



# **HERCUWALL**

## **INSTALLATION GUIDE**

V.12.2020

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## Overview

Congratulations on choosing HercuWall®! Please read and follow this installation guide in full. Contact HercuTech support PRIOR to beginning the installation process should there be any questions. Contact us at 855-284-4037 and ask for technical support or call your direct contact with any questions. Thank you for choosing HercuWall®.



## CAUTION

ShearStrip® - warning - do not cut any ShearStrip® without written approval from the project Engineer of Record. ShearStrip® are critical to the structural integrity of the HercuWall® system. HercuTech Inc. is not liable for any structural issues arising from ShearStrip® being cut or altered on the job site. All warranties will be voided if ShearStrip® is determined to have been cut, manipulated, or otherwise altered in any way.

Use caution when handling ShearStrip® and oversized panels to avoid cuts and injuries.

## Parts Included

- Your Project Specific HercuWall® Kit
  - HercuWall® Panels
  - HercuWall® Top Track
  - HercuWall® Bottom Track
  - Seaming Tape
  - Installation Packet

## Tools and Supplies Required

- Safety glasses
- Gloves
- Tape Measure
- 4-foot Level
- Caulk gun
- Utility Knife
- Elastomeric Sealant (meets or exceeds ASTM C 920: Type S, Grade NS, Class 25)
- Scaffold/Bracing
- Ladder(s)
- Pneumatic Concrete Nail Gun or powder-actuated fastener (Optional)
- Ramset concrete nails
- Screw gun w/ #2 Phillips head driver bits
- Modified Truss Phillips Head Screws - #8x3/4", self-drilling, Zinc plated
- Rebar, as specified
- Ready-Mix Concrete per HercuWall Mix Specification
- Concrete pump
- Concrete pencil vibrator
- Steel trowel for concrete finishing
- Rebar Tie Wire
- Tie Wire Twister
- Chalk Line
- Straight-Cut Aviation Snips
- Rafter Square or Speed Square

## Pre-Project Planning and Preparation

### Foundation/ Footing Preparation:

Review the HercuWall® Installation Packet prior to placement of concrete in the footings and/or slab. The drawings in the Installation Packet will identify all rebar requirements as well as locations and sizing needed for installation from the footings/slab to the wall panels.

Validate all dimensions listed in the HercuWall® Installation Packet with the formwork and rebar locations prior to placement of concrete in the footings/slab.

### Bottom of Wall Dowel Installation:

Refer to the HercuWall® Installation Packet for bottom of wall dowel requirements.

- J-Bolts and/or rebar dowels may be used for this step. Please verify the spacing, sizing and projection requirements for the dowels in your HercuWall® Installation Packet.
- Bottom of wall dowels are to be installed prior to, or during, the placement of the concrete slab. If locations are missed, please contact your Engineer of Record and your HercuTech Inc. Project Manager for an epoxy embedded dowel detail.

### Hold Down Installation:

Continuous rebar projecting from the footing/slab into shear wall panels must be installed per the approved construction documents. This information is also available in the HercuWall® Installation Packet for the designed HercuWall® Kit.

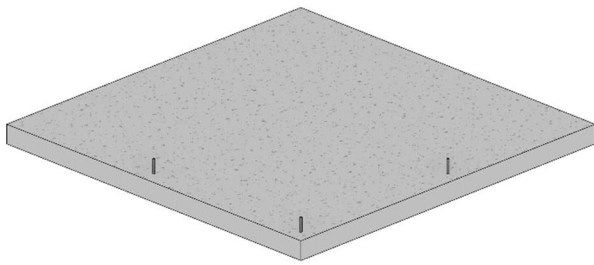
### Scaffold Bracing Recommendations:

HercuTech recommends combination scaffold bracing for safe and easy installation of HercuWall. These systems are offered by: [Plum Wall](#), [Giraffe Bracing](#) and other similar systems available for purchase or rent. 2x4 bracing to the exterior with concrete placed from rolling scaffold. Follow all OSHA guidelines when working at heights and on or around scaffold.

## Section 1: General Installation

### Step 1: Foundation Inspection & Preparation

The foundation will have vertical dowels or rebar studs, projecting three inches above the slab surface, along the perimeter of the house where HercuWall® panels will be installed.

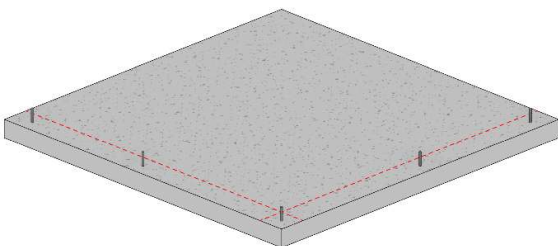


To inspect and prepare the foundation:

1. Measure the slab for accuracy.
2. Clean dirt and obscurities from the perimeter of the slab where HercuWall® will be installed.
3. Be sure dowels or rebar studs are not protruding into door way openings.
4. Rebar must be +/- 1 inch from the centerline of HercuWall®.
5. Measure to ensure that dowel spacing is not greater than specified by the engineer.
6. Repair any deviations in the slab, greater than ¼ inch in 10 feet, per industry standards.
7. If dowels or rebar studs are missing contact your Engineer of Record (EOR) for an engineered solution.

### Step 2: Mark Bottom Track Location

Chalk lines are used to mark the locations where bottom track will be installed. The placement of these lines is documented in the Installation Packet provided with your HercuWall® Kit.



To mark the track locations:

1. Snap chalk lines around the perimeter of the foundation. These chalk lines will represent the interior edge of the HercuWall® bottom track.
2. The chalk lines must match the panel layout in the Installation Packet to ensure proper fit of all wall panels.
3. Verify all door opening locations and mark where the opening will be to show that no bottom track will be needed in that section of the wall.

### Step 3: Install Bottom Track

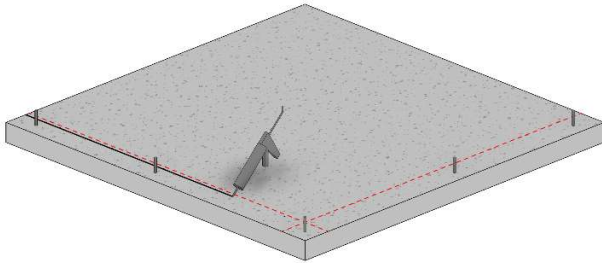
Bottom track is used to locate HercuWall® panels during installation and to prevent movement of the panels during concrete placement. The track is continuous wherever HercuWall® panels contact the slab, with the only exception being door openings.

To install the bottom track:

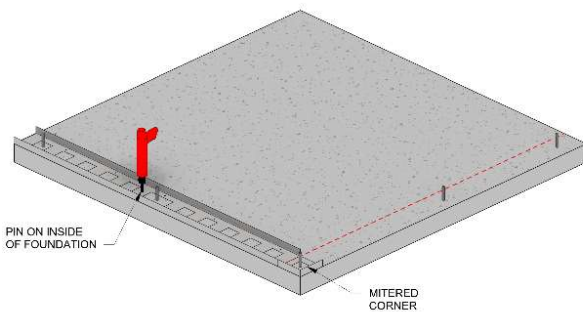
1. It is recommended to start at a corner.
2. When positioning the first length of track, place the track with the interior edge against the chalk line. Place the track so that the punched holes in the bottom of the track align with majority of dowels. Trim the bottom of the track with snips to avoid the remaining dowels.
3. Mark and miter cut the end of the track to 45 degrees, at the slab corner, with the long side being the exterior side. The exterior side of the track is easily identified by the weep holes located along the exterior bottom edge. Corners are miter cut to prevent overlapping of the track.
4. Apply a continuous ¼" bead of elastomeric sealant approximately 1" to the outside of chalk line on the slab where the track will be installed. This will form an air and moisture barrier between the foundation and the track. NOTE: It is recommended to install sealant continuously to edge of slab and at all seams where adjoining track has a butt joint both on the horizontal joint as well as the vertical.

Continued

## Step 3: Install Bottom Track (Continued)



5. Place the track on the slab with the inside edge on the chalk line and the mitered cut aligned with the corner of the slab.
6. Attach, or pin, the track to the foundation using a powder-actuated or pneumatic fastener. Fasteners are recommended to be placed at the midline of the track and are spaced approximately 24 inches apart. For short sections of track, at least two fastening points are required. Pinning the track to the slab is only necessary to prevent the bottom track from moving during installation of panels and concrete.



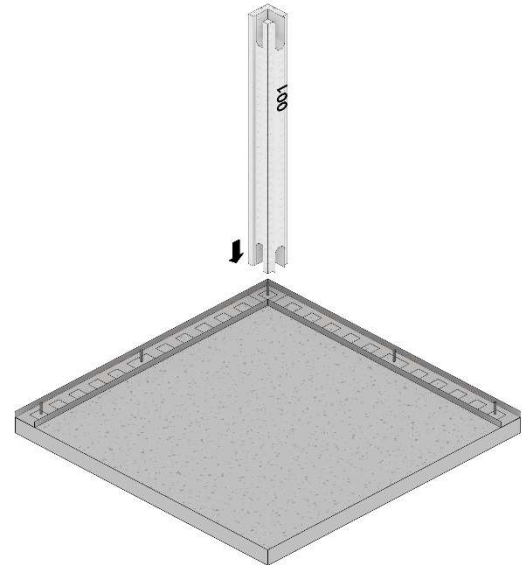
7. Install additional lengths of track in the same manner making sure all corners are miter cut.
8. When a door opening is reached, cut the track so that it does not obstruct the opening.

### \*\*NOTES\*\*

- HercuWall® bottom track is non-structural, so it may be altered to allow clearance for dowels or pipes protruding out of the slab.

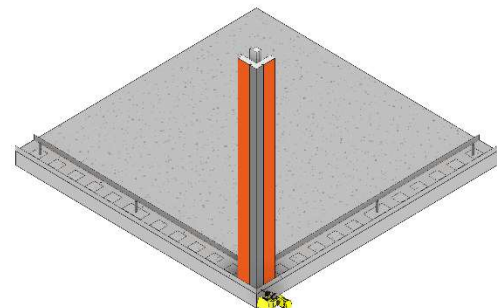
## Step 4: Placing the First Panel

HercuWall® panels are sequentially numbered, starting with 001. The first panel is typically a corner panel. The panel number will be located on the top left interior side of the HercuWall® panel.



### To install the first panel:

1. Place the corner panel into the bottom track making sure it is fully inserted in the track.
2. Use a level to hold the panel roughly plumb in both directions.
3. Install a #8 x 3/4" Modified Truss Head Self-Drilling Screw through the bottom track into each side of the outside metal corner nailer.



## Step 5: Level and Brace the First Panel

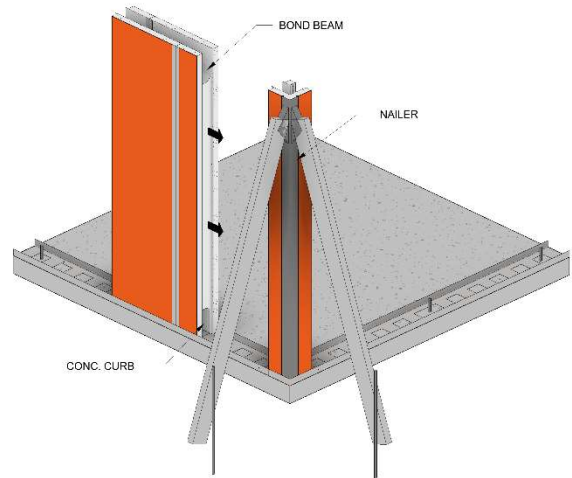
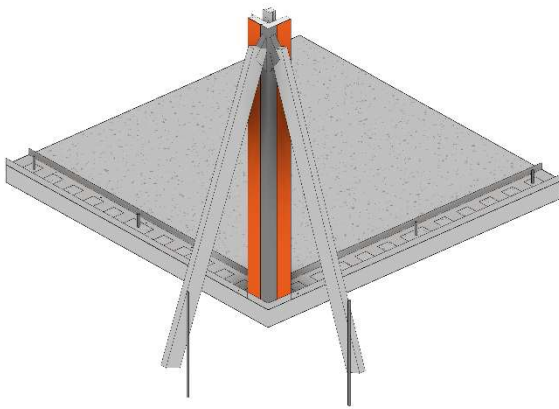
Once the corner is fastened, it is necessary to level and brace this panel. This step is crucial for maintaining straight and level walls.

## To brace the first panel:

1. Attach braces to the corner nailer on the exterior of the building, one facing each direction.
2. Once the panel is plumb, secure the braces.

### \*\*NOTE\*\*

Bracing may be installed on either the interior or exterior side of the wall system. When bracing is installed on interior side of the wall, plumb and level panels 1 and 2 as an assembly



## Step 6: Install Adjacent Panels

The second panel, numbered 002, is placed adjacent to the corner panel (001). The panels interlock by means of a tongue and groove for ease of installation.

The second and third panel, numbered 002 and 003, are placed adjacent to the corner panel (001). The panels interlock with the left and right sides of the corner panel by means of a tongue and groove for ease of installation

## To install adjacent panels:

1. Set the panel into the track adjacent to the previous panel.
2. Slide the panel over to engage with the previously installed panel.
3. Ensure that the tongue and groove is fully engaged.
4. Insert a screw through the bottom track into each ShearStrip® to hold the panel in place.
5. Periodically check that the panels are sitting level in the track by placing a level, vertically, on the narrow end of the panel.
6. Repeat this step until you have 12 linear feet of wall.

### \*\*NOTE\*\*

- For non-standard panels such as windows, doors or shear walls, see *Section 2 Openings and Specialty Panels* for specific installation instructions.

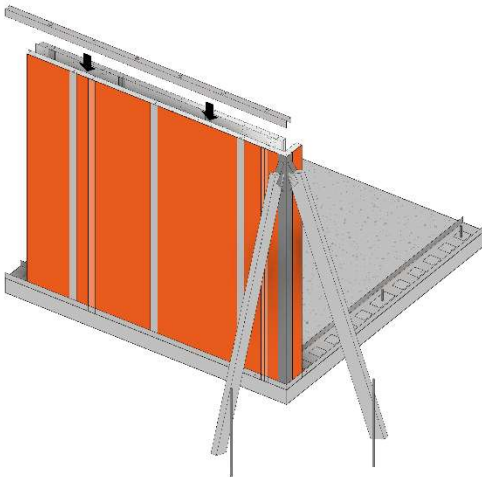
## Step 7: Install Top Cap

Once 12 linear feet of HercuWall® has been installed, it is recommended that you “fall back” and start the installation of the top cap. There are two parallel top caps to install at the top of the HercuWall® Panels. Top caps tie the panels together and provide additional rigidity to the wall assembly.



## To Install the top cap:

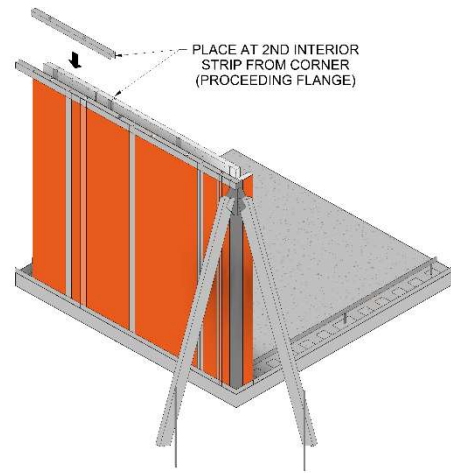
1. Begin installation of the top cap at the corner, starting on the side of the wall that bracing is being installed.
2. Corners may be miter cut, or the obstructing legs notched for proper fit. Do not overlap/stack the top cap.
3. The top cap has punched holes on the top surface that are offset from center. It is important to properly place the top caps with the holes offset toward the center of the wall. These holes provide locations for wires and pipes to exit through the top of the wall panel.
4. Ensure that the tongue and groove joint between panels are tight
5. Install a #8 x 3/4" Modified Truss Head Self-Drilling Screw through the Top Track into each ShearStrip®.
6. It is recommended that the interior and exterior joints of the top caps are staggered as much as possible to keep the wall straight and rigid until the concrete is poured.



7. Once the first top cap is installed, cut a second top cap to a length and fasten it to the opposite top edge of the panel. Move down to the second shearstrip® from the corner and attach to the proceeding flange of the shearstrip®.

## \*\*NOTES\*\*

- It is best to install top cap with an aide like a stringline or laser to ensure a consistent top of wall elevation



## Step 8: Level and Brace the Wall

Once the first section of top cap has been installed, the wall must be leveled and braced. It is recommended that bracing be installed at 6 to 8 foot increments, or when additional bracing is specifically called out in the Installation Packet.

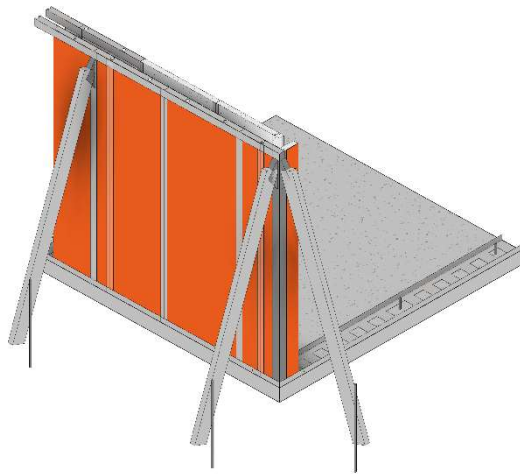
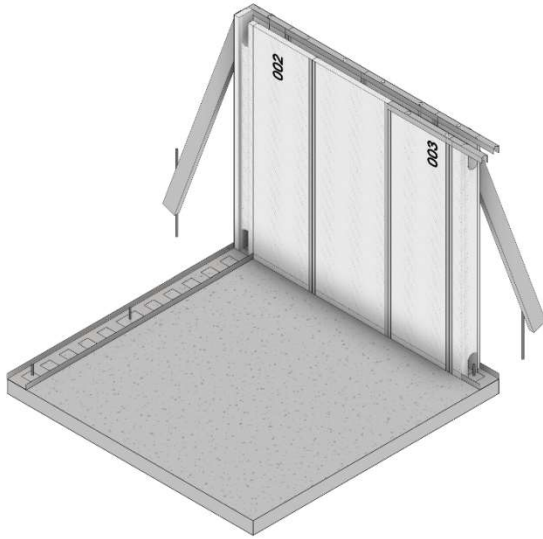
To level and brace the wall:

1. Place a level on the ShearStrip® that you are attaching the brace to.
2. Move the panel until it is level, then attach the brace to the interior or exterior of the slab.
3. Continue alternately placing panels and top caps, stopping to level and brace the walls periodically.

## \*\*NOTES\*\*

- It is best to install all the braces on the same side of the HercuWall® system whenever possible. Because the panels are solid you do not need to brace both sides.
- Some panels may have special bracing/over forming requirements. Check Installation Packet for specific instructions on any specialty panels.
- When using wood bracing, install a few additional braces on the opposite side of the panel for additional support.
- When utilizing an integral scaffold/bracing system, ensure that it is installed in accordance with the manufacturer's recommendations.
- Depending on site, soil, and weather conditions additional braces may be needed to ensure the walls stays straight while pouring concrete.





6. Press the panel down into place until it is level with the plate height of the adjacent panels.



7. Lift the interior corner trim above the corner and make sure the trim is engaged with the cut outs in panels 002 and 099, then slide down to meet bottom track.



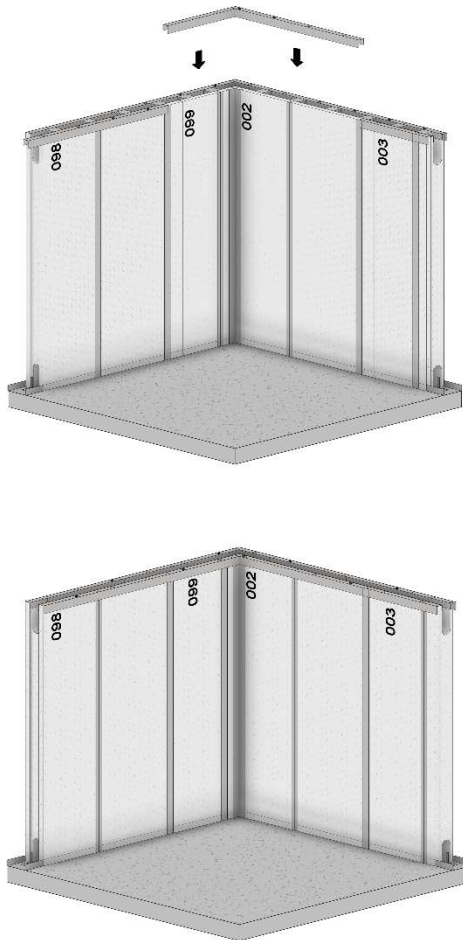
## Step 9: Keystone Panel (Final Panel)

The keystone panel is the last panel to be installed and is typically narrower than a standard panel. Installation of the keystone panel is a slightly different from installing previous panels.

To install the keystone panel:

1. The keystone (final) panel cannot be slid into place.
2. Measure the width of the keystone panel and the opening where it will be installed to verify a proper fit.
3. If the opening for the panel is too narrow, make sure all adjacent panels are properly engaged and tightly pushed together to gain the necessary width.
4. Lift the keystone panel above the top plate height.
5. Make sure the tongue and groove are properly engaged and then slide it down into place.

8. Fasten, brace and apply top cap to the keystone panel in the same manner as all the other panels.

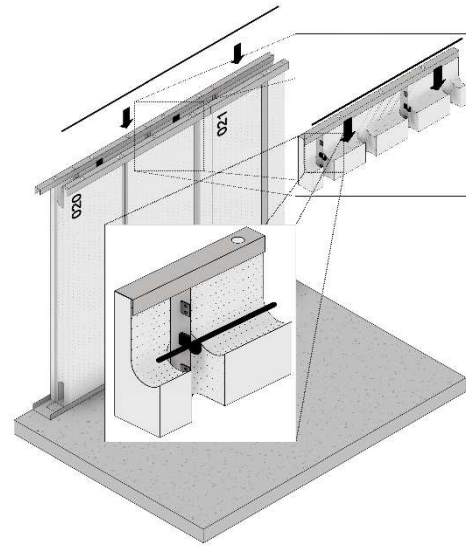


displacement during concrete placement.

4. Most windows and doors will require additional rebar in the header above the opening. This additional rebar will be installed at the factory and will arrive at the jobsite with no additional installation needed.

**\*NOTE\***

- Some panels, such as Solid Shear Panels, may require the addition of vertical rebar. Vertical rebar should be installed prior to the horizontal bond beam rebar. See Installation Packet for details.



## Step 10: Placing Rebar in Bond Beam

HercuWall® utilizes integral ShearStrip® technology to vertically reinforce the concrete columns. No additional vertical rebar is required for standard panel installation. A single horizontal rebar, however, must be installed around the perimeter of the wall within the bond beam at the top of the wall.

### To install the bond beam rebar:

1. Place the rebar into the factory pre-installed rebar hooks located in the bond beam. Typically, a single #4 rebar is used for standard wall panels (spacing, quantity and size may vary per plan).
2. Overlap rebar per industry standard practices.
3. It is not necessary to tie the rebar to the hooks, but is recommended to tie spliced rebar together to avoid

## Section 2: Openings and Specialty Panels

### Window Panels

Each HercuWall® kit includes window panels with factory installed casements dimensioned to the determined rough openings to reduce installation time and minimize jobsite waste. The rough openings are cased with a galvanized 20 gauge metal casement. It is important to temporarily brace the rough openings during the concrete placement to ensure that the opening remains true.

There are two types of window panels:

#### Factory Assembled

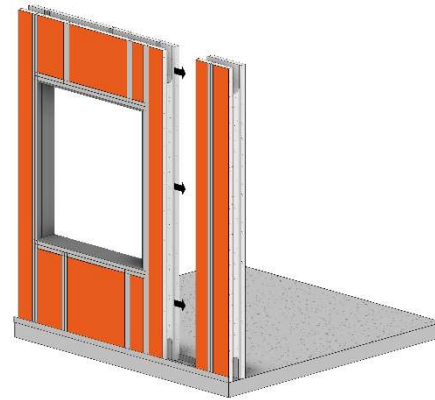
- Factory assembled window panels are one-piece panels, fully assembled at HercuTech and are installed in the same manner as a standard panel. Factory assembled window panels are limited to four feet in width.

#### Field Assembled

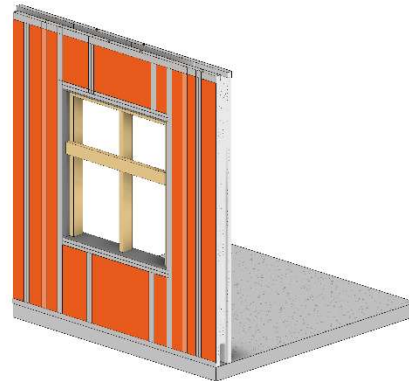
- Field assembled window panels are typically shipped in four pieces; a header, a sill and two jamb sections. Field assembled window panels are utilized for larger openings where the rough opening width is over 3'0".

#### To install factory assembled window panels:

1. Set the panel into the track adjacent to the previous panel.
2. Slide the panel over to engage with the previously installed panel.

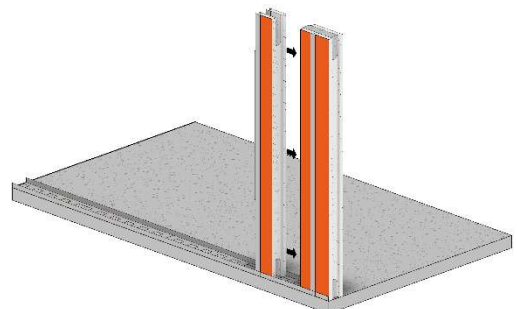


3. Ensure that the tongue and groove is fully engaged.
4. Insert a screw through the bottom track into each ShearStrip® to hold the panel in place.
5. Install top cap as outlined in *Section 1, Step 7*
6. Brace the panel as outlined in *Section 1, Step 8*
7. Install temporary bracing to keep the rough opening true during concrete placement

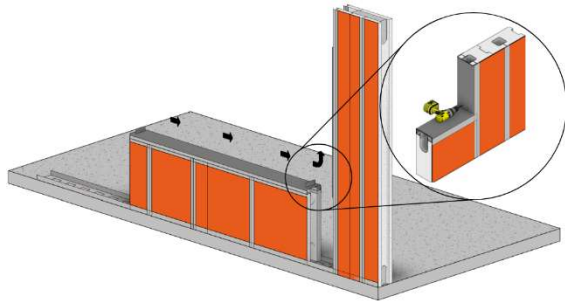


#### To install field assembled window panels:

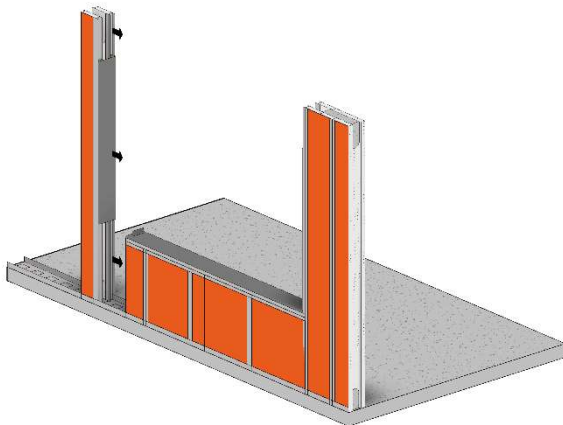
1. Set the first jamb section into the track adjacent to the previous panel.
2. Slide the jamb over to engage with the previously installed panel.



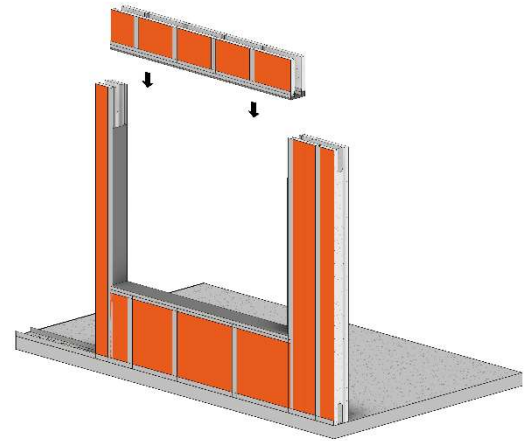
3. Ensure that the tongue and groove is fully engaged.
4. Set the sill section into the track, adjacent to the first jamb section.



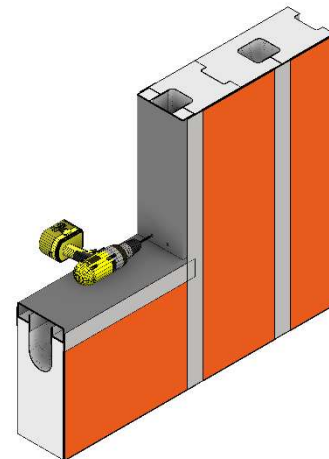
5. There is no tongue and groove between the jamb and sill. Slide the sill over so that the sill casement tab is against the jamb casement.
6. Lift the jamb section slightly to allow the sill casement tab to move behind the jamb casement. Slide the jamb back down to fully engage bottom track.
7. Insert a screw through the bottom track into each ShearStrip® to hold the jamb and sill in place.
8. Set the second jamb directly into the bottom track so that sill casement tab is behind the jamb casement.



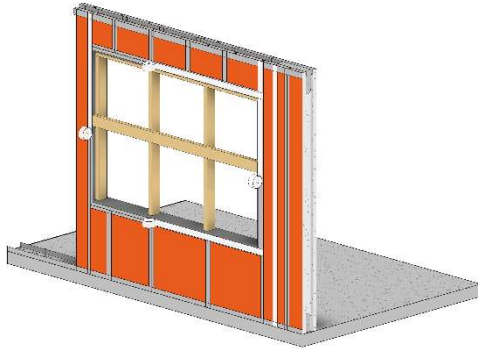
9. Insert a screw through the bottom track into each ShearStrip® to hold the jamb in place.
10. Set the header section between the top of the two jamb sections lowering the header until the header casement tabs are fully engaged behind the left and right jamb casements.



11. Ensure that all window casing joints fit properly and the opening is square.
12. Insert a screw at every interior and exterior intersection of horizontal and vertical ShearStrip®.
13. Insert 2 – screws; spaced 2" from centerline of the casement and 3/4" from the intersecting sill or header casement, into each jamb casement intersection per the below diagram.



14. Install top cap as outlined in *Section 1, Step 7*
15. Brace the panel as outlined in *Section 1, Step 8*.
16. Install temporary bracing to keep the rough opening true during concrete placement



17. Brace the panel as outlined in *Section 1, Step 8*

## **\*\*NOTES\*\***

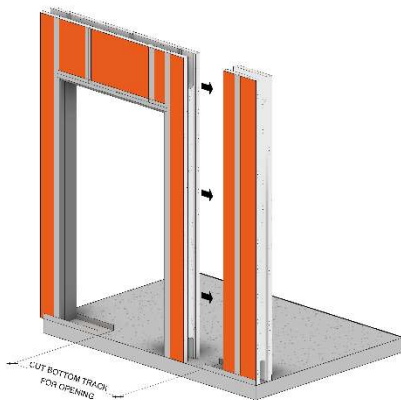
- HercuTech may include window blanks for some openings. Window blanks are EPS inserts that are used in lieu of bracing an opening

## **Door Panels**

Each HercuWall® kit includes door panels with factory installed casements dimensioned to the determined rough openings to reduce installation time and minimize jobsite waste. The rough openings are cased with a galvanized 20 gauge metal casement. It is important to temporarily brace the rough openings during the concrete placement to ensure that the opening remains true

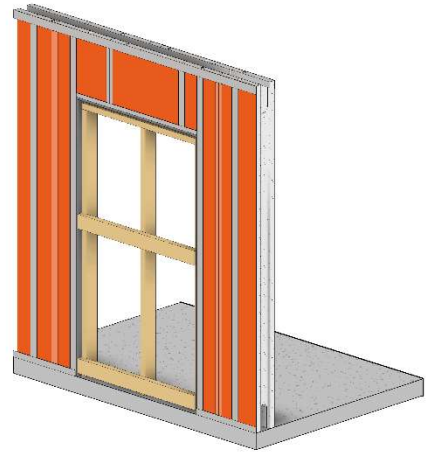
### **To install door panels:**

1. Remove the temporary spacer at the base of the door.
2. Set the door panel into the track adjacent to the previous panel.
3. Slide the panel over to engage with the previously installed panel.



4. Ensure that the tongue and groove is fully engaged.
5. If necessary, trim any bottom track that extends into the door opening.

6. Bottom track should end no more than two inches from the opening.
7. Measure the opening at the top and adjust the bottom to match.
8. Check the opening with a square.
9. Insert a screw through the bottom track into each ShearStrip® to hold the panel in place.
10. Install top cap as outlined in *Section 1, Step 7*.
11. Brace the panel as outlined in *Section 1, Step 8*.
12. Install temporary bracing to keep the rough opening true during concrete placement



## **\*\*NOTES\*\***

- Some door panels may have special bracing/over forming requirements. Check Installation Packet for specific instructions on any door panels.

## **Wide Openings**

### **(Overhead Doors, Arcadia Doors, Etc.)**

Panels with wide openings may be included in the HercuWall® kit. These panels are most commonly used when the installation of a large door such as an overhead garage door or arcadia door is required. Due to their size, these panels are typically delivered in multiple pieces and are assembled at the jobsite.

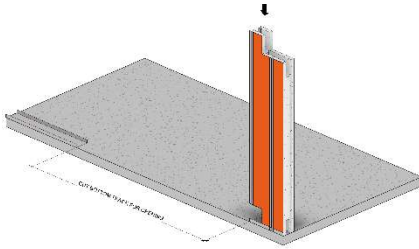
Wide openings typically require more reinforcement and have more concrete in the adjacent cells for added strength. Wide opening panels may be delivered with either multiple EPS blanks that fit together to keep the opening square during concrete placement, or instructions for properly bracing the opening. Refer to HercuWall® kit Installation Packet for EPS blank configuration or bracing requirements.



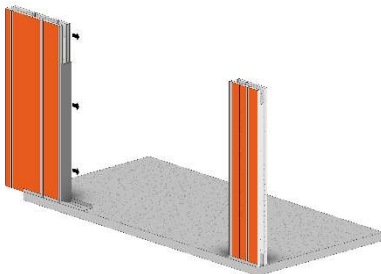
11. Install top cap as outlined in *Section 1, Step 7*.

## To install wide opening panels:

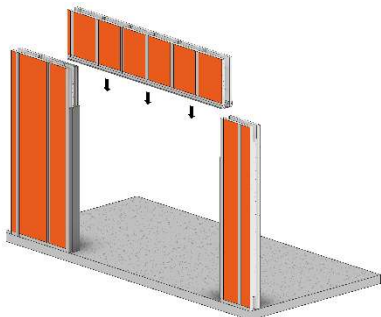
1. Set the first jamb section into the track adjacent to the previous panel.
2. Insert the jamb into the track while engaging the tongue and groove of the previously installed panel.



3. Ensure that the tongue and groove is fully engaged.
4. Insert a screw through the bottom track into each ShearStrip® to hold the jamb in place.
5. Set the second jamb section into the track at the proper distance from the first jamb. This distance is the rough opening.



6. Set the header section between the top of the two jamb sections, lowering the header until the header casement tabs are fully engaged behind the left and right jamb casements.



7. Ensure that all casing joints fit properly.
8. Measure the opening at the top and move the bottom to match.
9. Check the opening corners with a square and the sides of the opening with a level.
10. Insert a screw through the bottom track into each ShearStrip® to hold the second jamb in place.

12. Brace the panel as outlined in *Section 1, Step 8*.
13. Install additional rebar as required and outlined in the Installation Packet.
14. Re-install the EPS Inserts into the door opening or brace per instructions in the Installation Packet.

## \*\*NOTES\*\*

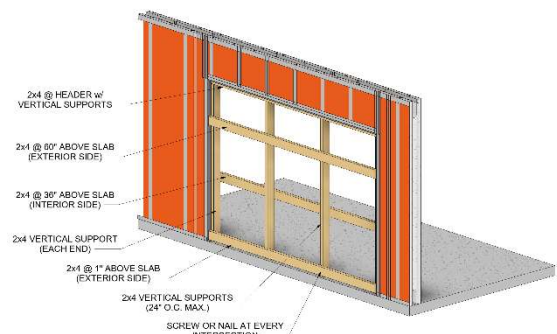
- Some door panels may have special bracing/over forming requirements. Check Installation Packet for specific instructions on wide opening panels.

## Standard Bracing for Wide Openings

For wide openings that were delivered without accompanying foam blanks or precise instruction in the Installation Packet, use the following standard method for bracing.

### To install wide opening bracing:

1. Refer to the diagram at the end of this section for details.
2. Install horizontal 2 x 4's against the header. These must span the entire length of the opening.
3. Install vertical 2 x 4's against the two jambs. These will support the header 2 x 4(s).
4. Install additional vertical 2 x 4's to support the header. These should be spaced at a maximum of 24" on center and at joints in the header 2 x 4 bracing.
5. Install additional horizontal 2 x 4 supports between the two jambs. Screw or nail these supports to all vertical supports. Placement of these supports should alternate between interior and exterior sides of the vertical supports.
6. Install top cap as outlined in *Section 1, Step 7*.
7. Brace the panel as outlined in *Section 1, Step 8*.



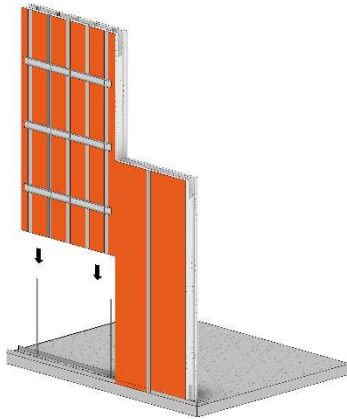
## \*\*NOTES\*\*

### Solid Shear Wall Panels

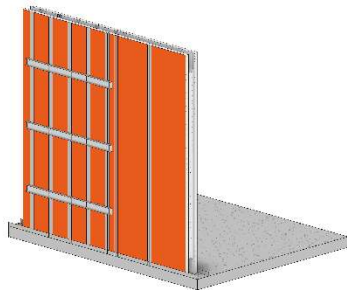
HercuWall® utilizes a solid core shear panel when required. These panels are factory assembled and require no additional jobsite assembly. Shear wall panels include pre-installed horizontal supports to accommodate the increased concrete pressure in these areas.

To Install a shear wall panel:

1. Review and confirm that rebar projecting out of the slab is in the correct position and aligns with the shear wall panel.
2. Lift the panel over rebar dowels and place it into the track. Shear wall panels cannot be slid into position



3. Verify that both the exterior and interior side of the panel are fully engaged in the bottom track.
4. Ensure that the tongue and groove is fully engaged.



5. Insert a screw through the bottom track into each ShearStrip® to hold the panel in place.
6. Install top cap as outlined in *Section 1, Step 7*.
7. Brace the panel as outlined in *Section 1, Step 8*.

- See Installation Packet for details on bracing/over forming requirements.
- Shear wall panels should be filled with concrete in 2 to 3 passes to ensure proper filling and to minimize concrete form pressure.

### Installation Inspection

#### Final Inspection Checklist

Once all panels have been installed, it is imperative to perform a final inspection of the entire HercuWall® panel installation. Making changes to the walls during or after concrete placement is very difficult. Inspecting and verifying the items in the following checklist prior to receiving concrete will help to ensure trouble-free concrete placement.

1. Inspect all bracing.
2. Check that all walls are straight and level.
3. Check that all panels are properly attached to the bottom track and top cap with screws.
4. Verify rebar is in place and meets lap requirements.
5. Check that all recommended additional bracing is in place and secure per HercuWall® Installation Packet.
6. Verify that scaffolding is installed per manufacturers recommendations.
7. Inspect all panels for any damage that may have occurred during installation that might affect concrete placement.
8. Mark the installation locations of all embeds, truss ties, and j-bolts.
9. Verify that all EPS window and door blanks are installed to ensure openings stay square during pouring.
10. Verify Jurisdiction Inspection has been completed and approved.



## Section 3: Concrete



### Important

#### Concrete Requirements

A specified concrete mix design is required for all HercuWall® installations. If concrete is out of tolerance from specifications and/or acceptance conditions, do not continue with the pour. Please refer to the Approved Construction Documents and the HercuWall® Installation Packet for concrete specifications and acceptance conditions.

#### Tools and Supplies

Having proper tools and supplies on the job site when concrete is delivered is important to the overall success of the project. The following items must be available and ready for use when concrete arrives.

- Concrete Pumping/Delivery System
  - Grout Pump
    - 2" Hose
  - Overhead Boom Pump
    - 4" Flexible Hose
- Concrete mix specification
- Certified ACI Concrete Testing Service to verify acceptance conditions
- External form vibrator and/or pencil vibrator
- Concrete finishing tools
- Proper PPE for Safety

#### Pre-Pour Checklist

On the day of concrete placement, a little planning goes a long way. The following items can be completed prior to concrete delivery to help ensure a successful pour.

11. Adequate PPE usage
12. Scaffolding/ladders meet manufacturers requirements
13. Approved pump priming, testing and washdown area are setup
14. Ensure all embeds are accessible
15. Select areas for positioning the concrete truck and pump that have ample access, stable ground, no

overhead/underground utilities and are within planned pumping distance

16. Verify that the concrete pump has the proper size and length of hose to easily reach all areas of the installation
17. Schedule the concrete pump to arrive 30 minutes prior to concrete delivery time
18. Discuss pump speed and review hand signals with the pump operator

#### Test the Concrete

When concrete arrives at the job site, it is important to check the slump, or flowability, of the concrete. The concrete mix design for HercuWall® is extremely flowable, therefore, a standard slump test cannot be used to test the mix. The proper method to test HercuWall® concrete is by means of a slump flow test per ASTM C1611 typically used for self-consolidating concrete instead of the traditional slump test used for stiffer concrete. This test uses an inverted slump test cone and a large base plate to measure the concrete spread which is typically between 20 and 24 inches in diameter.

#### **\*\*NOTE\*\***

- Most ready-mix companies will hold back a small amount of water from the mix they deliver. Ask the delivery driver how much water was held back. This amount of water may be used to adjust the slump flow of the concrete if necessary.
- Do not add more water than what was held back by the ready-mix company.
- If the slump flow slightly exceeds 24 inches in diameter, allow the mix to spin in the truck for an additional 10 minutes and re-test. This will help reduce the slump flow of the concrete.

#### Concrete Placement

Once the concrete mix has been tested and determined to be within specification, it is time to place the concrete in the HercuWall® panels.

HercuWall® panels are filled with concrete in two lifts, or passes. The first pass will fill the base beam, vertical columns and the lower half of solid shear wall panels. The second pass will fill the bond beam and the remaining unfilled shear wall sections.

Placing the concrete can be divided into four steps:

- Pump Priming/Preparation
- First Pass Concrete Placement
- Second Pass Concrete Placement
- Finishing & Embedment Placement

## Step 1: Pump Priming/Preparation

It is the responsibility of the pump operator to prime the concrete pump and hoses with concrete prior to placement. It is ***extremely important*** that all the slurry in the hose and pump hopper is completely purged prior to placing concrete in the wall.

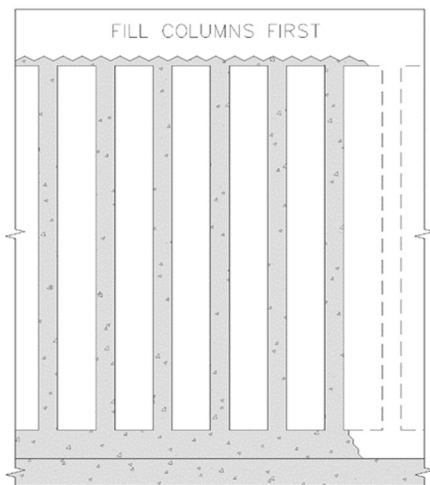
## Step 2: First Pass Concrete Placement

Concrete placement typically starts in the corner and continues around the structure.

Start at a low pump speed and slowly increase to match placement capability. Do not try to pump faster than the natural flow of the concrete.

Point the hose output down at an angle rather than straight down into the columns. This will promote better flow characteristics while integrating concrete with the HercuWall® system.

Fill 4 or 5 columns at a time, alternating between them until concrete is almost to the bond beam, then move to the next 4 or 5.



Fill shear wall sections approximately half way in the first pass.

When filling window jambs use an external form vibrator sparingly on one of the sill ShearStrip® to improve concrete flow under the window opening.

**\*\*NOTE\*\***

- As you place concrete ensure that the vertical columns are filled without bridging.

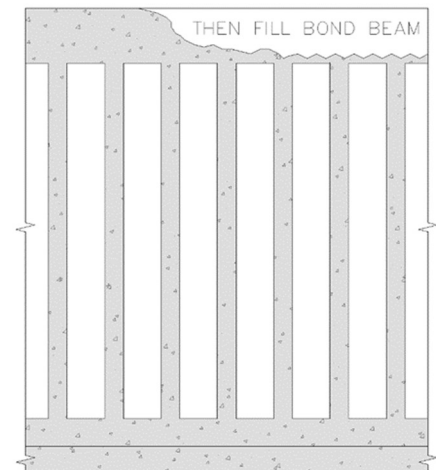
## Step 3: Second Pass Concrete Placement

Start at the same corner as the first pass

Use a low pump speed to fill the bond beam

Point the hose output down at an angle rather than straight down. This will promote better flow characteristics while integrating concrete with the HercuWall® system.

Fill the bond beam while moving steadily around the perimeter



Fill shear wall sections completely

Only when necessary, vibrate to ensure complete concrete consolidation

It is recommended to have a second person follow behind with a trowel to level the concrete with the top of the wall and to redirect excess concrete to low spots.

## Step 4: Finishing & Embedment Placement

Finish the top surface of the bond beam concrete using a flat trowel. The upper surface of the top cap is used as a screed edge to maintain the proper level **Continued**

Install all embeds, J-bolts and truss ties per the Approved Construction Documents, Manufacturer's Recommendations and/or standard practices.

**\*\*NOTE\*\***

19. This step can be started while Step 3 is in process.

## Post-Placement

Best Practice is to remove scaffolding and bracing per system manufacturers instructions. Remove over forming/bracing from the forms. Remove window blanks, if provided, and large opening bracing.

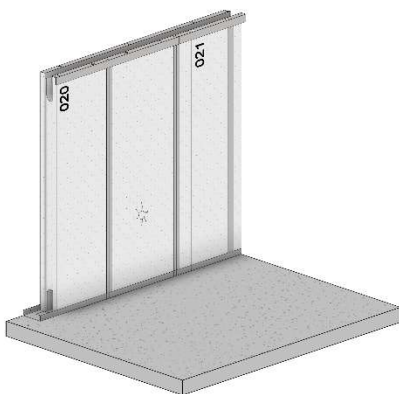
**\*\*NOTE\*\***

Contact your HercuTech Inc Project Manager for recycling coordination of any EPS opening blanks, if provided.

## Repairs

HercuWall Panels are repairable in the field as long as there is no damage to the ShearStrip®. If there is a damaged ShearStrip® please stop immediately and call your HercuTech representative for replacement instructions.

The EPS functions as both concrete formwork (before concrete placement) and rigid insulation (after concrete placement). If the EPS is damaged, you may provide a simple repair using over forming methodology.

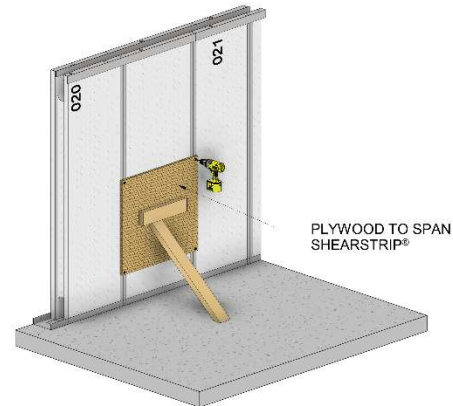


To repair damaged EPS prior or during the concrete placement:

1. Remove the damaged EPS and clear out any debris that may interfere with concrete placement
2. Install a plywood gusset from ShearStrip® to

ShearStrip® bridging the damaged section of EPS inserting screws through the gusset into the ShearStrip®

3. Brace the gusset per the below diagram



## Section 4: Water Management System

### HercuWall's Integral WRB

HercuWall® Series 8, Type S panels comes with an integral Film Laminate that serves as a WRB (water resistive barrier) when the below steps are completed. The HercuWall WRB meets or exceeds IRC and IBC code requirements for a WRB.

It is important to maintain the continuity of the integral HercuWall® Film Laminate to maintain a true functioning WRB from top to bottom of HercuWall. This section will provide guidance for completing the WRB system at panel joints and in instances of flanged and un-flanged penetrations, damaged laminate and where beams are needed to penetrate the surface of the WRB film laminate.

### Completing the Integral WRB

Once the HercuWall® System is installed it is required to complete the WRB System by applying the two-inch-wide sheathing tape included in the HercuWall® kit to the HercuWall® panel joints, top track (when no other code approved flashing methods are utilized), bottom track (when no other code approved flashing methods are utilized), large opening assemblies and to repair damages

to the laminate. This must be completed prior to concrete placement. Do not substitute HercuWall®

sheathing tape with any other product. Sheathing tape should only be applied in dry conditions at temperatures between 0°F and 122°F.

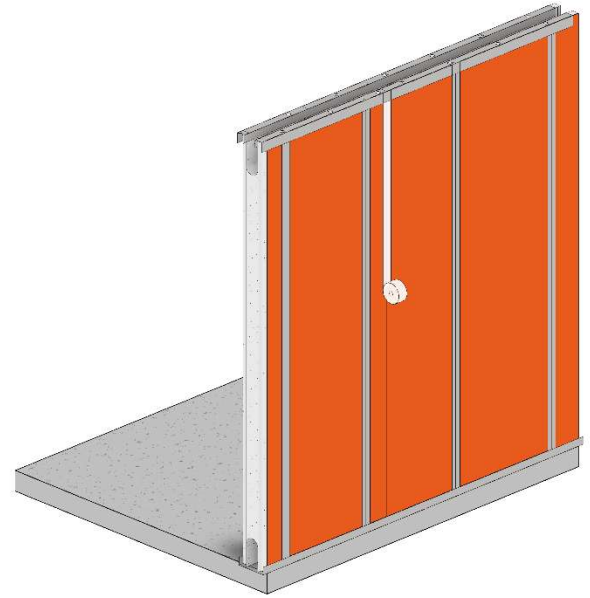
## Panel Joints

To install sheathing tape on panel joints:

1. Ensure that the surface of the HercuWall WRB is clean, dry and free of debris
2. Apply the sheathing tape on the WRB with the tape centered on the panel joint starting at the top of the wall
3. Apply tape so that it lays flat continuously on the surface of the HercuWall WRB from top of wall to bottom of wall
4. Press tape to the surface of the HercuWall WRB using a J-roller or stiff bristle scrub brush to ensure a proper bond
5. Repeat until all panel joints have sheathing tape applied

**\*\*NOTE\*\***

When lap splicing the sheathing tape, overlap the tape ends a minimum of 2 inches



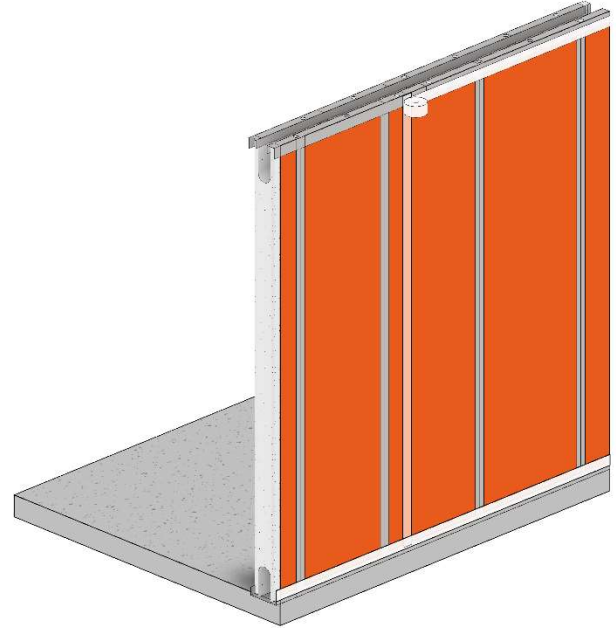
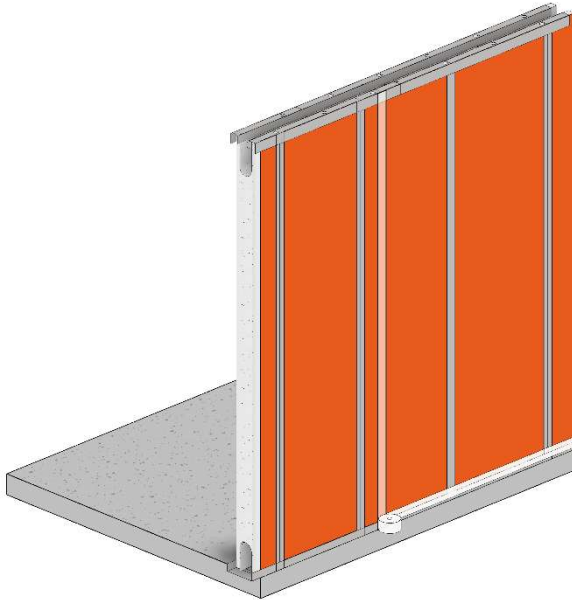
## Bottom Track

To complete the continuity of the WRB, it is required to install the sheathing tape at the bottom track of HercuWall unless an alternative, code approved flashing methodology is used:

1. Ensure that the surface of the HercuWall WRB and Bottom Track are clean, dry and free of debris
2. Apply the sheathing tape on both surfaces with the tape centered on the joint of the Bottom Track and WRB
3. Apply tape so that it lays flat on both the surface of the HercuWall WRB and the Top Track
4. Press tape to the surface of the HercuWall WRB and Bottom Track using a J-roller or stiff bristle scrub brush to ensure a proper bond
5. Repeat until the sheathing tape is applied continuously around the bottom perimeter of the wall

**\*\*NOTE\*\***

When lap splicing the sheathing tape, overlap the tape ends a minimum of 2 inches



## Top Track

To complete the continuity of the WRB, it is required to install the sheathing tape at the top track of HercuWall unless an alternative, code approved flashing methodology is used:

1. Ensure that the surface of the HercuWall WRB and Top Track are clean, dry and free of debris
2. Apply the sheathing tape on both surfaces with the tape centered on the joint of the Top Track and WRB
3. Apply tape so that it lays flat on both the surface of the HercuWall WRB and the Top Track
4. Press tape to the surface of the HercuWall WRB and Top Track using a J-roller or stiff bristle scrub brush to ensure a proper bond
5. Repeat until the sheathing tape is applied continuously around the top perimeter of the wall

**\*\*NOTE\*\***

When lap splicing the sheathing tape, overlap the tape ends a minimum of 2 inches

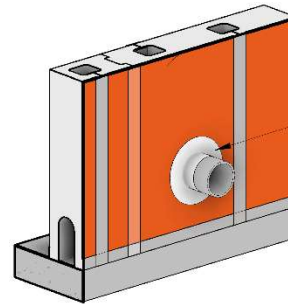
## Field Assembled Panels & Wide Openings

In Section 2 of the HercuWall Installation Guide we discussed how to assemble the Field Assembled Window Panels and Wide Openings. It is important to install the sheathing tape to the Header and Sill prior to installing the sheathing tape on the Jambs. To complete the continuity of the HercuWall WRB at these conditions:

1. Starting at the Header condition ensure that the surface of the HercuWall WRB, integral Window Casement and ShearStrip are clean, dry and free of debris
2. Apply the sheathing tape on all surfaces with the tape centered on the application area
3. Apply tape so that it lays flat on all surface of the HercuWall WRB, integral Window Casement and ShearStrip
4. Press tape to the surface of the HercuWall WRB, integral Window Casements and ShearStrip using a J-roller or stiff bristle scrub brush to ensure a proper bond
5. Repeat the previous steps for the Sill (on Field Assembled Window Panels only) and both Jambs

**\*\*NOTE\*\***

When lap splicing the sheathing tape, overlap the tape ends a minimum of 2 inches



FLASH WITH CODE APPROVED FLASHING PER MFG SPECIFICATIONS

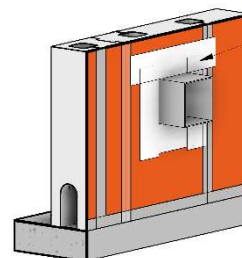
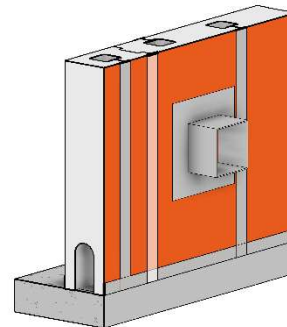
## Flanged Penetrations

When treating a flanged penetration or when joining a rigid flashing system to the HercuWall WRB it is important to provide continuity to the HercuWall WRB. Apply the desired flashing system per the manufacturer's specifications and required building code to ensure proper integration of this system with the HercuWall WRB.

## Penetrations in the WRB

Penetrations in the HercuWall WRB can occur for a variety of reasons from intersecting structural members to utility piping and raceways. It is important to integrate additional flashing systems to complete the continuity of the WRB when penetrating the HercuWall WRB. Select a code approved flashing method that is appropriate for the penetration type.

Please review the below section to understand some of the many different conditions where penetrating the HercuWall WRB may occur.



FLASH WITH CODE APPROVED FLASHING PER MFG SPECIFICATIONS

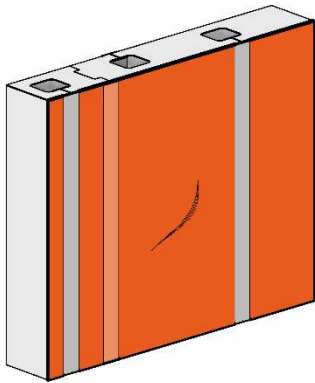
## Non-Flanged Penetrations

When treating a non-flanged penetration to provide continuity to the HercuWall WRB, apply the desired flashing system per the manufacturer's specifications and required building code to ensure proper integration of this system with the HercuWall WRB.

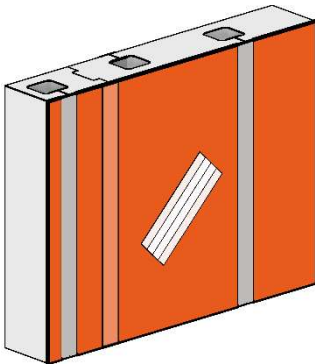
## Repairs to HercuWall WRB

If there are any tears, punctures or damage to the HercuWall® WRB, a repair can be accomplished with the sheathing tape supplied with your HercuWall System





Install the sheathing tape over the area in need of repair using a shingling methodology, installing the sheathing tape from the bottom up. Ensure that there is a minimum of 1" of sheathing tape bonded to the HercuWall WRB around the entire perimeter of the damaged WRB.

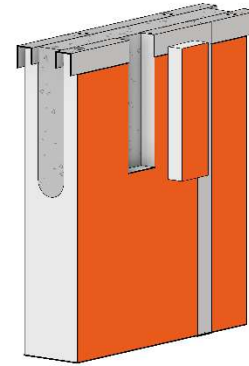


## Beam Pockets/Beam Hangers

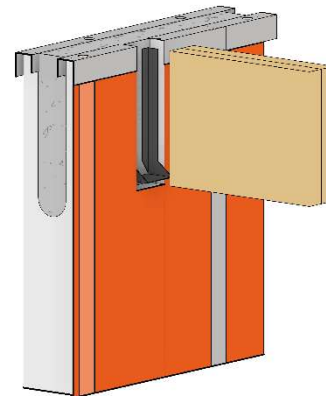
The HercuWall® system can be modified in cases where intersecting beams are required to pass through, bear on or hang off the concrete structure. Apply the desired flashing system per the manufacturer's specifications and required building code to ensure proper integration of this system with the HercuWall WRB.

1. Remove portion of EPS from the panel where indicated.
  - a. Start by cutting away the flange of the top track to allow access to the top portion of EPS.

- b. Cut the required area of EPS out of the panel. Lines designated are for general guides and not meant to supersede structural elements' specifications/dimensions.



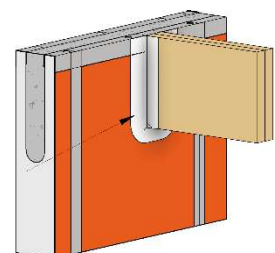
2. Install the required structural anchor/hanger.
  - a. After removal of EPS section, install the anchor/hanger element per the manufacturer's specifications.
  - b. Install the structural member (wood beam shown for example only).



*Placement of HUC Hanger (Example Only)*

3. Wrap structural member with approved flashing tape/system.

FLASH WITH CODE  
APPROVED FLASHING  
PER MFG SPECIFICATIONS





## Window Flashing

The HercuWall® System and its opening casements can be utilized for any window system. Shown in the following figure is a casement window with fins. Apply the desired flashing system per the manufacturer's specifications consistent with standard construction methods and required building code to ensure proper integration of this system with the HercuWall WRB.

