



FLOWERS

ICF Blocks **INSTALLATION CHECKLIST**

Innovative Technology from a name you can trust



FLOWERS



Industrial Strength Insulated Concrete Forms (ICF)



INSTALLATION CHECKLISTS

The Checklists on the following pages are to help remind you of proper sequencing as well as highlight items that could be missed.

The lists will help crews continue to build efficiently at times when the lead hand is unavailable.

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PHASE 1: PRIOR TO JOB

- 1 Blueprint shows rebar schedule or proper rebar design has been established.
- 2 Rough opening sizes are available for all window and door openings.
- 3 Wall heights have been pre-planned to determine the number of courses needed.
- 4 Height of top and/or bottom of openings are clear.
- 5 Depth of backfill is clear if needed.
- 6 Thickness of concrete is established.



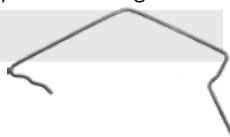
PHASE 2: PRODUCT DELIVERY

- 1 Provide clear access for delivery truck.
- 2 Staging area is established for block.
- 3 Bracing and rebar should arrive at or close to the same time as ICF block.
- 4 Job is squared prior to material being moved in. *(Hard to do after)*

PHASE 3: START OF JOB

ITEMS NEEDED TO BUILD JOB:

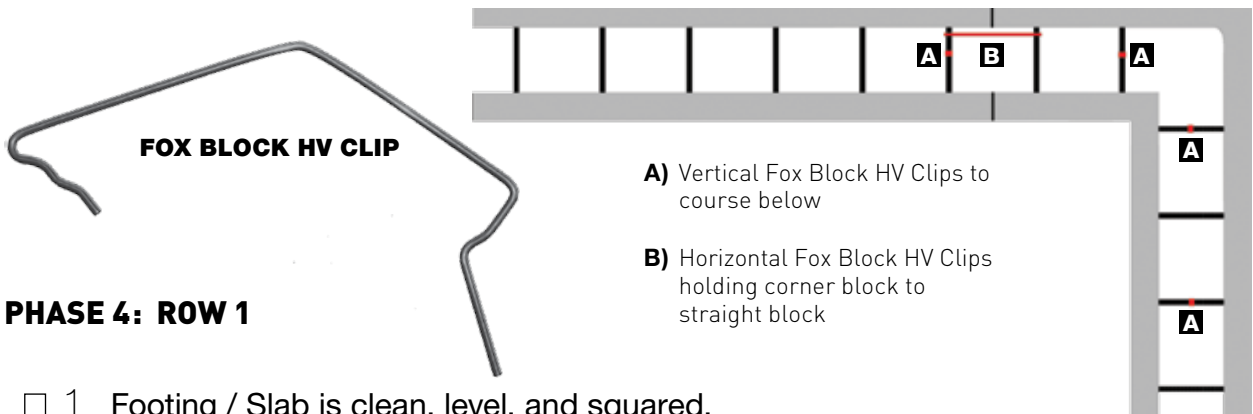
- 1 Rebar and design
- 2 Blueprint
- 3 Buck material and opening sizes
- 4 ICF blocks
- 5 Alignment/scaffold system including screws
- 6 2 x 10 planks
- 7 Anchor bolts or Simpson Hangers
- 8 Strapping
- 9 Fox Block HV Clips



TOOLS INCLUDING:

- 1 Saws (pruning and handsaw)
- 2 Tie wire & Pliers
- 3 Spray foam adhesive
- 4 Rebar bender / cutter
- 5 Chalk and string lines
- 6 Proper signage
- 7 Table saw to rip cut block





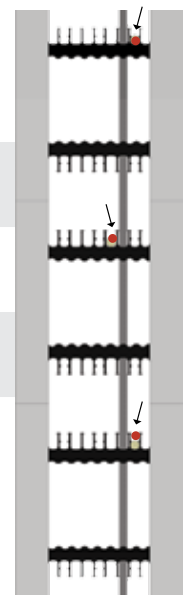
PHASE 4: ROW 1

- 1 Footing / Slab is clean, level, and squared.
- 2 Chalk lines are complete. *(Outside of form is outside of building dimension.)*
- 3 Mark out all window and door openings on working surface. Have someone start to build bucks.
- 4 Place the ICF corner block - line up to chalk line (can go either way with long leg of corner).
- 5 Starting at corner block, place straight ICF blocks and attach tightly together, end to end, with Fox Block HV Clips.
- 6 Work from each corner block toward the center of the wall, creating a joint at an opening works well.
- 7 Decide if you are going to use a butt or lapped joint. *(Butt joints do not need to be cut on a line. Lapped joints must be cut straight and on a line.)*
- 8 Once 1st row is complete, install rebar as per plans, code, or engineering. *(See sheet 2 on reinforcement)*



PHASE 5: REINFORCEMENT

- 1 As rebar is placed, remember that concrete needs access to fill wall.
- 2 Horizontal rebar should alternate to allow vertical rebar to be held in place.
- 3 All lap splices should overlap 40 bar diameters. *(Unless Engineering shows different)*
- 4 Contact lap splices must be tied. Non-contact lap splices do not need to be tied.
- 5 Lintel rebar should have 2" concrete cover at bottom. *C - Stirrups as per reinforcing charts or*



Engineering Clever Tip: Reinforcing Steel

Below Grade Walls = Usually Tension

Side. Above Grade Walls = Usually Center of Wall

**PHASE 6: ROW 2**

- 1 Start row 2 at same corner you started row 1, using the opposite corner you started with on row 1.
- 2 Place straight forms from the corner form. Webs should line up automatically.
- 3 Use Fox Block HV Clips to connect rows 1 and 2 together at 24" o/c and 1st and 3rd tie from every corner.
- 4 Once 2nd row is complete, install rebar as per plan, code, or engineering.
- 5 Check top of 2nd course to confirm level footings. Shim and/or trim as needed to be +/- 1/4"
- 6 If satisfied, kick wall to the chalk lines and spray foam to footings at 16" o/c and both sides of wall. *(Insert tip of spray foam under form so spray foam fills about 2" of space)*
- 7 Remember that courses 1,3,5,7 and courses 2,4,6,8 are all the same pattern for stacking. Once you have the first two courses stacked, this becomes your blueprint for all other courses.

**PHASE 7: ROW 3**

- 1 Start at same corner as row one and lay forms out along wall.
- 2 All joints should line up with joints on row one.
- 3 Use Fox Block HV Clips on 1st and 3rd tie from each corner and in both directions from corner.
- 4 If a block is to be cut, it's size should be the same as row one.
- 5 Install rebar as per plan, code, or engineering.

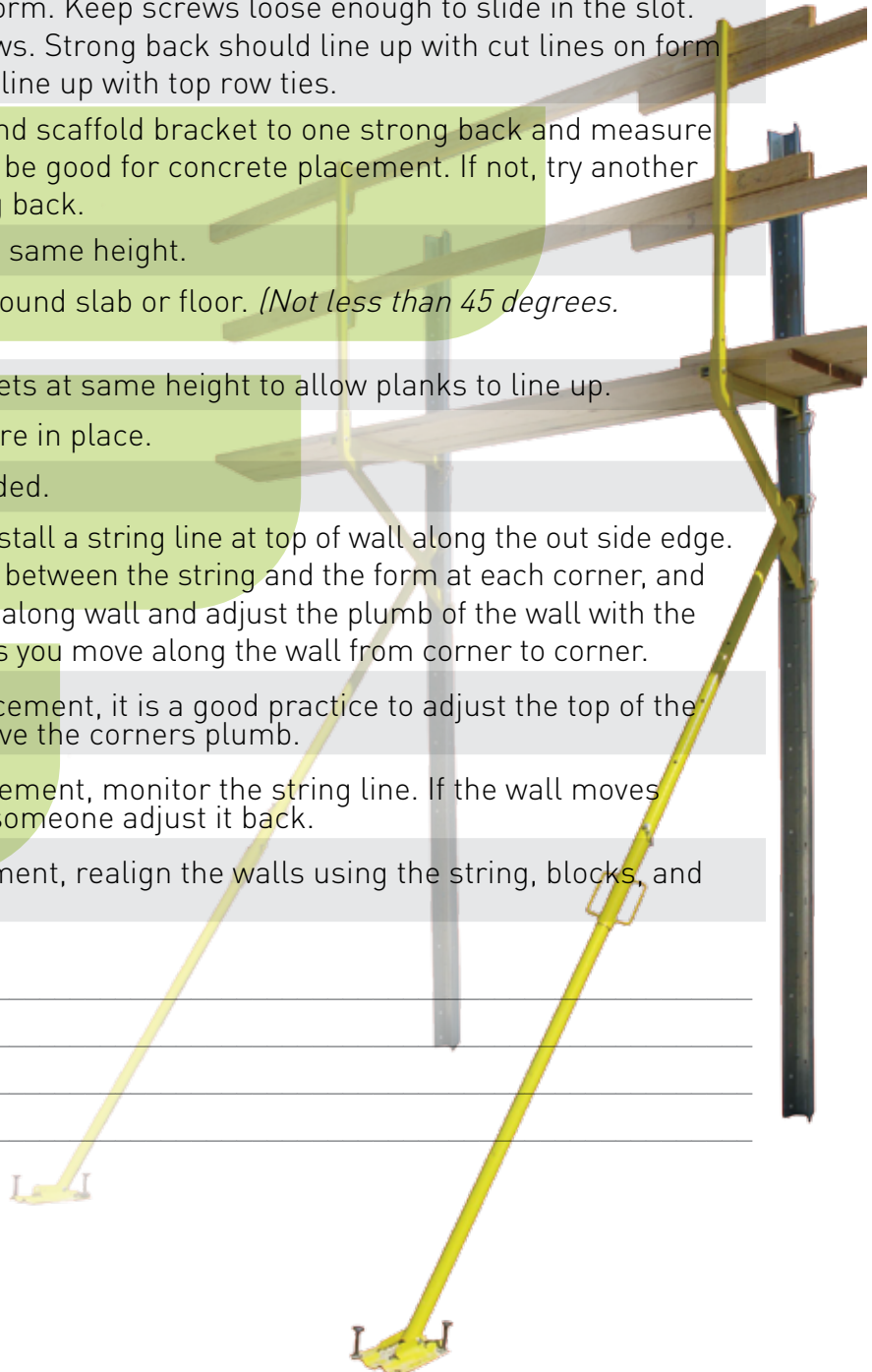
PHASE 8: ROW 4

- 1 Start at same corner as row one and lay forms out along wall.
- 2 All joints should line up with joints on row two.
- 3 Use Fox Block HV Clips on 1st and 3rd tie from each corner and in both directions from corner.
- 4 If a block is to be cut, it's size should be the same as row two.
- 5 Install rebar as per plan, code, or engineering.



PHASE 9: BRACING

- 1 When laying out bracing, keep in mind how it will safely support scaffold planks.
- 2 At each corner you should have at least one scaffold, place it on the 4th tie from the corner. (24")
- 3 Space bracing so planks will fit. *(9 or 10 webs apart work good for 14' planks)*
- 4 Attach strong backs using one #10 sheet metal screw, at the top of the slots, into the tie of each ICF form. Keep screws loose enough to slide in the slot. Do not use tapping screws. Strong back should line up with cut lines on form units to ensure they will line up with top row ties.
- 5 Attach one turnbuckle and scaffold bracket to one strong back and measure to make sure height will be good for concrete placement. If not, try another set of holes in the strong back.
- 6 Install all turnbuckles at same height.
- 7 Attach turnbuckles to ground slab or floor. *(Not less than 45 degrees. Extend if needed)*
- 8 Install all scaffold brackets at same height to allow planks to line up.
- 9 Place planking and secure in place.
- 10 Install guard rails if needed.
- 11 Plumb all corners and install a string line at top of wall along the out side edge. Slide a 3/4" spacer block between the string and the form at each corner, and slide a 3/4" spacer block along wall and adjust the plumb of the wall with the alignment turnbuckles as you move along the wall from corner to corner.
- 12 Just before concrete placement, it is a good practice to adjust the top of the wall IN about a 1/4". Leave the corners plumb.
- 13 During the concrete placement, monitor the string line. If the wall moves toward the string, have someone adjust it back.
- 14 After the concrete placement, realign the walls using the string, blocks, and turnbuckles.

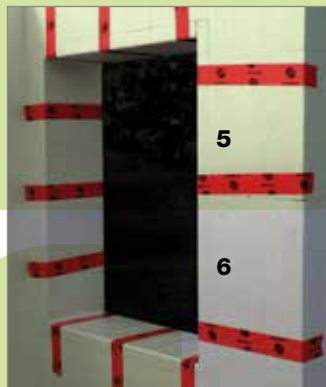
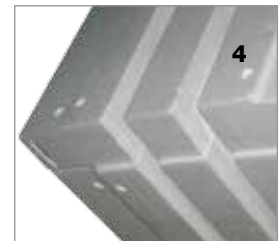
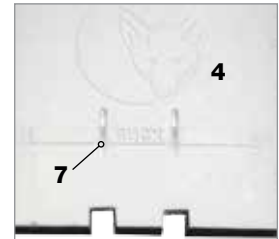




PHASE 10: OPENINGS

FOX BUCK

- 1 Build wall as normal with opening 4" larger than rough opening called for.
- 2 Ensure all opening rebar is properly placed and secured.
- 3 Double check opening measurements.
- 4 Cut side to length and notch each end 3/4" as in photo.
- 5 Place Fox Buck sides into place and hold with tape.
- 6 Cut and place top and bottom Fox Bucks.
- 7 Penetrate all slots with a nail or screw to ensure entrapped air can escape during concrete placement.
- 8 Cut and remove all circles in sill to ensure proper concrete consolidation during concrete placement.
- 9 Brace inside opening to hold square during concrete placement.
Optional: Spray foam can be used to completely seal buck to block



CONVENTIONAL WOOD BUCKS

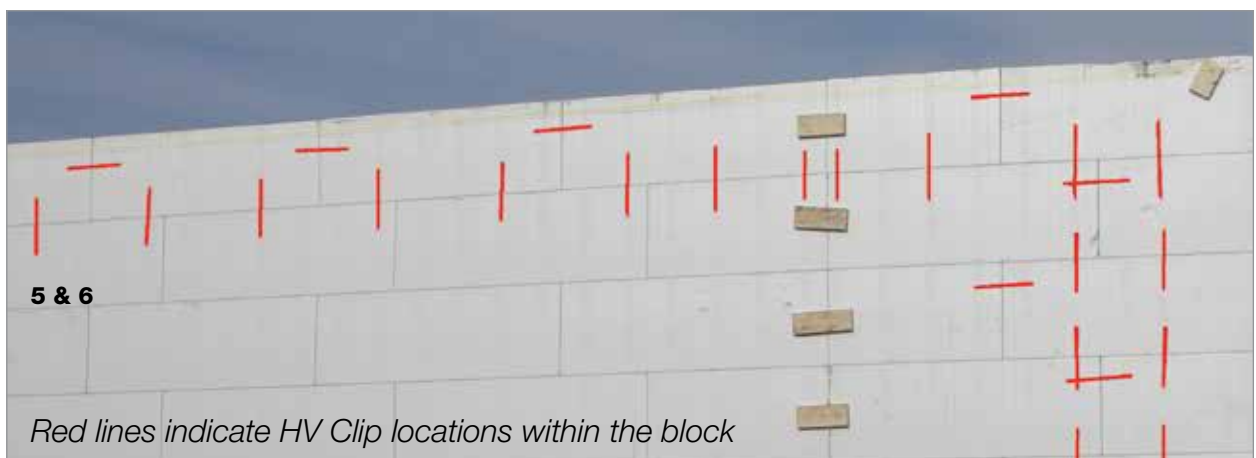
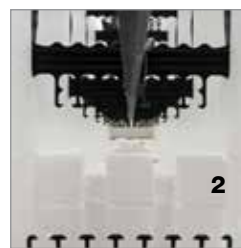
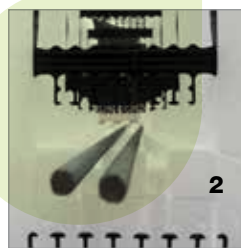
- 1 Establish the bottom of buck and mark on forms.
- 2 If the outside edge of buck lines up on a tie you should alter web pattern or simply slide the buck over.
- 3 Cut the forms to accept the bucks.
- 4 If needed, install vertical rebar into spaces under the buck locations.
- 5 Bucks should be built with access points in bottom to allow for concrete placement.
- 6 Place the bucks into position on wall. Buck does not need to line up with cut lines on forms.
- 7 Build ICF forms around buck.





PHASE 11: TOP ROW

- 1 Establish where lintel rebar will need to be prior to laying forms in place.
- 2 If needed, place lintel rebar on top of window and door bucks. Remember to keep the rebar up off the buck to allow the proper amount of concrete to flow around rebar as required by code.
- 3 Start at same corner as row one and lay forms out along wall.
- 4 Use Fox Block HV Clips to hold the forms together horizontally.
- 5 Use Fox Block HV Clips at 1st and 3rd tie from each corner and in both directions from corner.
- 6 Use Fox Block HV Clips on entire row at 2' o/c (*Second tie back from all joint lines*).
- 7 Install service penetrations if needed.
- 8 Insert beam pockets if needed. *Hint: 2 layers of ICF foam cut from scrap on site will give you a 5 1/4" pocket. Then just cut it out after the concrete cures.*
- 9 Install vertical rebar as per plan, code, or Engineering.





PHASE 12: PRIOR TO CONCRETE

- 1 Attach a string line to monitor wall during concrete placement. *(A good spot for the string line is opposite the bracing, about 2" down from the top of the wall. See notes in bracing section)*
- 2 Rebar and lintel steel is complete as per plan.
- 3 Openings have been braced and framed.
- 4 Stacked joints (any joints 8" or less apart) have been strapped.
- 5 Short wall sections (4' or less) have been strapped.
- 6 Beam pockets are in place.
- 7 Sill plate attachment is ready for installation after concrete placement.
- 8 Space is ready for concrete pump to set up.

PHASE 13: MULTIPLE LEVELS

- 1 Top of foam has been covered to protect from concrete.
- 2 Service penetrations have been installed. *(Vents, central vac exhaust etc.)*
- 3 Rebar dowels are ready to be installed.
- 4 When placing concrete, remember to leave a portion of the tie exposed. This will allow you to tie the next row down when you continue building.
- 5 Embeds installed and secured.



PHASE 14: CONCRETE

Establish concrete crew and who will be responsible for what.

- 1
 - a. One person to place concrete
 - b. Two people to consolidate concrete
 - c. One or two people leveling walls
 - d. Extra manpower on pour day is not a bad thing!
- 2 You have to tell the pump operator how many lifts you will be doing and what slump concrete you want. 2' to 4' lifts with a 5" to 6" slump is normal.
- 3 Start placing concrete at least 2' from a corner. (Never into a corner as it could move the wall). Always flow the concrete through the corner.
- 4 If the concrete gets through the top rebar with just a bit of restriction the slump is good. If the concrete flows freely past the top rebar the slump could be too high.
- 5 Create a lift of concrete on either side of corner before actually filling the corner. These lifts on either side act as an anchor holding the corner in place
- 6 At a window, fill from one side and let the concrete flow under the window buck, then stop the pump, move to the opposite side of the buck, and continue. Some windows will require extra concrete be placed into the opening at bottom of buck.
- 7 Consolidate concrete during each lift following the person who is placing concrete.
- 8 Leave at least 18" to 24" at top of wall for final lift. This will allow concrete pump to keep up.
- 9 Monitor walls during and after concrete placement and then adjust turnbuckles to level walls.
- 10 If required, install anchor bolts.
- 11 Ensure all window and door bucks have been consolidated properly by hitting their face all around with a hammer.
- 12 Clean concrete off footings, slabs, scaffold, walls, tools etc.
- 13 Before leaving, take one last look to ensure your walls are straight and plumb.



PHASE 15: POST CONCRETE

- 1 Bracing should be left in place for 72 hours after concrete placement. If you must remove bracing, from 24 to 72 hours after concrete placement, it is recommended that you place temporary bracing against walls prior to removing ICF bracing.
- 2 Damp proofing may be required according to building code. *(Peel & Stick and/or dimple membranes have been the most common damp proofing methods for ICFs.)*
- 3 Prior to backfill, you may need to have floor diaphragm in place according to building code.

PHASE 16: EXTREME WEATHER CONCRETING

When building with ICFs in extreme weather, there are just a few additional precautions that need to be taken.

- 1 Keep walls covered to keep snow out of wall cavity. Concrete does not melt snow.
- 2 If you get snow into the wall cavity you must remove it prior to concrete placement. This can be done by cutting temporary holes into the bottom of forms or drizzling hot water into the forms. Hot water comes on the mixer trucks in winter.
- 3 Use 18" wide insulated tarps or equivalent along top of wall.
- 4 In very cold weather (-0° F / -20° C), only lift off 8' of insulation at a time while placing concrete. This will allow the warmth of the concrete to preheat the wall and rebar during the pour.
- 5 When complete, cover the wall to protect concrete from cooling. The hydration process will keep the wall at a good temperature without the need for any extra hoarding or heating.
- 6 Remember to cover exposed concrete at bucks.
- 7 In very hot weather, keep exposed concrete covered and apply moisture.



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