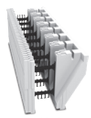
| FORM (HEIGHT 16″) | CORE | WIDTH | LENGTH | RETURN | AREA | CONCRETE VOLUME |
|---|---|---|---|---|---|---|
| Straight | 4″ | 9″ | 48″ | N/A | 5.33 ft² | .07 yd³ |
| | 6″ | 11″ | 48″ | N/A | | .1 yd³ |
| | 8″ | 13″ | 48″ | N/A | | .13 yd³ |
| | 10″ | 15″ | 48″ | N/A | | .16 yd³ |
| | 12″ | 17″ | 48″ | N/A | | .2 yd³ |
| 90° Corner | 4″ | 9″ | (e) 31″ (i) 22″ | (e) 19″ (i) 10″ | 5.56 ft² | .05 yd³ |
| | 6″ | 11″ | (e) 33″ (i) 22″ | (e) 21″ (i) 10″ | 6.00 ft² | .09 yd³ |
| | 8″ | 13″ | (e) 35″ (i) 22″ | (e) 23″ (i) 10″ | 6.44 ft² | .12 yd³ |
| | 10″ | 15″ | (e) 37″ (i) 22″ | (e) 25″ (i) 10″ | 6.88 ft² | .15 yd³ |
| | 12″ | 17″ | (e) 39″ (i) 22″ | (e) 27″ (i) 10″ | 7.33 ft² | .19 yd³ |
| 45° Corner | 4″ | 9″ | (e) 28″ (i) 24.272″ | (e) 16″ (i) 12.272″ | 4.89 ft² | .05 yd³ |
| | 6″ | 11″ | (e) 28″ (i) 23.444″ | (e) 16″ (i) 11.444″ | | .08 yd³ |
| | 8″ | 13″ | (e) 28″ (i) 22.615″ | (e) 16″ (i) 10.615″ | | .11 yd³ |
|  Brickledge | 4″ | 9″ | 48″ | N/A | 4 ft² | .10 yd³ |
| | 6″ | N/A | 48″ | N/A | | .13 yd³ |
| | 8″ | N/A | 48″ | N/A | | .17 yd³ |
| | 10″ | 15″ | 48″ | N/A | | .20 yd³ |
| | 12″ | 17″ | 48″ | N/A | | .24 yd³ |
| Double Taper Top | 4″ | 9″ | 48″ | N/A | 5.33 ft² | .1 yd³ |
| | 6″ | N/A | 48″ | N/A | | .13 yd³ |
| | 8″ | N/A | 48″ | N/A | | .16 yd³ |
| | 10″ | N/A | 48″ | N/A | | .2 yd³ |
| | 12″ | N/A | 48″ | N/A | | .26 yd³ |
| BuildBuck | 4″ | 9″ | PIECE LENGTH 52″ NOMINAL LENGTH 48″ | N/A | 3.125 ft² | N/A |
| | 6″ | 11″ | | N/A | 3.82 ft² | N/A |
| | 8″ | 13″ | | N/A | 4.51 ft² | N/A |
| BuildRadius 2 ft | 6″ | 11″ | OUTER PANEL 48″ INNER PANEL 30.75″ | 18″/6″ | 5.33 ft² | .06 yd³ |
| BuildRadius 4 ft | | | OUTER PANEL 60″ INNER PANEL 42.75″ | 12″/0 | 6.67 ft² | .11 yd³ |
| BuildRadius 8 ft,12 ft,16 ft,20 ft | | | OUTER PANEL 24″ | INNER PANEL 19.75″ | 2.67 ft² | .05 yd³ |
| | | | | INNER PANEL 21.125″ | | .05 yd³ |
| | | | | INNER PANEL 21.8175″ | | .05 yd³ |
| | | | | INNER PANEL 22.25″ | | .05 yd³ |

MORE INFORMATION AVAILABLE AT BUILDBLOCK.COM

## STEPS FOR ACCURATE ESTIMATING

1. Divide wall height by 16″ and round up. This is the **number of courses** required.
2. Multiply the # of 90° corners in the structure by the # of courses. This is the **number of 90° corner forms** required.
3. Multiply the # of 45° corners in the structure by the # of courses. This is the **number of 45° corner forms** required.

4. Use the table to determine the **total square footage** of all **90° forms** to be used. (Number of 90° forms multiplied by sq. ft. per form.) Do the same for the **45° forms**.
5. Determine the **total square foot area of wall** being formed (width x height, minus 80% of window and door openings). Subtract total square foot of all 90° forms to be used and all 45° forms to be used.
6. Divide the remaining square footage of the wall by 5.33 to determine the **number of straight forms required**. Add a small number of forms for possible waste.
7. Estimate the **concrete volume** required by the following: Divide total square footage of wall to be formed, including corners, by 80 for 4″, 53 for 6″, 40 for 8″, 34 for 10″, or 27 for 12″. This equals the **number of cubic yards of concrete** required. Add 1.5 additional yardage for waste and the pump.

## RECOMMENDED TOOLS & MATERIALS

### *TOOLS LIST*

- Hand Saw
- Power Saw
- Keyhole Saw
- Table Saw (Optional, For Convenience)
- Hammer Drill / Cordless Drill
- Rebar Tie Tool
- Hot Knife, Router
- Hammer
- Framing Square
- Concrete Tools
- Level, Laser Level
- Mason's Line And Chalk Line
- Rebar Bender And Cutter
- Scaffold Planks
- Internal Concrete Pencil Vibrator (Max 1″ Head)
- Alignment & Bracing System
- Foam Guns, Low Expansion Foam Adhesive, Foam Cleaner
- Work Gloves
- Sunscreen
- Broom And Floor Scraper

### *MATERIAL LIST*

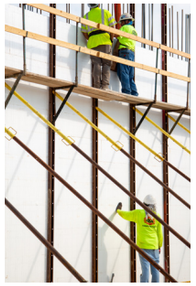
- Reinforcing as required plus accessories, (rebar ties, stirrups)
- Screws (1-5/8″, 2-1/2″, #10 Course thread), Concrete screws 1-3/4″
- BuildBuck window & door bucking material
- Sleeves for mechanical, electrical, plumbing.

### *RECOMMENDED CONCRETE MIX*

*(See our buildblock.com for mix designs and more information.)*

- *3000 psi: Higher psi can be used but lower psi is not recommended. In Canada, minimum 20 mpa.*
- *Aggregate: 3/8″ (10mm) rock chip or river rock is highly recommended. 1/2″ (12mm) aggregate can be used but will require more vibration.*
- *Slump: 5″ - 6″ (Keep in mind as the concrete is being pumped under pressure, it loses approximately 1/2-inch of slump.)*

## PRIOR TO POUR CHECKLIST



- ❑ Are walls straight, plumb, square and level?
- ❑ Are window and door openings sized and located correctly?
- ❑ Are they plumb and square?
- ❑ Are they cross-braced sufficiently?
- ❑ Is reinforcing steel placed in accordance with local building requirements and/or Project Engineer?
- ❑ Is bracing & alignment / scaffold system installed properly?
- ❑ Check all block cuts to make sure there are no loose connections that concrete might push out. Screw wood over any such locations to secure.
- ❑ Are all penetrations (electric, plumbing, HVAC, dryer vents) been placed and secured?
- ❑ Is the concrete acceptable for the method of placement and engineering or code requirements? (See ***Recommended Concrete Mix***.)
- ❑ Have anchor bolts and tie-down straps been located and marked, ready to install?
- ❑ Have all beam pockets been located and cut out?
- ❑ Is adequate labor prepared for pouring?

**NOTE:** Recommended minimum pouring temperature is 15°F (-9°C). Properly handled, specially formulated concrete can be poured at temperatures as low as -15°F (-26°C). Consult your ready mix company. At temperatures below freezing, you must cover all exposed concrete with insulating material.

*This guide is intended for a contractor or installer of BuildBlock Insulating Concrete Forms. It is intended to supplement the basic construction knowledge of a professional.*

*For the latest version of this publication and our complete Installation & Technical Manual visit BuildBlock.com*

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BUILDING SYSTEMS

# POCKET INSTALLATION GUIDE

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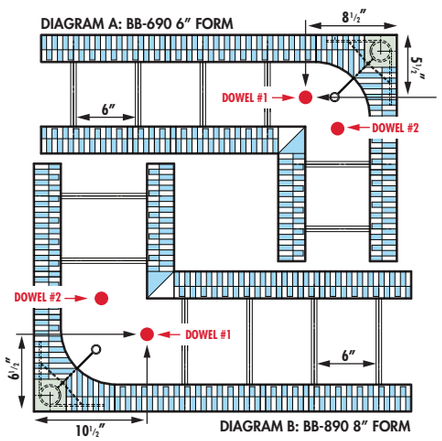
## STEP 1: FOOTING OR SLAB

1. Footing or slab must be level for best results (within 1/4″ in all directions).
2. Establish wall locations on footing or slab with chalk line.
3. Place packaged forms inside perimeter of footing.
4. When pouring footing or slab, place reinforcing dowels as per Project Engineer and/or local building code requirements. The following dowel spacing instructions will prevent dowels from interfering with webs:
5. **6″ 90° Corner:** Place first dowel 5-1/2″ in from one outside edge and 8-1/2″ in from the other outside edge as shown in Diagram A. Reverse those measurements to place Dowel #2. Space remaining dowels on 6″ increments according to your engineering requirements (i.e. 6, 12, 18, or 24″ apart.)
6. **8″ 90° Corner:** Place first dowel 6-1/2″ in from one outside edge and 10-1/2″ in from the other outside edge as shown in Diagram B. Reverse those measurements to place Dowel #2. Then space remaining dowels on 6″ increments as described above. **Note:** Optimum location of steel is centered between webs.




7. Where a step footing is required we recommend that the step be set at 16″ increments to align with courses. If an 8″ step is required, block may be cut in half horizontally.
8. Optional: Drop 1/2″ or 5/8″ rebar rod in circular hole of corner web for additional strength.

## STEP 2: COURSING PLACEMENT

1. Prior to setting forms, determine the exact wall height required for the project. If the wall height required is not divisible by 16″ then one or two courses may need to be cut horizontally. When determining cut, care must be taken to preserve all cross web members.
2. Set corner forms level and plumb. Set straight forms, starting from corners and moving toward center of wall. (Run first course of corners with long side in same direction. Reverse every other course in the opposite direction. This offsets courses and makes a one foot stagger.)
3. Try cutting blocks on vertical lines (center between two interlocks) in a manner that will not jeopardize the blocks functioning interlock. If it is not possible to adjust wall dimensions, a "stacked joint" will be created which should be placed under a window or at center of door to minimize its effect. If possible try to keep this cut four to six feet from a corner.
4. Note that horizontal rebar must be placed as the BuildBlock forms are stacked, per engineering requirements or design. (See Step 4.) Complete first course.

## STEP 3: DOOR & WINDOW OPENINGS

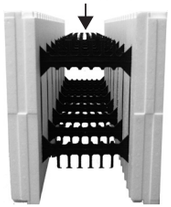
1. BuildBuck is the perfect ICF bucking material to create and insulate all window and door openings. Dimensional lumber should be used only on overhead garage doors.

2. Determine openings for doors and windows: Mark footing or slab at these locations.
3. Determine window and door locations, and sizes. If needed, cut blocks horizontally for setting bucks between block courses. Be careful when cutting through block webs. Additional bracing of blocks may be required.
4. Window and door bucks may be pre-assembled with cross bracing already in place. Please allow 1/2″ oversizing of bucks in both directions over actual window or pre-built door frame sizes. Most manufacturers will provide the frame opening size which may or may not be adequate to work with concrete walls. This will allow you the ability to plumb and level the window or door if things move slightly during concrete placement. Bucks may be installed piece by piece while stacking walls. Make sure all buck pieces are plumb and level and fit window and door rough opening sizes.
5. Securely cross brace all buck openings. Foam glue bucks in place when installation is final before the pour.

**Review the BuildBuck Installation manual for more information.**

## STEP 4: REINFORCING STEEL

1. Create 1-1/4″ length rebar collars out of 1-1/4″ PVC pipe with Skill saw. Before stacking second course, place collars over vertical dowels protruding from footing or slab. NOTE: Some code officials do not allow these collars. Check local codes first.



BB-800 8″ FORM

2. Snap horizontal rebar into the web fingers of the first course, alternating rebar courses left and right of center. Every other rebar course is placed in the same rebar finger positions.
3. Continue to stagger in this manner. By staggering horizontal rebar, it will hold the vertical bar, once placed, between the horizontal bars.
4. Once entire wall is stacked, thread vertical rebar between horizontal rebar and place end into PVC collar. Tie vertical rebar to top horizontal rebar. (Note: Vertical rebar must be 1″ shorter than top of wall. This steel can be pre-ordered to length.)
5. Refer to engineering for all header/lintel steel placement and stirrup requirements.

## STEP 5: SUCCESSIVE COURSES

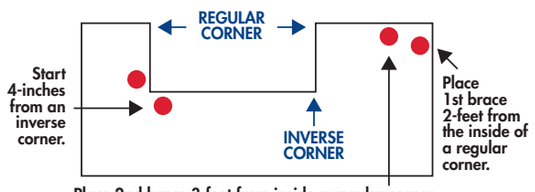
1. Start second course by reversing direction of each corner form, creating a stagger of the vertical joints. Proceed around perimeter in the same manner as the first course. Make sure blocks are pressed together completely.
2. Once the first three courses have been set, string walls and shim.
3. For out-of-level footings or slabs, use wood door shims to level low areas and trim bottom of block for high areas.
4. Set additional courses the same way as the first two courses, reversing corners each course. Cut forms at window openings and place reinforcement as required.
5. Spot glue the bottom of each block on the final (top) course 6″ from the end of each block. This will lock the blocks into place. Do not glue the entire length of the block to prevent lift and interlock issues.
6. Identify all building service penetrations and install appropriate size pipes.
7. Once wall is completely stacked, pop string line at desired wall height and trim top of wall level. Note: ICF walls may compress up to 1/16″ per course during the pour as the weight of the concrete presses the blocks tighter together.

## STEP 6: WALL BRACING

Install wall alignment (bracing) system in the following manner after the third or fourth course is completed:

1. **Regular Corners:** Start 2 feet from inside regular corner going one direction and 3 feet going the opposite direction. This keeps braces from interfering with each other (see diagram below). **Inverse (inside) Corners:** Start 4 inches from inverse corners (see diagram). Attach braces to BuildBlock corner tie.

**BRACING PLACEMENT DIAGRAM**




**Place 2nd brace 3-feet from inside a regular corner.**

2. Thereafter, place an alignment unit every 4-6 feet.
3. At every other course, fasten bracing to the wall, preferably at the stronger "BB" attach points.
4. Braces should have at least one-inch vertical slots for screw attachments. Place screws at top of the vertical slots. To prevent bowing from wall compression, do not over tighten screws when attaching braces.
5. **Proper installation of bracing system is critical to wall alignment as well as crew safety.** We advise contacting a BuildBlock distributor for support.

## STEP 7: CONCRETE PLACEMENT

1. Use **Prior to Pour checklist** (see back).
2. Order/use **proper concrete mix** (see back).
3. When ordering Pump Truck, make sure they have an "S" bend, ram's horn, or reducer before end of hose. If possible, final size of hose should be reduced to 3″.
4. Begin pouring 4′ to 5′ from a corner; direct concrete flow towards the corner, then move along the wall. Never pour directly down a corner.
5. When filling around window and door bucks alternate pour from side to side so buck is not moved sideways by concrete pressure.
6. As the pour continues, make sure that the space below the bottom of any window opening or pipe sleeve is filled entirely and vibrated.
7. Proper consolidation of concrete can be accomplished by internal vibration (3/4″ or 1″ pencil vibrator recommended). Vibrate all bucks completely, but do not over vibrate.
8. Concrete should be placed with a constant, moderate and steady flow, using 4-foot lifts. A normal eight to ten foot wall can be completed using two or three passes around the structure.
9. Final alignment of each wall must be performed before the concrete has set.
10. After finishing the concrete top, place anchor bolts or plate straps into wet concrete at the proper locations as required by code.
11. All walls, bucks, and floors should be brushed and swept clean before concrete hardens. Recheck wall alignment before leaving jobsite.

## FINISHING THE JOB: VAPOR BARRIERS & WATERPROOFING

1. Proper installation of waterproofing (below grade) and vapor barriers (above grade) according to your local code requirements is vital to the success of your project. In regions of heavy termite infestation, EPS insulation must be protected by code approved materials or methods. Then your wall can be clad with the exterior finish of your choice, such as EIFS, brick, rock, or siding. See the BuildBlock Comprehensive Guide to ICF Waterproofing available on buildblock.com for more information.

**Do not remove vertical bracing on walls for at least 48-96 hours. All vertical window and door header bracing must remain for a minimum of seven days.**

**FOR MORE INFORMATION SEE OUR INSTALLATION & TECHNICAL MANUAL OR YOUR BUILDBLOCK DISTRIBUTOR.**