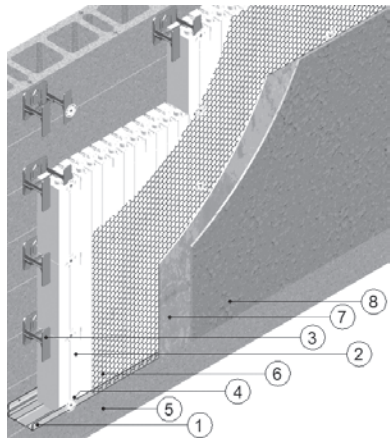
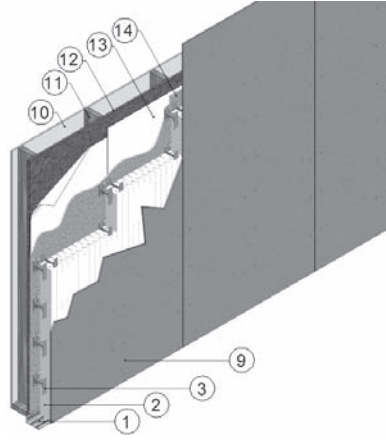


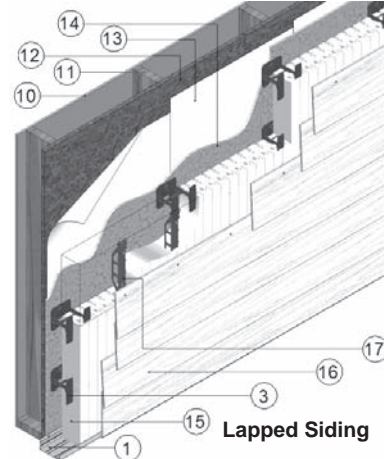
## FINISHES



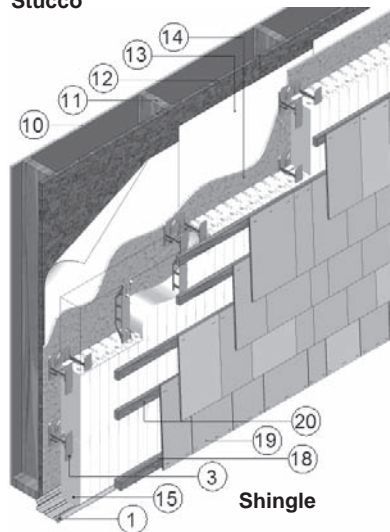
**Stucco**



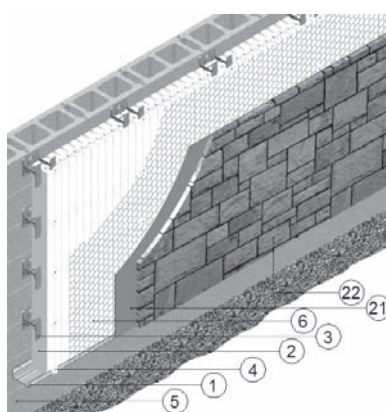
**Panel**



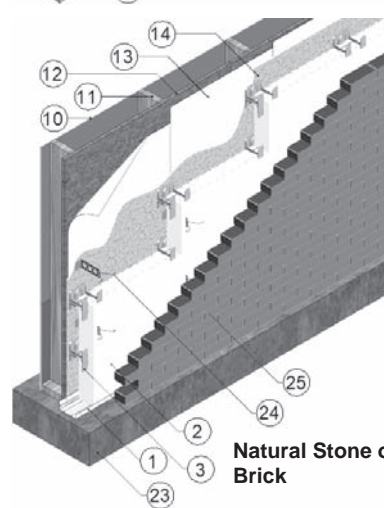
**Lapped Siding**



**Shingle**



**Cultured Stone or Brick**



**Natural Stone or Brick**

1. R-ETRO Track
2. Plus Panel
3. R-ETRO Ties Fastened to Existing Construction
4. Wind-lock Screws or Similar
5. Existing Construction
6. Fiber or Steel Mesh – Fastened to R-ETRO Ties
7. Base Coat
8. Stucco Finish

9. Fiber Cement Panel Siding – Fastened to R-ETRO Ties
10. Existing Sheetrock
11. Existing Studs
12. Existing Sheathing
13. Existing Water/Air Barrier
14. Existing Exterior (Stucco) Finish
15. FS Plus Panel
16. Siding Finish
17. FS Strip (integrated in FS Panels)

18. Starting Furring Strip
19. Cedar Shake Finish or Similar
20. Horizontal Furring – Fastened to FS Strips
21. Adhesive Grout
22. Cultured Stone
23. Existing Footing Strip
24. Brick Ties Fastened to Existing Construction
25. Brick Finish

**QUAD-LOCK BUILDING SYSTEMS**

Phone: 604.590.3111 Toll Free: 888.711.5625  
 Email: info@quadlock.com Web: www.quadlock.com  
 Head Office: 7398-132nd St., Surrey, BC, Canada V3W 4M7

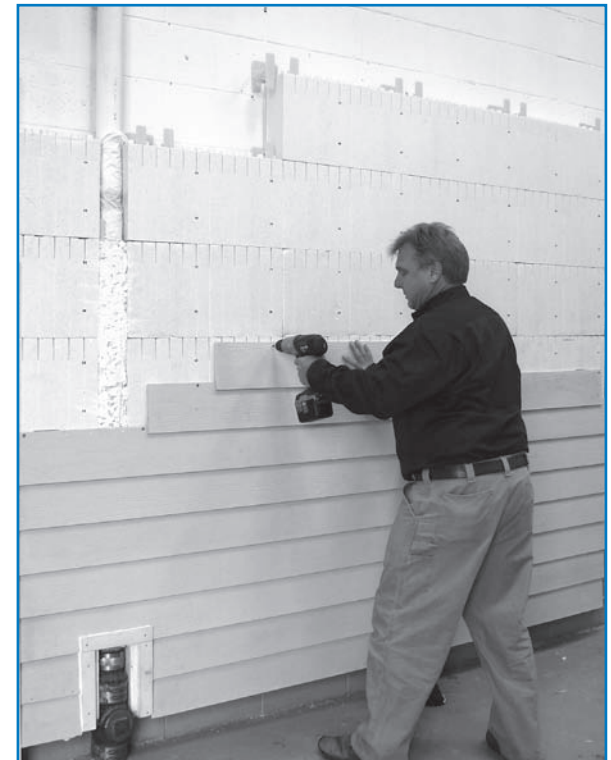
### LIMITED PRODUCT WARRANTY

Quad-Lock Building Systems believes the information herein contained to be accurate at the time of preparation and has been compiled using sources believed to be reliable. Quad-Lock Building Systems assumes no responsibility regarding the use of its products. It is the responsibility of the user to comply with local, state/provincial and federal regulations concerning the use of these products. Quad-Lock Building Systems warrants its products to be free of defects affecting their use and will replace or refund the purchase price, at its option, of product proven to be a manufacturing defect. This warranty shall be exclusive and in lieu of any other warranty, express or implied, including those arising by operation of law, custom trade or otherwise.

**R-ETRO SYSTEM**  
 What's old is new again...

# INSTALLATION GUIDE

*Here's How The Pros Do It!*



## Step by Step

- Interior Applications •
- Exterior Applications •
- Components & Accessories •

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*Quad-Lock holds worldwide patents on its products.*

## ESTIMATING

### 1. Obtain the following information from the plans and specifications:

Length of walls to be insulated (lineal feet or meters).  
Height of walls to be insulated (lineal feet or meters).  
Measure the size of door, window, and other openings; Determine total area of openings (sq. ft. or sq. meters).

### 2. Using the information determined in #1:

Calculate the total square footage of the wall, i.e.  
 $\text{Length} \times \text{Height} = \text{Total wall area}$   
Subtract window and door area to determine net wall area to be insulated (sq. ft. or sq. meters).

### 3. Panel Pairs required:

Calculate the required number of panels by dividing the net square area (sq. ft. or sq. meters) of insulation area by: 8 sq. ft per panel pair, or .74 sq. meters per panel pair.

**Note: All panels are sold in pairs.**

### 4. Plus Ties required:

Your job will require either 2 or 4 ties per panel, depending on load applied (see Fastening Requirements table).

To cross check: Divide net square area of insulation, either by 2 or 1 to arrive at total ties required.

**Important:** Add extra ties for each opening and each corner for every level of panels.

### 5. Plus Top Ties required:

Total lineal footage divided by 2 (or 1 depending on wind-loading - see Fastening Requirement section for more details) .

### 6. R-ETRO Track required:

Total lineal footage x 1.

### 7. Track Fasteners required:

Total lineal footage divided by 2.

### 8. Wind-locks required:

Box of 1000.

## CODE REFERENCES

### ELECTRICAL

NEC 300.4 (USA)

Required distance of cables to surface framing.  
\*\*This applies to electrical cable installed in Plus Panels as well. The stated minimum depth must be maintained from the surface of the foam to the cable.

NEC 300.14 (USA) | CEC Part 1, 12-3000(5) (Can)  
Requirements for the minimum length of conductors.

NEC 334.30 (USA) | CEC Part 1, 12-3022 (Can)  
Requirements for securing cables.

NEC 314.16 (USA) | CEC Part 1, 12-3034 (Can)  
Requirements for minimum size of electrical boxes.

NEC 110.14 & 300.15 (USA)  
Requirements for development of splices in boxes.

NEC 314.19 (USA) | CEC Part 1, 12-3014 (Can)  
Junction box accessibility.

NEC 110.12 & 314.17 (USA) | CEC Part 1, 12-3024 (Can)  
Unused openings in boxes.

### FOAMED PLASTIC INSULATION

IRC R314.1 to R316 (USA)

Outlines requirements for use of foam plastic insulation in residential structures, including surface burning characteristics, use of thermal barriers, use in attics and crawl-spaces and termite damage.

IBC Chapter 26, Section 2603 (USA)  
Outlines requirements for use of foam plastic insulation in non-residential structures, including surface burning characteristics, use of thermal barriers, use in attics and crawl-spaces and termite damage.

NBC Part 9, Section 9.10.17.10 (Can)  
Outlines requirements for protection of foamed plastics in residential structures.

NBC Part 3, Sections 3.1.4.2 & 3.1.5.12 (Can)

Outlines requirements for protection of foamed plastics in non-residential structures.

## FASTENING REQUIREMENTS

### INTERIOR FASTENING REQUIREMENTS

IMPERIAL		Concrete	Hollow Block	1/2" Plywood
Loading	R-ETRO Plus Tie O.C. Distance (in)	Tapcon Screw Length & Diameter	Tapcon Screw Length & Diameter	Wood Screw Length & Diameter
Drywall + 0 to 20 psf	24"	1.25" x 3/16"	1.25" x 3/16"	1.25" x #6
Drywall + 21 to 40 psf	24"	1.25" x 3/16"	1.25" x 1/4"	1.25" x #8

METRIC		Concrete	Hollow Block	13mm Plywood
Loading	R-ETRO Plus Tie O.C. Distance (mm)	Tapcon Screw Length & Diameter	Tapcon Screw Length & Diameter	Wood Screw Length & Diameter
Drywall + 0.96 kPa	610mm	32mm x 4.8mm	32mm x 4.8mm	32mm x 3.6mm
Drywall + 1.92 kPa	610mm	32mm x 4.8mm	32mm x 6.35mm	32mm x 4.0mm

### EXTERIOR FASTENING REQUIREMENTS

IMPERIAL		Concrete	Hollow Block	1/2" Plywood
Design Wind Pressure (psf)	R-ETRO Plus Tie O.C. Distance (in)	Tapcon Screw Length & Diameter	Tapcon Screw Length & Diameter	Wood Screw Length & Diameter
0 - 30	24"	1.25" x 3/16"	1.25" x 3/16"	1.25" x #6
30 - 40	24"	1.25" x 3/16"	1.25" x 1/4"	1.25" x #8
40 - 60	24"	1.25" x 3/16"	1.25" x 1/4"	1.25" x #10
60 - 80	12"	1.25" x 3/16"	1.25" x 3/16"	1.25" x #6
80 - 100	12"	1.25" x 3/16"	1.25" x 1/4"	1.25" x #8
100 - 115	12"	1.25" x 3/16"	1.25" x 1/4"	1.25" x #10

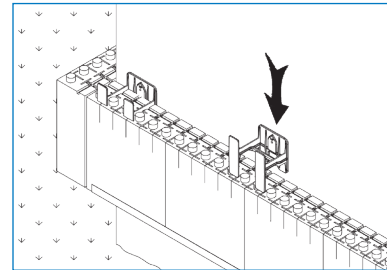
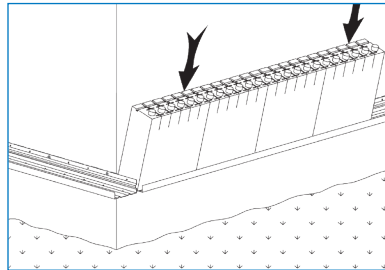
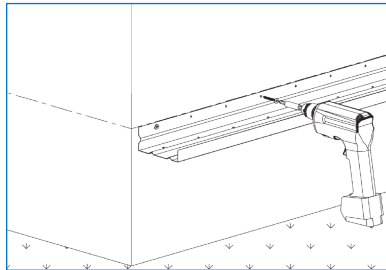
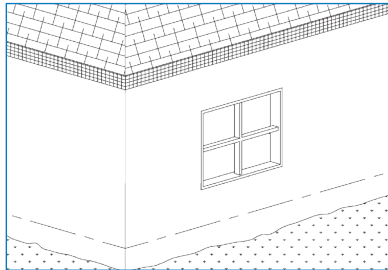
METRIC		Concrete	Hollow Block	13mm Plywood
Design Wind Pressure (kPa)	R-ETRO Plus Tie O.C. Distance (mm)	Tapcon Screw Length & Diameter	Tapcon Screw Length & Diameter	Wood Screw Length & Diameter
0 - 1.45	610mm	32mm x 4.8mm	32mm x 4.8mm	32mm x 3.6mm
1.45 - 1.92	610mm	32mm x 4.8mm	32mm x 6.35mm	32mm x 4.0mm
1.92 - 2.87	610mm	32mm x 4.8mm	32mm x 6.35mm	32mm x 4.8mm
2.87 - 3.83	305mm	32mm x 4.8mm	32mm x 4.8mm	32mm x 3.6mm
3.83 - 4.79	305mm	32mm x 4.8mm	32mm x 6.35mm	32mm x 4.0mm
4.79 - 5.51	305mm	32mm x 4.8mm	32mm x 6.35mm	32mm x 4.8mm

The provisions of this section shall apply to the construction buildings not greater than 60' [18.3m] in plan dimensions, and floors not greater than 32' [9.7m] or roofs not greater than 40' [12.2m] in clear span. Buildings shall not exceed two stories in height above-grade. Walls constructed in accordance with the provisions of this section shall be limited to buildings subjected to a maximum design wind speed of 150 miles per hour [67 m/s], and Seismic Design Categories A, B, C, D0, D1 and D2.

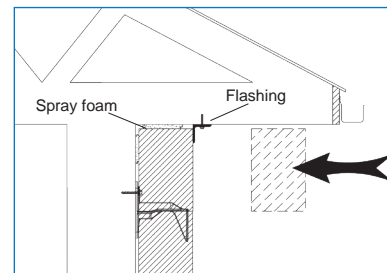
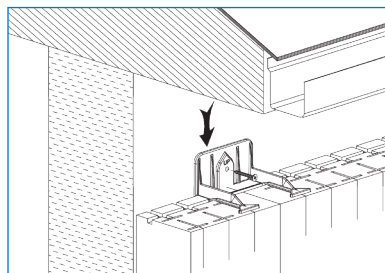
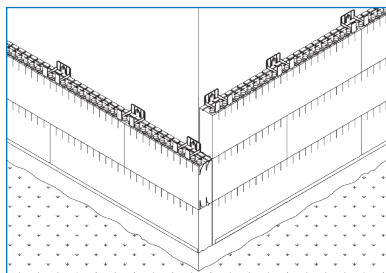
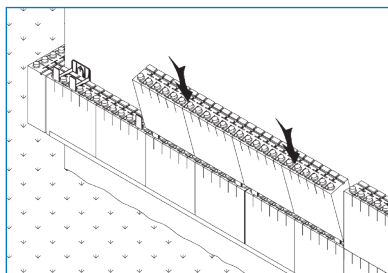
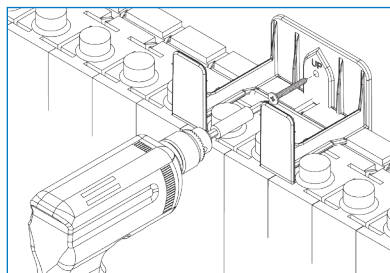
- Vertical spacing is always 12" [305mm] for R-ETRO Ties
- All screws used on the exterior to be exterior rated.
- Screw size assumes 0.25" [6.35mm] of thread to be lost on R-ETRO Tie thickness.
- Factor of Safety = 3.
- Maximum finish weight (Shear) not to exceed 50psf [2.4kPa] for plywood and 70psf [3.4kPa] for concrete and block construction.

## GETTING STARTED

**Note:** Steps shown are for exterior applications; interior applications start from floor level.



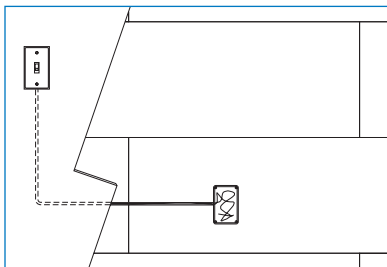
1. Before you start, all existing walls must be inspected for structural soundness
2. Strike a reference line 2" [50mm] above the highest point of interior floors or 2" [50mm] above the planned bottom termination line of the exterior cladding.
3. Position the R-ETRO Track so the top of the 2" [50mm] flange is aligned perfectly with the reference line struck on the building.
4. Starting from the corners, insert the 1st row of Plus Panels into the R-ETRO Track with knobs facing up.
5. Insert Ties into the top panel slots at max. 24" [610mm] intervals. (See the Fastening Requirements section for higher loading conditions.)



6. Drill holes and fasten ties to wall with appropriate screws.
7. Fit Plus Panels over 1st row of ties starting with a 12" or 24" [406mm or 610mm] offset.
8. At 90° corners, Plus Panels can be lapped over one another and do not need to be mitered. Place ties to the wall as close to the corner as possible.
9. At the top of wall, remove interlock knobs with a razor knife and fasten Top Ties in the top panel.
10. Cut last row of panels to fit, push them in, add spray foam and flashing.

## ELECTRICAL

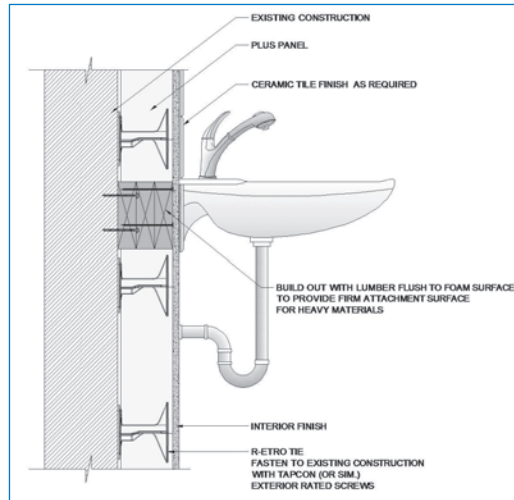
Boxes for switches and outlets should be extended to finish flush with gypsum drywall, siding, stucco or other finishes. Re-positioning of boxes may be necessary to allow for sufficient wire length. It is NOT recommended leaving existing boxes in position below the surface of the R-ETRO System. New boxes may be fastened to plywood shims which are first attached securely to the existing wall. Box extensions may be added to bring the box flush to finish materials. If conduit is fastened to existing walls, cut a channel with a hot knife or circular saw to accommodate the conduit. If conduit is not required, unsheathed cable may be embedded into the EPS foam panels and secured with spray foam. Chases may be cut with a hot knife or electric saw. **See Code References for more information.**



## PLUMBING

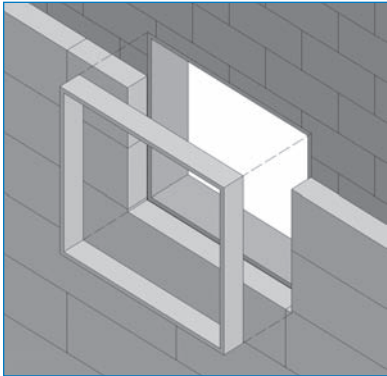
Wherever possible, plumbing fixtures (laundry boxes, water outlets, guttering, drains, etc.) should be brought flush to the new surface of finish materials covering the R-ETRO System. This may entail re-routing supply and drain lines to terminate on a solid wood or metal substrate that is fastened securely to the existing wall. Use treated lumber, treated plywood or galvanized metal to support plumbing fixtures. Attach to the wall with stainless steel fasteners to resist moisture. Do not attempt to fasten fixtures directly to drywall, foam, ties or exterior cladding.

Supply or drain lines may be embedded into the EPS foam panels and secured with spray foam. Chases may be cut with a hot knife or electric saw. Check local codes for protection requirements.



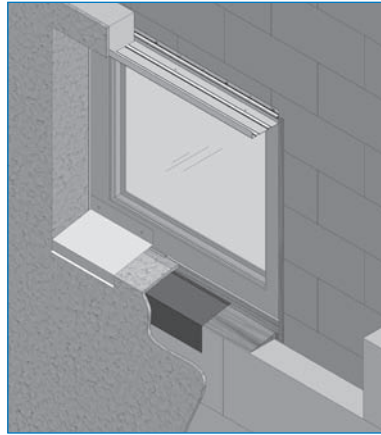


## OPENINGS



### Windows - Interior Applications

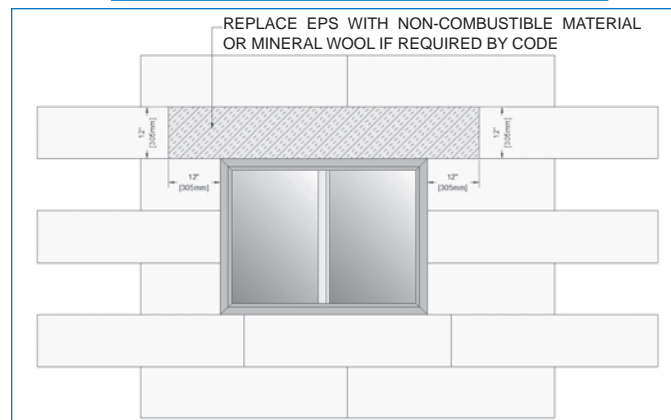
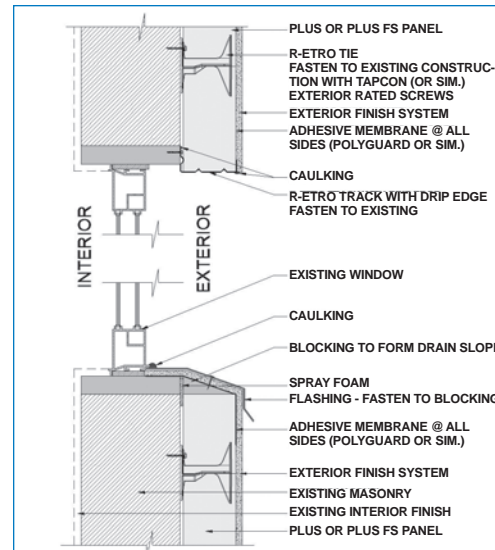
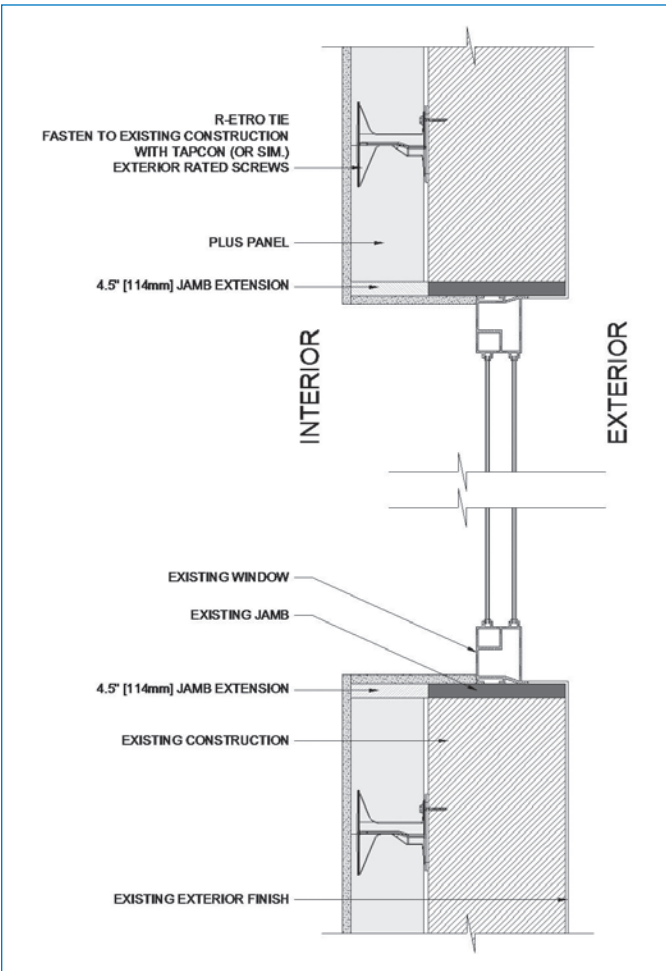
Gypsum drywall can be wrapped around the interior of the opening and held in place with foam adhesive. Butt edges of drywall to window frame and seal with caulking. Alternatively, the old window sill can be removed and replaced with a wider (+4½" [114mm]) wood sill.



### Windows - Exterior Applications

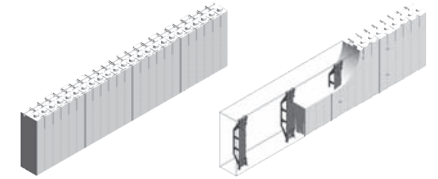
Window openings should be flashed and sealed during a R-ETRO System installation as if they were a new building installation and in compliance with current codes.

**TIP:** Fashion a tapered sill (no higher than the window frame) from a Plus Panel with a saw or hot-knife to promote drainage away from the window. Adhere tapered sill to the existing sill and window frame with spray foam; Coat with stucco or acrylic finish. Seal with caulking against window frame.



## PARTS LIST

**PLUS PANELS**  
QPX2 Plus or QPX2 Plus FS



**R-ETRO Plus Tie**  
RT Plus



**R-ETRO Plus Top Tie**  
RTT Plus



**R-ETRO Plus Metal Track**  
CTP R-ETRO Plus



**Wind-lock Fasteners**  
Stucco - WIND1



**Wind-lock Fasteners**  
Reg. - WIND2



**Track Fastener**  
CTP Fastener



## TOOL LIST

**Tape Measure**



**Laser Level**



**Chalk-Line**



**Small Roto-Hammer**



**Cordless Drill**



**Masonry Bits**



**Circular Saw**



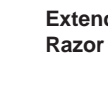
**Drywall Saw**



**Felt Pen**



**Extendable Razor Knife**



**Spray Foam**



**Off-the-Shelf Components:**



**2x2 Galvanized Flashing**



**Concrete/Masonry/Wood/Cement Board Screws**