

# CastleRock™

## ICAP C-Series

### E84 Series - R-10 to R-20 Installation Guide

#### Warning:

(Read these instructions thoroughly before attempting to install)

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](http://www.spec-direct.com)

CastleRock website [www.castlerockx.com](http://www.castlerockx.com)

Installation Guides available at [www.castlerockx.com](http://www.castlerockx.com)

Or by contacting us at [info@castlerockx.com](mailto:info@castlerockx.com)

**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

#### Summary

ASTM E84, CAN/ULC S102 (2007)

Flame Spread Rating: 0

Smoke Generation Rating: 0

ASTM E330(2002) “Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Static Air Pressure Difference” Rating: 127 lbs./Sq.ft.

## 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 manufacturer's 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 manufacturer 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 1/2" 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.

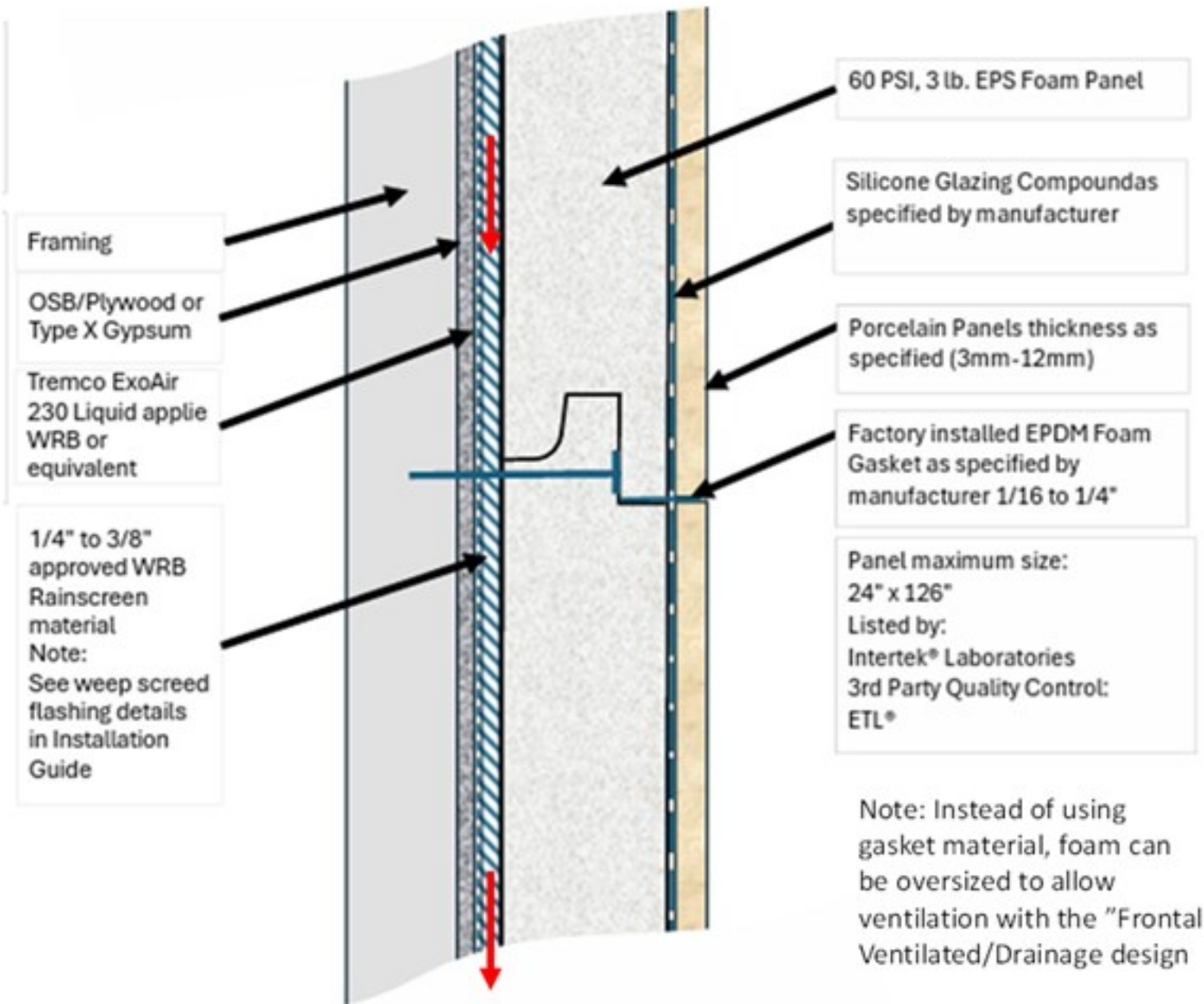
## Recommended Clearances:

- 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 not 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.

# Traditional Rear Side Rainscreen with optional factory installed perimeter gasket



# CRX Series

## Installation Guide

	<u>R-Value</u>	<u>Height Range</u>	<u>Length Range</u>
Flat Panels	1	5" - 24"	24" - 60"

**Note: Panels sizes are dictated by porcelain panel sizes. Check with CRX for available sizes.**

### Tools Required:

- Wet Tile Saw with a porcelain diamond blade.
- **Alternative:** A 4-1/2" water cooled circular saw with a track system.
- Right Angle Grinder with a porcelain diamond blade.
- **If using a Staple Gun:** 1" crown x 2-1/2" min. corrosion resistant staples.
- **If using Screws:** Cordless Screw gun with adjustable torque chuck.
- Oscillating tool: Use: Nothing backer board from tile at corners.



Oscillating Tool for cutting foam and removing adhesive from the back of tile.



## 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 head #10 by 2-1/2" for use with ICAP screw/washer assembly to attach to metal studs. To be used with Fender washers listed below.

Please Note: Item in picture may not reflect size and finish of actual part



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



EXTERIOR



SPAX143HCR OR SPAX144HCR

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

Part # SPAX143HCR or SPAX144HCR screw/washer assembly for attaching ICAP panels to Type X Gypsum sheathing



Optional Fender Washer:

GRIP12500: Grip-Plate 1-1/4" washer for use with all screw/washer assemblies



Optional Fender Washer:

Fender Washer: Zinc plated or Stainless Steel, #10 x 1-1/4".



## Fastener Chart For CastleRock/ICAP Panels

Type X Gypsum Sheathing, Wood or Metal Studs with OSB/Plywood Sheathing

### 5/8" Densglass Type X Gypsum

<u>Spax® Brand</u>	Densglass® Type X Gypsum	ICAP Panel Size	
		<u>up to 24" Narrow Direction</u>	<u>Lbs./sq.ft.</u>
1/4" Power Lag	Fasteners Spacing C-C	4"	103.6
	Fasteners Spacing C-C	6"	77.7
VersaFast™ VF-3250	Fasteners Spacing C-C	3"	92.2
	Fasteners Spacing C-C	4"	73.7

### 5/8" GlasRoc Type X Gypsum

Fastener	Sheathing	ICAP Panel Size	
<u>Spax® Brand screws</u>	GlasRoc® Type X Gypsum	<u>up to 24" Narrow Direction</u>	<u>Lbs./sq.ft.</u>
1/4" Power Lag	Fasteners Spacing C-C	4"	136
1/4" Power Lag	Fasteners Spacing C-C	6"	102
VersaFast™ VF-3250	Fasteners Spacing C-C	4"	103.6
	Fasteners Spacing C-C	6"	77.3

Note: All Lbs./sq.ft. rating include ASTM E330 safety margin calculation

### To Wood or Metal Studs with OSB/plywood Sheathing

Fastener to Stud			
<b>Metal Stud</b>	<b>Wood Stud &amp; Sheathing</b>	<b>Fastener to OSB/Plywood</b>	<u>Lbs./sq.ft.</u>
# 10x 1-1/4" TEK Screw	#10 x 1-1/4" Deck Screw	Studs & 4" O.C. to Sheathing	88

### Fastener to OSB/plywood Sheathing with Staples

OSB/Plywood Sheathing	Fasteners to Studs	Fastener Spacing	<u>Lbs./sq.ft.</u>
1" Crown x 2-1/2" Staples	Not Required	3" O.C.	126

All fasteners require min. 1-1/4" diameter corrosion resistant fender washers. Some areas near salt water may require stainless steel fasteners and washers or 1,000 hour corrosion resistant screws. Check with you local building official for code compliance in your area. (Note: ICAP fasteners are concealed in the foam and not exposed to exterior elements.

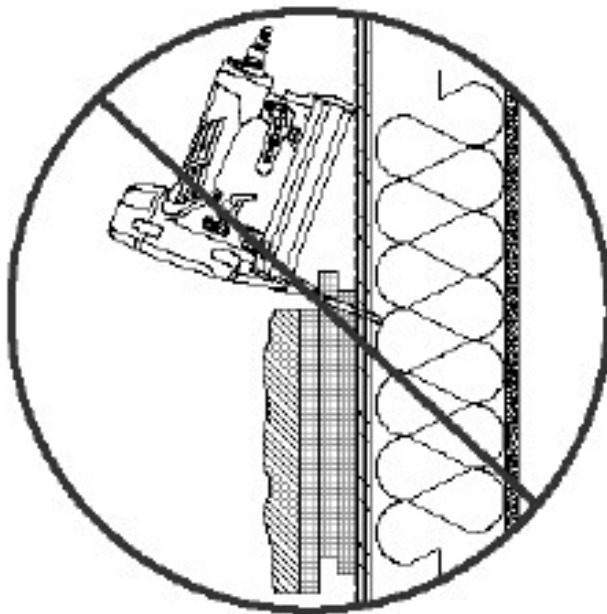
## Fastener Installation:

Install all fasteners horizontal as illustrated below. Fasteners must be located in the foam area of the panel and not impede the ability of the groove of the next panel to interlock.

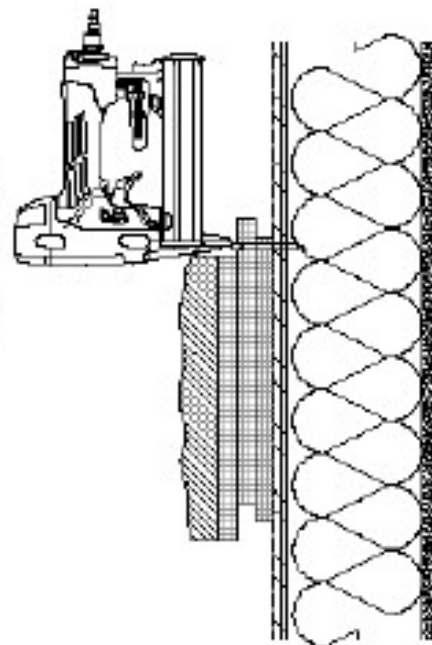
### **NOTE:**

STAPLE LOCATION:  
SET AIR PRESSURE SO  
THAT STAPLE IS  
IMBEDDED  $\frac{3}{8}$ " INTO THE  
EPS.

STAPLE W/ 2  $\frac{3}{8}$ " LONG  
STAPLE.



**INCORRECT METHOD**



**CORRECT METHOD**

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

NO. 01	WALL DETAIL	ICAP WALL	STAR ELEMENTARY SCHOOL 7th N. STAR RD. STAR, IDAHO	PRELIMINARY NOT FOR CONSTRUCTION
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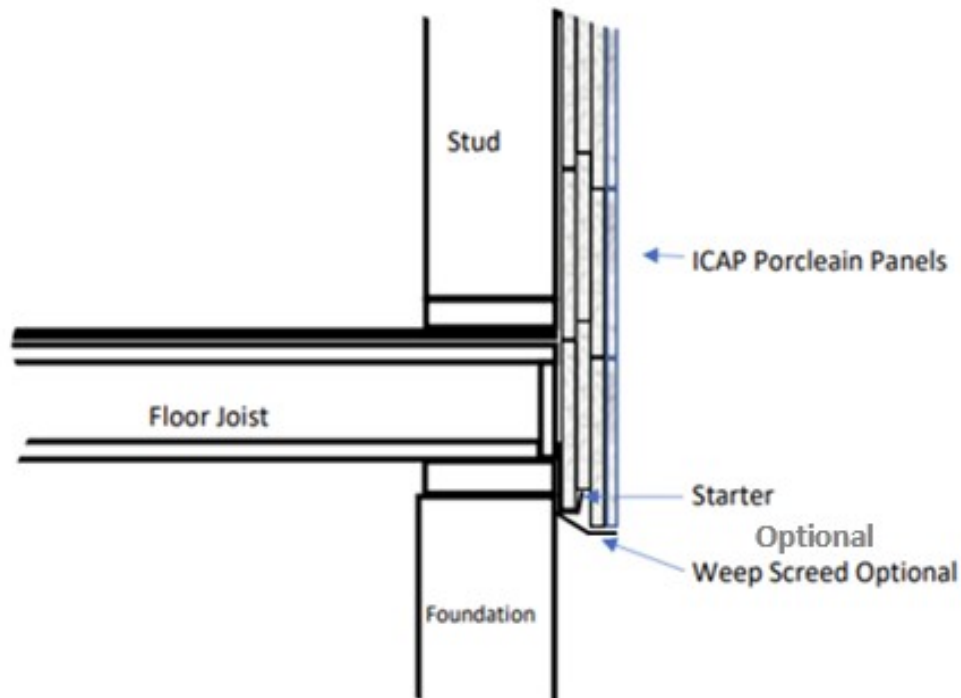
CastleRock Panels are a very simple 1-piece panel that interlocks similar to Lego's and staples or screws to the wall. Installation is fast and easy and can be done by tile installers, siding installers, carpenters, or most anyone with some mechanical abilities.

**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**





# Installation 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.

CastleRock recommends the use of “sprayed” liquid applied water barriers or synthetic weather barriers i.e. Tyvek, etc.

## Execution:

**Step #1:** Install the starter metal at the base of the wall and any sides where the groove in the panel does not interlock with the adjacent panel.

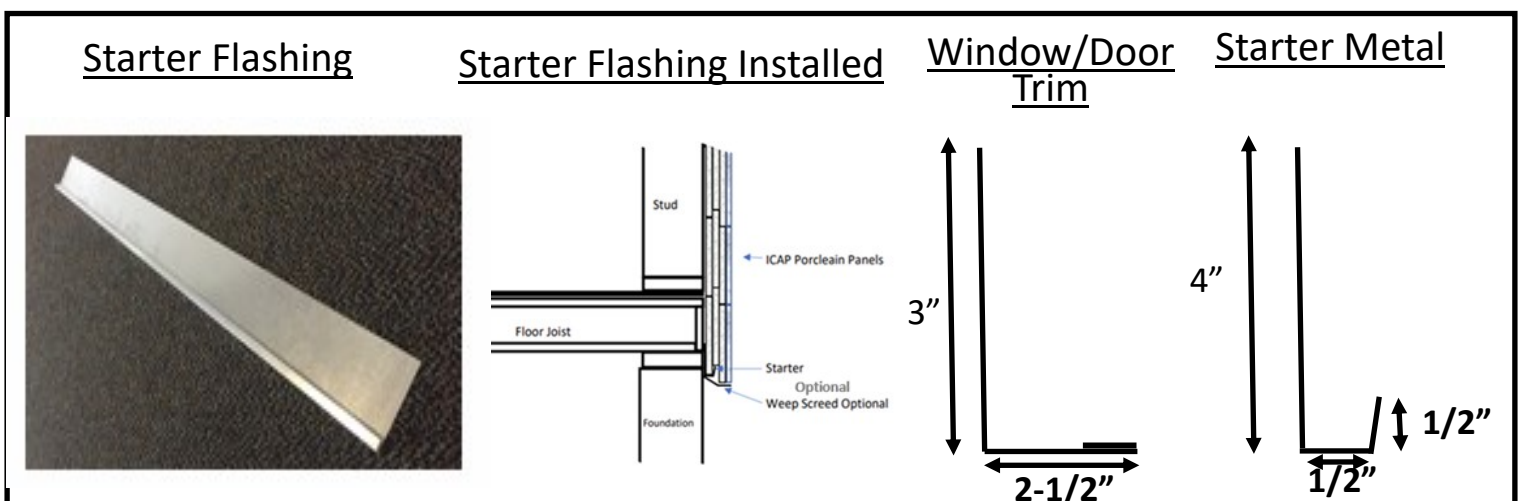
Use a laser level, transit or use the foundation to create a level line to install the starter to. Straight and level is critical.

**Step #2: Install Window/Door, Opening Flashings:** Install window flashing around windows/doors and other openings.

**Step #:** Install the first row of panels beginning on the left and working to the right. Use a 4ft or longer level on the top of the porcelain to check straightness. It is recommended to use screws in the first row so if you have to make adjustments they can be easily removed. You can come back afterwards and staple once you are convinced the first row is straight and level.

**Step #3:** Install the second row checking with the level/straight edge to ensure straightness and level. If you are staggering the vertical seam, cut the grooved end off of the first panel (usually 1/2 or 1/3/2/3 stagger) After this panel is installed, resume using full panels until you reach the other end. The last panel will require cutting and fitting.

Go to next page

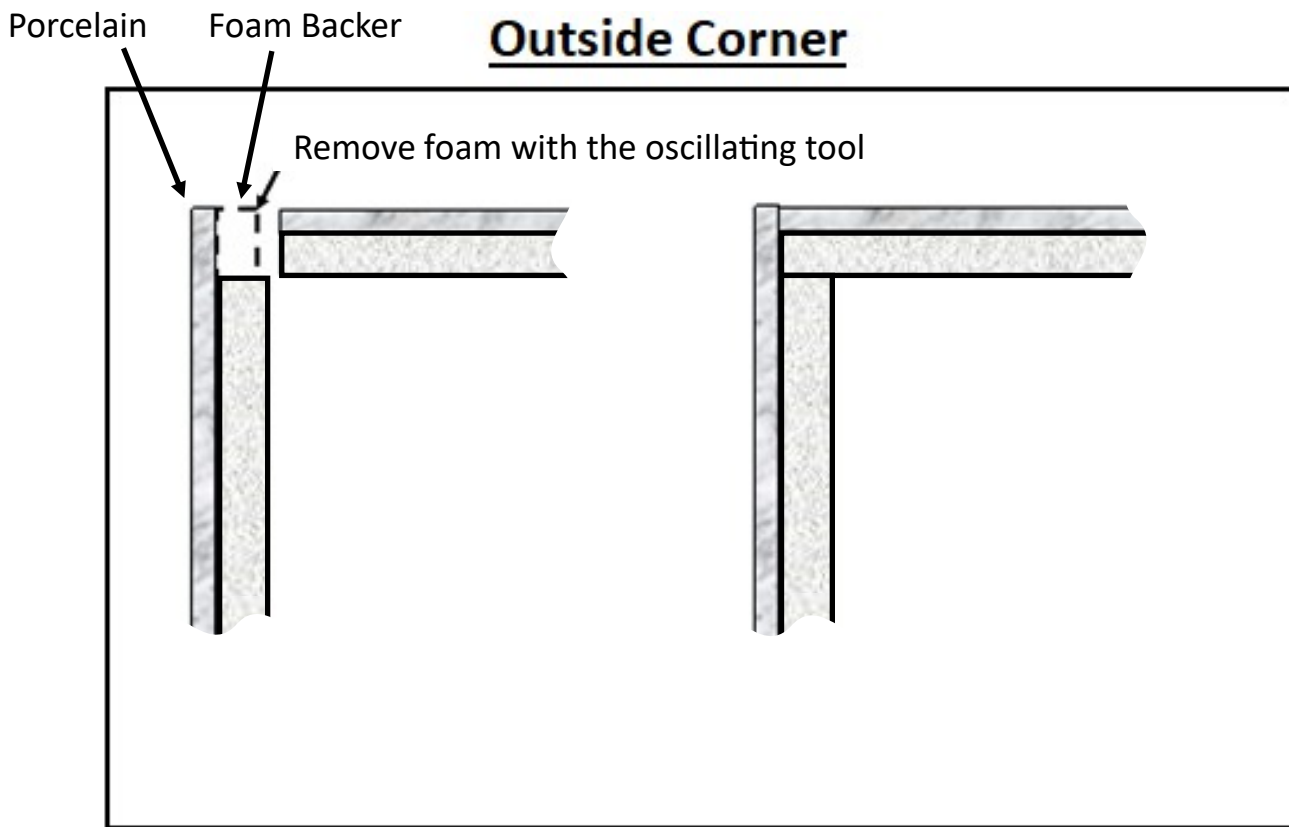


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**Step #4: Window , Door or opening:**

When you reach a window or door, cut the porcelain panels to fit leaving about 1/8" gap for caulking. Once installed, mask both surfaces and caulk the gap with colored or paintable silicone type caulking. If the joint is wider than 1/8", backer rod may be necessary.

The top of the window, door or opening may require cutting the porcelain panel the horizontal distance. Remove the porcelain from the bottom of the panel to keep the top tongue level. Building codes usually require metal flashing above windows, doors and openings. After installing flashings and fitting the tile panel, caulk it in a similar manner as the sides.



**Step#4:**

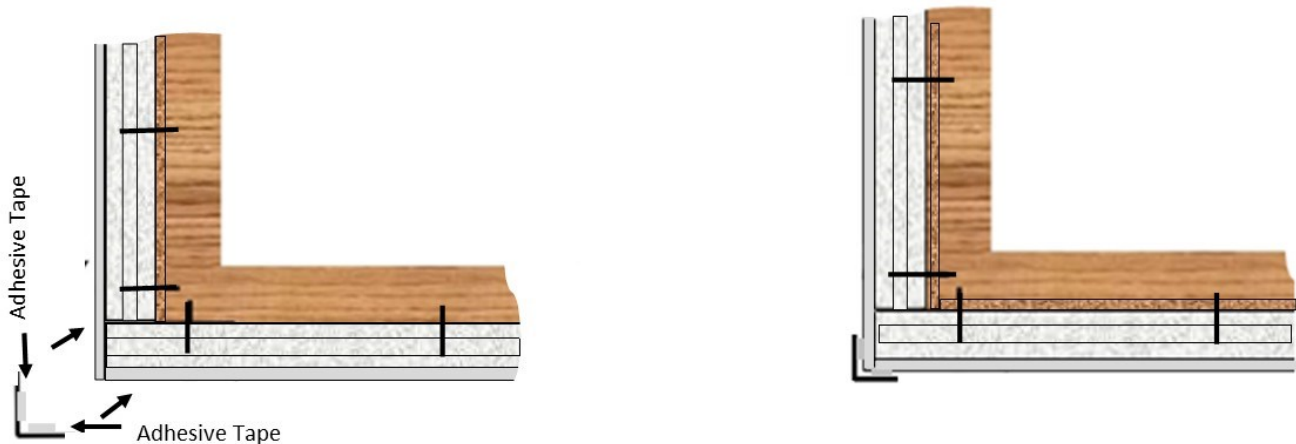
**Upper terminations:**

**Soffit:** Cut the top panel 1/2" short to allow it to fit between the upper panel and the soffit and slide down into place and interlock with the lower panel. Use backer rod and silicone to caulk this space. Install a 1"x1' L-shaped formed metal piece which screws to the soffit and overlaps the face of the porcelain to retain the panel to the wall and serve as a trim piece to hide the caulking at the top.

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# CastleRock Outside Corners for Flush or Lap Siding

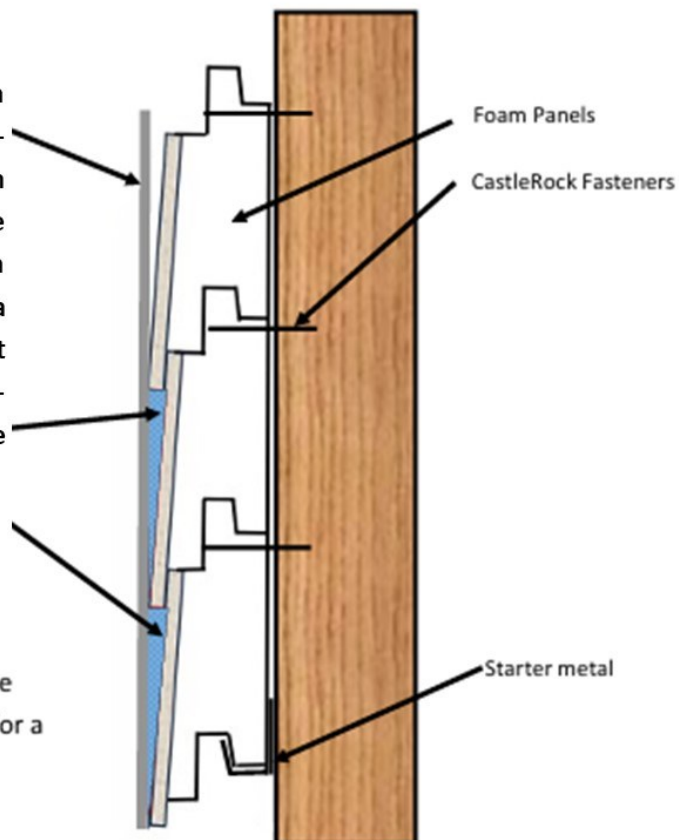
- 1) Notch the foam on the back of the porcelain to fit as shown.
- 2) Install on the wall as shown
- 3) Apply factory supplied 2-sided foam tape to the inside flanges of the colored metal flashing



Apply duct tape or equivalent on the porcelain parallel to the flashing to prevent excess caulking from getting onto the porcelain. The foam tape will hold the flashing in place while the sealant cures. Use a putty knife to trowel excess sealant at a 90 degree angle from the flashing. After the sealant cures, remove the tape.

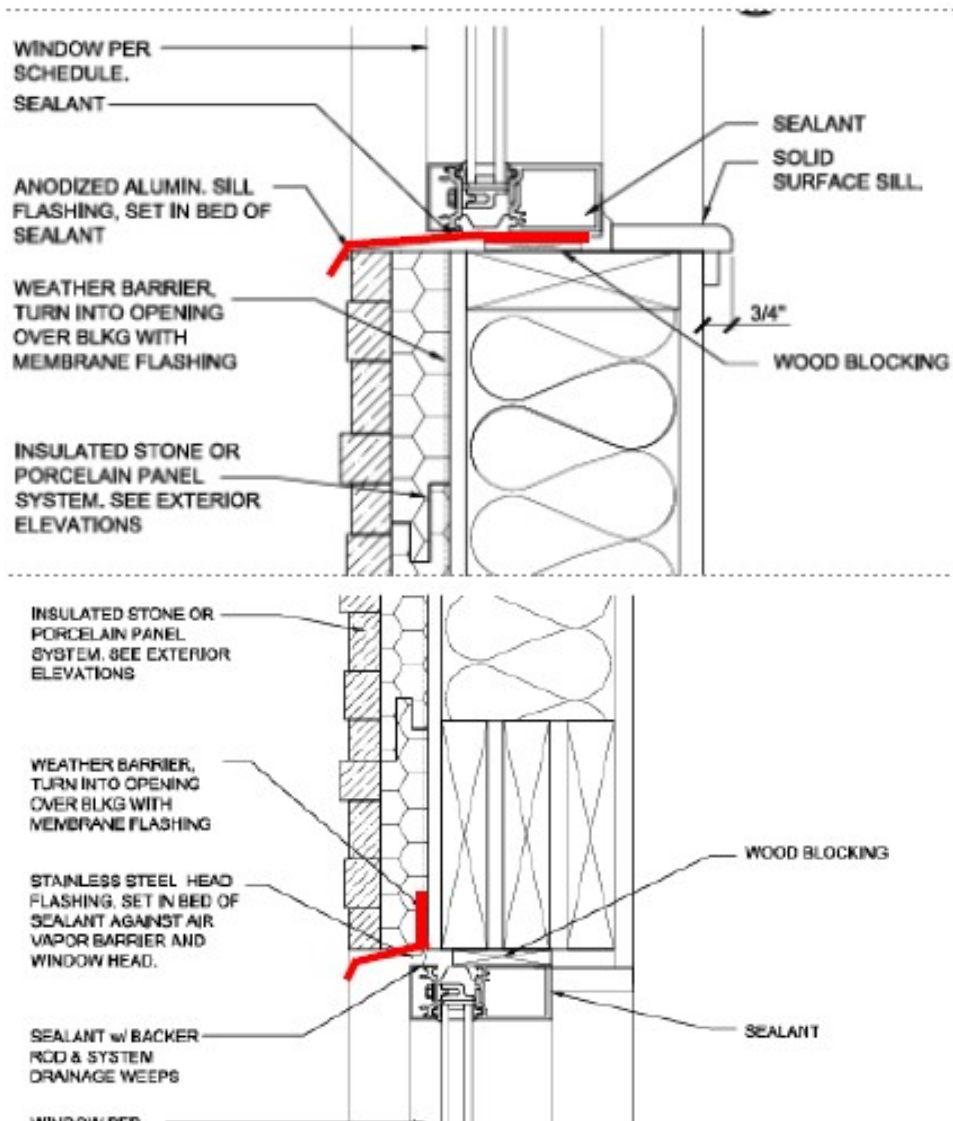
**Note:**

1/8" 2-sided foam tape will space trim away from siding to allow for a caulking



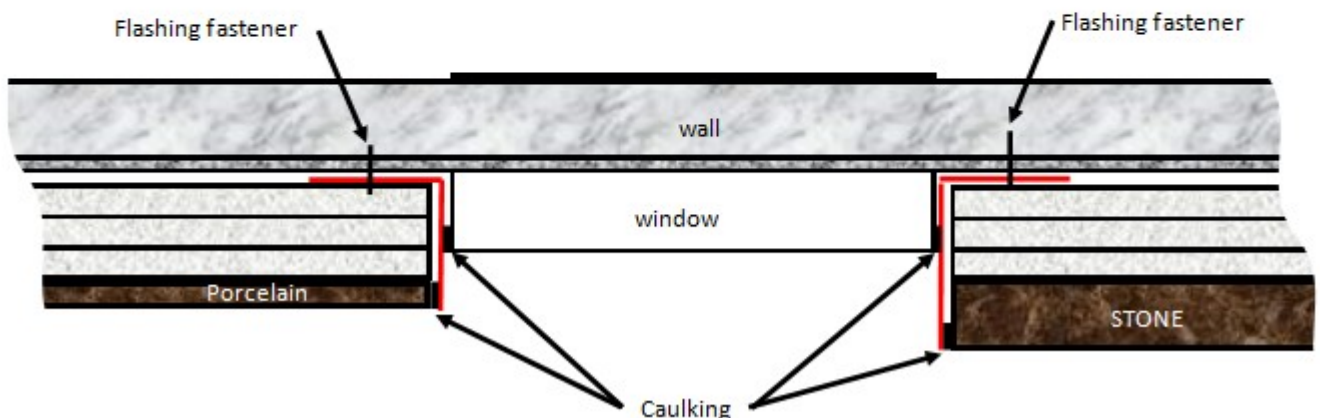
# Typical Porcelain Returns on Recessed Window

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## Side Window/Door Flashings

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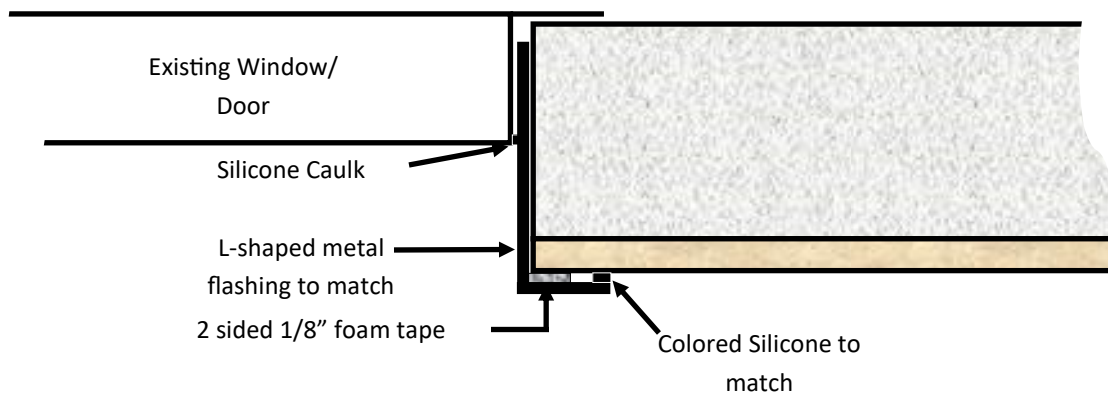
8

## Optional Porcelain Return on Butt End or Window Termination



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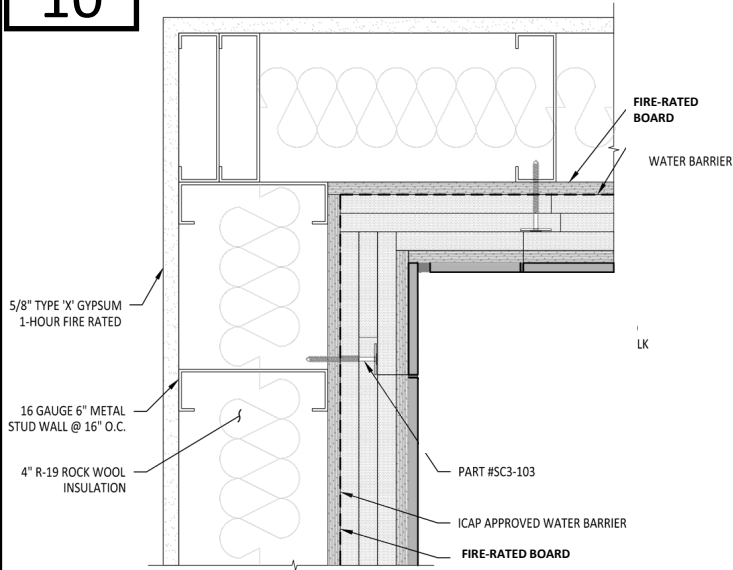
## Self-flashing Window Trim for Installation after siding is installed



Note: Traditional Metal Flashing required above the or window/door

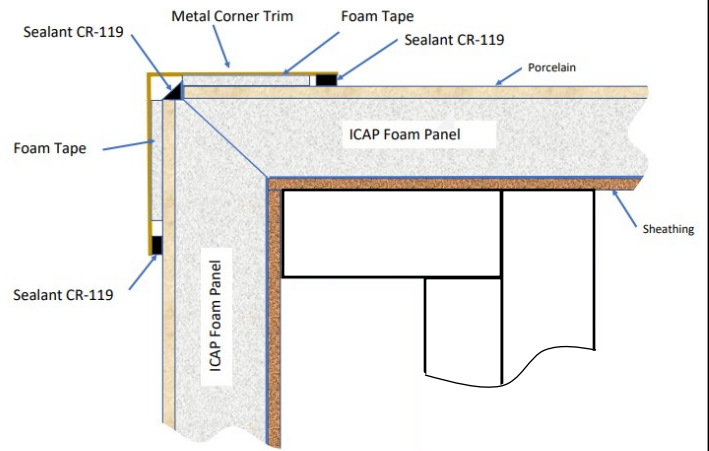
10

Inside Corner



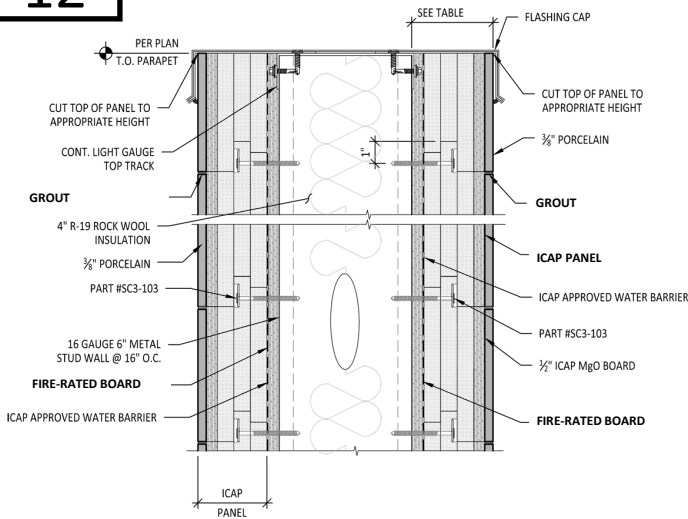
11

Outside Corner



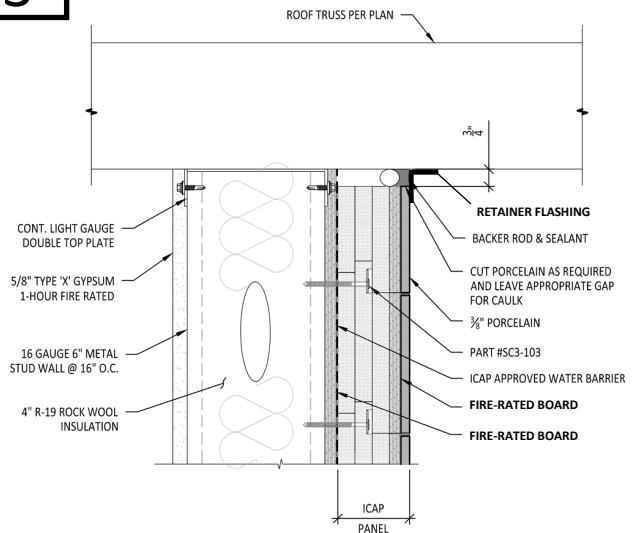
12

Parapet Cap



13

ICAP to Soffit Overhang



R-12 .25 INSULATION TABLE

<u>ICAP PANEL MATERIAL</u>	<u>TOTAL PANEL INCHES</u>	<u>MILLIMETERS</u>	<u>PANEL R-VALUE</u>
EPS FOAM	2.00"	50.8/101.6	R-9.70
BONDING ADHESIVE	.0625"	1.5875	N/A
PORCELAIN	.375"	9.525	R-.34
TOTAL	3.1875"	80.9625	R-10.04

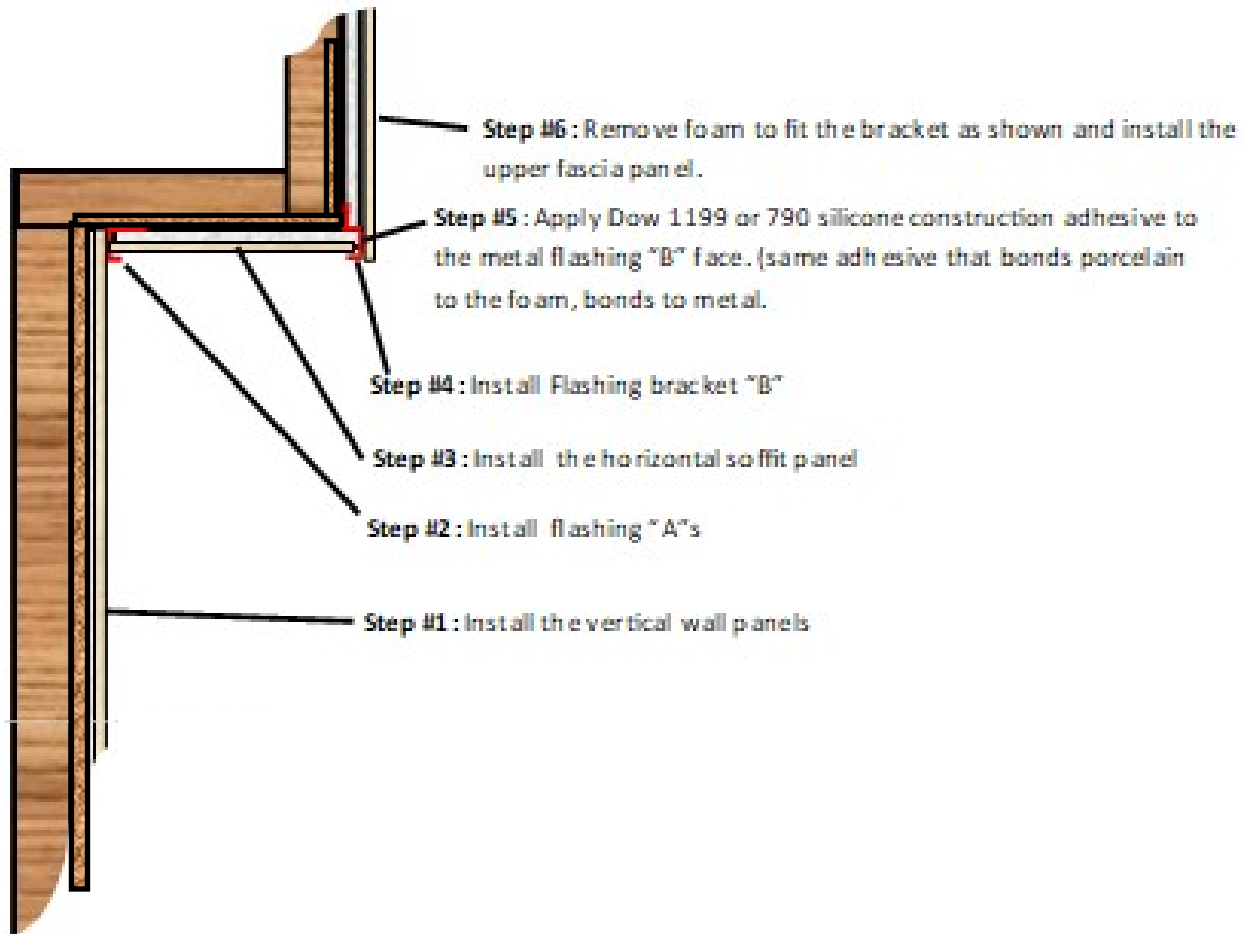
NOTE:

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

## Installing panels around complex framing

Configuration below can be applied to top, bottom & sides of structure



# 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



# CastleRock™

## 40 Year Insulated Porcelain Cladding Limited Material Warranty

This Warranty is effective as of 01/15/2025 and supersedes all previous warranties

P.O. Box 1258 Meridian, ID 83680 Phone: (208) 859-4200 email: les@castlerockx.com

### WHAT DOES THE LIMITED WARRANTY COVER?

InsulStone, Inc., DBA CASTLEROCK™, warrants to the original purchaser/consumer at the time the product is installed, to be free from defects in material and workmanship during manufacture for a period of 40 years from the date of retail purchase to the first owner of the structure to which the product is applied and to the first transferee (each a "Covered Person\*").

This warranty is limited to the terms and conditions, exclusions and limitations, requirements and legal rights stated in this Warranty. In the event of repair or replacement under the terms of this warranty, the original warranty shall be limited to replacement or repair of the defective product and will extend for the balance of the warranty period from the date of the original installation. The coverage offered by this Express Limited Materials Warranty to the original purchaser and may only be transferrable to subsequent purchasers with the prior written approval of CASTLEROCK/INSULSTONE.

### WHO IS COVERED AND WHAT WILL WE DO?

Should a material defect occur within 40 years of the original purchase by the registered purchaser, the manufacturer will in its sole discretion, replace the defective product before it is installed, or, during the first 40 years, reimburse the party for losses up to no more than twice the manufacturers selling price of the defective portion of the Product. After the 40 years all warranty coverage shall cease, and the warranty coverage shall be terminated. The Manufacturer's replacement of the defective product or granting of a refund pursuant this Warranty shall be the in its sole discretion and the sole exclusive remedy available to the covered party with respect to any defect. MANUFACTURER WILL NOT REFUND OR PAY ANY COSTS IN CONNECTION WITH LABOR OR ACCESSORY MATERIALS.

### WHAT DOESN'T THIS WARRANTY COVER?

This warranty **does not cover** damage of any kind resulting from:

- Faulty or improper installation
- Labor for repair or replacement of warranted parts.
- Shipping costs for replacement parts.
- Movement, waving, buckling, or other distortions.
- Damage from impact or contact with foreign objects, chemicals, etc.
- Damage from failure to properly maintain the Product.
- Installation of the Product in direct contact with dissimilar materials or use of incompatible caulking, adhesives, fumes, vapors or coatings.
- Changes in the surface color resulting from exposure to the elements (i.e. soiling, staining or discoloring resulting from local conditions, exposure to harsh cleaning materials or tools which InsulStone, Inc. has no control over.
- Settlement or shrinkage of the property or structure.
- Fire or heat from barbeques, heaters, vents, etc.
- Lightning, hurricane, tornado, windstorm, earthquake, hail, snow or ice accumulation, or other acts of God.
- Surface deterioration from air pollution, hard water or seacoast environment.
- Abuse, misuse, vandalism, or abrasion.
- Product that has been painted, coated, colored, or altered.
- Chips, cracks that do not affect the performance of the Product are not covered under this warranty.
- Any other causes beyond InsulStone/CASTLEROCK/INSULSTONE's reasonable control.

### OTHER LIMITATIONS:

1. CASTLEROCK/INSULSTONE cladding is designed for use as a wall covering in accordance with its published installation instructions and should not be used as roofing, floors, on ceilings, or in locations that require watertight protection.
2. INSULSTONE reserves the right to discontinue or change any design, color or texture, of any of our products at any time and without notice or liability. If, for any reason, you make a warranty claim and the product type originally installed is no longer available, we may substitute another product determined by us to be of comparable quality and price.
3. There are no warranties expressed, implied, or written that CASTLEROCK/INSULSTONE accepts responsibility for other than this Warranty.
4. CASTLEROCK/INSULSTONE IS NOT RESPONSIBLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING OUT OF ANY BREACH OF THIS EXPRESSED WARRANTY, OR ANY OTHER ORAL, WRITTEN, OR IMPLIED WARRANTY THAT MAY APPLY TO YOUR PURCHASE, AS IT RELATES TO OUR PRODUCTS.
5. THIS IS YOUR EXCLUSIVE WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. FAILURE OF PART OF THIS WARRANTY TO COMPLY WITH LOCAL OR FEDERAL LAW DOES NOT VOID DOCUMENT IN ITS ENTIRETY. This warranty shall be interpreted under the laws of the State of Idaho.

### HOW DO I REGISTER THIS WARRANTY?

One application per property location where CASTLEROCK/INSULSTONE cladding is installed must be completed and mailed to CASTLEROCK/INSULSTONE, P.O. Box 1258 Meridian, ID 83680 within 30 days after the original installation has been completed. The notice should include the following:

- (1) Name of owner.
- (2) Address of property or location of the installation
- (3) Date of purchase
- (4) Proof of purchase

### HOW DO YOU SUBMIT A WARRANTY CLAIM?

You must submit a claim in writing with us within the warranty period and within a reasonable period of time after the defect is discovered.

To initiate the claim, please go to [www.CastleRockx.com](http://www.CastleRockx.com), contact us or email us at [les@castlerockx.com](mailto:les@castlerockx.com), or by mail at:

CASTLEROCK/INSULSTONE, PO Box 1258, Meridian, ID 83680. Phone#: 208.859.4200

ANY REPAIR OF THE PRODUCTS UNDERTAKEN WITHOUT PRIOR WRITTEN AUTHORIZATION FROM CASTLEROCK/INSULSTONE PRIOR TO RECEIVING WRITTEN APPROVAL FROM INSULSTONE, INC. WILL VOID THIS WARRANTY.

This Warranty is effective as of 01/14/2025 and replaces all prior warranties.

Owner \_\_\_\_\_

Installation Address: \_\_\_\_\_

Name of installing Contractor: \_\_\_\_\_ Date Installed: \_\_\_\_\_

Date of Completion: \_\_\_\_\_

Phone # \_\_\_\_\_ Owner Signature \_\_\_\_\_

Return a copy of this Limited Materials Warranty to CASTLEROCK/INSULSTONE PO Box 1258 Meridian,