

# Part 8 – The Installation Process

## 8.1 - Overview

This part of the manual will explain the detailed steps in constructing a typical Amvic ICF project. By the end of this chapter, your Amvic ICF wall(s) should be set up and ready for the concrete pour.

## 8.2 – Mobilization: Material & Tools Positioning

Once wall, window and door layouts are complete, materials and tools should be organized to maximize efficiency during construction. A typical Amvic ICF project is much easier to construct from inside of the footprint rather than the outside.

The following are recommended practices:

1. Before any installation begins it is preferable to move as much block as possible within the perimeter of the wall layout. Stack it if necessary. This will minimize workers movement during the construction process.



*Figure 8.1 – Placing Amvic ICF within the perimeter of the wall layout*

2. Place reinforcing steel, tools and equipment within the perimeter of the wall layout including bracing, bender/cutter, table saws, scaffolds and planks as well as any other equipment you may need.



3. For each storey, build door and window bucks before starting to lay block and position them within the wall layout perimeter close to where they will be installed. (Please refer to part 5.)



### Tips

*Prior to construction, order pre-cut and bent rebar from your steel supplier. For 90 degree corners, have them cut and bent to the proper lap splice lengths so they will be ready for placement when they arrive to the site. Similarly Z-shaped reinforcing steel (Figure 8.2) required for wall bump-outs can be ordered from your steel supplier.*



Figure 8.2 – Pre-cut & bent reinforcing steel will increase efficiency



### Tip

*Try to place all materials and tools at least six feet away from the inside wall to provide space for bracing and alignment equipment.*



### Tip

*If Amvic ICF blocks will be stored for a prolonged time on the jobsite, protect them from dust, sunlight and extreme weather by storing them in a contained environment.*

Amvic ICF comes in bundles of different quantities depending on the type and size of block ordered. The most convenient way to move a small number of bundles is to slide 2x lumber through the forms then carry them to the desired location (Figure 8.3 below). A greater number of bundles may require using a forklift (Figure 8.4 below). An average person can easily carry a few separate blocks during construction.





*Figure 8.3 – Moving ICF bundles by hand*



*Figure 8.4 – Using forklift to move bundles*



### 8.3 – Course Planning: Determining wall heights & no. of courses per Storey

Prior to laying block, determine the exact wall height required for the project.

Amvic ICF is 16 inches (406.4 mm) high except for the 10 inch block which is 24 inches high (609.6 mm). If your storey height is not divisible by 16 inches or 24 inches, you have two options:

1. Rip-cut the first or last course of block horizontally. Cutting the first course is recommended since the cut edge will be glued to the footing/SOG and will not affect the interlocking of subsequent courses. If you decide to use this method, make sure you preserve the polypropylene webs which connect the two EPS panels. (Figure 8.5 below.)



#### Tip

*A circular saw is recommended for rip cuts since cutting the webs by hand can be tedious and time consuming. (Figure 8.5 below.)*



Figure 8.5 – Using a circular saw to horizontally rip cut ICF



#### Tip

*When using a circular saw for rip cuts, use one with an 8 1/4" blade.*



2. Use an Amvic ICF height adjuster. These are available in 2, 3 & 4 inch heights (50.8, 76.2 & 101.6 mm) and can be placed below the first course or above the last course. Placing the height adjuster above the top course is recommended. (Figure 8.6 below)



*Figure 8.6 – Amvic height adjuster*

### **8.3.1 – Single Storey vs. Multi-Storey Construction**

For single storey structures the walls are poured in one day from the footing/SOG to the top plate. For multi-storey structures forms are typically stacked and concrete poured one storey at a time. Once a storey is complete, the floor joists and floor will be installed before the next storey is stacked and poured.



## 8.4 – Placing First Course of Block

Once the pre-planning stages are complete, begin placing the first course of block by following the steps outlined below.

1. Place door bucks in their proper location on the footing/SOG. Install a temporary kicker, stacked outside to hold each safely in place.



Figure 8.7 – Placing Door Bucks



### Note

*Some installers will not place door bucks until at least two courses of block have been stacked. This provides the benefit of establishing an interlocking pattern between the courses before buck installation. When using this method, bucks are installed by cutting through the blocks to the rough opening sizes then securing the bucks in place. This method is acceptable but may increase block wastage.*



2. If you are not rip-cutting the first course horizontally. (Refer to section 8.2 above). The nubs on bottom interlock may be shaved off to provide a flat contact surface with the footing. Some installers may opt to leave them, which is also acceptable.
3. Start stacking by first placing the corner forms. It does not matter how the corner blocks are laid as long as the direction is reversed on the subsequent course.

**Tip**

*Test different placements of the corner blocks to minimize block wastage.*



*Figure 8.8 – Placing corners first*

4. Install straight forms starting from the corners and working toward the center of the wall or door buck. If a dowel from the footing/SOG is in contact with a web, bend it to make an offset curve around the web. This will help to prevent pressure on the blocks which may result in misaligned walls.





Figure 8.9 – Placing straight blocks

5. Cut the final block in each wall section to size. Ideally the cut will be made at a 2 inch increment line (center between two interlocks). This will allow for proper alignment of the interlocking system. Where possible, slightly adjust wall dimensions to accommodate this. If it is not possible to adjust wall dimensions, an offset/stack joint will be created. (Refer to Section 8.10.) Keep this offset/stack joint at the same location when stacking the subsequent courses of block.



#### Note

*Offset/stack joints require additional bracing to withstand hydrostatic pressure during the concrete pour. Please refer to section 8.10 for more information.*





*Figure 8.10 – Cutting the final block for a wall section*



*Figure 8.11 – Fitting the cut block in place*



***Optional:***

Connect blocks in the first course together using zip ties (plastic ties or wire ties). One zip tie per end joint is generally sufficient. Place zip or wire ties towards either edge (next to the EPS inside face). Tightening at the center will flex the webs and may lead to foam fracturing at that location creating a source of failure during the concrete pour.



*Figure 8.12 – Using zip ties to tie the first course blocks together*

6. Install the horizontal reinforcing steel as per engineering or local building code requirements. (Refer to part 6 of manual.)



*Figure 8.13 – Installing horizontal rebar*



## 8.5 – Placing the Second Course of Block



*Figure 8.14 – Second course placement*

1. Start by stacking the corner blocks first. Every corner block has a short leg and a long leg. Make sure that you reverse the corners on the second course by flipping them upside down so that the long leg interlocks with the short leg of the first course. This will create a 12 inch (304 mm) running bond pattern between the two courses.



*Figure 8.15 – Reversing 45 degree corner blocks for bay window*

2. Stack the straight forms, working towards the center of the wall.



3. Place the cut block on this course at the same location as the first course. This will ensure your offset/stack joint remains roughly in the same place.

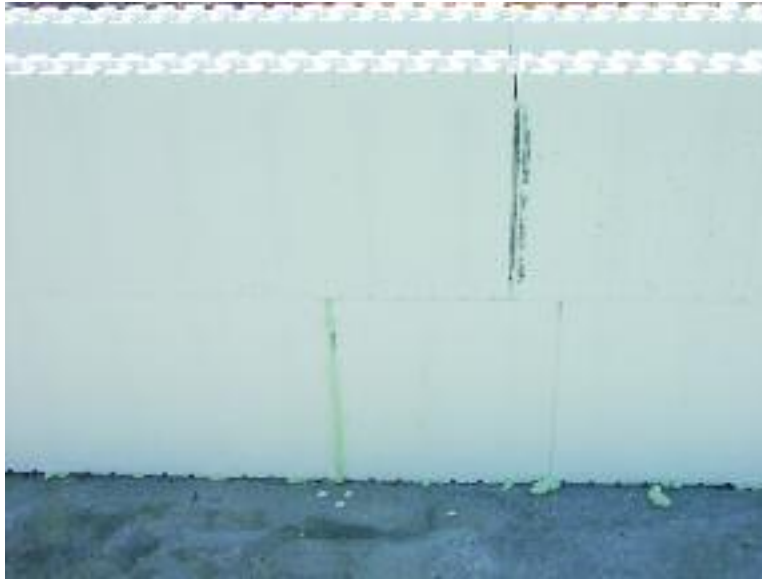


*Figure 8.16 – Placing the offset joint in approximately same place as first course*

4. Press down firmly on the blocks to ensure a secure connection with the course below.
5. Install horizontal reinforcing steel as per engineering or local building code requirements.



### Note

*It is very important to keep the offset/stack joint at roughly the same location for each wall section as you stack the courses. This will ensure that there is a straight “stud” for interior and exterior attachments.*



## 8.6 – Checking for Level

Once the second course has been laid, place a square of plywood or OSB over each corner block and check for level. If you are more than  $\frac{1}{4}$  inch out then you will need to either shim low spots or trim high spots. Once the walls have been leveled to within  $\frac{1}{4}$  inch you are ready to secure the first course of block to the footings/SOG.



*Figure 8.17 – Checking for level after second course placement*

Use foam cuttings as shims to level the wall at the vertical joints.



*Figure 8.18 – Shimming the first course with foam cuttings*



If you need to trim the first course of block, slide a hand saw underneath the blocks and shave off the desired amount.



Figure 8.19 – Trimming the first course of block with a hand saw

Once the walls have been leveled to the desired tolerance, you are ready to secure the first course of block to the footings/SOG.

### 8.7 - Securing First Course to Foundation/SOG

Ensure that all walls are on their layout lines then use low expansion foam adhesive to glue the base of the first course to the footing/SOG. Insert the nose of the foam gun into one of the notches every 6–12 inches (150-300 mm) along the footing and squirt a small amount of foam adhesive under the block along the entire wall. Allow the adhesive to set for up for 30-60 minutes.



#### Tip

*When shimming/brimming keep in mind that this may be needed on both sides of the form.*



#### Tip

*Securing the first course of block to the foundation is an ideal task to do just before a break.*





*Figure 8.20 – Using foam adhesive to secure the first course of block to the foundation/SOG*

When foaming under a large, low spot, ensure that the entire area is done.



*Figure 8.21 – Foaming under a large, low spot area*



## 8.8 – Placing 3rd & Subsequent Courses of Block

The installation of subsequent courses of block is the same as for the second course of block.

Remember:

1. Start in the corners, alternating the direction of the corner forms.
2. After setting corners, work towards the centre of the wall
3. Keep offset/stack joints (where you lose layout) in the same place as the wall goes up. The remainder of all wall sections should maintain their web alignment (indicated by the deep grooves on the outside face of the EPS panels).
4. Place horizontal steel reinforcement as required by engineering or local building code requirements.



### Note

*Webs will not line up where your offset/stack joints occur.*

### 8.8.1 - Cutting Block around Door Bucks

If you have chosen to delay door buck installation until after you have placed the first two courses of block, it must be done at this point. Cut the blocks and secure the door bucks in place, remember to leave  $\frac{1}{4}$  inch gap between the forms and the buck to allow for adjustment before pouring the concrete. (Refer to section 8.10.)



Figure 8.22 – Stacking courses around door bucks



### 8.8.1.1 - Elevated Doorways

For doors on second storeys or doors with elevated floors, the height of the door sill must be carefully calculated before the floor is in place. It is a good idea to install a pressure treated 2x4 or 2x6 sill into the block that will be poured in place to provide an attachment point for the door threshold.



*Figure 8.23 – Installing door bucks on the second floor*



### 8.8.2- Cutting Forms around Window Bucks

The window and/or door bucks should already be assembled and ready for installation. (Refer to part 5 of manual.) The bottoms of window bucks are usually placed in the 3rd or 4th course of blocks and must be perfectly level. If they are not, then trim or shim as required. When cutting the block, leave a  $\frac{1}{4}$  inch gap between the block and the buck to allow for adjustment after all the courses have been stacked and before concrete is poured. (Refer to section 8.10.)



*Figure 8.24 – Building courses around window bucks*

### 8.8.3 – Reinforcing Steel around Wall Openings

Install reinforcing steel around the window/doors as you stack the blocks. Wall openings are required to have minimum shrinkage and crack control steel bars on both sides and sill (area below window opening). For wall openings greater than 2 feet (610 mm) in length, diagonal reinforcing steel may also be required at the corners. The headers (area above door/window opening), commonly known as lintels require specially engineered and detailed reinforcing steel bars. (Please refer to **Appendix A** for more details on steel requirements for wall openings.)





*Figure 8.25 – Installing reinforcing steel bars for wall opening header or lintel*

#### **8.8.4 - Placing the Top Course of Block**

The top course of block in each pour needs special attention since it is not locked at the top. During the concrete pour the upper sides of the top course tends to flex outward, and if not secured properly may go out of plumb. This will also cause the interlock to be misaligned if there is another ICF wall storey above.

The following steps are recommended for each top course of a storey;

1. Tie each block to the next using zip or wire ties on the webs ensuring they are pulled snugly together.
2. Use a horizontal wailer around the top at the corners of the structure. A 1x4 or 1x6 lumber is ideal. Install a drywall screw into every other web on each block to minimize stretching.
3. If there are long narrow lintels, install a wailer on both sides of the block wall and to each other. This should prevent the course from flexing outwards.
4. If another course of block will be installed above this temporary top course, protect the tops of the block. An ideal protective device is 2½ inch metal stud starter track. It is exactly the right dimension to slip over the EPS foam panel on each side. Alternatively, 4 inch wide plastic tape can be used.





Figure 8.26 – Protecting the Interlock on a top course

### 8.8.5 - Installing Vertical Rebar

The vertical reinforcing steel bars are installed after the top course of block for each storey has been placed.

At the uppermost wall storey, cut the reinforcing steel short to ensure there is 2 inches (50 mm) of concrete cover.

The steel bars are inserted from the top of the wall and weaved in between the horizontal steel bars that are already installed in place.

If there will be another ICF wall storey above, then refer to **Part 6 section 6.6** of this manual for splicing details and placement.



#### Tip

*Review site safety plans and OSHA compliance regulations for protruding steel bars on the jobsite to protect workers from this hazard.*





*Figure 8.27 – Installing vertical reinforcing steel*



## 8.9 – Installing Wall Alignment & Bracing

Alignment and bracing systems are required during construction with Amvic ICF and perform the three main functions listed below:

1. Ensure blocks are straight, plumb and properly aligned along each wall length.
2. Support stacked walls against wind and other lateral loads until the concrete is poured and gains enough strength.
3. Act as a scaffold for construction workers to stack the block courses.



### Code Requirements

- *In the United States scaffolds must meet the safety requirements of OSHA (Occupational Safety and Health Administration)*
- *In Canada scaffolds must meet the fall protection and scaffolding regulations of OHSA (Occupational Health and Safety Act)*



Figure 8.28 – Plumwall bracing & alignment system

### 8.9.1- General Application

The following rules of thumb generally apply to bracing and alignment systems used with Amvic ICF regardless of which type or proprietary brand being used:

- Before using a new bracing system, check with your local Amvic distributor to ensure that it is appropriate for your use.
- Bracing is typically installed after the 3rd or 4th course of block is laid.



- In most cases, bracing is installed only on the inside of the wall structure, since this is where all the labor work occurs.
- Bracing will push very well, but is very limited in pulling the wall. While generally you brace only one side, if you have a wall section that you cannot plumb any other way, you may need to install braces on both sides to properly align the wall.



*Figure 8.29 – Bracing the inside of the wall*

Most bracing and alignment systems are specifically designed to allow for placing scaffolding planks and installing handrails. The planks and handrails are usually provided or acquired separately.



*Figure 8.30 –Platform and scaffold planks*



Bracing is usually attached either with a “hat bracket” that wraps around the strong-back or a screw through a slot in the brace. Amvic recommends using wrapping hat brackets as they screw into two webs. A single center slot screw system is more likely to get damaged and/or get pulled out. If a single slot screw bracing system is used, install the screw near the *top of the slot*. Over tightening the screw may result in the block not settling or compressing which can misalign a wall, however, this is unlikely with Amvic ICF which compresses very little.

If you have glued down the first course of block and it is firmly attached to the footing/slab start installing the brackets on the second course. Continue attaching the brackets on every other course e.g. 2nd, 4th, 6th etc.



*Figure 8.31 – A hat bracket wrapped around a vertical strong-back and screwed to webs on both sides*



### 8.9.2 – Spacing for the Alignment & Bracing System

Depending on the system used and the governing local codes, there are minimum spacing requirements for the bracing which support scaffolding. Following the recommendations below will ensure you are well within the limits of these requirements.

***Recommended Practices:***

- Install two braces within 2 feet (610 mm) of a corner, one on each side.



*Figure 8.32 – Bracing corners on the inside*

- Install a brace at the edge of every door and window opening.



*Figure 8.33 – Bracing both sides of wall openings*



- Install braces along all the wall segments at a maximum of 6 feet (1.8 meters) apart.



*Figure 8.34 – Bracing every 6 feet*

- On walls that end without an adjoining corner (stub walls), install braces on all three sides.
- On T-walls, install at least two kicker braces on the outside of the T (the top). This is because walls tend to bulge at T-joints due to the pressure from the concrete in the leg of the T.

## 8.10 –Preparing Bucks for the Concrete Pour

At this stage you need to re-check the window and door bucks for the final adjustments in preparation of the concrete pour. The following steps are recommended:

1. **Ensure that bucks are square and plumb.** At each door or window buck, check again for square and plumb. Adjust as required.
2. **Glue & fill the buck-block joint.** Once bucks are square and flush, fill the gaps between them and the forms with adhesive foam. Allow this to set for at least 30 minutes.





*Figure 8.35 – Filling gaps between bucks and forms with foam adhesive*

3. **Cleat the corners.** At each buck, at all the four corners on each side, install a cleat that screws to the buck. Overlap the foam to hold the buck flush with the form on both the inside and outside. The cleat can be anything, e.g. a concrete stake, piece of OSB or plywood, etc.



*Figure 8.36 – Installing cleats around wall openings*



**4. Install cross braces for all bucks.** These are required to keep the bucks from bowing due to the pressure of the concrete. Install both horizontal and vertical braces in all doors and windows.

Generally there should be a cross brace at least every 2 feet (610 mm). Lintels over 8 feet (2.4 meters) may require additional shoring.

**Tip**

*When in doubt, add another brace.*



*Figure 8.37 – Bracing wall opening vertically and horizontally*

## 8.11 Additional Bracing

Additional bracing may be needed to connect or bridge at least two intact webs or a web and a buck. You can make this added bracing/cleat with strips of OSB, square patches, dimension lumber, concrete stakes, etc.

Additional cleats or bracing are required for any but are not limited to the following situations:

- Where an internal web has been cut out (to fit around rebar or other obstructions). This illustrates the importance of marking block on the inner face at the time you cut a web so that it later is apparent that the web was cut.
- Where a stack joint exists. A stack joint is when there is no “running bond” pattern between the Amvic ICF block courses. Here the joint between the blocks in a single course are repeated exactly in the same place for the courses to follow. Try to avoid this kind of joint as much as possible.





*Figure 8.38 – Bracing a stack joint on both sides of wall.*

- Where an offset joint exists. An offset joint is where the interlocking system between the block courses does not line up. This most likely happens when you have cut the last block in a wall section so that it fits the required wall dimension. You may also note that the “running bond” pattern on an offset joint is less than 12 inches which is the recommended overlap of the interlock.

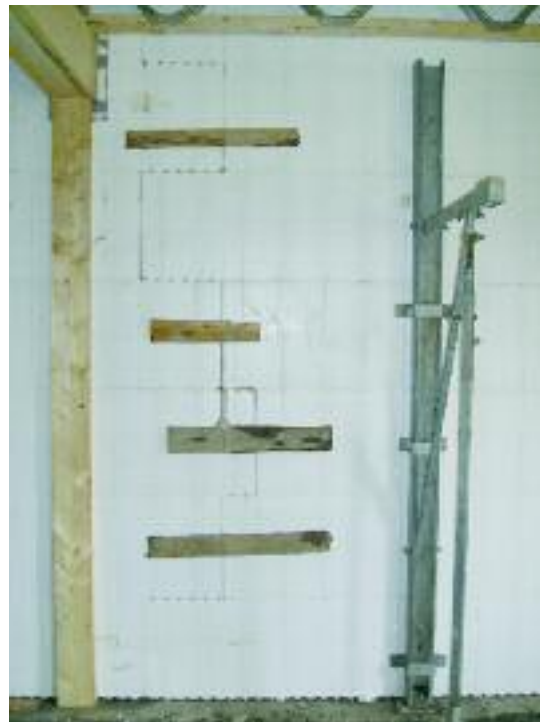


*Figure 8.39 – Additional bracing for an offset joint*



- Where the edge of the block joins a window or door buck if using wooden bucks (not applicable when using V-Buck).



Figure 8.40 – Cleat installation around a door opening using OSB



### IMPORTANT NOTE

*This added reinforcement is extremely important. Failure to install this bracing will frequently produce a blowout. The block itself resists blowout as long as the webs are intact and the joint in any course is locked together both above and below by the interlock.*



## 8.12 - Penetrations

### Utility Penetrations

Penetrations for utilities must be installed after a storey has been stacked and before the concrete has been poured. Generally all wiring and plumbing is run inside the walls by cutting channels in the EPS foam and installing the wiring and plumbing. Wiring for external fixtures is normally run through the wall only at the point where the external fixture will be placed. (For details on electrical wiring etc. please refer to Appendix E of this manual.)

### Penetrations are required for the following:

The following list contains the most common types of penetrations encountered:

- Exterior electrical fixtures
- Exterior electrical outlets and/or fixtures such as pump controls, watering systems, etc.
- Entrances or exits for high voltage electrical wiring
- Low voltage wiring (phone, cable TV, satellite dishes, conventional antennas, alarm systems, gate controls, etc.)
- Dryer vents
- Wall venting chimneys
- Condensate lines or other lines for furnaces and air conditioning
- Water lines
- Water faucets
- Crawl space vents and/or crawl space access doors
- HVAC ducts (for example when the furnace is in the garage and ducts run beneath a raised floor)



#### Tip

*Consider installing extra penetrations for potential future needs.*

In most cases a piece of ABS or PVC pipe inserted through the wall can be used for a block-out. Cut a hole the same size as the pipe and insert it all the way through the block. Use adhesive foam around the pipe to seal it.





*Figure 8.41 – Using PVC pipe for penetration block-outs*

## 8.13 – Suspended Floor Installations

Floor systems are most commonly suspended from rim joists or ledgers that are mechanically attached to the concrete with anchor bolts or with a proprietary tie. The Simpson Strong-Tie™ ICFLC ledger is highly recommended, as it simplifies installation and can be used with both wood and steel floor joists.

### 8.13.1 – Ledgers Installed with Anchor Bolts

Anchor bolt sizing, spacing and pattern of installation, must be specified by the structural engineer as it is an essential element of the structural design. The “Prescriptive Method” contains engineering tables for using anchor bolts to connect wood floor joist to ICF walls. (Please check Appendix B of this manual for more information on this subject.)



**Installation:**

1. Cut 8 inch x 8 inch (200 x 200 mm) pieces of OSB or plywood and drill a hole in the center for the anchor bolt.
2. Install the anchor bolt through the hole using double nuts on either side. Make sure the anchor bolts used have enough thread to allow double nuts on both sides. With  $\frac{1}{2}$  inch (13 mm) OSB, you need approximately  $3\frac{1}{4}$  inch (83 mm) of thread.



*Figure 8.42 – Cutting square OSB boards for anchor bolt installation*

3. Cut out a 4 inch (100 mm) wide opening between webs, up to the full height of the ledger. Make the top and bottom cuts with a flare to the inside at 20-30 degrees allowing the concrete to readily fill the cavity.



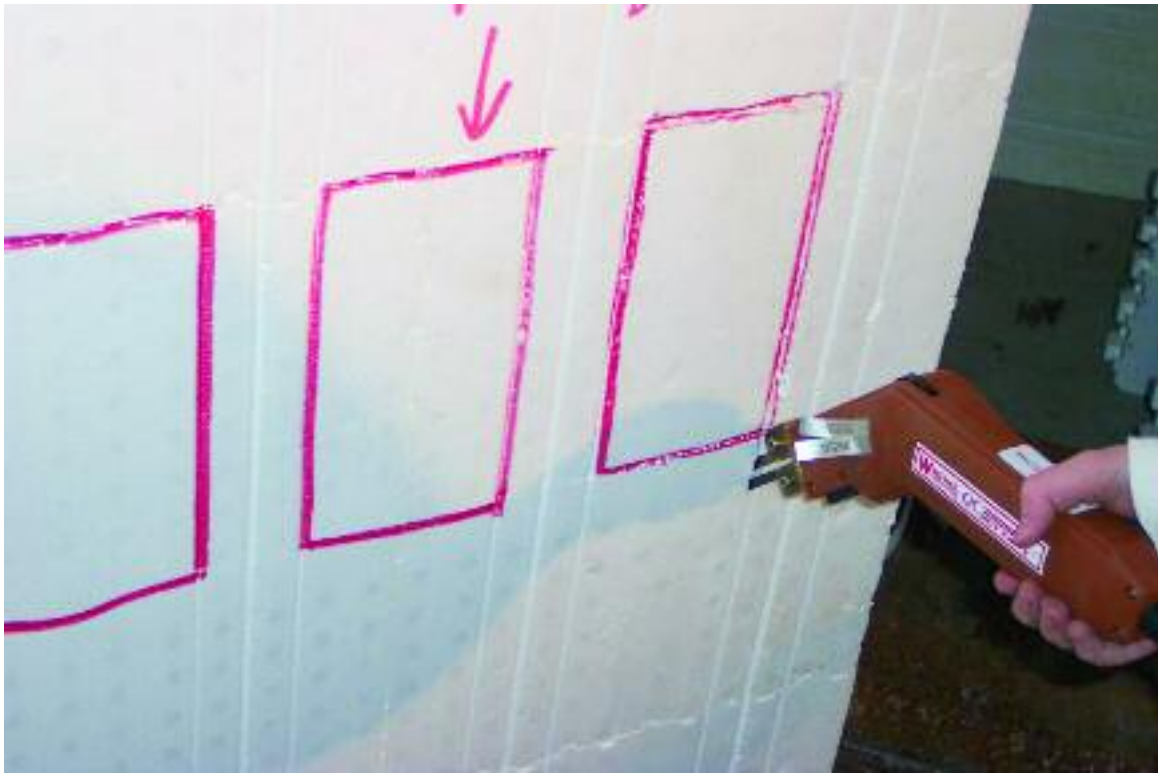


*Figure 8.43 – Cutting openings in EPS between webs*



*Figure 8.44 – Making the end cuttings flare out*



4. Place the OSB & anchor bolts into the holes and attach with four screws, one in each corner. Sheetrock screws work well.



*Figure 8.45 – Installing the OSB with anchor bolts onto the EPS openings and securing with sheet rock screws*

5. Allow the concrete to gain adequate strength after the pour and before tensioning the anchor bolts.



*Figure 8.46 – Allowing the concrete to cure for at least 3 days before removing the OSB square pieces*



6. Install the ledger, by leveling it precisely below the anchor bolts. Using a reference block, do a drop down takeoff and drill holes slightly larger than the anchor bolts. Place the ledger. Install the required anchor bolt washers and nuts.
7. Use standard joist hangers to attach floor joists.



*Figure 8.47 – Installing ledger board with proper nuts and washers*

### 8.13.2 - Installing Ledgers with the Simpson Strong-Tie™ ICFLC Ledger Connector

The Simpson Strong-Tie™ ICFLC connector is the preferred method for attaching a ledger, primarily because it lowers the cost of construction of the floor. The labor time to install an ICFLC hung ledger is up to 30% less than for an anchor bolt hung ledger.

Simpson's ledger connector system is easy, quick and versatile to use. The perforations in the embedded leg of the ICFLC permit the concrete to flow around it anchoring the ICFLC securely with the block. The exposed flange provides a structural surface for mounting either a wood or a steel ledger. In addition, the new ICFLC & ICFLC-W/CW ledger connector system is engineered to solve the challenges of mounting steel or wood ledgers on insulated concrete form (ICF) walls.

The system comes in three parts:

- a. Base plate designated as **ICFLC**. This can be either 16 gauge (0.054 inch thickness) or 14 gauge (0.068 inch thickness) galvanized steel.



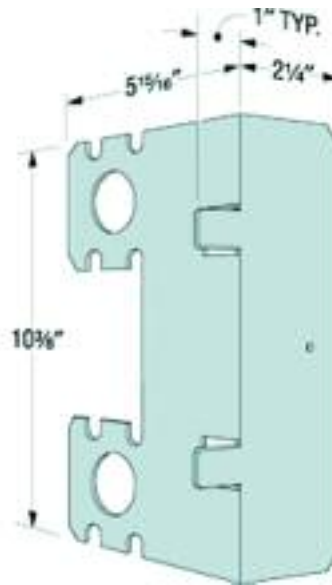


Figure 8.48 – ICFLC

- b. Ledger hanger designated as **ICFLC-W** or **ICFLC-CW** made of 16 gauge (0.054 inch thickness) galvanized steel.
- c. Self tapping screws.

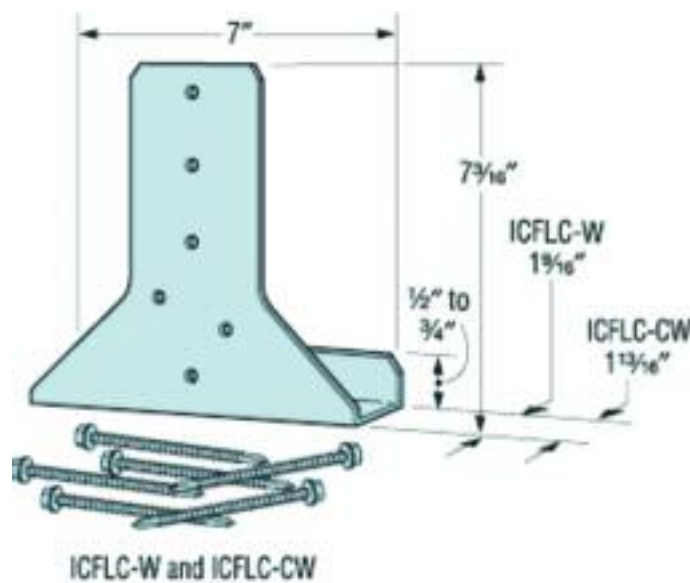


Figure 8.49 – ICFLC-W/CW and Screws



**Installation:**

1. Make a saw cut in the block and insert the long blade of the ICFLC piece into the block.



*Figure 8.50 – Inserting the ICFLC long blade through the EPS and into the concrete*

2. Fix it in place with a foam adhesive or a single screw through the small hole in the ICFLC, into an adjoining web.
3. After the concrete has been poured and has cured for 3-4 days place the ledger in the proper place, level it and temporarily brace it.



*Figure 8.51 – Securing the ledger board in place temporarily*



4. Install the ICFLC-W/CW piece around the ledger.
5. Using a driver drill, install the self-tapping machine screws through the holes in the ICFLC-W/CW, through the ledger and into the flange of the ICFLC.



*Figure 8.52 – Installing the ICFLC-W around the ledger board and drilling self tapping screws in the designated holes through to the ICFLC piece*

6. Attach the floor joists to the ledger board using standard Simpson Strong-Tie™ or equivalent.



*Figure 8.53 – Attaching floor joists to the ledger board with the Simpson Strong-Tie™*





### Link

Please visit <http://www.strongtie.com/products/connectors/ICF.html> for technical and engineering information for ICFLC system

## 8.14 – Beam Pocket – Floor Joist Directly Bearing on ICF Wall

Steel beams and solid wood floor joists may be required to bear on the ICF walls according to the plans. A beam pocket made inside the wall will have to be created as per the following steps:

1. Establish the beam dimensions and the elevation at which it will be installed. Use a laser level to mark the elevations on the inside of the EPS panel.
2. On one side of the wall where one end of the beam will bear, cut out an opening from the inside and outside EPS panels. Make sure that the cut out pieces are aligned and are larger than the actual beam size by about  $\frac{1}{2}$  inch (13 mm) all around. This will facilitate placing the beam in place.



Figure 8.54 – Cut out opening from the inside and outside EPS panels on one side

3. On the opposite wall where the other end of the beam will be bearing, cut out a piece from the inside EPS panel only. The opening should be aligned with the one on the opposite wall and larger than the actual beam size by  $\frac{1}{2}$  inch (13 mm) all around.



4. Block the void between the two openings in one wall completely from inside out using waste EPS or wood. The opening in the other wall should also be blocked deep enough into the wall cavity to provide the required bearing length as depicted on the plans.

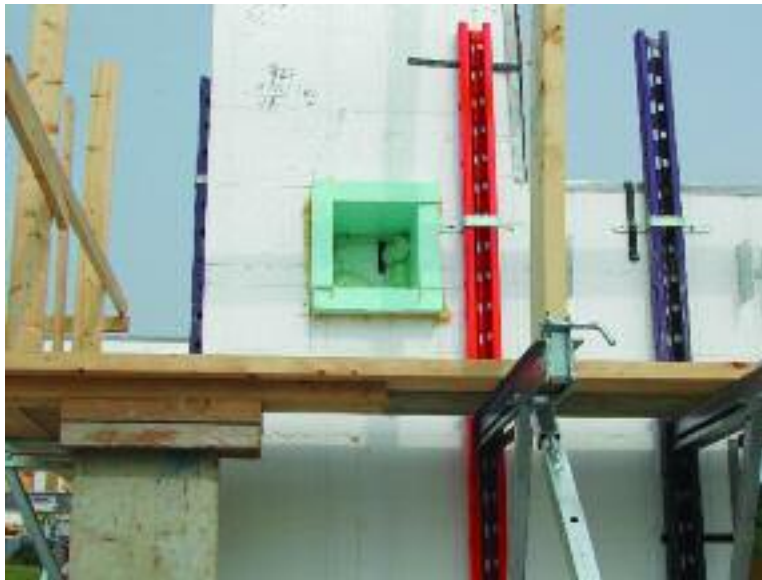


*Figure 8.55 – Blocking void with EPS before pouring concrete*

5. After the concrete is poured and has gained enough strength, break off the blocking EPS or wood to reveal the beam pocket or voids created in the wall.
6. Maneuver the beam in place and secure. Seal the area between the beam and void pocket as required.



*Figure 8.56 – Maneuvering wood beam in place to bear on beam pocket*



## 8.15 - Final Adjustments Prior Pouring Concrete

**Check corners for plumb.** Reconfirm that corners are plumb. If they are not, use additional bracing as required to plumb corners.

**Straighten the walls.** Set a screw at each corner and install a taut string line around the perimeter of the wall. Use an offset block (2x4 lumber piece) set at the corners, on the top course of forms behind the string line using another block of equal size as a guide to set the wall to the string line.



### Tip

*Many builders prefer to lean the center of each wall inward (toward the bracing) by  $\frac{1}{4}$  inch or so at the center of the wall segment. Then immediately after the pour, the braces are adjusted to push the wall segment perfectly in line.*

