allowable deflection, fastening, and spans.

Current International Building Codes specify wall cladding panels to be designed for a deflection of $L/180$. The project designer and/or engineer of record should always check the applicable code(s) for deflection limits. For deflection limits other than $L/180$, please contact PermaTherm's Technical Services for evaluation.

Insulated panels should not be relied upon to provide significant diaphragm strength. Instead, cross bracing (cables, rods, angle iron etc.) should be used to provide diaphragm. Insufficient bracing for the walls may result in damage to the panels, and will void the panel warranty.

For more information on any of the above items, please contact PermaTherm customer service at 706-468-7500.

*** The information contained in this guide is thought to be reliable and correct, but is subject to change without notice.**

Cutting of PermaTherm Insulated Metal Panels

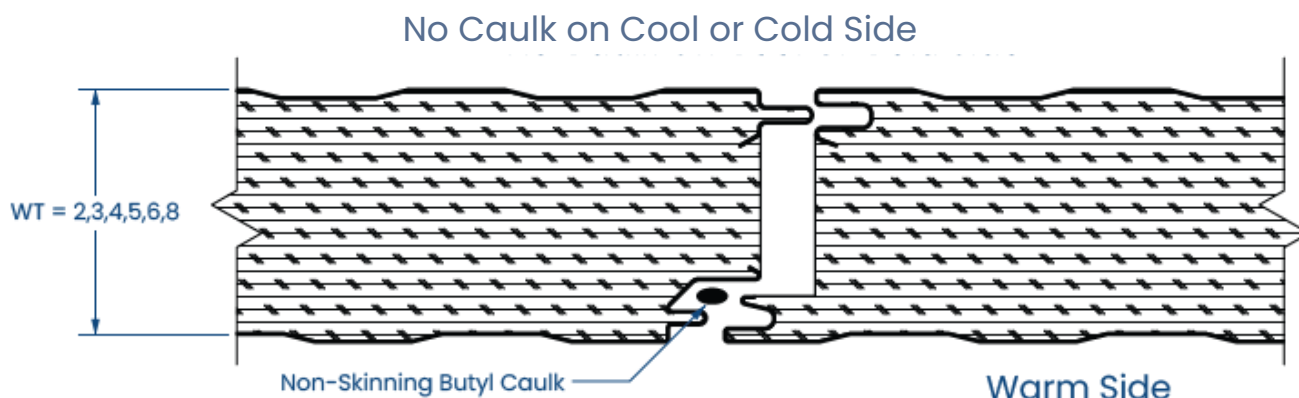
Personnel working with panel cutting equipment should wear respiratory and eye protection at all times.

Panel cutting should take place prior to panel installation whenever possible. Use the appropriate cutting tools with extreme care to avoid panel delamination. Do not use a cutting disk, torch, and other high heat producing methods for cutting. Hot filings may damage the painted surface of the panel. PermaTherm recommends use of a circular saw with a fine tooth carbide tip blade or PermaTherm supplied beater blade made specifically for metal panels. Power snips, nibblers or hand snips may be used to cut trims and flashings.

Milwaukee's 8" Metal Cutting Circular Saw 6370-20 series shears the metal, producing a virtually spark-free wake and cool, burr and scorch-free edges that don't require post-cut finishing. Cool cut waste, in the form of metal shavings, is effectively contained with a durable magnesium blade shield and channeled into the saw's integral Chip Tank. Cool cutting also means that materials can be handled almost immediately following a cut, reducing downtime.



PermaTherm Insulated Metal Panel Sealant

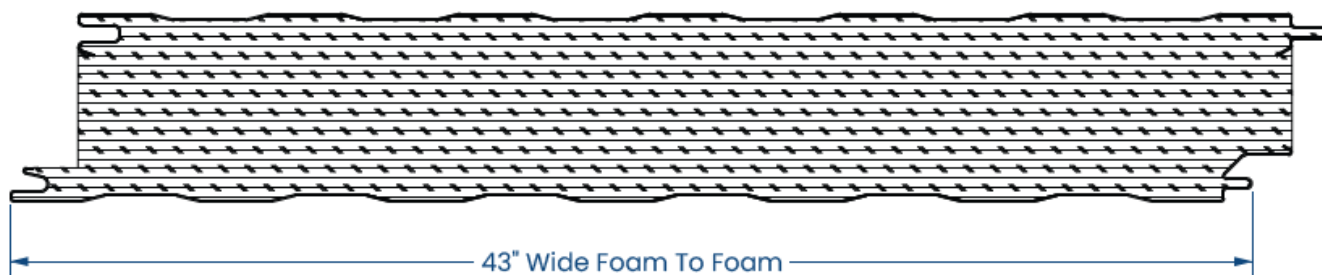


PermaTherm's recommended sealant is our **FSI-96 Non-Skinning Butyl caulk**.

Where to caulk: (See detail above for exact location of caulk)

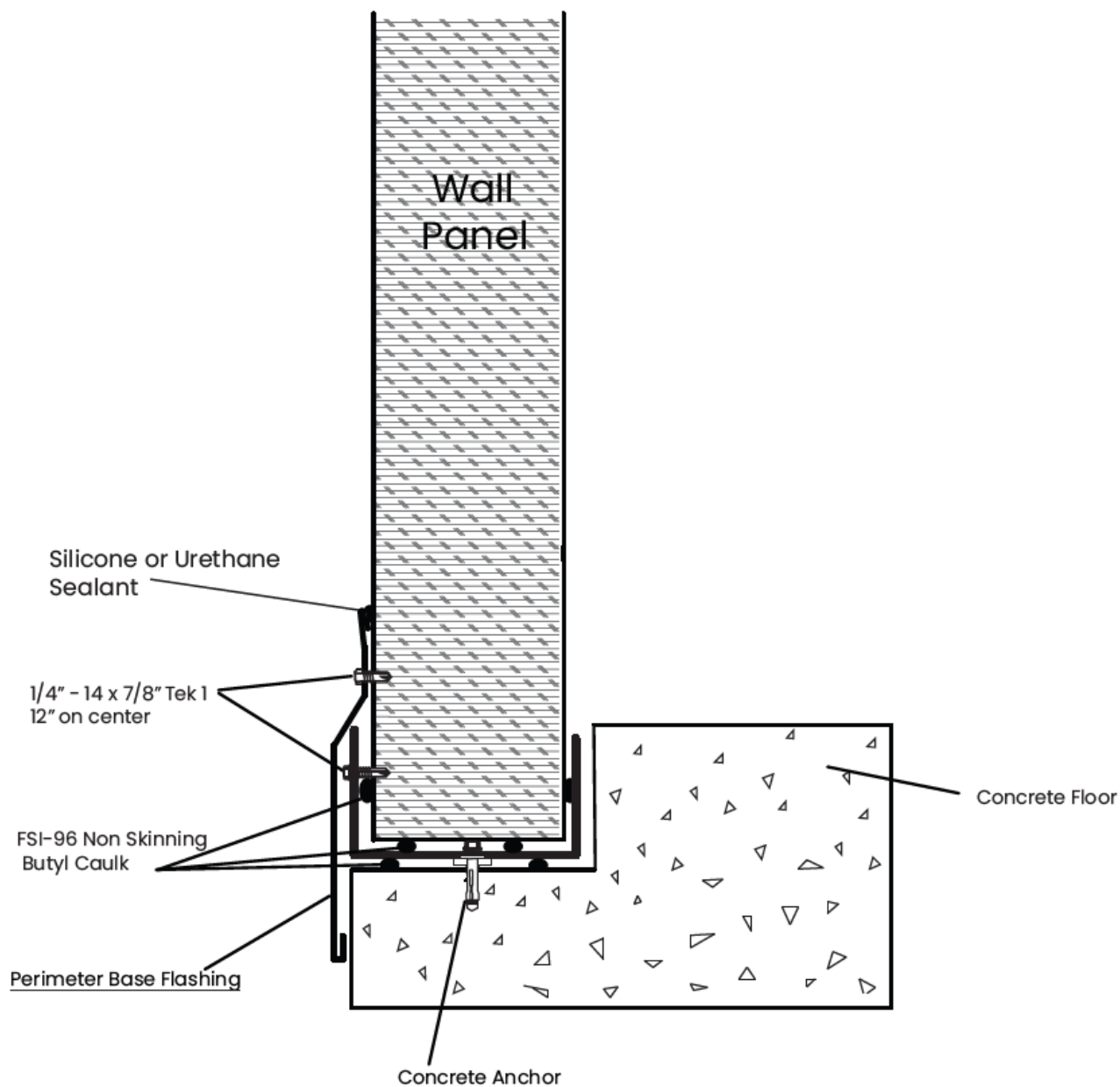
Wall Details: HF (Hidden Fastener Joint)

PermaTherm's **HF** or *Hidden Fastener* joint allows the panels to slide together quickly and easily. Caulk will be placed on the exterior or warm side of the panel to prevent air and water intrusion through the panel. See illustration as to where the caulk is set. After the first panel is up and leveled, use the HF clip with 2 screws to fasten the panel to the top, bottom and at each girt. Check for unusual gaps in the joint which is an indication of not being level. Make sure panel joints are uniform. Checking the level of the floor pad is essential to making sure the panels are level.



Caulk is one of the most important parts of every panel job. Lines must be continuous and a full 3/8" bead. A break in caulk can cause vapor leaks.

Outside Wall Recessed Floor



This detail is commonly used for this application; however, every building project is different. You should consult your building engineer to make sure this detail will work for your particular application.

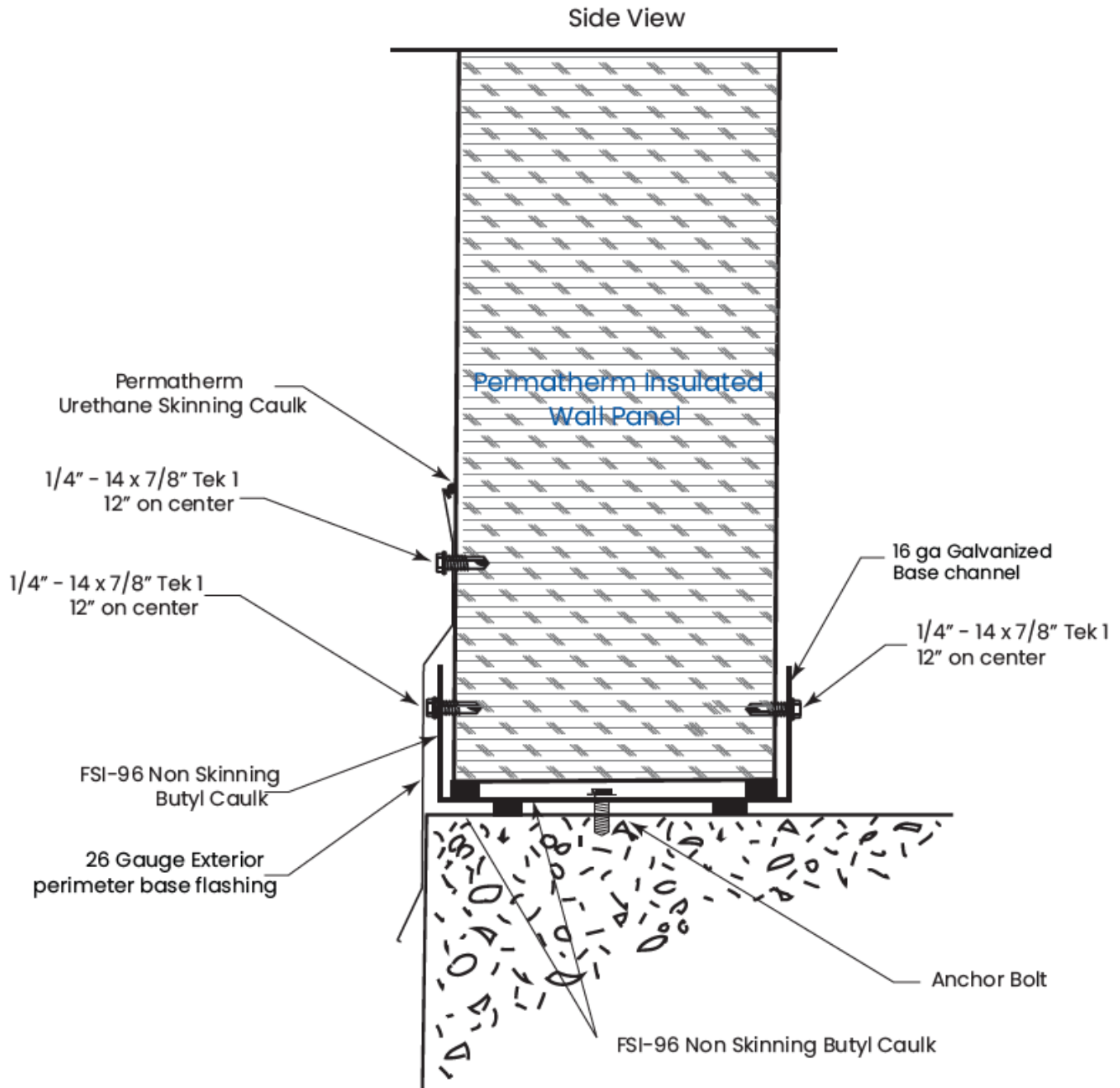
Outside Wall Recessed Floor (Cont.)

PermaTherm Insulated Metal Panel Installation for Coolers

- Place base track onto floor with non-skinning butyl caulk on each edge under base track.
- Secure base track with 3/8" X 4" anchor bolts.
- Place non-skinning butyl caulk inside base track per detail.
- Place the panel into base track and secure with 1/4 - 14 x 7/8 TEK 1 self-drilling screws at recommended connection points.
- Concrete is to be poured per industry specs for processing applications by your approved concrete contractor.

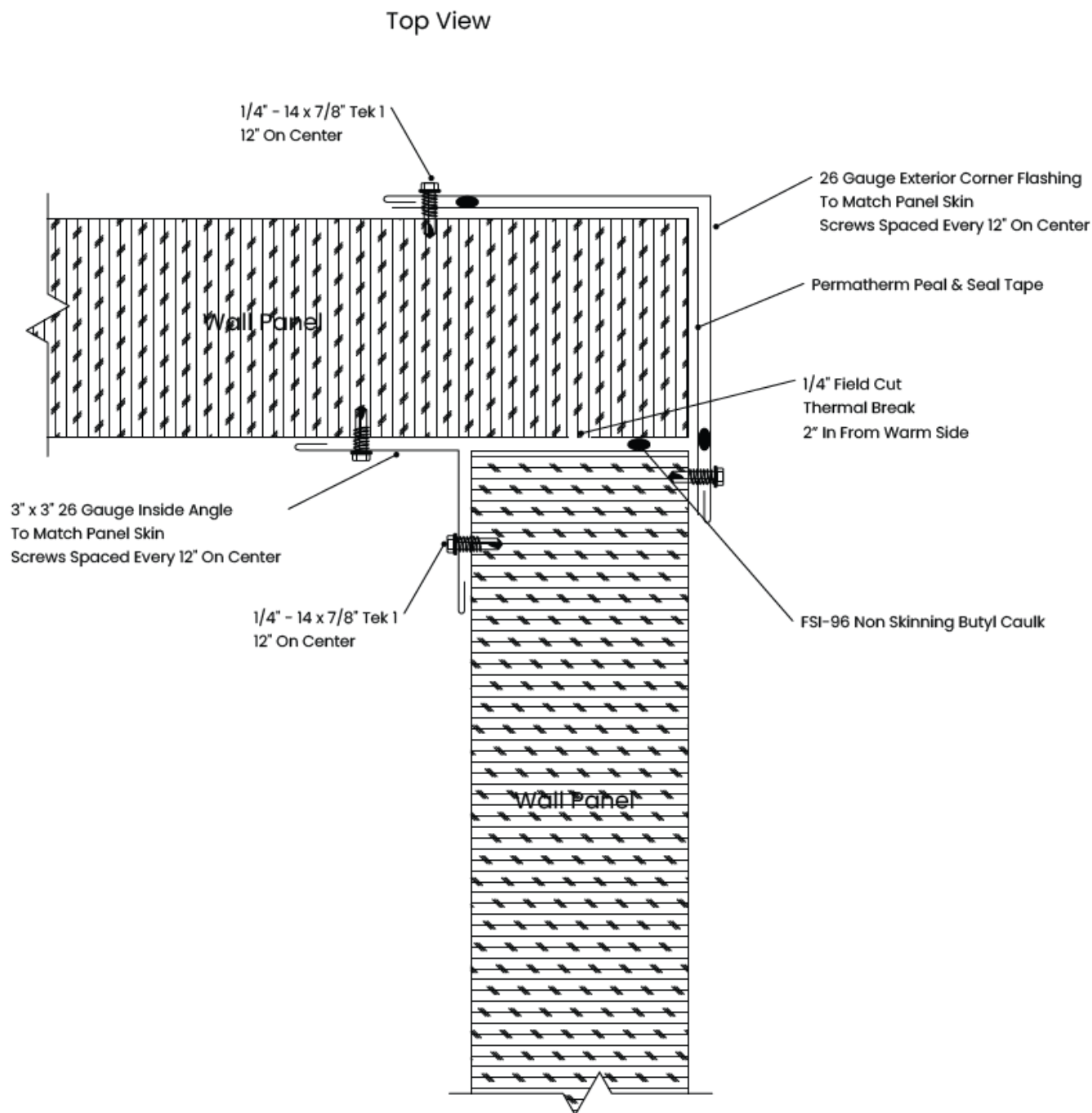
*****If using a non-stepdown design, use same directions on top of flat concrete floor.**

Exterior Perimeter Wall Flat Floor with Exterior Base Flashing



*****This detail is commonly used for this application; however, every building project is different. You should consult your building engineer to ensure this detail will work for your application.**

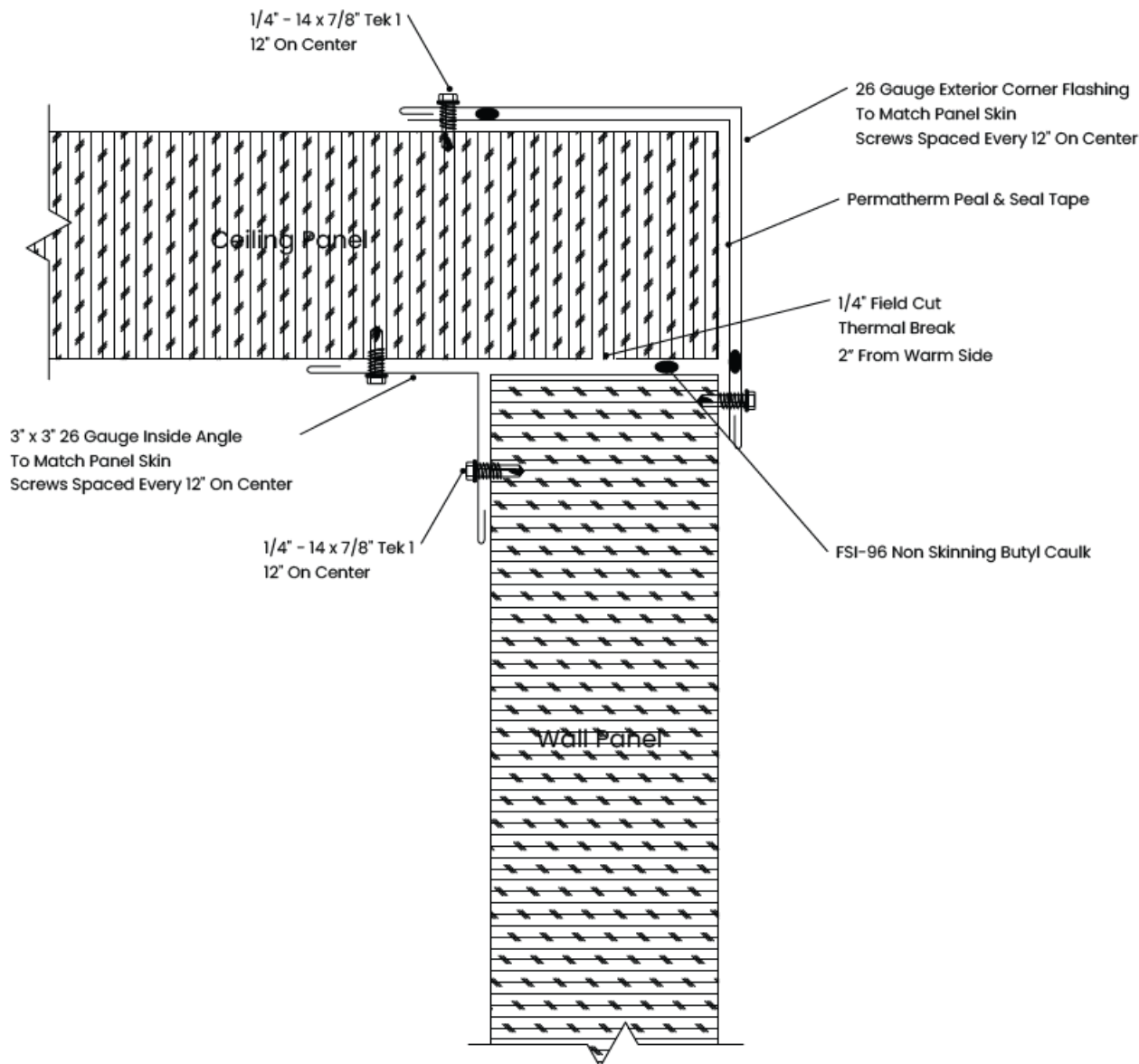
Cooler Corner Detail



*****This detail is commonly used for this application; however, every building project is different. You should consult your building engineer to ensure this detail will work for your application.**

Ceiling To Wall Connection

Side View

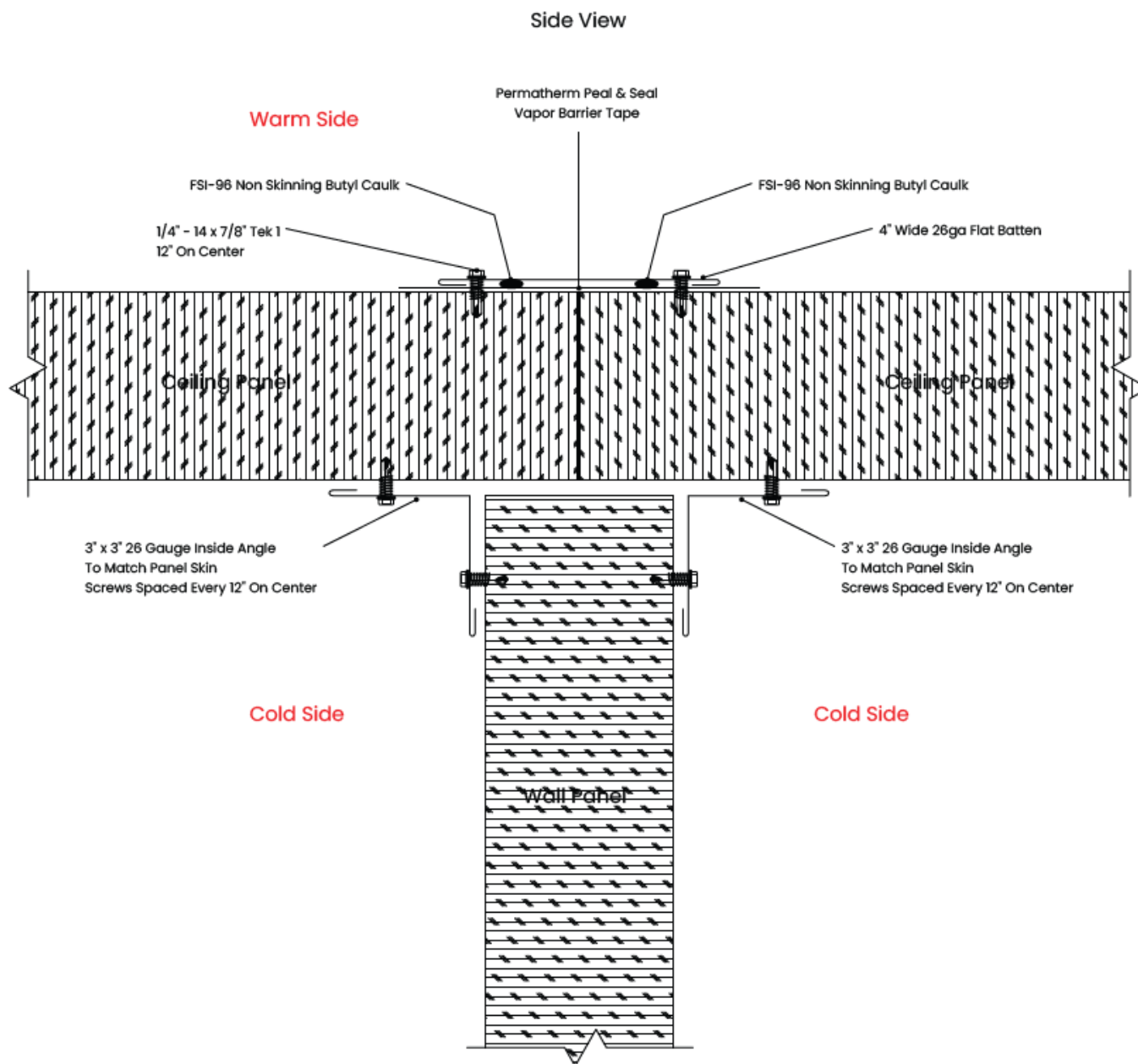


*****This detail is commonly used for this application; however, every building project is different. You should consult your building engineer to ensure this detail will work for your application.**

Ceiling To Wall Connection (cont.)

- Make a thermal cut 2" from the warm side of the ceiling panel as illustrated.
- On the two edges of the outside angle edges, Clean and then place the PermaTherm Peel & Seal tape over the two panel edges as illustrated.
- Caulk as illustrated and place the outside angle trim onto the outside and secure with the 1/4"-14 x 7/8 Tek screws at each edge
 - 12" apart on center on the inside and
 - 12" apart on Center on the outside.
- Check for gaps and if any exist, fill with PermaTherm's urethane spray to seal.
- Place the 3" X 3" inside angle on the inside top corner and secure using the 1/4"-14 x 7/8 Tek screws on each edge with 12" on center spacing.

Partition Wall to Ceiling Panel



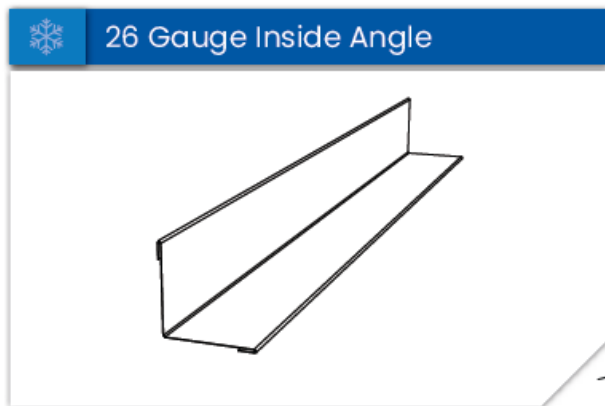
*****This detail is commonly used for this application; however, every building project is different. You should consult your building engineer to ensure this detail will work for your application.**

Partition Wall to Ceiling Panel (cont.)

We will cover several wall details and intersections. You may have a situation that calls for another detail that is not covered.

Do not hesitate to call our Solution Specialist team and we can help you with your unique need.

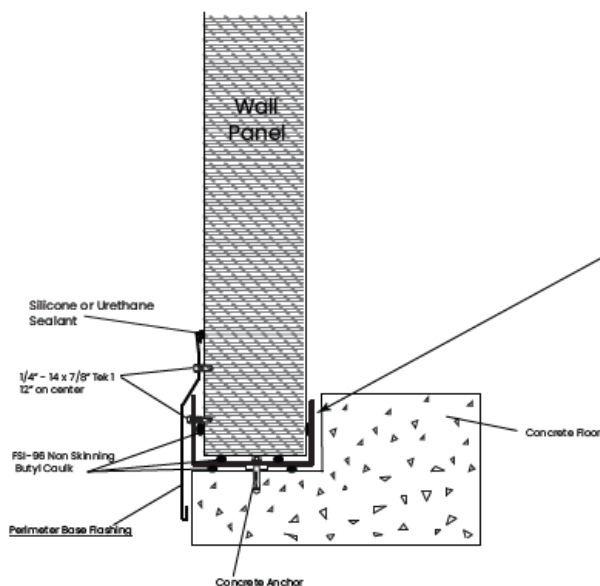
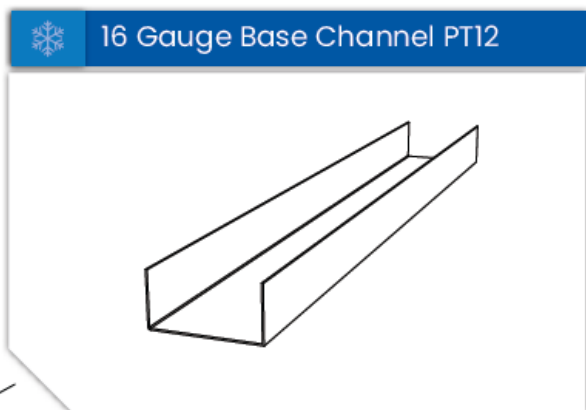
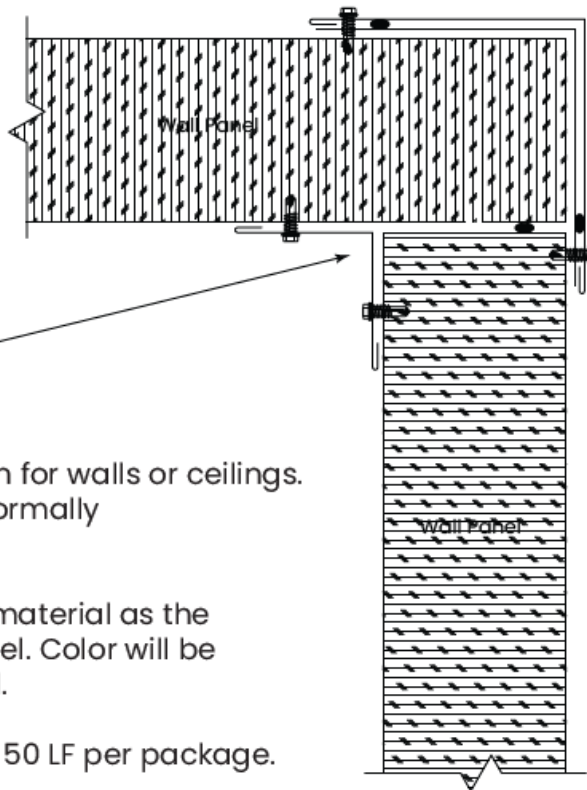
- When there is a juncture on top of a divider wall place each panel halfway onto wall butting them up firmly together.
- Place PermaTherm's Peel & Seal vapor tape over joint on top of panels.
- Place 5" wide flat batten down with two beads of 3/8" caulk one just inside each tek screw as shown in detail drawing.
- Secure batten with tek screws at each edge and 12" apart on each side of the batten.
- Place the 3" X 3" inside angle onto the inside corner junctures securing them with tek screws at each edge and every 12".
- Repeat with every joint on top of walls.



26 gauge inside angle covers any inside intersection for walls or ceilings. Inside angles are not structural. Inside angles are normally 3"x 3" x 10' long.

Inside angle trim is made from the same specified material as the panels. Smooth texture, stucco texture, Stainless Steel. Color will be matched with the panels unless otherwise specified.

Packaged in packages of 5 ea. Made in 10' sections. 50 LF per package.



16 Gauge Base Channel connects the panel to the concrete floor.

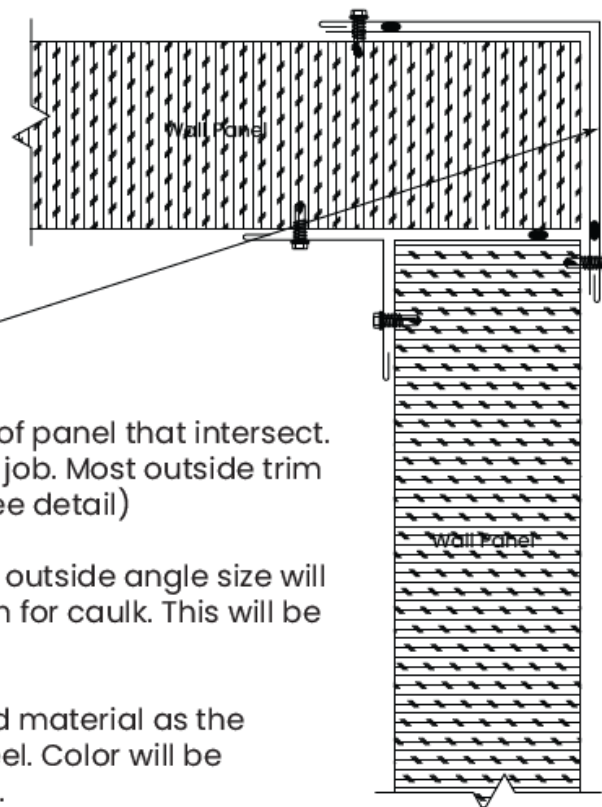
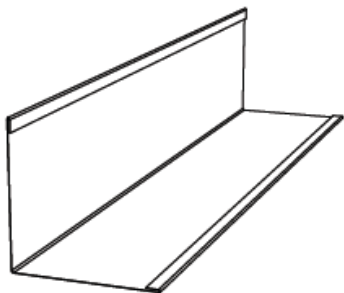
Base Channel is made from 16 Gauge Galvanized Steel and is unpainted. Channel is gray in color.

Packaged in packages of 4 ea. Made in 10' sections.

40 LF per package.



26 Gauge Outside Angle Trim PT10



Outside Angle Trim is placed on all outside corners of panel that intersect. Different sizes of outside trim may be used on each job. Most outside trim is made according to the thickness of the panel. (see detail)

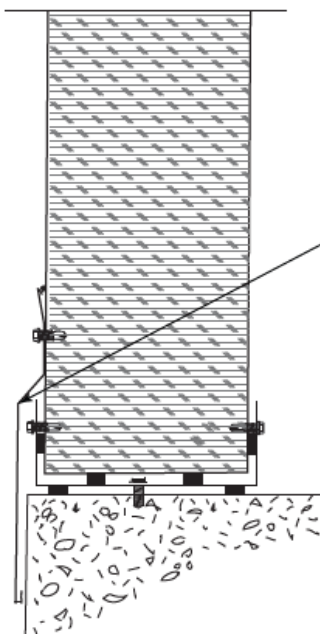
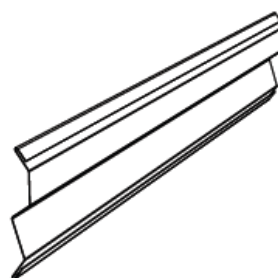
If the panel is 4" thick and butts up to a 4" panel, the outside angle size will be 6" X 6" to over lap 2" onto the panel leaving room for caulk. This will be done on vertical walls and horizontal ceilings also.

Outside angle trim is made from the same specified material as the panels, smooth texture, stucco texture, Stainless Steel. Color will be matched with the panels unless otherwise specified. Packaged in packages of 5 ea.

Made in 10' sections. 50 LF per package.



Drip Edge Trim PT14



Drip Edge Trim is used at the bottom of walls to deflect water from the wall floor connection. (see detail)

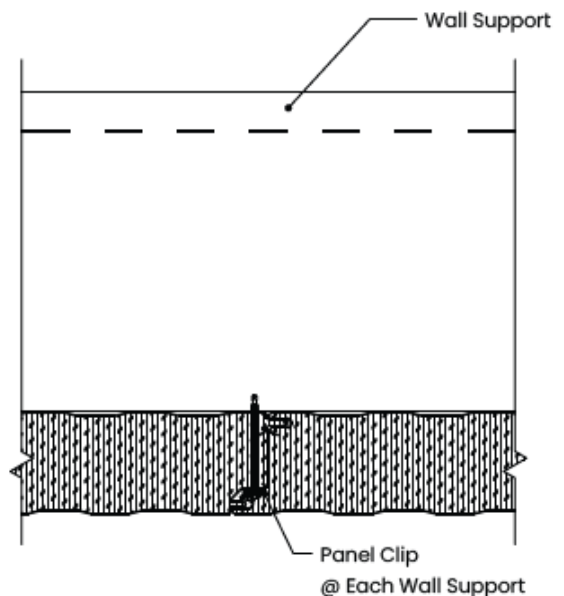
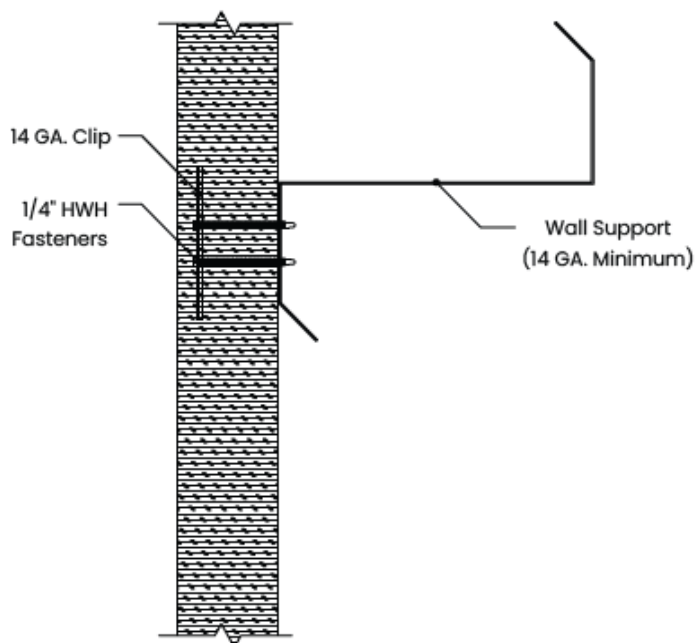
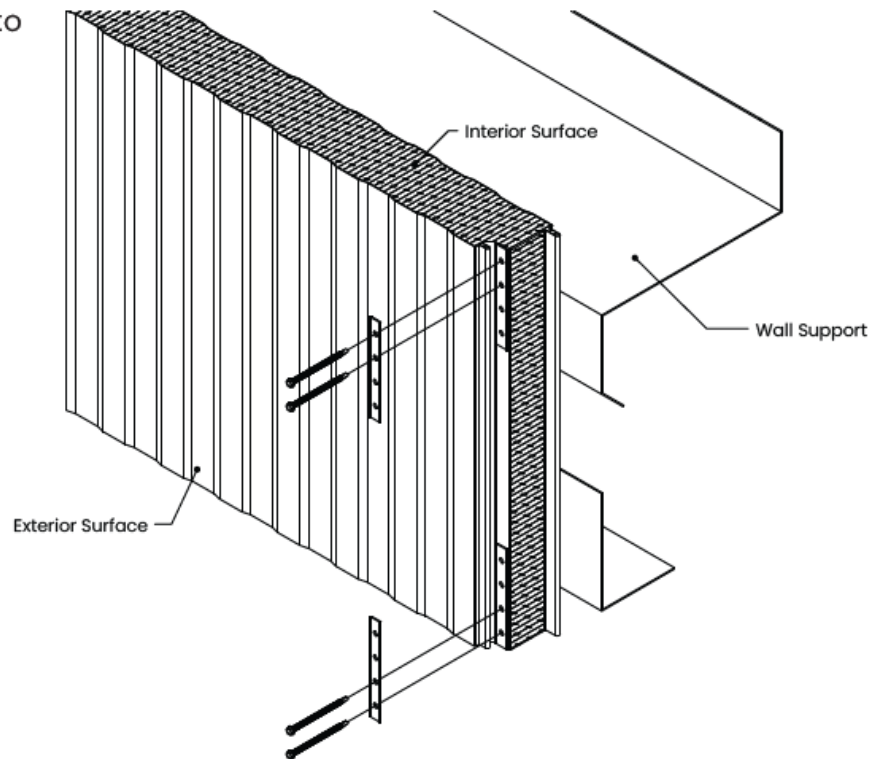
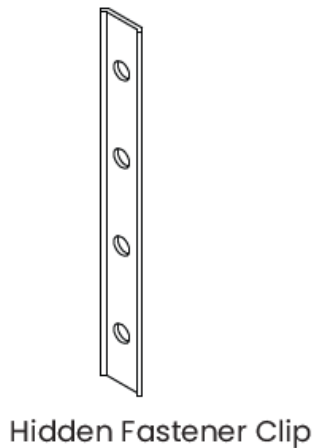
Drip edge trim may be used inside or outside of the floor Wall intersection.

Drip edge trim is made from the same specified material as the panels, smooth texture, stucco texture Stainless Steel. Color will be matched with the panels unless otherwise specified.

Packaged in packages of 5 ea. Made in 10' sections. 50 LF per package.

10-gauge galvanized HF clip to be placed at the top and bottom of the panel and at each girt secured with 2 screws per clip.

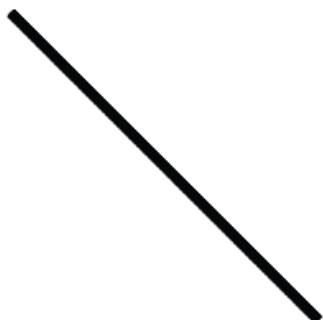
100 clips per package.



*****This detail is commonly used for this application; however, every building project is different. You should consult your building engineer to ensure this detail will work for your application.**



3/8" Threaded Rod



3/8" Threaded Rod

Threaded Rod comes in 10' Lengths
with 25 pcs per carton.

250 LF per Carton.



Large Foam Pack



Large Foam Pack

Produces 6 cubic feet of two-part Urethane
foam fill for gaps in insulation and to fill
gaps made by Tee Bar.

Self-Tapping Tek Screws

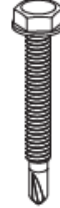
1/4-14 X 7/8"
Flat Head
Self-tapping TEK Screw



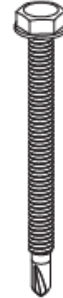
1/4-14 X 7/8"
Self-tapping TEK Screw



1/4-14 X 2"
Self-tapping TEK Screw



1/4-14 X 3"
Self-tapping TEK Screw



1/4-14 X 4"
Self-tapping TEK Screw



1/4-14 X 5"
Self-tapping TEK Screw

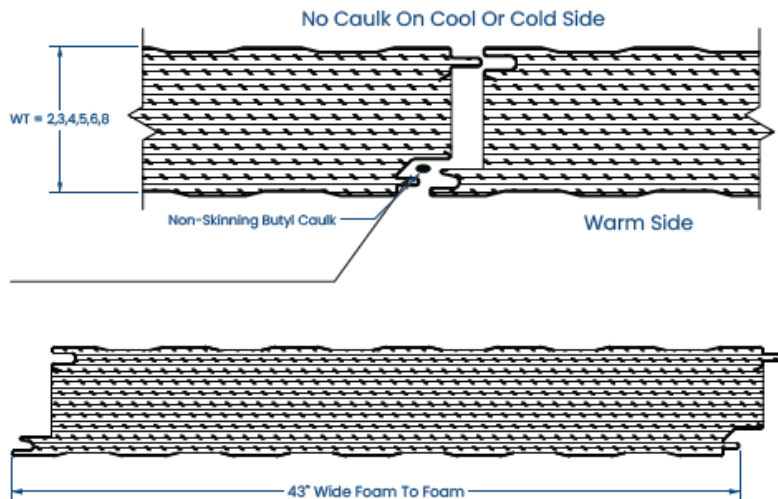


1/4-14 X 6"
Self-tapping TEK Screw



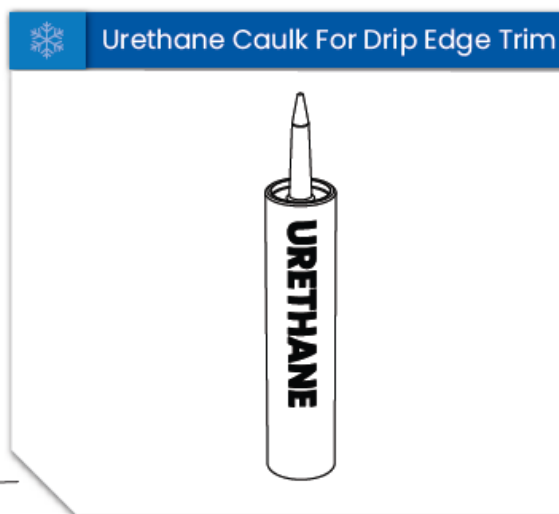
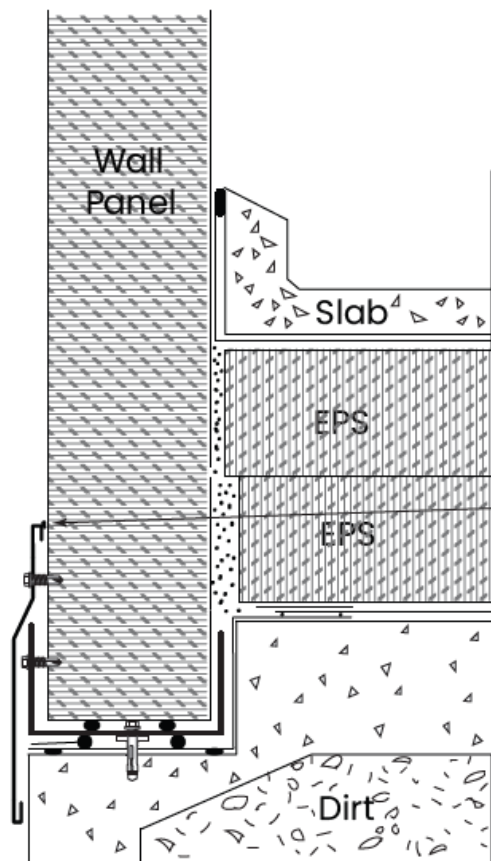
1/4-14 X 8"
Self-tapping TEK Screw





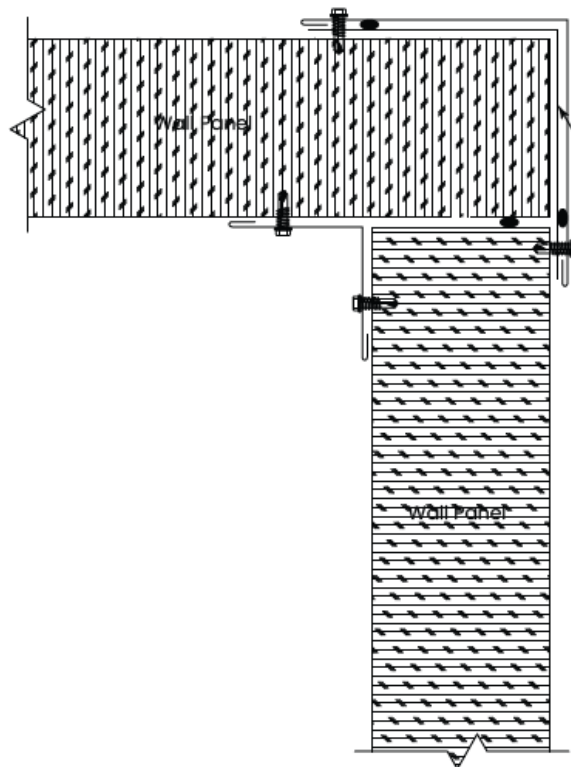
PermaTherm's FSI-96 Non-Skinning Butyl Caulk is designed for all panel joints. Coverage is 10' per tube. 30 tubes per case.

See Details for Application



PermaTherm's Urethane skinning Caulk is designed for exposed caulking joints. This includes Bottom Drip edge. 20' per tube coverage. 24 tubes per case.

[See Details For Application](#)



PermaTherm's Seam Seal Peel & Seal Tape is to be used on all outside corner or edge connections where a seam occurs. Tape will be used on the warm side of panels.

Thickness: 25 mil thickness. Length 33.5 lf per roll.

See corner details.

Seam Seal Sizes:

4" X 33.5'
6" X 33.5'
9" X 33.5"
12" X 33.5'

PermaTherm's Seam Seal Peel & Seal Tape is to be used on top of all ceiling joints.

(See Detail)

