

10 Step Construction Guide



The following manual is a condensed version of the Amvic Building System Installation Guide. It is a useful tool to take with you to the jobsite as a reminder of the various steps that are involved in Amvic ICF construction. With the right knowledge, tools and materials, your Amvic ICF project will become a more comfortable, energy efficient and sustainable home.

All Amvic forms are designed with FormLock™ technology on all edges of the form. FormLock™ is a pre-formed interlocking system that holds the courses of block securely together. This prevents movement of the forms during concrete placement and concrete leakage during pouring.

Within the Amvic Building System product line, straight, 90-degree, and 45-degree forms (excluding 10") are available as well as various brick ledge, taper top and radius forms.

In order to ensure the success of your ICF installation, Amvic offers a unique training program which covers the basics of ICF construction from footing to rafter including floor and roof connections, consolidation, proper rebar placement and much more. Classroom presentations and discussions as well as hands on wall building make this an exciting event.

For more information please contact us at 1-877-470-9991 or visit our website at www.amvicsystem.com.

Our products
stronger every day



Step 1



Plan the outline of the block and the location of door and window openings on the footing or slab.

Step 2



Place the first corner blocks on each corner,

then lay the straight blocks toward the centre of each wall segment. On the first course, use zip-ties on the webs to connect the blocks and pull them snugly together. Following this, install horizontal rebar by placing it in the clips at the top of the internal webs within the block cavity. The clips hold the rebar securely and eliminate the need for wire tying. (Repeat this step for each course of block).

Step 3

Install the second course of block by reversing the corner blocks, so that the second course of block is offset from the first, in a running bond pattern.



At this point check for level across all of the blocks.

If the courses are not level, use shims or trim the block as required.

Step 4



Install window & door frames (“bucks”) at each location

where an opening is required; cut and fit the Amvic blocks around them. Bucks are used to hold back the concrete and stay in place permanently providing a nailing surface for the installation of windows and doors. Pressure-treated lumber or vinyl bucks may be used.

Step 5



Install following courses of block by continuing to overlap

the courses so that all joints are locked both above and below by overlapping blocks.

Step 6



Install alignment bracing around the entire

wall of the structure to ensure that the walls are straight and plumb and to enable alignment adjustment before and during the pour, to maintain the walls plumb. The bracing also serves the dual purpose of providing a secure and safe framework to support scaffolding planks once five courses have been stacked. Stack the block to the full wall

Step 7



height for single storey construction, or to just

above floor height for multi storey construction. Cut the vertical rebar to length and begin installing it from the opening at the top of the wall through the spaces between the horizontal rebar.

Step 8



Pour the concrete into the stacked walls using a boom pump. Do this in layers approximately 3 - 4 feet at a time, circling the structure

until the top of the wall is reached. Next, use a mechanical pencil vibrator to vibrate the concrete and remove all air pockets within the wall.

Step 9



Screed off the concrete until it is even with the block top and then “wet set” anchor bolts into the concrete top. These bolts will be

used later to install the top plate (mud sill) for the installation of rafters or trusses.

Step 10

Remove the bracing after the concrete has cured, then proceed with further stages of construction.

Tools and Material Lists

Tools needed for block installation:

- Hand saws: either folding pruning saw or conventional rip saw*
- Tape measure*
- Cordless driver drill with appropriate driver bits*
- Sun protective gear (hats and sunscreen)*
(* each work crew member)
- Portable power saw
- Keyhole saw
- Table saw (optional, for convenience)
- Hammer drill
- Rebar tie tools ("Yankee" twist type preferred)
- Hammer
- Framing square
- Level (2' & 6')
- Laser level, water level, or transit
- Plumb bob
- Mason's line (a lot - enough to circle the structure)

Materials list:

- Reinforcing steel, as required, plus accessories, e.g. rebar ties, stirrups.
- Screws [to attach alignment bracing to ICF blocks]: 1 5/8 inch, 2 1/2 inch, #10 course thread
- Concrete Screws 1 1/2" to 1 3/4" (TAPCON brand or equivalent) to attach foot of alignment braces to the concrete slab
- Material for rough openings (i.e. 2x12, 2x3 and 2x2 lumber or plywood for fabricating wood bucks, anchors e.g. spikes, anchor bolts or nails) or V-Buck
- Tie wire in rolls and in pre-made rebar tie loops
- Anchor bolts, nuts, and washers or Simpson IFLC ledger connectors (order both pieces)
- Sleeves for mechanical and/or electrical.

- Chalk line
- Foam gun
- Rebar bender and cutter
- Scaffold planks
- Wall alignment & bracing system
- Steel Stakes to anchor alignment braces to earth (n/a if bracing off a slab)

Tools for pour days:

- Concrete Vibrator, 1" maximum head – 10 - 14' shaft (a spare is advisable)
- Rubber gloves for all work crew
- Hard hats
- Concrete finishing tools
- Flat shovels (for spill cleanup)

Tools for utilities installation after pour:

- Hot Knife (for electric box cutout)
- Electric chain saw (for cutting channels for Romex and plumbing)
- Foam gun

- OSB or plywood to bridge cut joints or removed webs, block-out for anchor bolts, etc.
- *Foam 2 Foam* EPS controlled-expansion foam/adhesive
- Waterproofing system such as Polyguard membrane and dimple drain board



For Tips and Tricks and Frequently Asked Questions please visit our website at www.amvicsystem.com



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