

CastleRock™

ICAP & C-Series, E84 Series - R-10 to R-20 Installation Guide

Warning:

(Read these instructions thoroughly before attempting to install)

CastleRock Building Products, Inc.

PO Box 1258 Meridian, ID 83680

208-895-8557

ICAP-USA™ Cladding – Patent #: USA #8,176,701B2, Canada 2,588,294

Test reports and certifications are listed below:

Intertek/Warnock Hersey Test Reports W/N 20269

Intertek test reports available at www.spec-direct.com

CastleRock website www.castlerockx.com

Installation Guides available at www.castlerockx.com

Or by contacting us at sales@castlerockx.com

Testing conducted in accordance with the following:

Evaluation Guide: ICC EG 315

ASTM E330(2002): “Standard Test Method for Structural Performance for Exterior Windows, Doors, Skylights and Curtain Walls by Static Air Pressure Difference”

ASTM E84(2009) -08a “Standard Test Method for Surface Burning Characteristics of Building Materials”

CAN/ULC S102 (2007) “Standard Test Method for Surface Burning Characteristics of Building Materials”

ASTM C578 “Standard Test Methods for EPS Foam”

ANSI A137.1-2012 American National Standard Specifications for Ceramic Tile - Version 2013.1

ASTM C373 Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products
(See Uniform Load Rating Chart: www.castlerockx.com)

Summary

ASTM E84, CAN/ULC S102 (2007)

Flame Spread Rating: 0

Smoke Generation Rating: 0

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Minimum tools for installation of CastleRock/ICAP cladding panels



A smooth diamond saw blade. Dekton requires a special blade



A cordless Screw Driver.



A hand saw for cutting and trimming EPS foam



An oscillating tool for cutting & grooving EPS foam.



Rubi Wet Track Saw and Track Kit(Approximately **\$800.00**

Or a Rubi Bridge Saw is about **\$1,200.00**



Also: Comon Carpentry tools such as hammers, tape measures, ladders, scaffolds, man-lifts, etc.

Additional Tools



DEWALT 20V MAX* Angle Grinder
Tool Cordless Brushless, 4 1/2 Inch,
with Paddle Switch and Kickback
Brake, Tool Only (DCG413B) | Pad...

#1 Top Rated

4.8 ★★★★★ (9.5K)



**Spot Nail 1" crown x 2-1/2" Leg staple gun for
7/16" OSB or Plywood.**

Purchase from CAP with special 2-1/2" Staples

Rubi Tools DC-250 Python 1200 Wet Tile Saw



2-Pack Rubber Mallet
Hammer Set, 8oz &
25mm Small Rubber
Mallet Hammer Tool,...

Material Overview

Dekton is an **ultracompact surface** made from a blend of raw materials used in glass, porcelain, and quartz, giving it exceptional strength, heat resistance, and durability

 iworktops.co.uk +1 . Its dense, homogeneous composition makes it **prone to chipping** if cut improperly, so careful planning and the right tools are essential  satusatools.com . Each slab is unique, so visual inspection and layout planning are recommended before cutting

 cloudfront.net .

Tools and Equipment

- **Diamond blades** specifically designed for ultra-compact surfaces are required
 satusatools.com .
- **Water lubrication** is essential to reduce heat buildup, prevent blade wear, and achieve a smooth cut  satusatools.com .
- **Support bars or wooden battens** may be needed for spans exceeding 575mm to prevent sagging or breakage  Manuals+ .
- Avoid dragging heavy objects across the surface to prevent scratches or marks

 Manuals+ .

Cutting Techniques

- **Controlled speed and smooth motion:** Let the blade do the work without applying excessive pressure  satusatools.com .
- **Chamfer edges:** Slightly chamfer cut-outs and tap holes to reduce the risk of chipping
 Manuals+ +1 .
- **Edge finishing:** All exposed edges should be **arrised to at least 3mm**, with a **5mm pencil round recommended** for durability  iworktops.co.uk . Polishing is optional for some edges but smoothing is essential  cloudfront.net .
- **Dry fitting:** Always dry fit the worktop before final installation to ensure proper alignment and support  Manuals+ .

Best Practices

- Plan the layout carefully, especially for slabs with heterogeneous patterns or veins
 cloudfront.net .
- Protect the surface during further kitchen work with cardboard or other protective materials  iworktops.co.uk .
- Avoid recessing LED lighting under overhangs, as this can weaken the worktop

 Manuals+ .

Why Not Standard Bits?

Generic carbide or low-grade diamond bits often fail because they lack the grit density, segment height, and cooling design needed for ultra-dense stone [itoolmaster.com](#) .

Tip: For large or complex installations, follow the **Dekton Design & Installation Manual** for support, reinforcement, and cut-out guidelines [content.cosentino.com +1](#) to ensure structural integrity.

If you need the official **Dekton Design & Installation Manual PDF**, it's available from Cosentino's technical documentation site [Cosentino +1](#) .

Best Tool for Drilling Dekton Super High Density

For **Dekton Super High Density** (and other ultra-compact sintered stone like Neolith or engineered granite), the best approach is to use a **diamond-coated or diamond-core drill bit** specifically engineered for hard stone, with proper cooling and technique to avoid chipping or overheating.

Recommended Drill Bit

- **35 mm CNC Diamond Core Drill Bit** (1/2" gas & M14 shank) is a top-rated choice for precision drilling into dense sintered stone [itoolmaster.com](#) .
 - **Why it works:**
 - Calibrated for **2,200 RPM** and a **35 mm/min feed rate** to balance speed and tool life [itoolmaster.com](#) .
 - **10 mm diamond segment height** for longer life vs. budget bits [itoolmaster.com](#) .
 - **Wet-use only** design with flow channels to direct coolant to the cutting surface, reducing heat and dust [itoolmaster.com](#) .
 - CNC-machined core for consistent segment placement and minimal wobble [itoolmaster.com](#) .

Alternative Options

- **Diamond-coated drill bits** (e.g., 1.5" or 2" thin-wall core bits) for sink cutouts or faucet holes [shunttool.com](#) .
- **Diamond hole saws** with vacuum-brazed side protection for larger holes [shunttool.com](#) .

Drilling Technique

1. **Use water cooling** — sintered stone is 3× harder than granite; water is essential to prevent overheating [itoolmaster.com +1](#) .
2. **Slow and steady** — apply firm but not excessive pressure; intermittent breaks help dissipate heat [shunttool.com](#) .
3. **Match RPM and feed rate** to the bit's specs (e.g., 2,200 RPM for 35 mm core bit) [itoolmaster.com](#) .
4. **Dust extraction** — use a vacuum or dust collector to keep the work area clean [shunttool.com](#) .
5. **Safety gear** — goggles, gloves, and a dust mask are mandatory [shunttool.com](#) .

<https://www.youtube.com/watch?v=i6i0ovciBdU>

Workmanship

This Installation Guide assumes the construction personnel have knowledge of the materials described and their proper methods of installation. The manufacturer recommends certified installers be used to install ICAP products. Installer certification is available through the ICAP-USA "Factory Certified Installer" program. Contact us at 208-895-8557 for details.

Preparation

Prior to commencing activity related to the scope of this Guide, review all adjacent products and other subcontractor work that precedes the installation of ICAP-USA cladding ensure proper workmanship is reflected and that there are no recognizable errors or deficiencies.

Building Code Requirements

Building code requirements vary from area to area. Check with local authorities for building code requirements for your area and application. Carefully read all sections of this guide and follow the manufactures Installation Instructions before proceeding with your ICAP application. In the event the local building codes conflict with other statements made in this document, contact the manufacture for additional guidance.

Material Requirements:

Flashing

All flashing and flashing accessories must be corrosion resistant materials and integrated with the WRB materials or flashings recommended by the air/water resistant barrier manufacturer for use with their products. Flashing must be installed at all through the wall penetrations and at terminations of ICAP panel system, around doors, windows and other protrusions in accordance with local building codes.

Weep Screed

Some jurisdictions require weep screeds or termite barriers. These must be made of corrosion resistant metal a minimum of .019 inches or 26 gage thickness; or plastic weep screed a minimum of 0.050" with a minimum vertical attachment flange of 3 ½" wide.

Walls and Wall Systems

ICAP-USA ICAP Substrate Panels are designed to attach to the following wall substrates with manufacturer approved fasteners. See table on the next page to determine the appropriate fastener for your application.

Recommended Clearances:

- ICAP Substrate Panels individually attach to the wall or studs and do not require a brick ledge support like masonry products.
- Check with your local building official for requirements above grade and concrete/paving in your area. (slope away from the structure in accordance with local building requirements)
- ICAP-USA™ is a cladding product and all components used in its manufacture are waterproof. Consult with your local building official regarding requirements in your area.

Cautions:

- Do not subject ICAP-USA™ Claddings to frequent water contact such as sprinklers or direct spray. Place downspouts or drainage pipes so the water is not frequently contact the cladding.
- Do no subject ICAP-USA™ to contact with de-icing materials, salt, asphalt roofing material or its drainage, or other harsh chemicals. Prolonged exposure may damage the fascia or panel.
- Do not expose the EPS foam portion of the panel to extended periods of sunlight. All surfaces for EPS must be covered with fascia, flashing, other materials to protect it from UV exposure.

Joint Fit, Lippage & Rainscreen

ICAP Joints

Precut Panels require the following

- 1) The wall needs to be straight and flat before you begin. The panels will follow the flatness of the wall. The width of columns needs to be consistent and the corners need to be plumb.
- 2) If you are ordering precut material, see the Installation Guide for allowance around doors, windows and corners. Columns need to be a consistent width within 1/4" before pre-cut material is ordered. To confirm, measure the wall width on each section at every 4 ft. level up the wall.
- 3) The surface of the sheathing needs to be flat without roughness or bumps.
- 4) A bowed wall will result in the panel bowing to conform to the wall.

Note: ICAP considers lippage of up to .065 (1/16") acceptable on walls.

Joints can be addressed in several ways depending on the desire result.

- 1) The most economical & fastest installation is non-grouted joints with a tight fit or up to 1/32" fit.
- 2) Grout joints are optional, but not recommended unless you use silicone caulk for the grout. Grout is rigid and does not allow expansion/contraction. Silicones are flexible and allow a minimal amount of movement to absorb expansion and contraction. The 1-1/2" Tongue and groove joint is designed to allow minimal movement at every joint for long term performance.

Notes:

Please consult with your ICAP representative about these issues in the design phase prior to ordering materials for a project.

Rainscreen , Gasketed, or Caulked Joint

Built-in rainscreen drainage channels on the back side (closest to the wall) of panels at an additional charge.

Gasketed Joints are an optional feature using silicone foam gaskets in the panel joints and can be ordered factory installed or on-site.

Caulked Joints require colored 100% silicone caulking on-site but can be fairly labor intensive and expensive. **Grouted joints are not advised.**

The Part numbers are for standard parts, Specific Project Part Numbers will be identified on Attachment "A"

Pre-Engineered Insulated Porcelain Panels (C-Series ASTM E-84) with continuous insulation tongue and groove interlock: Manufactured by CastleRock Building Materials, Inc. DBA: ICAP/InsulStone.

A. Flat Panels:

- | | | | | | |
|----|-----------------------|--|------------|-------------|----------|
| 1. | Fascia Manufacturer: | a. Dekton | b. Daltile | c. Landmark | d. Other |
| 2. | R-Value: | a. R-10-20 | b. R-10-20 | c. R-10-20 | d. Other |
| 3. | Facia Options: | a. Porcelain | b. Dekton | . Landmark | d. Other |
| 4. | Min. Facia thickness: | a. 6mm | b. 6mm | c. 6mm | |
| 5. | Colors: | a. Custom: _____ | | | |
| 6. | Panel Sizes: | a. Custom: _____ Note: Max. size: 24"x126" | | | |

_____	_____	_____
_____	_____	_____

B Panel installation direction:

1. Vertical over OSB/Plywood with Staples 15/16" minimum crown x 2-1/2" legs
2. Vertical over Type X Gypsum (requires part# FS-06 horizontal furring channels, 16" on center)
3. Horizontal (requires 22 gauge min. metal studs located 24" min on center vertically)
4. Diagonal (requires 22 gauge min. metal vertical studs located 24" minimum on center)

C. Corners:

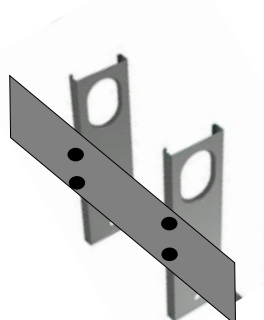
- | | Part Number |
|---|--------------------|
| 1. Horizontal Butt Fit (field cut & fit onsite) | BF101 |
| 2. Mitered Fit (order L-hand and R-Hand sets) | MF102 |
| 3. Metal wrapped corner (Provided by others) | |

D. Window/door/openings trim:)

- E.
1. Above metal window/door/opening drip flashing (Provided by others)
 2. Side Window/door/opening Metal Trim (provided by others)
 3. Aluminum or Stainless Steel Sill at bottom of window (provided by others)

E. Fasteners and accessories:

- | | | |
|----|--|-----------|
| 1. | Base Starter Strip | SSS-040 |
| 2. | Base Starter attachment screw | SCW-103 |
| 3. | TEK Screw/Washer Assembly through foam or to attach starter to metal stud | SWT-104 |
| 4. | Aluminum retainer T-clip for panels above window/door | CLP-T84 |
| 5. | Panel Retainer for above and sides of windows/opening spans wider than 24" | CLP-S84 |
| 6. | Vertical Corner Bracket for outside corners | WT-120 |
| 7. | Channel across studs for vertical panel installation | FIR-78316 |



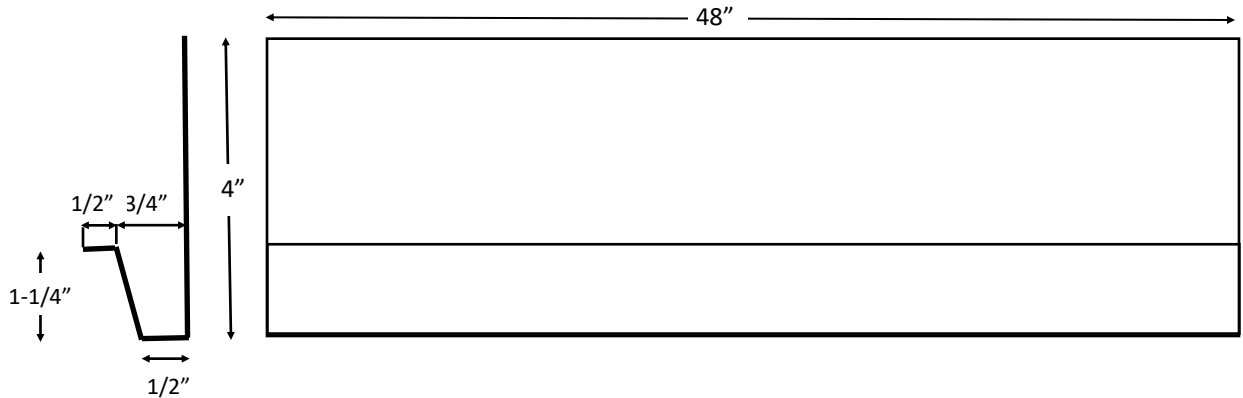
Part # FS-06 for vertical panel installation

Flat Strapping (16 gauge x 6"x120") for vertical ICAP panel installation. Installs behind Type X Gypsum Sheathing 24" O.C. for panel attachment.

(Supplied by metal framing contractors)

SSS-48 Starter (base of the wall)

ICAP Starter Metal

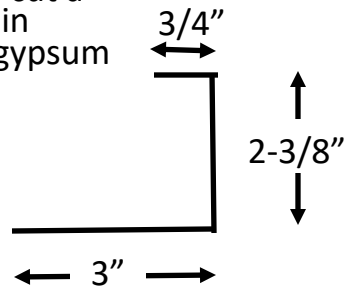


WT- 114 Metal Edging around window/Doors

ICAP J-Hook Window Side Flashing

Use to retain vertical siding at windows and doors. Use a n oscillating tool to cut a groove for the 3/4" lip to install in between the porcelain and the gypsum

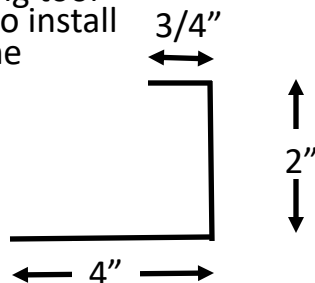
22 Ga. Aluminum



X 6" lengths installed
24" on center

WT- 120 Outside Corner J-Hook Bracket

Use on vertical siding outside corners (fits between the Foam and Porcelain located 24" on centers. Use a n oscillating tool to cut a groove for the 3/4" lip to install in between the porcelain and the gypsum .

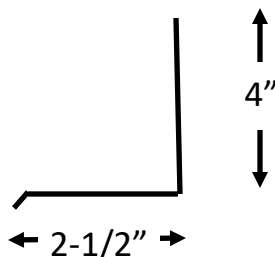


X 6" lengths installed
24" on center

WT-118 Drip Flashing located

Above Window/Door Flashing

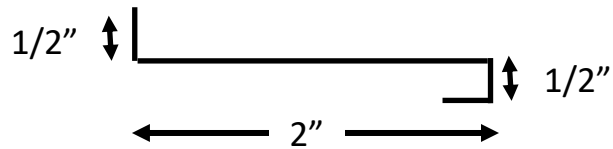
22 Ga. Aluminum



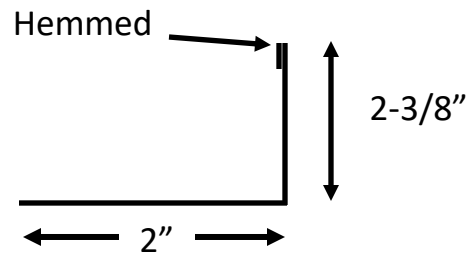
X 6" lengths installed
24" on center

WT-116 Porcelain & Retainer Bracket

Use to retain Panel to the wall on the sides and top of the Window/Door. Use a n oscillating tool to cut a groove for the 3/4" lip to insert between the porcelain and the gypsum. J-hook is to retain porcelain returns at sides and above the windows. 22 gauge aluminum



WT-11 Optional Window side and top Use to trim around Windows/Doors. Use backer rod and sealant to seal between the windows/doors panels gauge aluminum



INSULATED PORCLEAIN PANELS

Pre-Engineered Insulated Porcelain Panels (C-Series) with Continuous Insulation Tongue and Groove Interlock:
Manufactured by: CastleRock Building Materials, Inc. DBA: ICAP/InsulStone

A. Standard Flat Porcelain Panels:

1. Style:

2. Color:

3. Standard Panel thicknesses:

Std C-Series: 2" foam with fascia is approximately 2-3/8" thick

Rainscreen Series: 2-1/8" foam with fascia is approximately 2-1/2" thick.

R-21 Series: 4-14" foam with fascia is approximately 4-5/8" thick.

4. Panel sizes:

Maximum width panels the narrow direction is 24". Lengths can vary from 6" to 126".

Many projects are ordered pre-cut from shop drawings to eliminate or minimize any cutting in the field.

Note: Best material utilization from a cost stand point is modular sizes from the 56" x 126" that do not exceed 24" in one direction.

B Porcelain Panels and Components

A. Starter Strip

Part # SSS-048

B. Metal Window/Door flashings are available on page 9 of the Installation Guide.

REQUIRED SPECIALTY TOOLS

Traditional carpentry and cladding tools, caulking, etc. and the following specialty tools available from ICAP:

1. Oscillating Multi-tool for removing foam
2. Cordless Screw gun or drill with adjustable torque settings
3. Wet/Dry Tile saw (Preferably a bridge saw or track saw) with diamond blade for cutting Dekton or porcelain.
4. Laser Level or String Lines to level courses
5. Normal miscellaneous carpentry tools, ladders, scaffold, lifts, etc.

ACCESSORY MATERIALS

Flashing: Rigid, corrosion-resistant metal a minimum of .019 inches (0.5 mm) or 26 gage in thickness; or plastic weep screed a minimum of 0.050 inch (1.3 mm) with a minimum vertical attachment flange of 3-1/2 inches (89 mm) wide.

Fasteners:

ICAP Part's #:

Attachment to metal studs on 16" centers:

Part# TEK-111

Attachment to The stud with a TEK Screw and 1-1/4" fender washer minimum is required.

A. TEK Screws #10 x 3" with a 1-1/2" fender washer is required for metal stud attachment.

B. #10 x 3" wood or deck screws are required for wood studs.

B. Screws for Starter Strip (48" section) are #8 x 2-1/2" into the base plate or studs is recommended.

Part #SS-112

Attachment to OSB/Plywood:

A. 18 gauge 1" crown x 2-1/2" corrosion resistant staples is fast and easy. CastleRock offerss Stapleguns and staples for sale.

Caulk and adhesive:

A. Dow 1199 100% Silicone construction adhesive/caulking.

Part #SIL-119

B. Dow 795 Colored Silicone caulk/adhesive for joints

Part #SIL-695

Fasteners & Accessories

Fasteners



SCW10300

Standard ICAP Screw/Washer Assembly for wood studs:
#9 x 3" Zinc Plated or Stainless Steel—T-25 Torque Drive, Course Auger Thread, Type 17 Point. Used to attach EPS Foam Panels to Studs.



TEK10300

TEK screws with 6 point torque drive, flat 10 x 3-1/2" .2" for use with ICAP screw/washer assembly to attach to metal studs. To be used with Fender washers listed below.



SSS04800

Starter Strip: 48" long section of the starter strip used at the bottom of the wall to receive the groove flange of first row of panels.



SCW08200

Screw for Starter Metal attachment #10 x 1-1/2" min.
Option: TEK Screws for metal studs #10 x 1-1/2" min

T-STAR Washer Head HCR[®]
POWERLAGS[®]

EXTERIOR



Versa-Fast VF-3250

For attachment to TYPE X Gypsum (GlasRoc or Densglass))

Part # VF3250 or ICAP-SCRW screw/washer (see below)
assembly for attaching ICAP panels to Type X Gypsum sheathing



Fender Washer:

Fender **WA-125** zinc plated or Stainless Steel, #10 x 1-1/4"

For Wood OSB/Plywood Sheathing Only

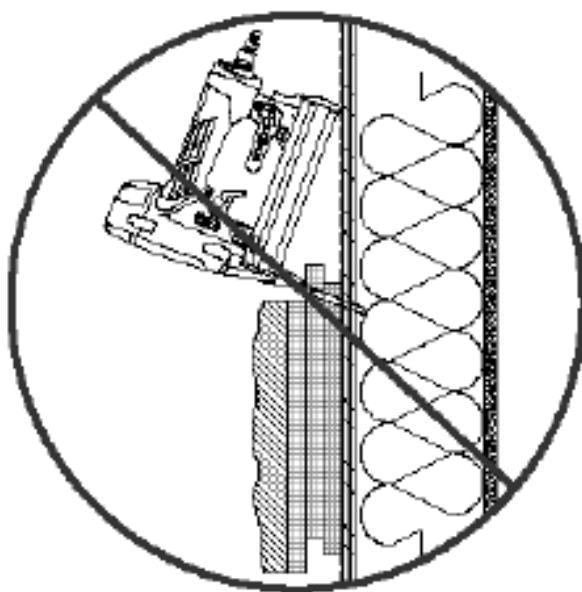
Fastener Installation: Staple requirements for 7/16" OSB/plywood min. sheathing.

Staples are usually used over OSB/plywood or other wood sheathing. Install all fasteners as illustrated through the tongue of the foam panel a minimum of 1" to 1-1/4" from the edge of the tongue foam material into the wood sheathing.

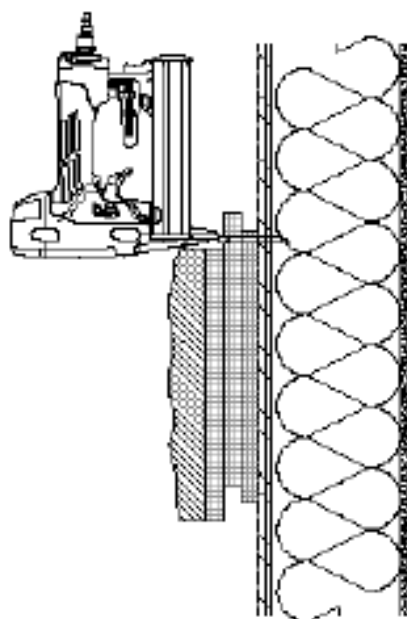
Note:

Set air pressure so the head of the staple is slightly embeds into the foam whereas the next panel will easily interlock.

Staple Size: 18 gauge min. corrosion resistant staple with 1" crown with 2-1/2" legs.



INCORRECT METHOD



CORRECT METHOD

01 ICAP CORRECT PANEL FASTENING PROCEDURE
SCALE 1-1/2" = 1'-0"

EXECUTION

EXAMINATION

Do not begin installation until the substrates have been properly prepared.

If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

Water resistive barrier shall conform to ICC-ES AC38 acceptance criteria.

PREPARATION

Clean surfaces thoroughly prior to installation.

Protection: Prevent work from occurring on the opposite walls to which cladding is being applied.

INSTALLATION

Installation as shown on drawings and as specified in accordance with manufacturer's installation instructions. Horizontal Panels are designed to be installed from left to right and vertical panels from right to left.

Sheathing:

OSB/plywood sheathing minimum of 7/16" thick or 5/8" Type X Gypsum attached to the studs as prescribed by the sheathing manufacturers installation instructions.

Weather-Resistant Barrier:

Installation of weather barrier and wall panels shall comply with local building code requirements or Authority Having Jurisdiction. Install weather barrier per manufacturer's installation instructions. Castlerock recommends liquid applied Air/Weather barriers such as Tremco Exoair 230 system, or STO Guard Gold Coat or equivalent. Use appropriate flashings as recommended as per the manufacturer's installation instructions.

Flashing: Install flashing as shown. Drawing #13

Flashing and flashing accessories shall be corrosion resistant materials and integrated with the air/weather barrier materials. Flashing shall be installed at all through-wall penetrations and at terminations of the panel system, around doors, windows and other protrusions in accordance with local building codes. Install flashing around penetrations and terminations of the veneer application. Install flashing to divert water run-off away from the finished surface area.

D. PATTERNS AND LAYOUT

- #13 1. Determine the area to be covered with ICAP Porcelain Panels and lay out the pattern See Drawing per panel size, corners, window/door trims, window/door perimeter panels and transition components if required. Refer to plans for locations of various panel sizes and types.

E. ELECTRICAL BOXES

- high A. The standard CastleRock R-10 foam is 2" thick, but several other thicknesses are available for er insulation values. For easy installation install a 2" deep electrical box on the surface of the sheathing (not recessed into the wall) and route the electrical wiring into the backside of the box.

B. Locate in the CastleRock Panel the correct location for the panel to fit over the box. Use a 4" right angle grinder with a diamond blade to cut the hole in the porcelain and remove the necessary foam from the hole so it will easily fit over the box. Seal the electrical box to the porcelain watertight to prevent water intrusion with a silicone sealant. Apply the appropriate cover plate over the box.

C. Other wall penetrations: Other wall penetrations can be addressed in a similar manner.

F. INSTALLING CLADDING PANELS

1. **STARTER SECTIONS:** Determine the location of the bottom panels and install the J-hook shaped “starter section” Part # SSS-048 at bottom of the wall and lap it a minimum of 1” (25.4 mm) over the foundation. Attach every 6” (152.4mm) to the plate or studs with appropriate fasteners. Note: ICAP panels will hang ¾” below the bottom of the j-hook starter. Check local building codes for code requirements above grade and sidewalks, etc. In the absence of local codes, locate the panels 2 inches (50.8 mm) above sidewalks, pavement etc. and 4 inches (101.6 mm) Above grade.
2. Begin by installing from the corner of the building aligning the first panel to fit to the panels from the adjacent walls with the tongue upward. Horizontal panels install from left to right. Vertical Panels from right to left.
3. Upon reaching the bottom of an opening, cut the panels to fit to the protrusion, window or door.
4. **Do not notch** porcelain panels to fit around the window, door or protrusion. Crosscut the porcelain panel where it meets the window/door, etc. See drawing #13
5. Joints: Dekton/porcelain joints spacing must be a minimum of 1/64”(.015”) or approximately the thickness of a business card.

G. PANELS ABOVE THE WINDOW

Cut panels above the window/opening/protrusion to fit as below and above protrusion. Keep seems aligned as shown. See Drawing 13

J. CORNERS

Outside Corners

Butt Corner: Cut and fit the panels for the porcelain to fit as desired by removing the necessary EPS foam. Foam can be cut at 45-degree angle to fit the corner. **See drawing #WT-**

Inside Corners: Cut the panels at an inside corner to fit the panels from the adjacent wall. Grout may be used to hide any irregularities.

K. SOFFITS

1. Soffit :

Install panels until the last row will not fit under the soffit. Measure the distance between the top of the panel and the soffit. Cut the panel ¾” (19.05) shorter than the desired space. Install the panel by inserting it into the space between the uppermost panel and the soffit. The panel will slide down over the tongue of the panel below, leaving a space between the top of the cut panel and the soffit.

2. Screw the panel to wall through the tongue section on the side of the panels. Install backer rod and sealant into the space between the top panel and soffit. See detail #12

L. PARAPETS

1. Install panels up to the height of the parapet. The top row of cladding will need to be cut to the correct height to match the height of the parapet. Secure panels by screwing through the tongue flange where possible and then “toe nail” screw the top of the panel to the parapet with appropriate screws. When the metal cap is installed, it will secure the top panels in place. See detail 11.
2. Install the metal cap over the top and sides of the panels as required.

Around Windows & Doors

The most common question is "How do you install around doors and windows? There are typically 3 methods depending on the desired finished look and cost of labor.

- a. **Option "A": Colored Metal Flashings** (usually match the window frames):
 - i. L-shaped metal with a hemmed front edge. This provides color on both sides of the metal and a smooth, rounded edge. (See Installation Guide for details).
- b. **Option "B":**
 - i. J-shaped metal trim (See Installation Guide for details)
- c. **Option "C": Porcelain Returns** (This method is more expensive both for materials and labor)
 - i. Butt-fit corner: The fascia remains proud (visible) over the return porcelain to the wall/window. Return porcelain is custom cut to the same thickness of the EPS panel. The "return" to the wall porcelain fills the void from the backside of the porcelain fascia to the wall and covers the panel foam and butts tight to the backside of the fascia porcelain. Grout joints can be designed in and used also. The "returns" are secured with CastleRock recommended adhesives Dow 790, 795, or 1199.

Corners:

- a. **Option "A":** Colored Metal Flashings (usually match the window frames) or porcelain color. The tile is sealed (Dow 790,795 or 1199 recommended) before the metal trim is installed. A 1/8" x 1" 2-sided foam tape is used to hold the metal corner in place. The 1/8" void created by the tape is filled with sealant to adhere the metal trim to the porcelain and create a watertight seal.
- b. **Option "B":** Butt-fit corners. The foam is cut at 45-degree angles to fit a 90-degree corner. The foam on one side (proud side) foam is cut back the thickness of the porcelain tile so the edge of the butt is not seen from the proud view. An oscillating tool is usually used to remove foam where needed.

See Illustration on next page:

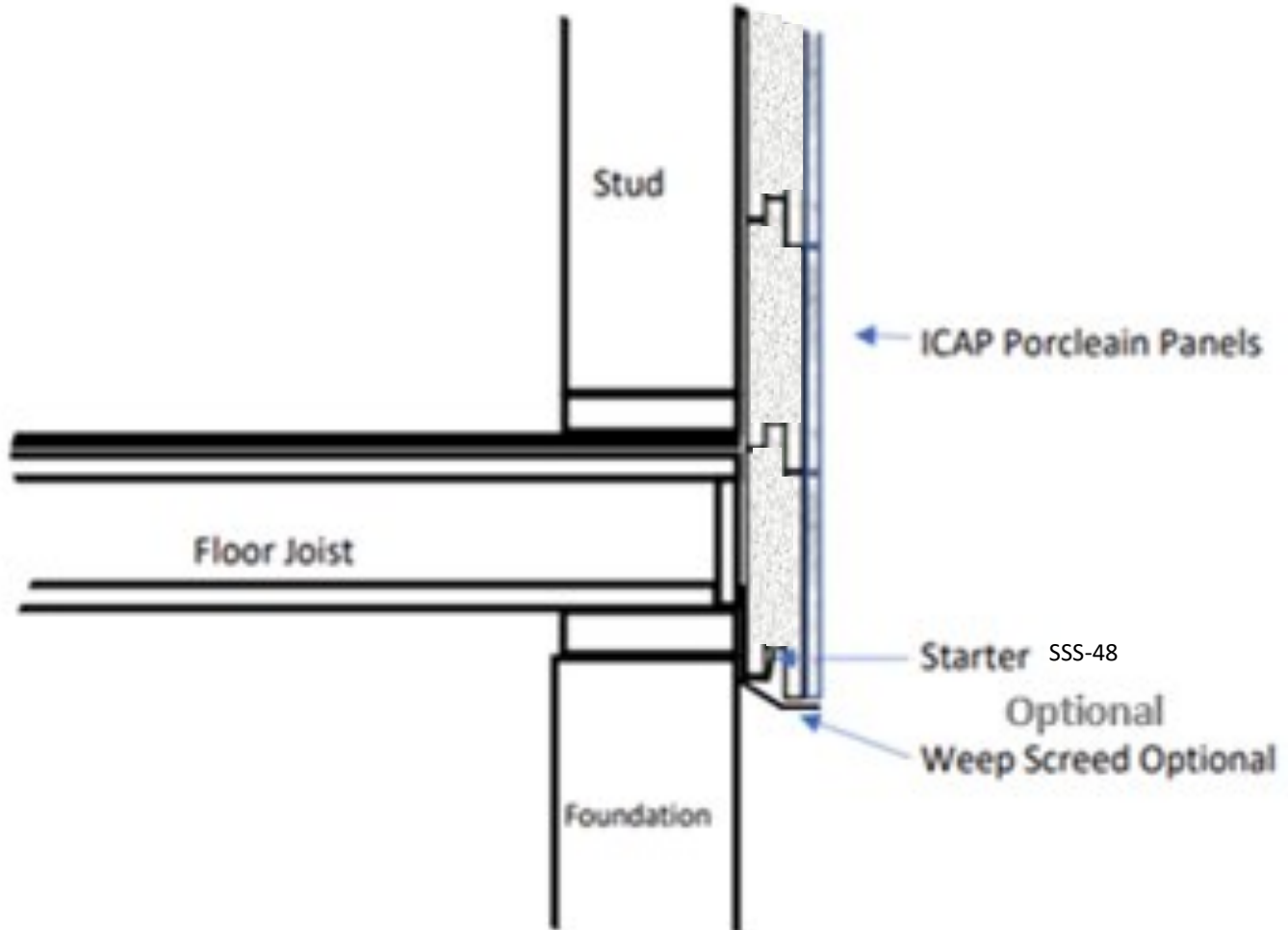
CastleRock Panels are a very simple 1-piece panel that interlocks similar to Lego's and staples or screws to the wall. Installation is fast and easy and can be done by tile installers, siding Installers, carpenters, or most anyone with some mechanical abilities.

1. Starter Metal:

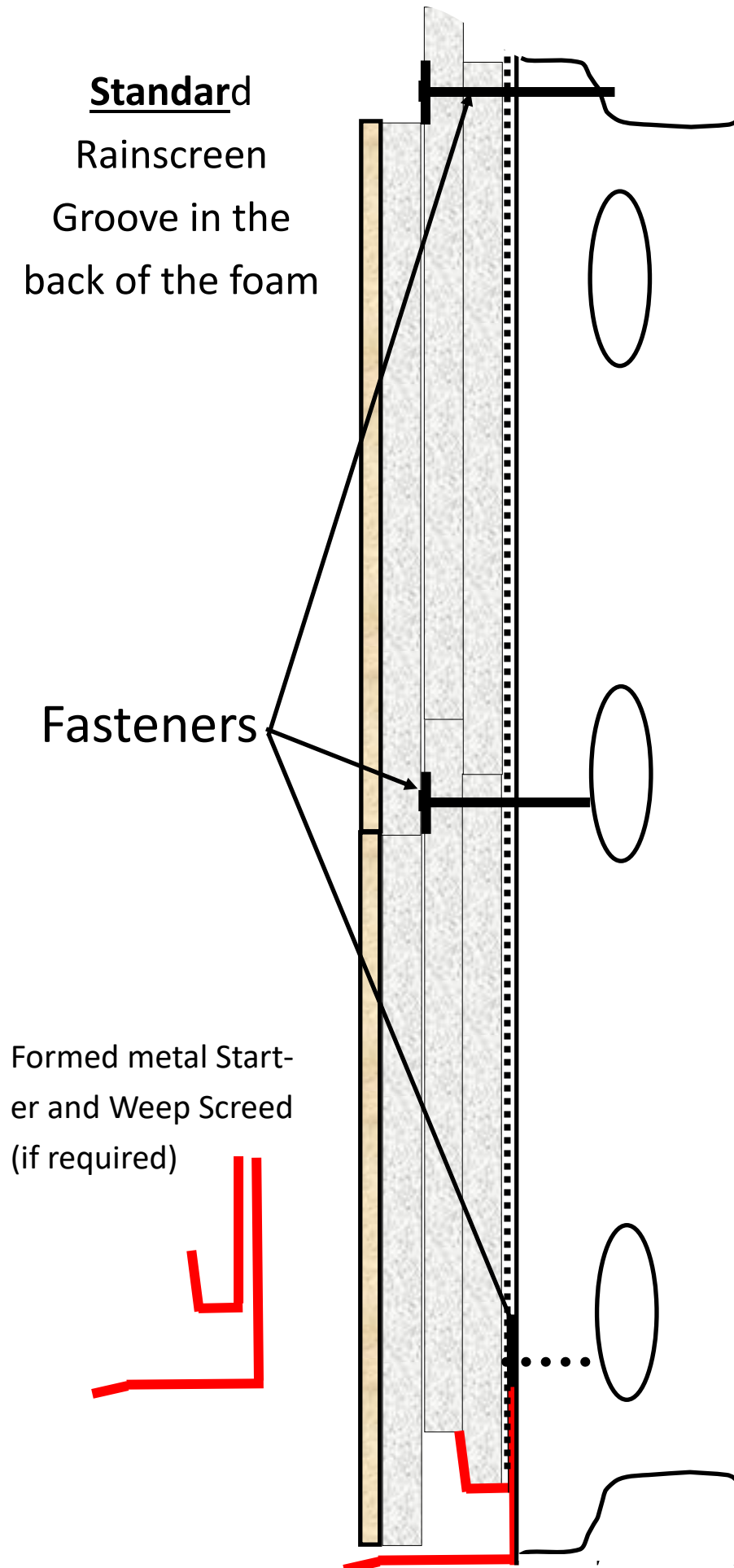
- a. A formed metal J-hook is required at the bottom of each panel. 48" sections are available from CastleRock Part# SSS-048. They are commonly galvanized steel but can be aluminum. Specifications are in the Installation Guide.

Drawing #1

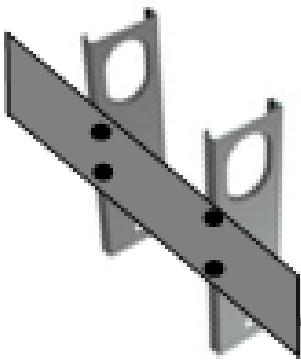
Starter metal at base of wall



ICAP Wall Cladding with WRB, Starter & Weep Screed



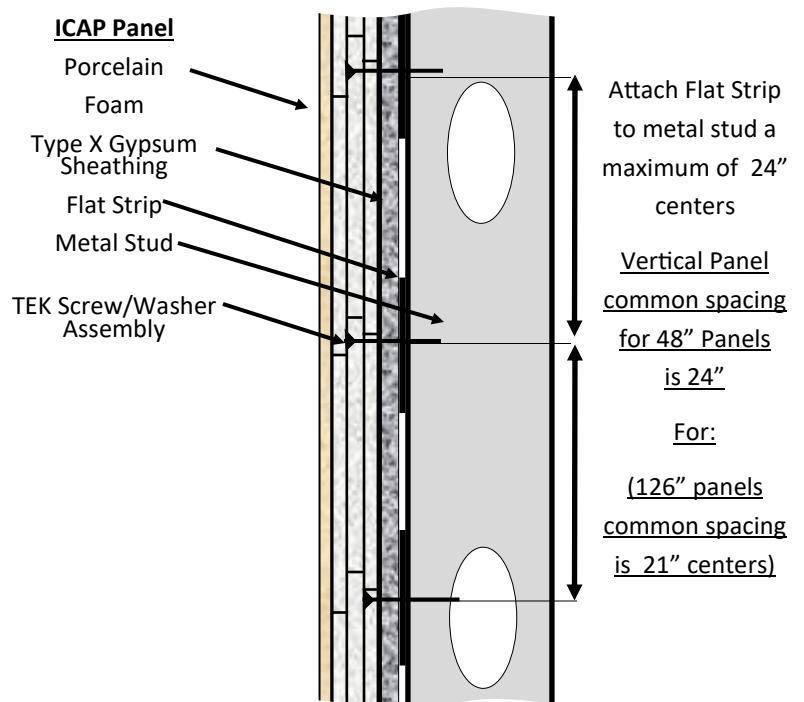
Flat Strip Furring Strip for vertical panel installation. Strap is located behind the gypsum sheathing.



Part # FS-06 for vertical panel installation

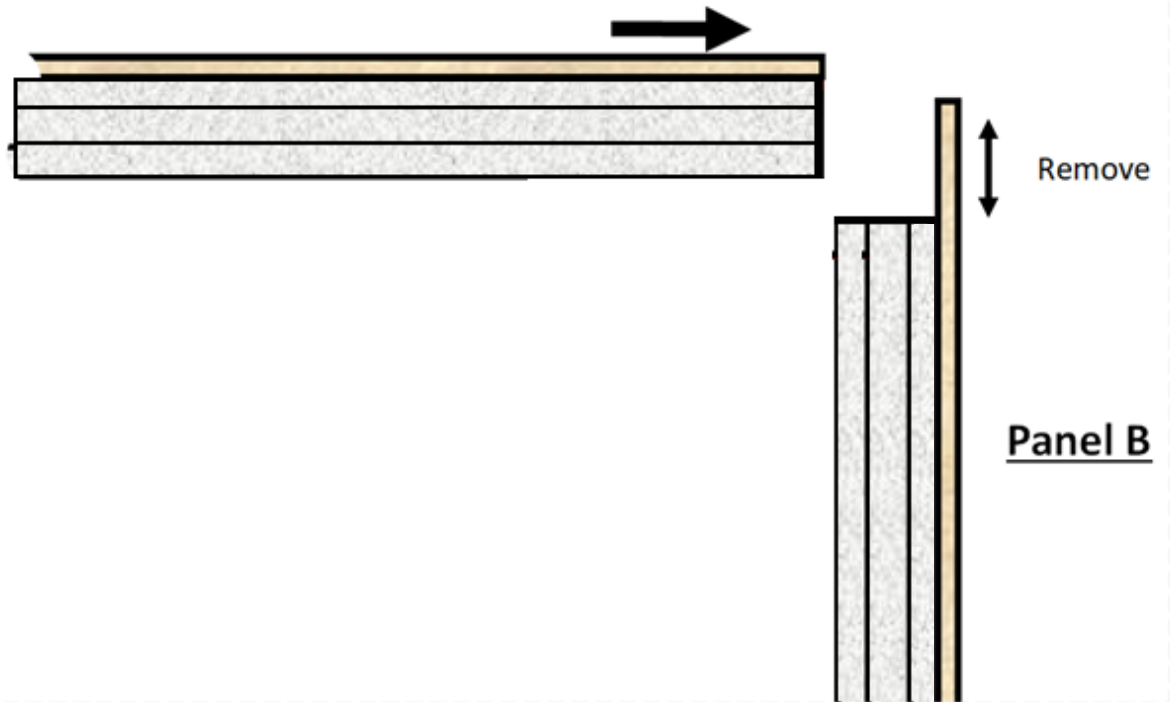
Flat Strapping (16 gauge x 6"x120") for vertical ICAP panel installation. Installs behind Type X Gypsum Sheathing 24" O.C.

(Supplied by metal framing contractors)

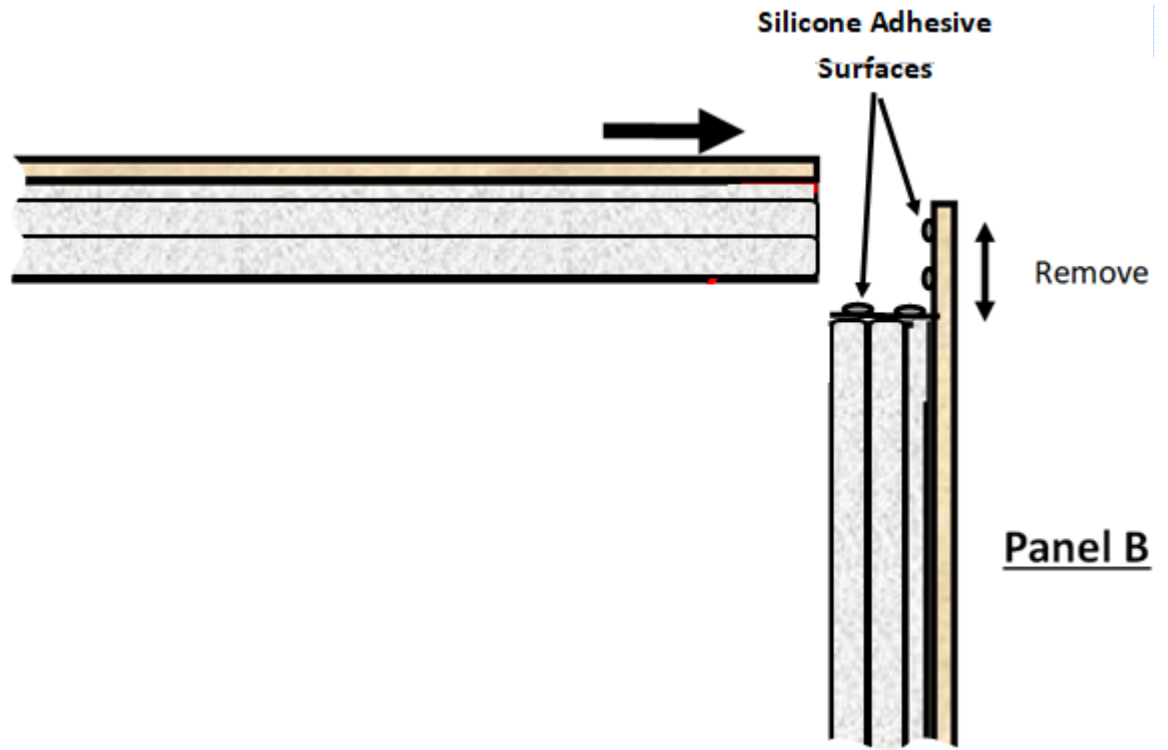


Horizontal Panels Under 24" High on Corners

Panel A

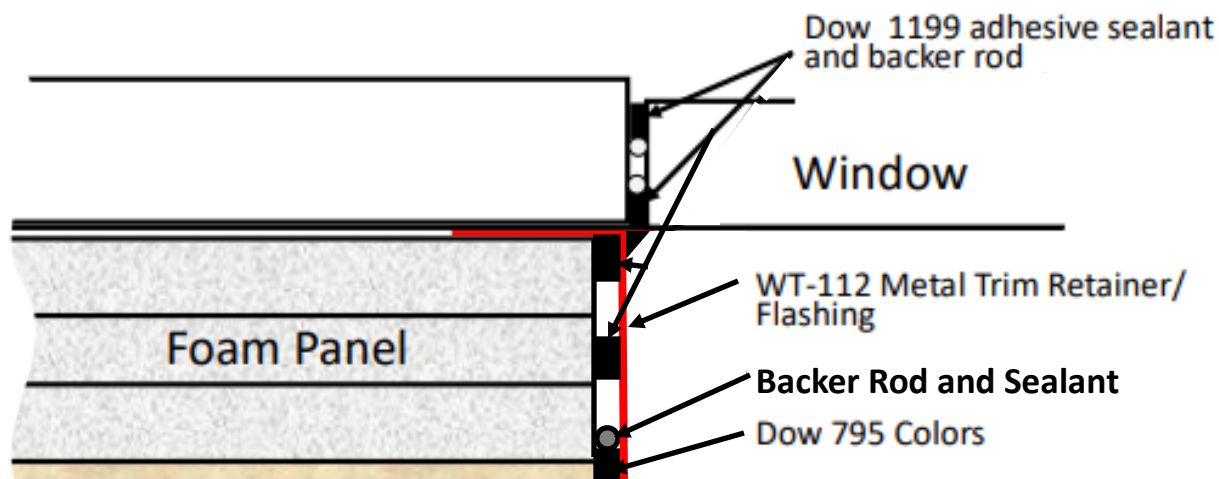


Panel A

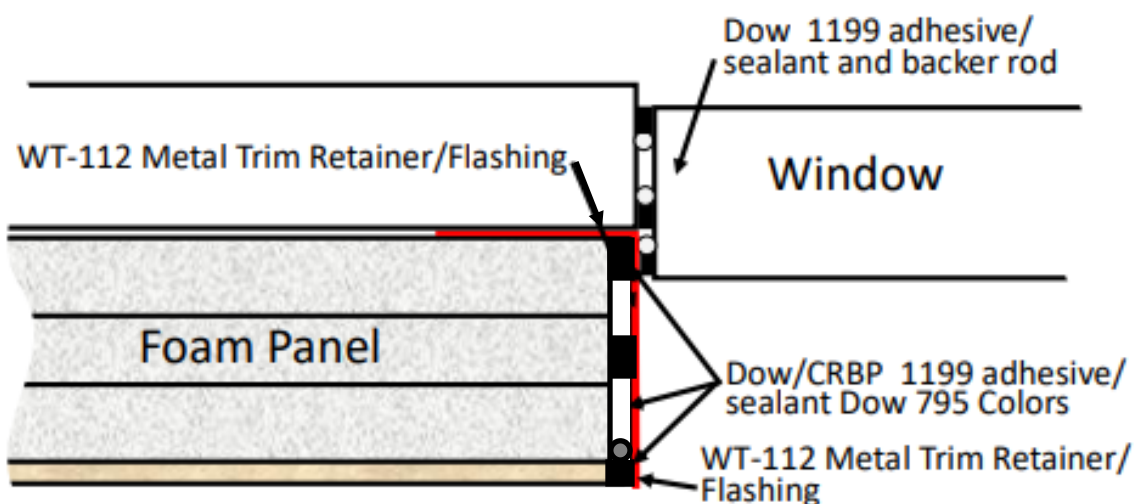


Metal Flashing Return on Flush Window Installation

Window Termination for Horizontal Panel Installation for Flush windows



Metal Flashing Return on Protruding Window Installation

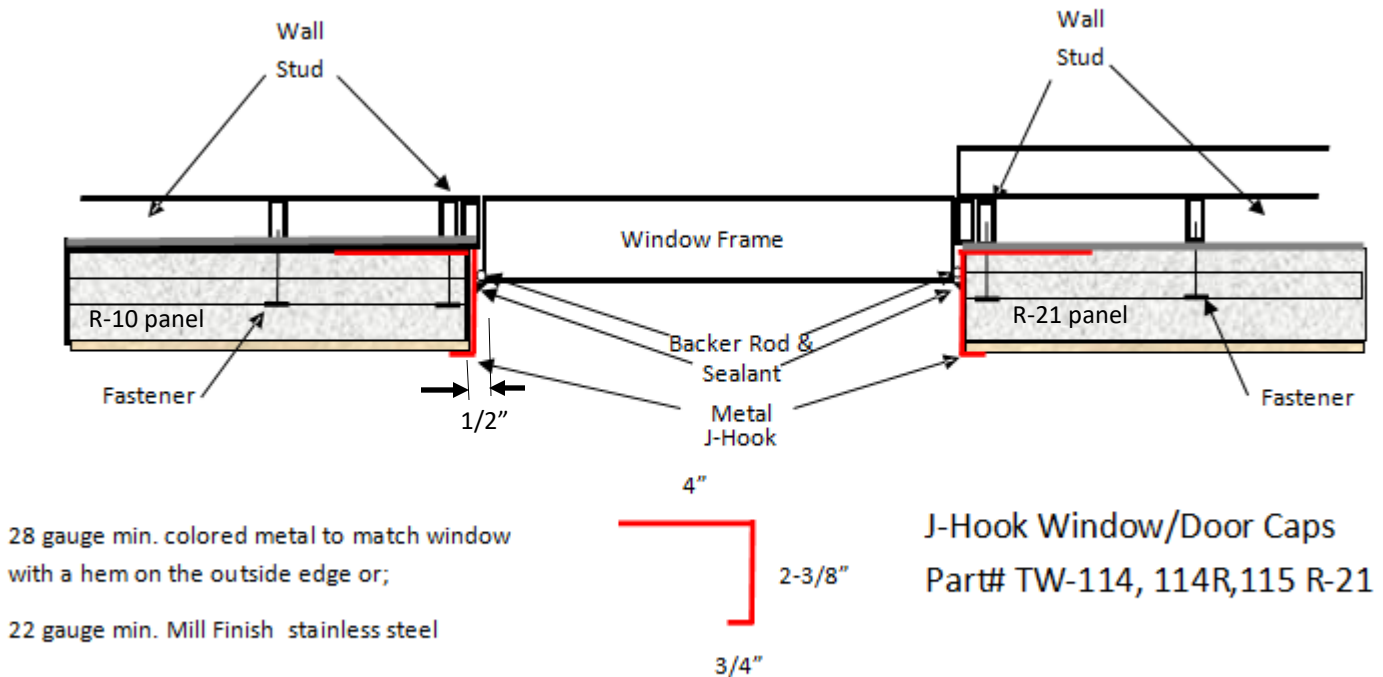


Note: Install backer rod and sealant in accordance with the architects, details and (WRB) weather barrier instructions.

Window Caulking_Options

Options #1

Metal J-hook Trim Around Windows/Doors



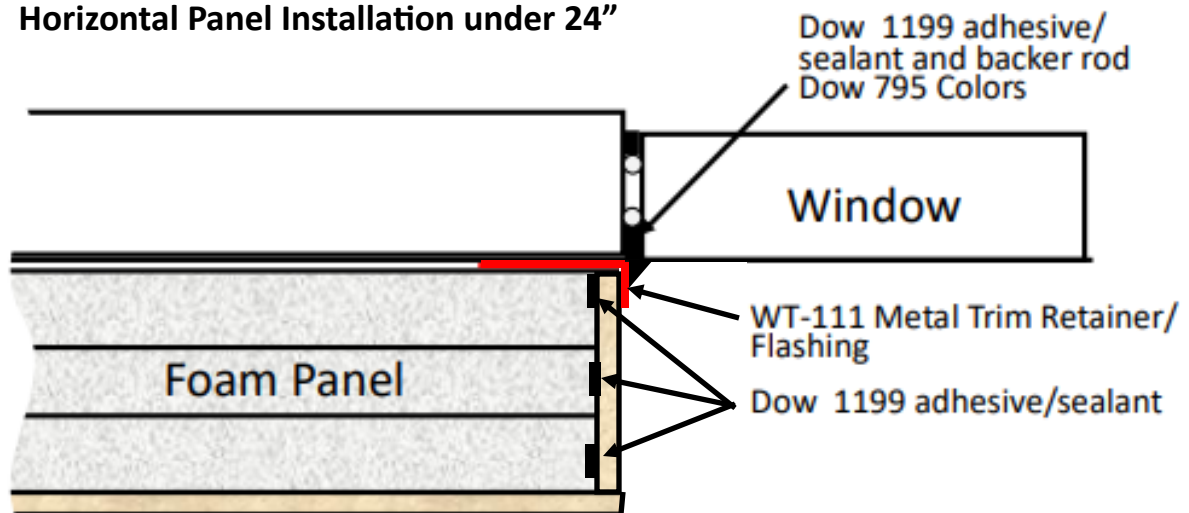
Note: Leave 1/2" between the window frame and the flashing for Sealant.

R-10:	WT-114
Rain Screen:	WT-114R
R-21:	WT-115
<u>See Trim Chart for Dimensions</u>	

Porcelain Return on Flush Window Installation

Terminate panel even with window/Door opening

Horizontal Panel Installation under 24"

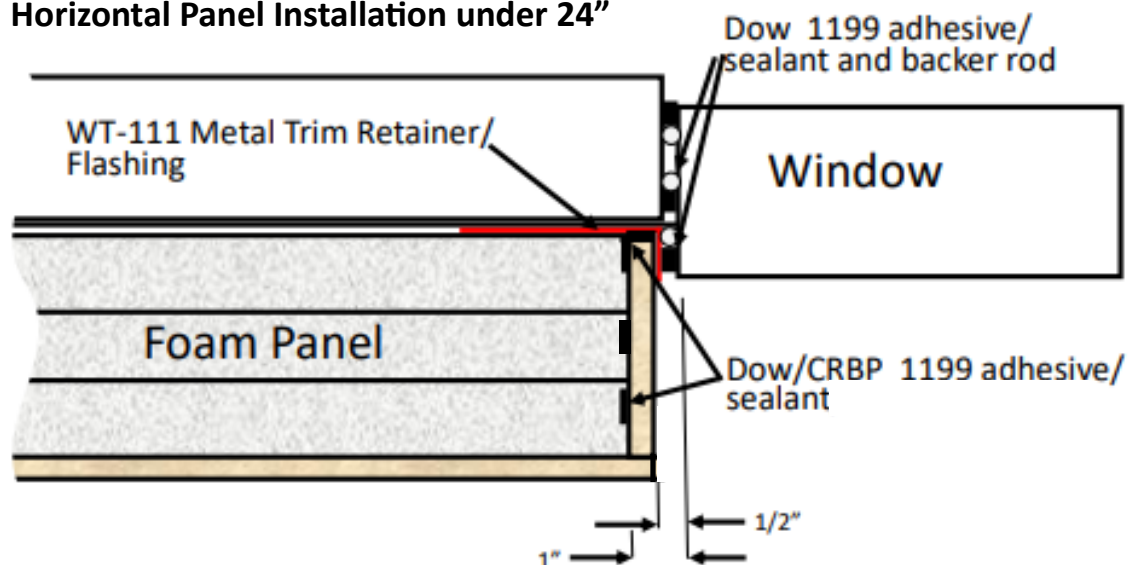


Note: Overlap onto window frame as per architects details.

Porcelain Return on Flush Window Installation

Terminate Panel 1" from window/Door protrusion

Horizontal Panel Installation under 24"

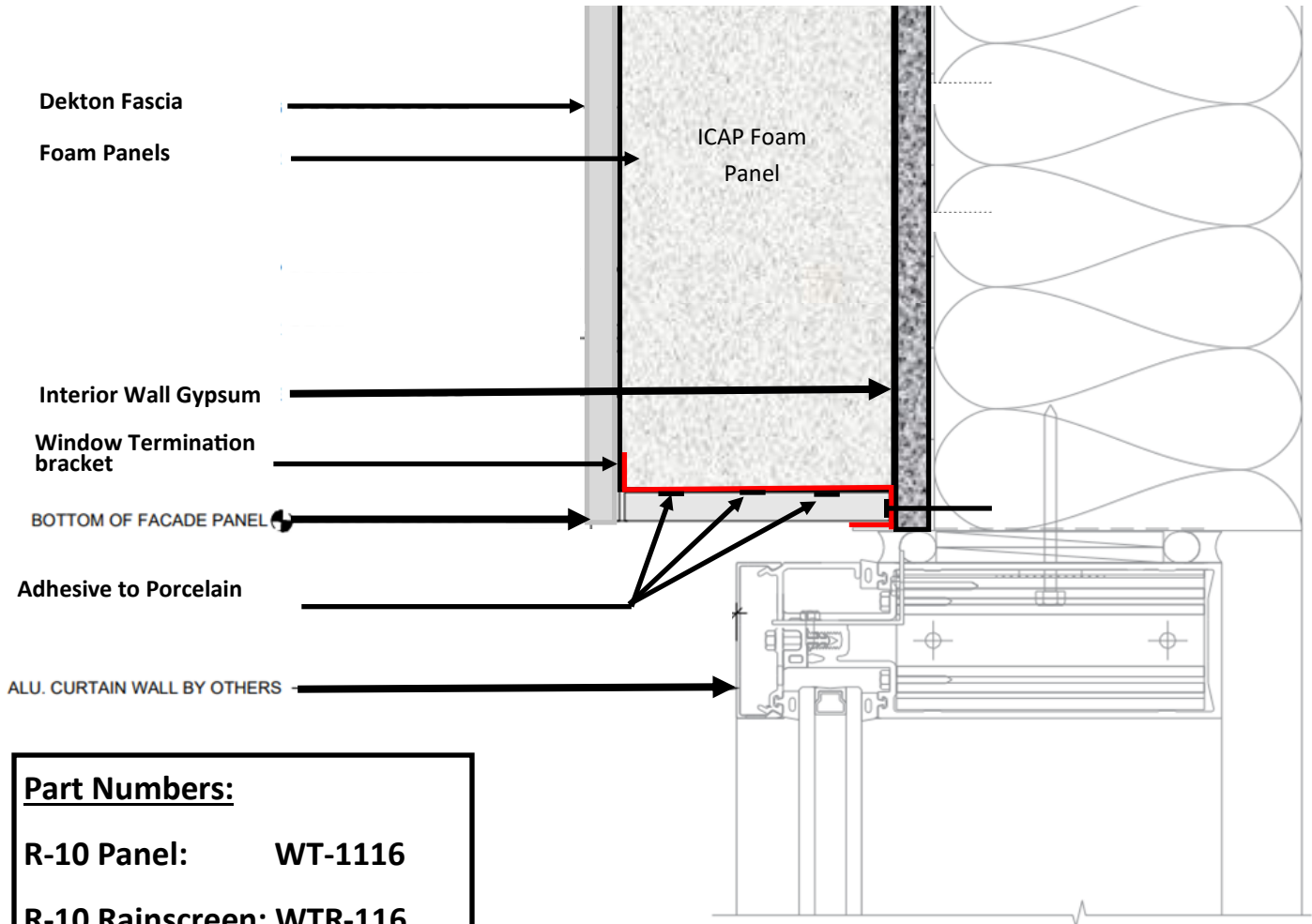


Note: Install backer rod and sealant in accordance with the architects, details and (WRB) weather barrier instructions.

Porcelain Window/Doors Returns

Above & Sides of Window/Door/Opening

Porcelain return over a window/door



Part Numbers:

R-10 Panel: WT-1116

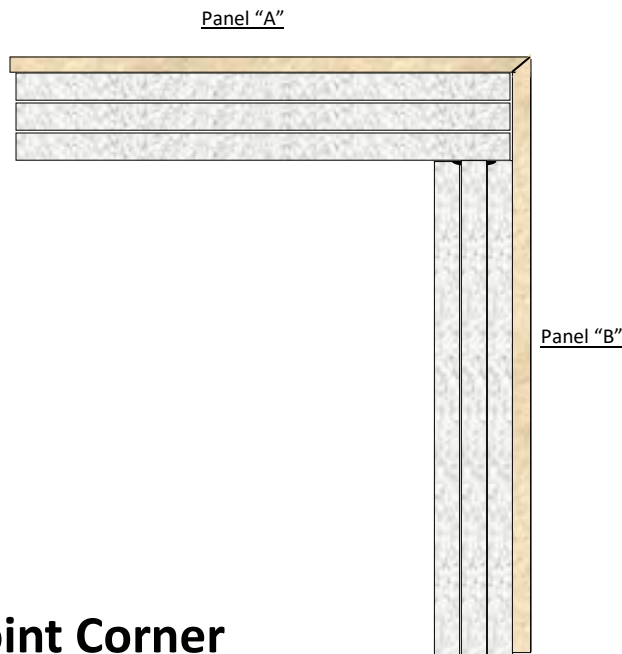
R-10 Rainscreen: WTR-116

R-21 Panel: WT-117

Outside Corners

Miter Fit or Butt Fit

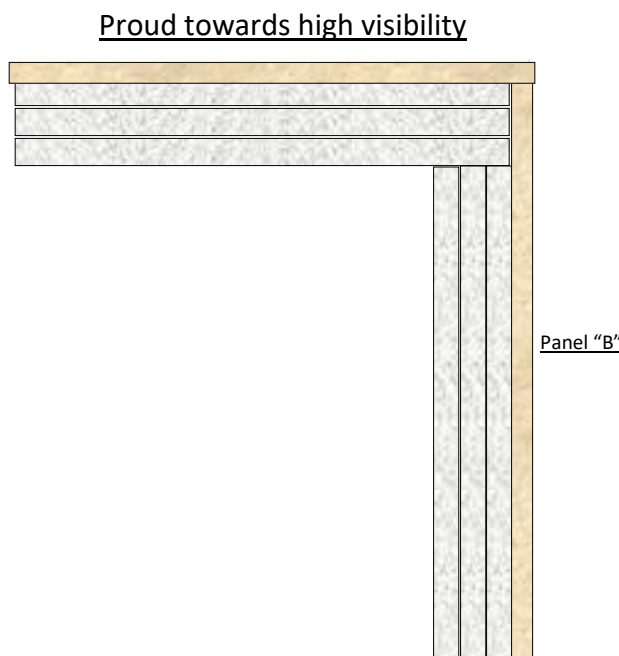
Miter Joint Corner



Mitered Joint:

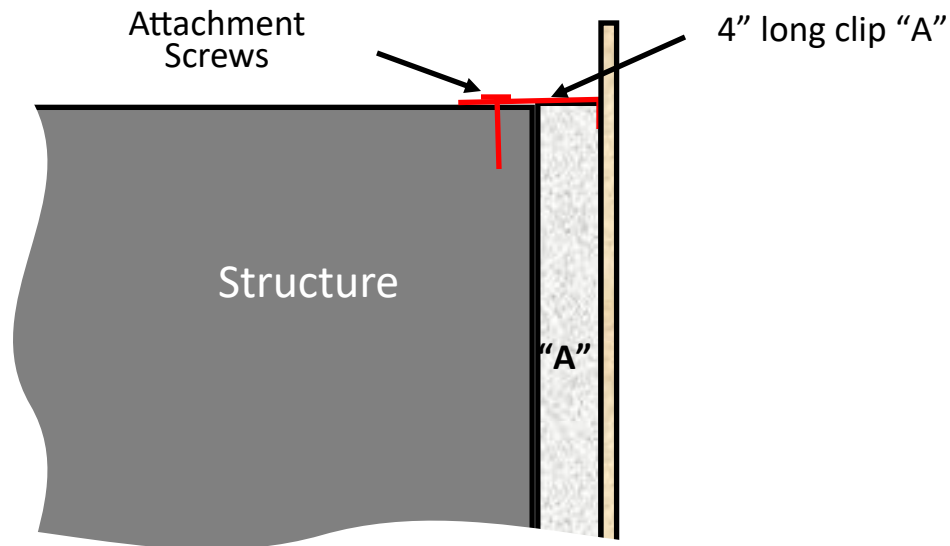
- 1) Remove foam and tile thickness from panel "B" as shown.
- 2) Square cut panel "A" as shown for miter joint to align.
- 3) Apply 1/4" dallops of ICAP adhesive as shown in the illustration every 4-6" on the foam.
- 4) Then, interlock the panels aligning the mitered joint and attach to the wall with the appropriate fasteners.

Butt Joint Corner

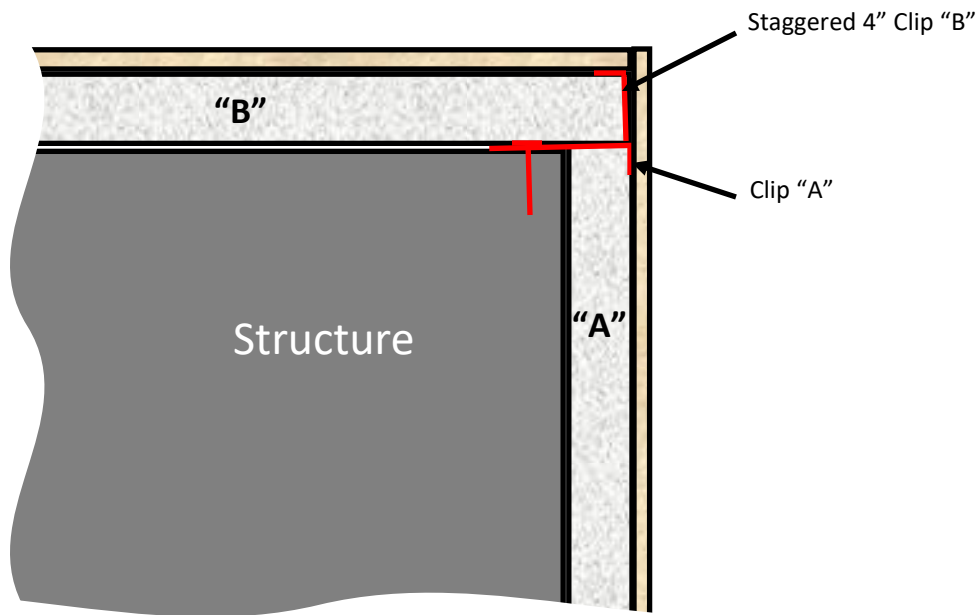


Corner Panel Installation over 24" high:

- 1) Install Panel "A" as shown.
- 2) Use an oscillating tool to cut a groove between the porcelain and the foam for the flange to fit into
- 3) Install the 4" long Clip "A" with screws as shown securing it to the wall.

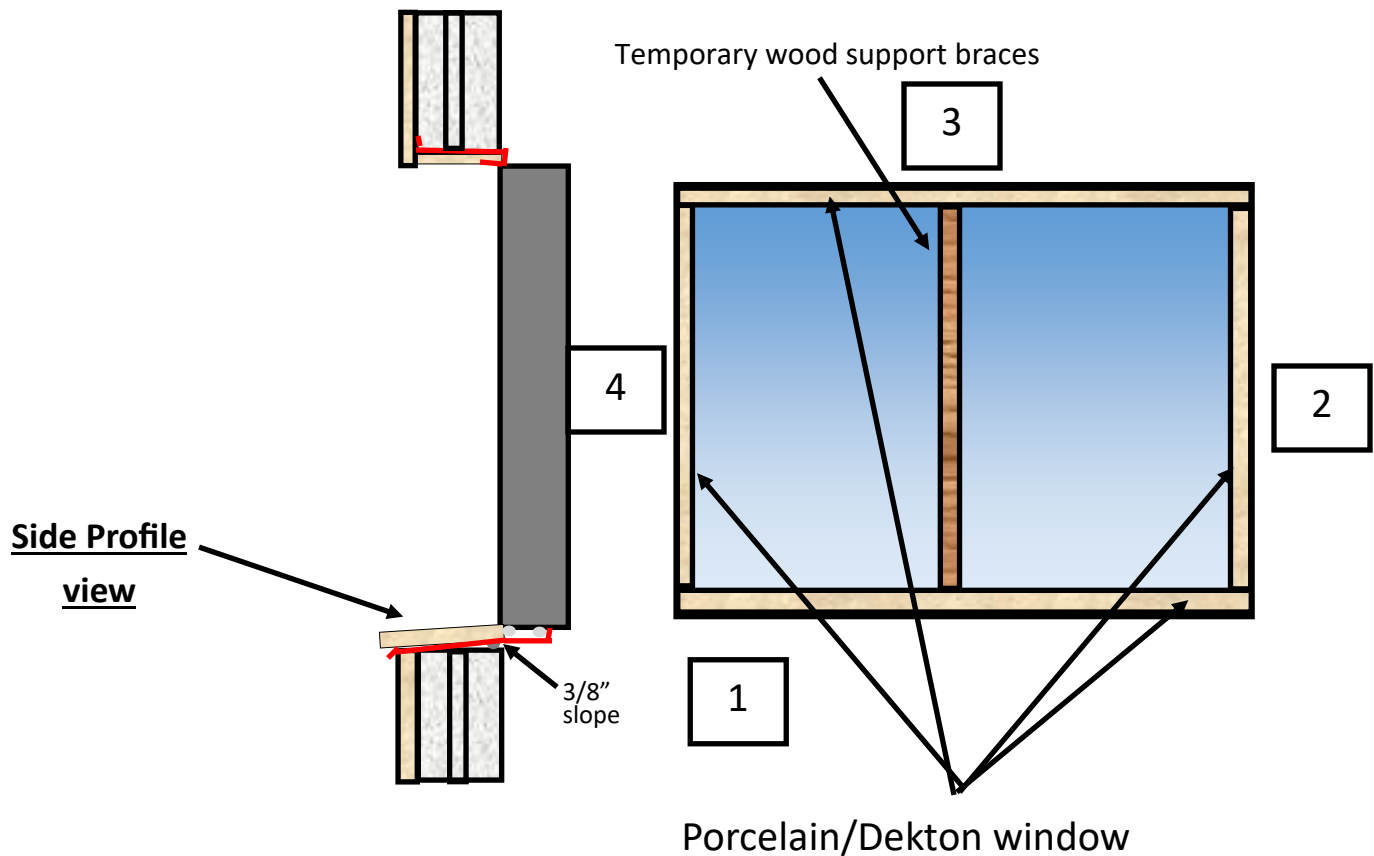


- 4). Install the 4" long clip "B" as shown. It can be staggered to not impact clip "A".
- 5). Use the oscillating tool to cut a groove in Panel "B" between the porcelain and the foam.
- 6). Install panel "B" as shown and attach through the foam tongue to the metal studs of flat metal.



Note: Factory foam shims up to 1/2" in thickness and 3" wide by 4" tall may be used to level walls at Tek Screw to Stud loca-

Porcelain Window Return Trim

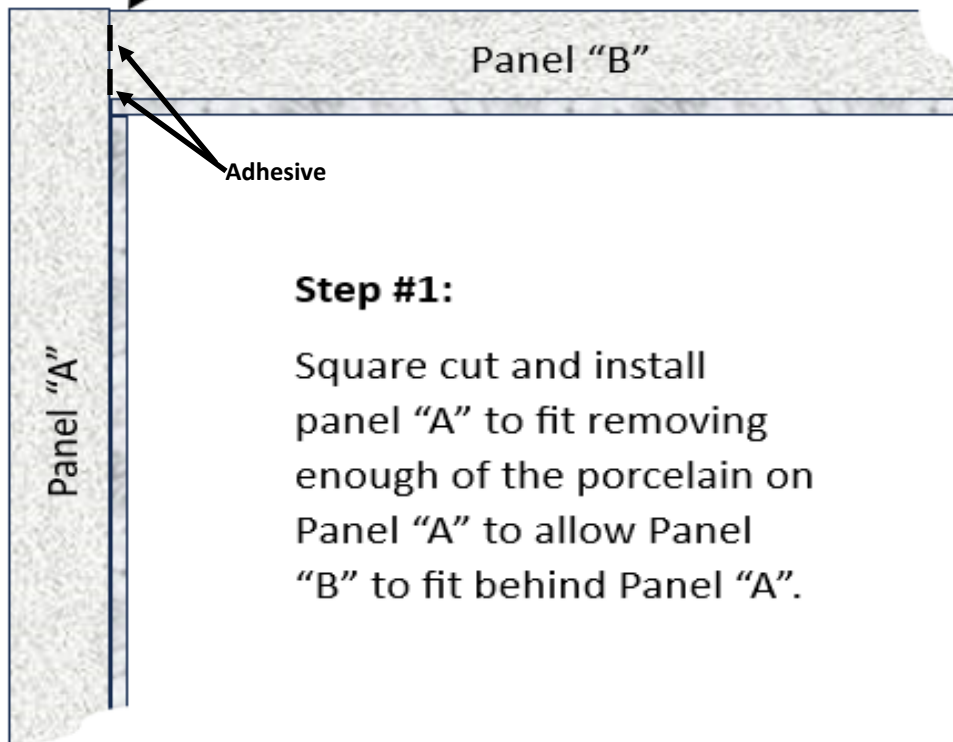


Follow Architectural caulking details

1. Remove 3/8" of foam from Panels "A" as shown
2. Install cladding panels around the opening before installing the return trim.
3. Apply adhesive to the foam on each side/top & bottom of the panels at the opening.
4. Install bottom trim at a slight slope for drainage away from the opening.
5. Install the top trim supporting with appropriately sized temporary brace(s).
6. Cut to size and install each side trim.
7. Allow 24 hours for adhesive to cure, then remove braces.

Inside Corner Installation

Step #2: Square cut panel "A" to length and install as shown.



Step #1:

Square cut and install panel "A" to fit removing enough of the porcelain on Panel "A" to allow Panel "B" to fit behind Panel "A".

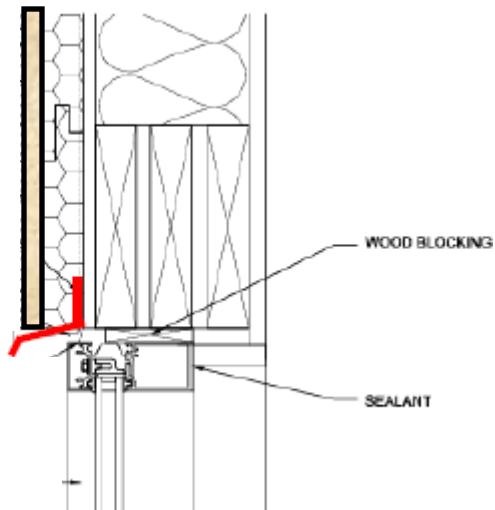
Note: If a grout joint is desired, remove more of the porcelain from panel "A" to allow space for the grout joint width.

Optional Methods for Porcelain Returns on Recessed

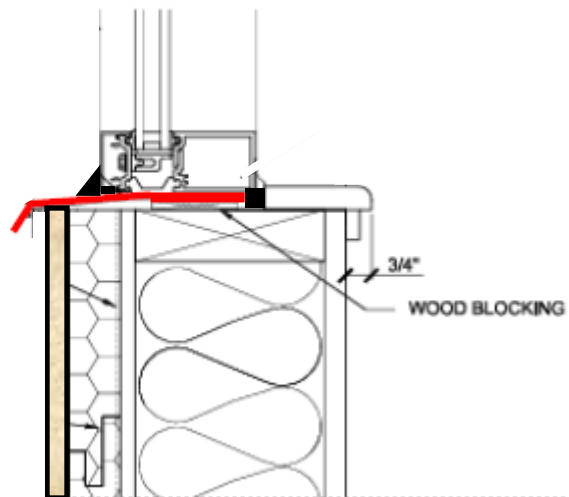
6

“A”

Window



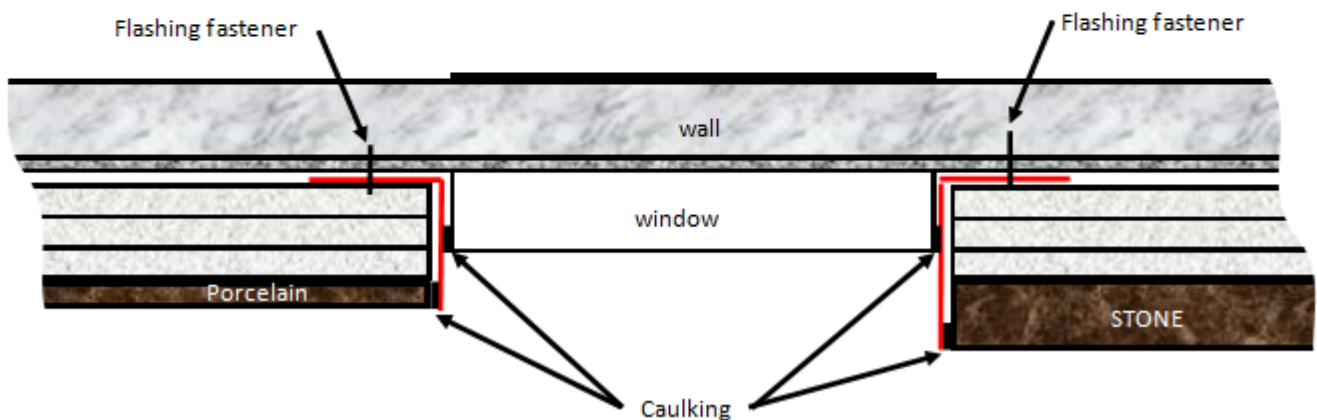
“B”



Side Window/Door Flashings

For Stone and Tile

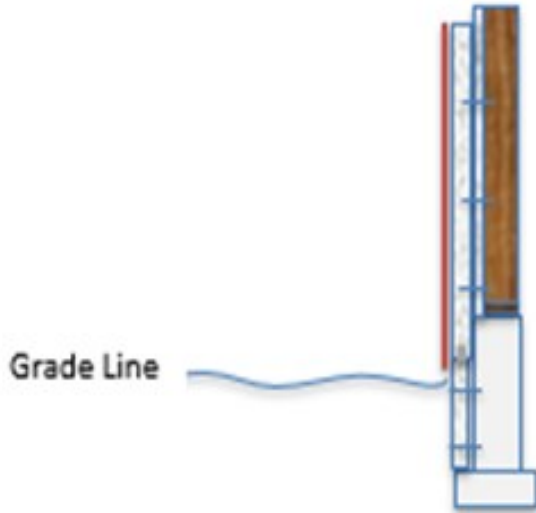
7



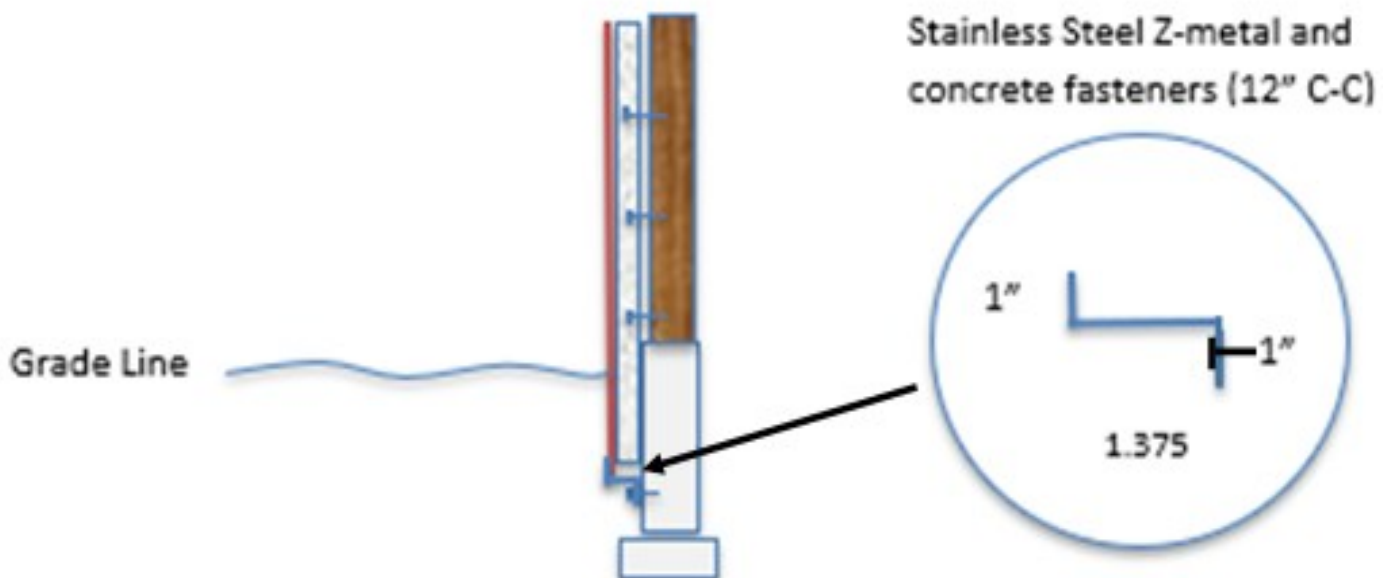
Installing Wall Panels below grade

Note: When installing CastleRock Porcelain panels close to or below grade, order the panels with a 1/64" joint spacing to keep the porcelain edges from touching if ground movement occurs.

1. This diagram shows "foam only" below grade:

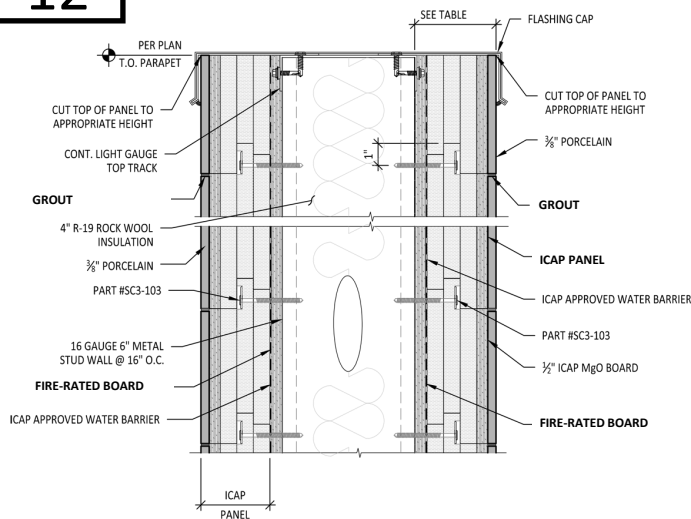


2. This detail shows the porcelain panel below the grade line. All porcelain panels require a joint spacing of 1/64" minimum between the porcelain edges and secure attachment to the wall through the porcelain. Note: predrilling the hole for the fastener with a diamond hole saw



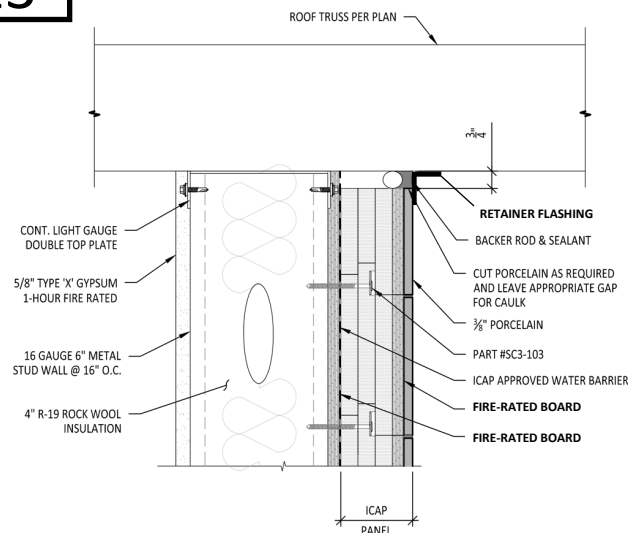
12

Parapet Cap



13

ICAP to Soffit Overhang



R-12 .25 INSULATION TABLE

ICAP PANEL MATERIAL	TOTAL PANEL INCH-ES	MILLIMETERS	PANEL R-VALUE
1/2" plywood or 1/2" gypsum	.500	25.4	R: .62
EPS FOAM	2.00"	50.8/101.6	R: 9.7
1/2" Type X Gypsum	.50	25.4	R: .45
BONDING ADHESIVE	.0625"	1.5875	N/A
PORCELAIN	.375"	9.525	R-.34
TOTAL	3.1875"	80.9625	R-11.11

NOTE:

14

60 PSI - HIGH DENSITY EPS (ASTM 578 TYPE XV EPS) w/ AN R-VALUE OF 4.85 PER INCH. PORCELAIN : R-.34 VALUE /INCH

ICAP-USA

Porcelain Cladding Maintenance Instructions

ICAP Porcelain Cladding can be installed in numerous design possibilities and a variety of looks. The Porcelain is easily cleaned due to the nature of the porcelain and its impervious surface. The grout joints are more vulnerable and should be treated carefully based on the type or grout :

Routine Porcelain Tile Care

Regular, basic cleaning with warm water and mild soap is sufficient to keep porcelain cladding looking good. You can also use gentle, everyday multipurpose spray cleaner to remove hard water deposits and mildew. Do not use cleaning products that contain acids or ammonia (and other harsh chemicals) as these can damage grout and glazed surfaces of the tile. Cladding can be spray washed at normal residential water pressure levels or with low pressure washers. Do not hold nozzle closer than 24 inches from the tile or grout to avoid damage of force waater between joints.

Grout Care

100% Silicone Grout: This grouting method may be cleaned in the same manner as routine porcelain care described above. Be careful not to force water in the grout seams or damage the silicone.

Cementitious Grouts: This type of grout should not be cleaned until it is completely dried and cured, then the grout should be treated with a silicone sealer. Grout, the material used to fill the spaces between tiles, is porous, and sealing it at this time will simplify maintenance in the future (Epoxy grouts and 100% silicones grouts do not require a sealer). We recommend you apply a sealer at least twice a year for maximum stain protection over cementitious grouts.

Heavy Duty Cleaning

Neglected or situations where extreme dirt, smog, mold, mildew or dust is common may require more intensive cleaning. Clean glazed wall tiles with a scouring powder or all-purpose cleaner applied to a non-metallic pad. Rinse and wipe dry. In extreme cases use a commercial tile cleaner, or apply a strong solution of an all-purpose, non oil-based cleaner or scouring powder paste. Let stand for five minutes, brush and scrub. Then rinse with clean water and wipe dry..

Purchasing Maintenance Products

Ceramic tile and Natural Stone cleaning products and sealants may be purchased at your local home center or floor covering store. Consult the manufacturer of the cleaner or sealant for usage instructions and more detailed information about how its specific cleaning solution

DO NOT...

Use cleansers containing acid or bleach for routine maintenance.

Use wax cleaners, oil-based detergents or sealants to maintain your tile (sealants may be used on grout joints).

Use ammonia (it will discolor grout).

Use harsh cleaning aids like steel wool pads or scouring pads containing metal.

Use a cleaning agent that contains color