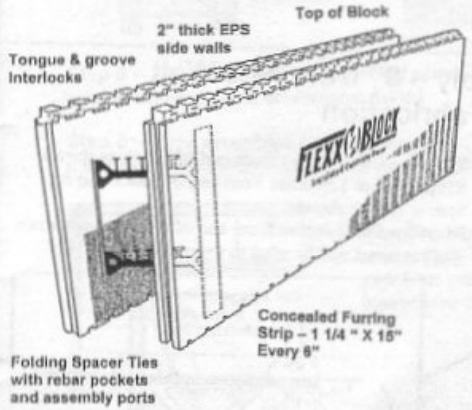
FLEXX BLOCK
Insulated Concrete Form
by Lite-Form Technologies®

Flexx Block forming components should only be assembled and installed by workers who have been properly trained. It is the installer's responsibility to make sure that training is done before construction begins. Serious injury or death may result from safety hazards caused by improper assembly and installation of forming components! Before beginning, check local engineering and building codes on cast-in-place concrete construction. The instructions in this guide cover typical building situations and are not meant to replace specific codes for engineering or safety.

Folding Flexx Block Form (16" X 48")



If you are fabricating (cutting) corners on the job, begin assembly at a corner and work toward center of wall. Assemble "Long Corner" for first course (row) of forms and "Short Corner" on second course. Alternate use of Long and Short Corners up the wall. Reinforce common seams between corners (page 10).

If you are using the Pre-Fabricated Corner Block (page 8), begin installation at corner, & continue through to next corner and custom-cut blocks as needed. With this technique, a common seam is not created, between corners. Alternate the installation of Long and Short Corners.

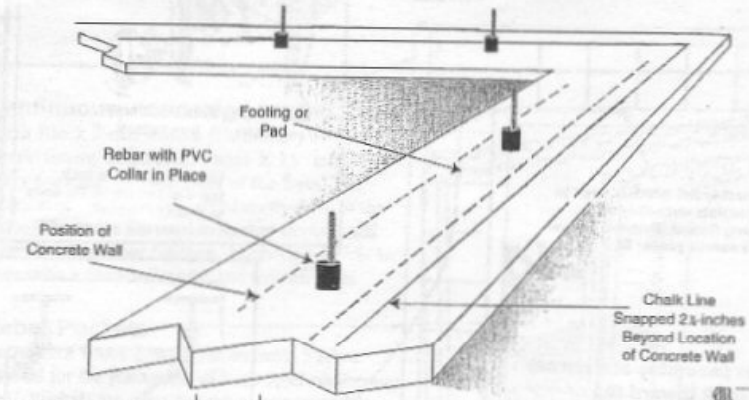
Save all cut sections. They may be used to assemble corners. Blocks can be cut along reference lines (every 2") with handsaw or hot-wire blade.

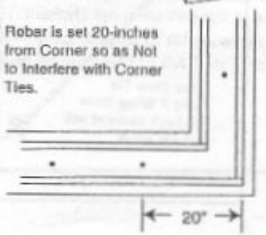
Cut Spacer Ties with mechanical shears or tin snips as needed.

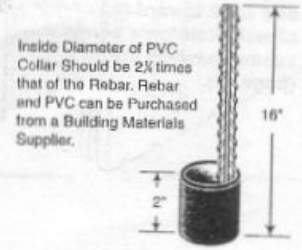
Lite-Form & Fold-Form
www.seadoremasonry.com
1-800-568-6145

Footing or Pad Preparations

Footing or pad must be level, uniform and wide enough for the form to rest on. Footing must also be proper width and thickness for soil conditions. Check with local code officials for guidelines and specifications. First course (row) of forms will be glued to the footing/pad, along the chalk line.

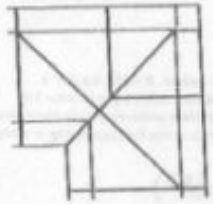




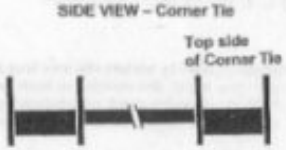


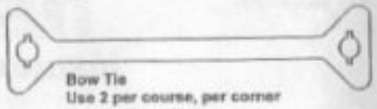
90-degree Corner Assembly

Accessories for Jobsite Fabrication and Assembly of 90-degree Corners

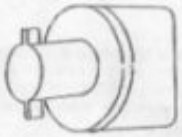


Wrap-around Corner Ties
Use 1 per course and 1 at bottom and top of wall



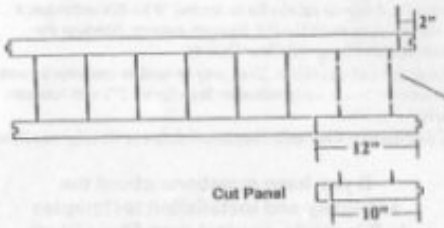


Bow Tie
Use 2 per course, per corner

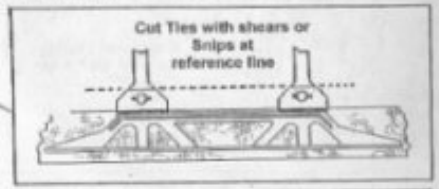


Wing Nut
use 5 per course, per corner

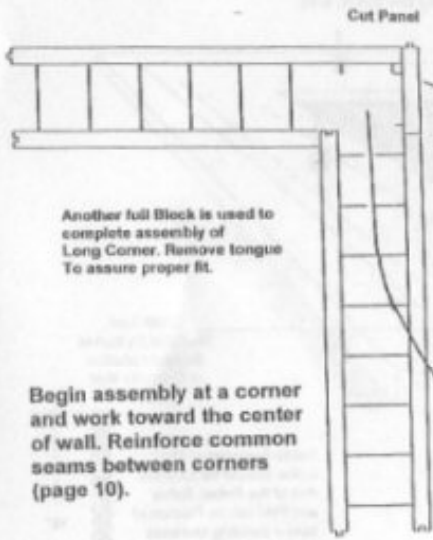
Long Corner Assembly – 8" Concrete Wall
Jobsite Fabrication

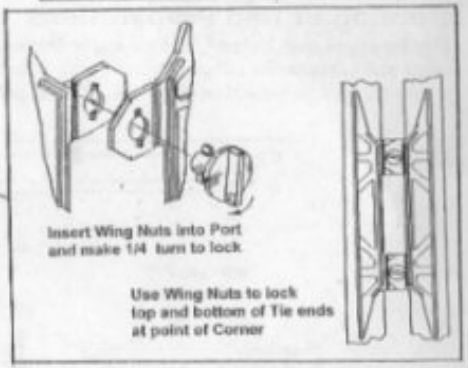


Step 1 – Cut 2-inches from end of Block as shown
Step 2 – Cut 12-inches from end of Block and cut Spacer Ties as shown
Step 3 – Cut 2-inches from end of cut panel as shown. The cut panel will be used to assemble corner.

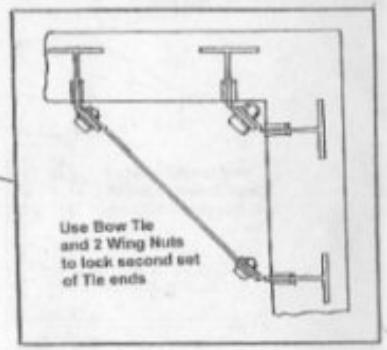


Step 4 – Position cut panel as shown. Bend Tie ends near point of corner and insert Wing Nuts as shown
Step 5 – Bend second set of Tie ends and attach plastic Bow Tie, using Wing Nuts as shown



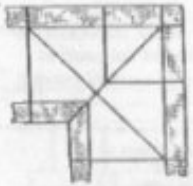


Begin assembly at a corner and work toward the center of wall. Reinforce common seams between corners (page 10).

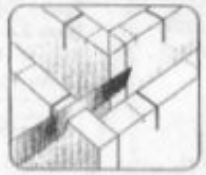


Long Corner Assembly – Continued - 8" Concrete Wall
First Course (row) of Forms – Jobsite Fabrication

For clarity, interlocking castellations are not shown.



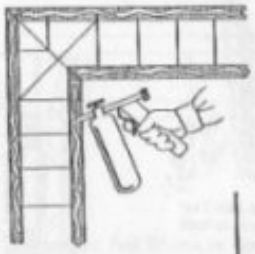
Corner, viewed from above



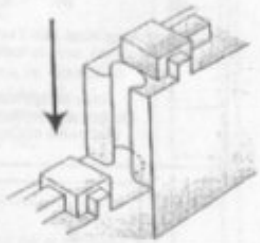
Step 6 – Place Corner Tie on assembled corner, press down firmly until insulation is dented

Step 7 – Cut 3/4-inch deep slots at the dents with a hand saw and press Corner Tie halfway into slots

Step 8 – Turn assembled Corner over, press Corner Tie and cut 2-inch deep slots. Press Corner Tie until it is flush with bottom of block. This step is required for the first course of forms only.



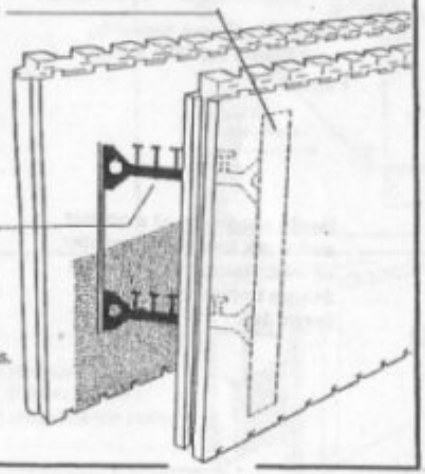
Step 9 – Apply expanding foam glue along bottom of assembled corner. Turn it over and press firmly into position, on footing or pad. Glue will set in approx. 30 minutes. Follow manufacturer's instructions for use in cold and wet conditions.



Step 10 – Continue placing first course (row) of blocks. Blocks slide together at tongue and groove interlocks. Apply foam glue along bottom of block and press firmly onto footing or pad.

Continuous, concealed furring strips
Flexx Block forms feature continuous, vertical plastic furring strips (1.25" wide X 15" tall) every 6-inches, on both sides of the form. The location of the strips is marked on the face of the form. The strips are used to anchor drywall and a variety of exterior finishes. Anchoring should be done with a threaded screw, not smooth nails.

Rebar Pockets
Each Flexx Block Spacer Tie includes 5 rebar pockets for the placement of horizontal reinforcing steel. Pockets are deep enough to accommodate overlapping lengths of rebar, when needed. Rebar should be wire-tied to the Ties every 36 to 48 inches.



Final Check List of Your Project

Are Corners plumb from top to bottom?
Are vertical braces wire-tied every 2-feet?
diagonal braces adjusted and anchored?
Is top In-Wall Bracing installed and wire-tied?
Has final alignment been checked?
Is someone assigned to check for blow-outs?
Is all rebar installed?
Does each vertical brace have a diagonal brace?Are
Are window/door bulkheads reinforced?
Have utility holes been cut and blocked?
Is blow-out repair kit handy?
Is scaffold planking safely anchored?

Concrete Specifications

1/2 to 3/4 inch smooth aggregate
2,500 to 4,000 psi mix
4 to 6 inch slump

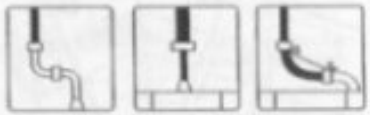
Placing the Concrete with a Pump

Concrete is often placed in the insulating form walls with a concrete pump. To minimize the risk of form failure, **the discharge pressure from the pump hose should be reduced,** by using one of the following techniques. Most pump operators are familiar with these techniques and can provide the necessary accessory, if they are notified, in advance.

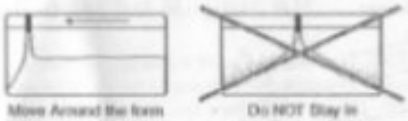
90-Degree Elbows - This 2-elbow accessory is attached to the pump's delivery hose to reduce discharge volume and pressure.

Hose Reducer - A 3-inch reducer is attached to the pump's delivery hose. The 3-inch discharge hose reduces the concrete's discharge pressure.

Hose Harness - If the 90-degree elbow or hose reducer is not available, the discharge hose can be fitted with a rope or strap harness to bend it so that concrete is **not discharged straight down,** into the form. The hose is diverted and allows the concrete to fall naturally.

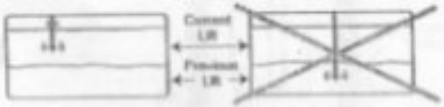


Lifts - Place concrete in lifts **not to exceed a height of 4-feet,** with no more than 8-feet of concrete placed vertically in one hour. This rate must be followed, regardless of how concrete is placed into the form. Placing concrete in lifts **over 4-feet per lift** can cause immediate form failure (blow-outs).


Move Around the form in the same direction, for each lift

Do NOT Stay in One Spot and Pour

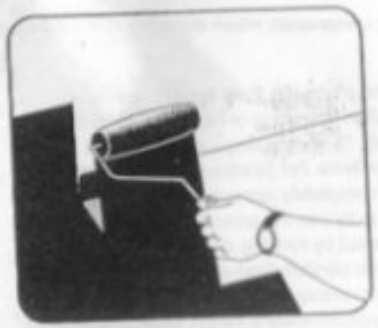
e. Only experienced operators should be allowed to use an electric vibrator with 1-inch head to consolidate concrete. Concrete can also be consolidated from the outside by tapping the tie pads with a rubber mallet.



Do NOT Extend Vibrator Into Level of Previous Lift. Doing so can Cause Immediate Form Failure.

f. If a winter project is delayed for several days, assembled forms should be covered to avoid the accumulation of ice or snow at the bottom of the form. If this debris is not removed, they will cause voids in the wall when the concrete is placed.

Finishing

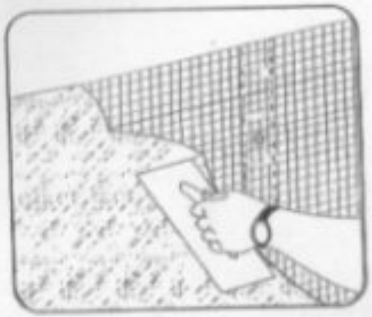


Damproofing

Select only latex or low-solvent liquid damproofing which is approved for application directly onto rigid polystyrene insulation. Apply a liberal coating directly onto the form, sealing the seams in the form wall.

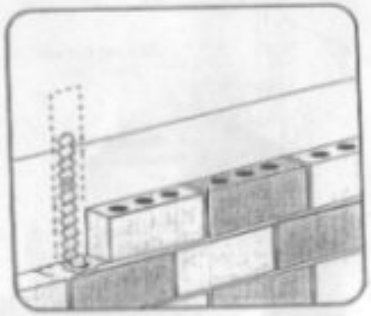
Waterproofing

Self-adhesive membranes (minimum 60 mil thickness) or approved liquid waterproofing materials can be applied directly to the form walls. Follow manufacturer's recommendations for application directly onto rigid polystyrene insulation.



Stucco, EIFS, Synthetic Masonry

Insulation surface must first be roughened by sanding or scratching. For single coat products, a generous coat of material is recommended to thoroughly cover the exposed plastic tie pads. For products having a base coat and mesh, the mesh is anchored directly to the concealed tie pads. Follow manufacturer's instructions for proper placement, temperature control, etc. Forms walls which have been exposed to the environment for more than 90 days will normally have a light coat of fine "powder" which must be thoroughly brushed off before applying finish.



Brick

With a concrete brick ledge, brick veneer (fascia) can be added directly over the form walls. Brick anchors may be attached to the concealed plastic tie pads o may be inserted through the form wall, into the form cavity, prior to placement of concrete. Follow local building codes or accepted practices for the placement of brick anchors.

Drywall and Siding

Gypsum Board (drywall) is attached directly to the form walls. This is done by anchoring the drywall to the form's concealed, continuous vertical furring strips with a drywall screw. The furring strips are the tab-ends of the Spacer Ties and are located every 6-inches on both sides of the forms.

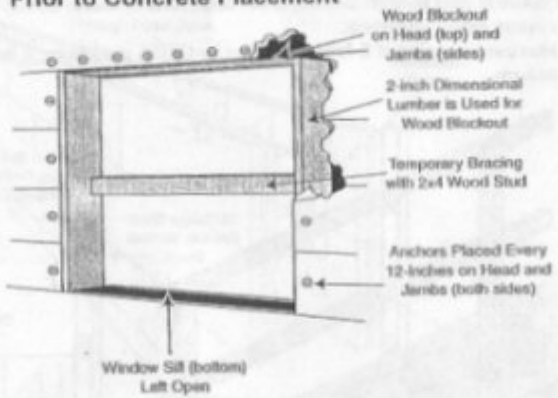
Exterior siding may be added directly to the form walls in the same manner as drywall. Follow manufacturer's recommendations for proper spacing and anchoring screws. Smooth nails should not be used to anchor siding.

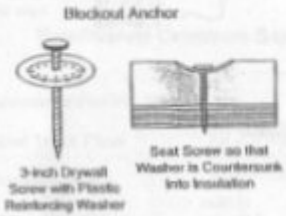
Window & Door Casing and Bracing

Openings can be built during form wall assembly or they can be cut in with a hand saw, after the form is assembled.

Prior to Concrete Placement

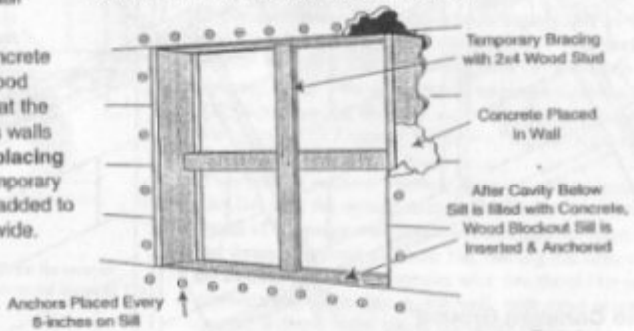
Before placement of concrete, wood blockouts are securely anchored at head and jambs. A temporary 2x4 wood brace is added to openings over 2-feet tall. Wood sill blockout is not placed at this time.





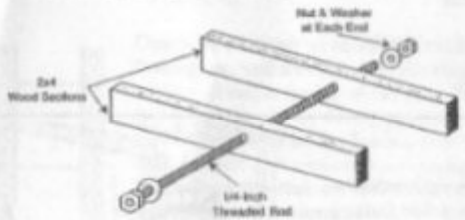
Concrete Placed up to Sill Height

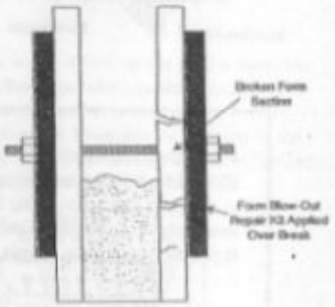
After placement of concrete up to the sill height, wood blockout is positioned at the sill, between the forms walls and achored. **Before placing anymore concrete**, temporary 2x4 wood braces are added to openings over 2-feet wide.



Blow-Out Repair Kit

A blow-out repair kit should be made BEFORE the concrete arrives. It is used to repair a form blow-out or break and is constructed of two pieces of wood 2X4s approximately 18-inches long, a length of 1/4 inch threaded rod, nuts and washers as shown.

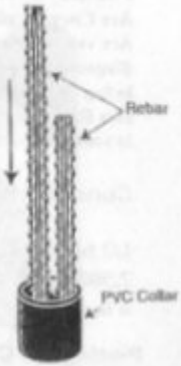




Form breaks rarely happen but when they do, it's important to stop pouring the concrete as soon as possible…remove the built-up concrete from the opening and re-position or replace the broken form pieces. Repair kit is placed over both sides of break as shown. Holes created by the blow-out should be filled with expandable insulation or fresh concrete to insure against water penetration later.

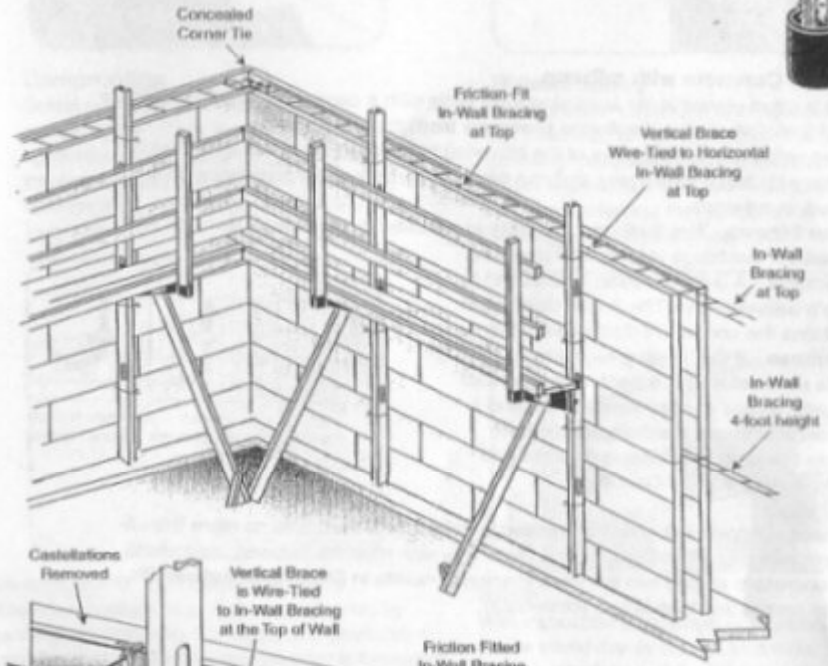
Top Assembly of Form Wall

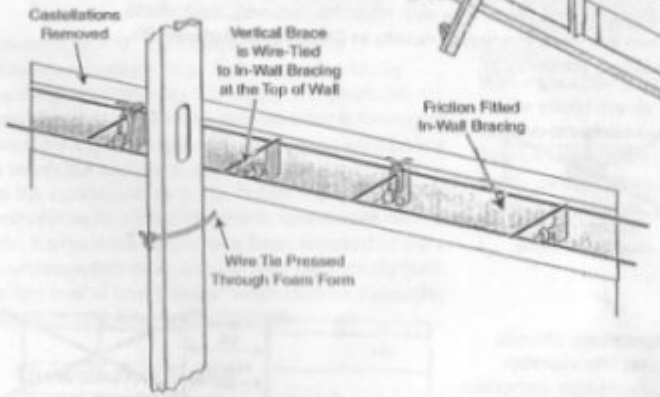
When assembled wall reaches full height, vertical rebar is lowered in-between the foam planks and inserted into the PVC collar up against the other rebar protruding from footing or pad.



Full Corner Ties or T-intersection Ties are placed at the top of the wall and steel In-Wall Bracing is 'friction fit' around the entire wall. The vertical 2X4 braces are anchored to the form with lengths of wire through the form wall.

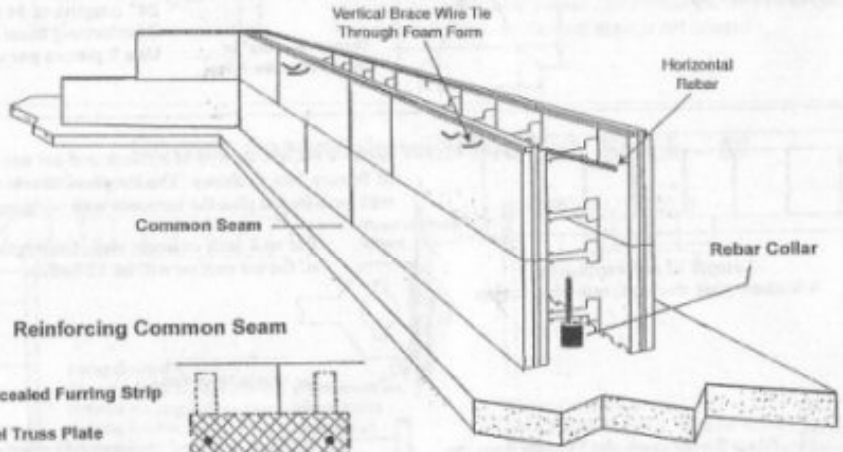
If wood frame structure will be constructed above the concrete wall, castellations should be removed with a sharp blade, to insure a smooth fit.



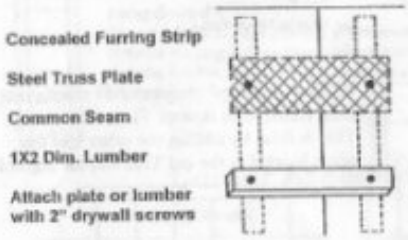


Wall Assembly

When assembled wall reaches 32-inches high, begin installing wire ties for exterior vertical braces (page 11) and begin installing horizontal rebar (reinforcing steel) as required by code.



Reinforcing Common Seam

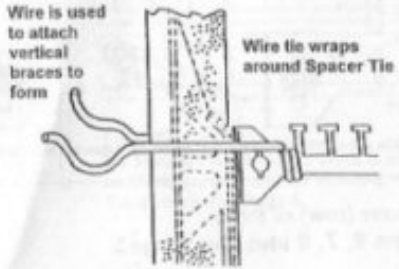


Common seams - If you are fabricating corners on the job, begin assembly at corners and work toward center of wall. At center, last block may have to be custom-trimmed, to fit. This will create a common seam up the wall. Reinforce the seam by anchoring pieces of steel truss plate or 1X2 lumber to a row of Spacer Ties, every 16-inches up the wall, on both sides.

Wire ties for exterior vertical braces – Begin installing wire ties with the second course of forms. A 24-inch length of 16-guage wire is pressed through the form wall and wrapped around a Spacer Tie, leaving the ends extending out. As assembly continues wire ties should be placed approx. every 32-inches up the wall, with rows placed approx. **8-feet*** apart, along the entire wall.

*Maximum spacing of **6 feet** is allowed by OSHA guidelines, if brace is also being used to support a work platform.

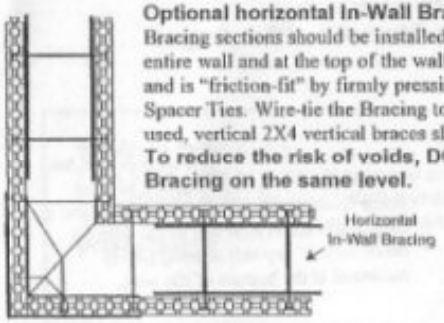
Wire Ties

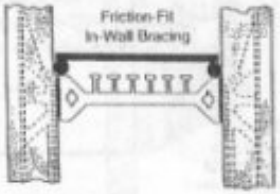


Horizontal rebar is placed into the rebar pockets on Spacer Ties and wire-tied (to Ties) every 36-inches to 48-inches. **Follow local building codes for proper size and placement of all reinforcing steel.**

Optional horizontal In-Wall Bracing

Bracing sections should be installed horizontally approx. every 4-feet up the wall around the entire wall and at the top of the wall. Bracing should be the same width as the concrete wall and is "friction-fit" by firmly pressing it into the form cavity, until it is seated on a row of Spacer Ties. Wire-tie the Bracing to a Spacer Tie approx. every 36-inches. If Bracing is not used, vertical 2X4 vertical braces should be placed every 4-feet, on one side of the entire form. **To reduce the risk of voids, DO NOT place horizontal rebar and In-Wall Bracing on the same level.**

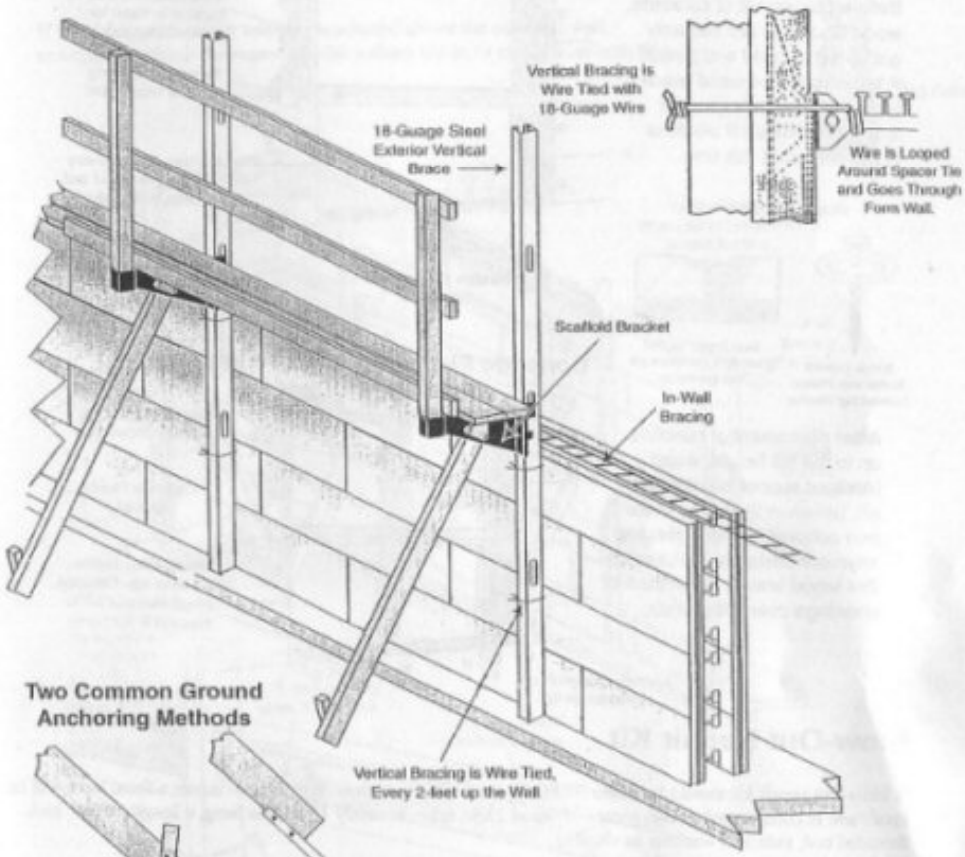




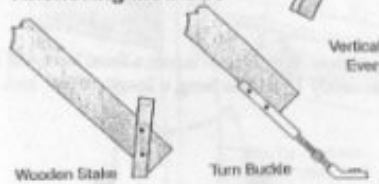
Exterior Vertical Bracing

When assembled wall reaches 4-feet high, exterior vertical braces must be attached along one side of the form. They are placed approx. **8-feet*** apart and are anchored to the form with the wire ties which were installed earlier. Braces can be good-quality dimensional lumber (2X4) or 18-guage steel. Additional braces should be used next to window or door jambs. A diagonal "kicker" brace is anchored to each vertical brace. If optional steel In-Wall Bracing is not used, vertical braces should be placed approx. every **4-feet apart**, to insure proper alignment.

*Maximum spacing of **6 feet** is allowed by OSHA guidelines, if brace is also being used to support a work platform.

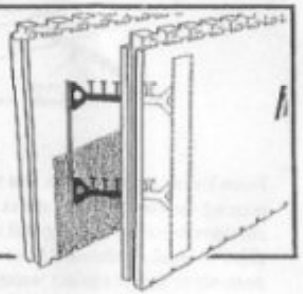


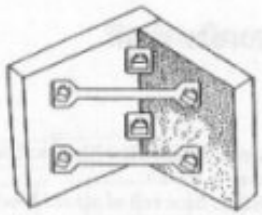
Two Common Ground Anchoring Methods



Positive Interlocks

Flexx Block forms have true 'tongue and groove' interlocks at the ends. Because of this the blocks slide together during assembly. This feature eliminates the need to glue the blocks together, to maintain proper alignment.



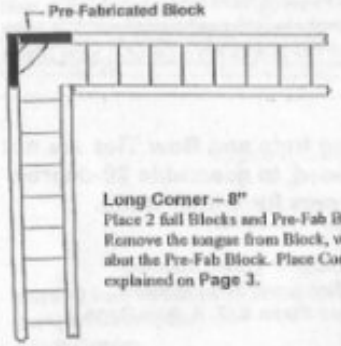


Pre-Fabricated Block

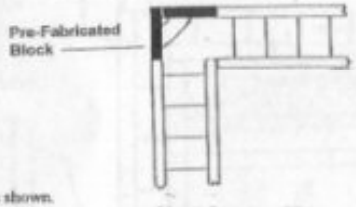
for 8" and 6" 90-degree Corners

Pre-Fabricated Blocks are used to assemble Long and Short Corners. To save time and labor on corner assembly, the Pre-Fabricated Blocks are pre-cut and pre-assembled as shown. Begin installation at a corner, continue through to next corner and custom-cut blocks as needed. With this technique, a common seam is not created.

Corner Assembly with Pre-Fab Block – 8"

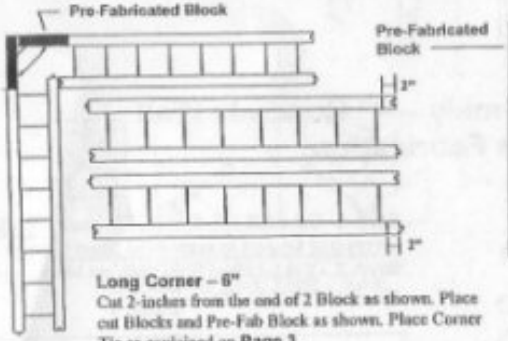


Long Corner – 8"
Place 2 full Blocks and Pre-Fab Block as shown. Remove the tongue from Block, where it will abut the Pre-Fab Block. Place Corner Tie as explained on **Page 3.**

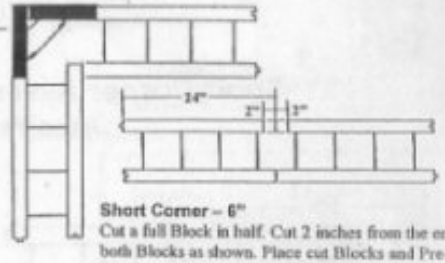


Short Corner – 8"
Cut a full Block in half. Place cut Blocks and Pre-Fab Block as shown. Place Corner Tie as explained on **Page 3.**

Corner Assembly with Pre-Fab Block – 6"



Long Corner – 6"
Cut 2-inches from the end of 2 Block as shown. Place cut Blocks and Pre-Fab Block as shown. Place Corner Tie as explained on **Page 3.**



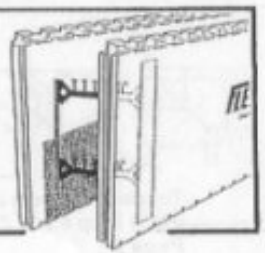
Short Corner – 6"
Cut a full Block in half. Cut 2 inches from the ends of both Blocks as shown. Place cut Blocks and Pre-Feb Block as shown. Place Corner Tie as explained on **Page 3.**

Corner Assembly – 4"

The Pre-Fab Block is not needed, to assemble Corners
See Corner Assembly as explained on Page 3

Positive Interlocks

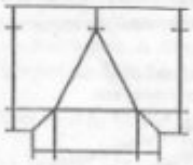
Flexx Block forms have true 'tongue and groove' interlocks at the \ ends. Because of this the blocks slide together during assembly. This feature eliminates the need to glue the blocks together, to maintain proper alignment.



T-Intersection Assembly

All concrete wall widths

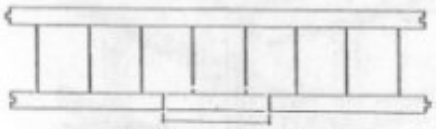
Accessories for Jobsite Fabrication and Assembly of T-Intersections



Wrap-around T-Ties. Use 1 per course and at bottom and top of wall

There is no "top" or "bottom" to the T-Tie

24" lengths of #4 (1/2 inch) Reinforcing Steel (rebar). Use 2 pieces per course

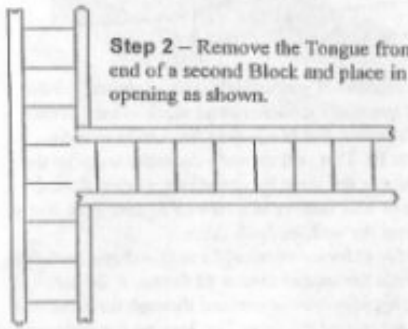


Length of cut section is 4-inches plus the concrete wall width

Step 1 – Cut a section of a Block and cut **one end** of Spacer Ties as shown. The length of the cut section will be 4-inches plus the concrete wall width.

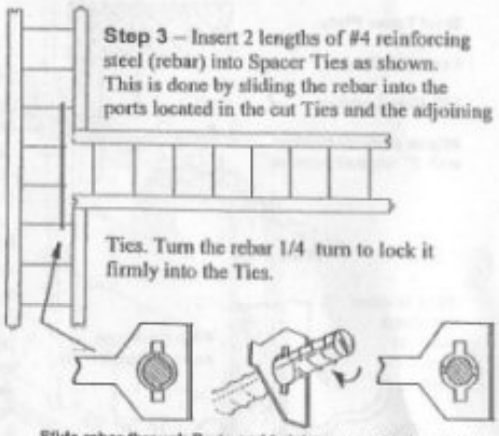
For an 8-inch concrete wall, the length of the cut section will be 12-inches.

Cut Ties at hinge, next to insulation



Step 2 – Remove the Tongue from the end of a second Block and place in cut opening as shown.

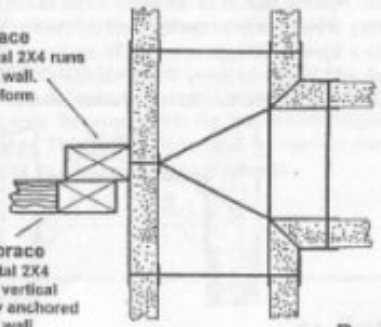
Step 3 – Insert 2 lengths of #4 reinforcing steel (rebar) into Spacer Ties as shown. This is done by sliding the rebar into the ports located in the cut Ties and the adjoining Ties. Turn the rebar 1/4 turn to lock it firmly into the Ties.



Slide rebar through Ports and twist one-quarter turn to lock

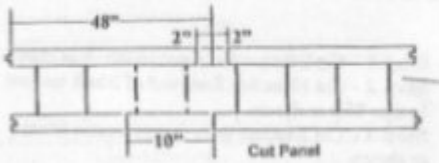
To assemble the first course (row) of forms, follow the Corner Assembly **Steps 6, 7, 8 and 9** on **Page3**

To assemble subsequent courses, follow the Corner Assembly **Steps 6 and 7** on **Page 3**



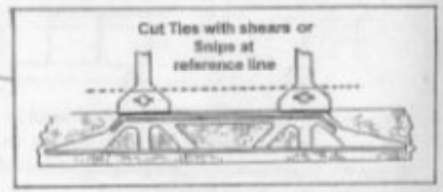
Step 4 – After the T-intersection wall has been assembled to full height, a vertical brace is anchored at each intersection and a diagonal brace is attached to the vertical brace with 3" drywall screws, firmly anchored at the bottom of the wall.

Short Corner Assembly – 6" Concrete Wall
Jobsite Fabrication

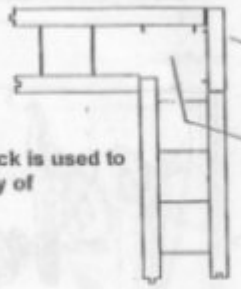


Step 1 – Cut a full Block in half as shown. Both Pieces will be used to assemble Short Corner.
Step 2 – Cut 2-inches from both cut blocks as shown.
Step 3 – Cut 10-inches from end of Block and cut Spacer Ties as shown. Cut panel will be used to assemble corner.

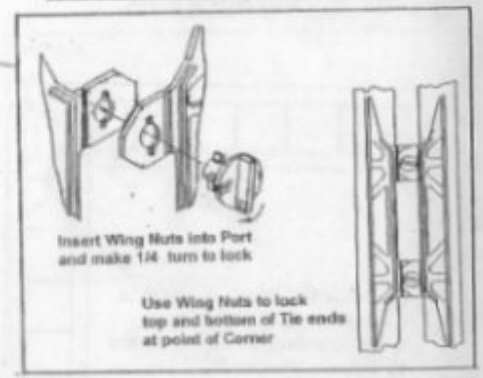
Step 4 – Position cut panel as shown. Bend Tie ends Near point of corner and insert Wing Nuts as shown.
Step 5 – Bend second set of Tie ends and attach plastic Bow Tie, using Wing Nuts as shown.



Cut Panel

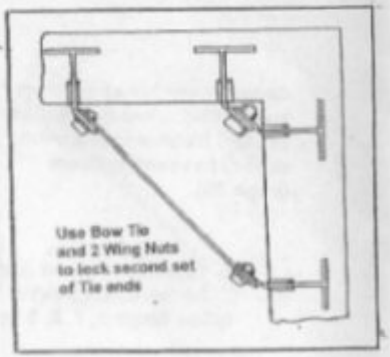


Second half of Block is used to complete assembly of Short Corner



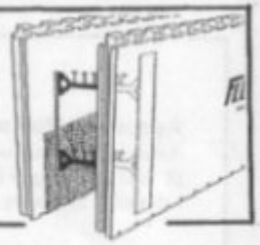
To complete Corner assembly, repeat **Step 6** and **Step 7** from **Page 3**

Begin assembly at a corner and work toward the center of wall. Reinforce common seams between corners (page 10).

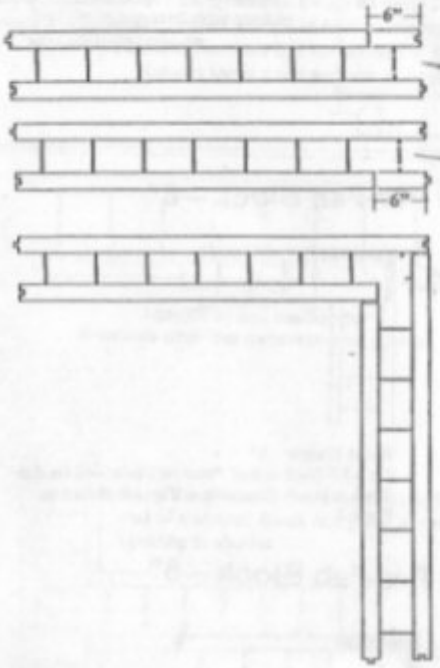


Reference Lines

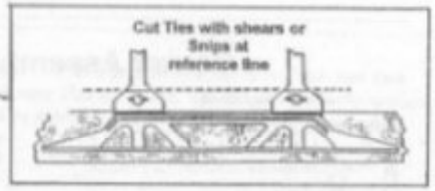
Convenient reference lines are 2-inches apart and are marked on both sides of the form, along with the locations of concealed furring strips.



Long Corner Assembly – 4" Concrete Wall
Jobsite Fabrication



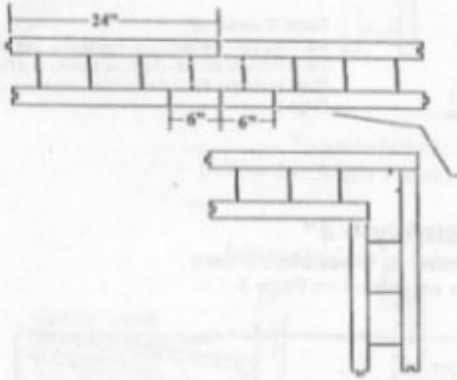
Step 1 – Cut 6-inches from end of Block and cut Spacer Tie as shown.
Step 2 – Cut 6-inches from end of second Block and cut Spacer Tie as shown.



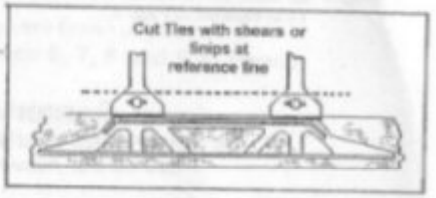
Wing Nuts and Bow Ties are not needed, to assemble 90-degree corners for 4-inch walls.

To complete Corner assembly for first course (row) of forms, follow **Steps 6, 7, 8, 9** on **Page 3**

Short Corner Assembly – 4" Concrete Wall
Jobsite Fabrication



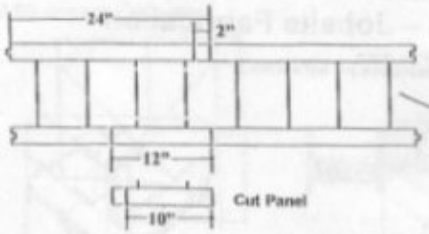
Step 1- Cut a full Block in half as shown. Both pieces will be used to assembled Short Corner.
Step 2 – Cut 6-inches from both cut blocks and cut Spacer Ties as shown.



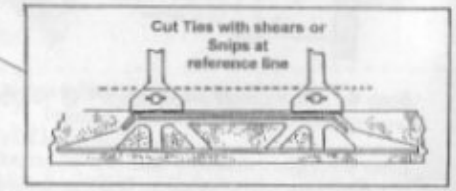
Wing Nuts and Bow Ties are not needed, to assemble 90-degree corners for 4-inch walls.

To complete Corner assembly, repeat **Step 6 and 7** from **Page 3**

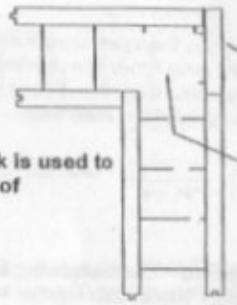
Short Corner Assembly – 8" Concrete Wall
Jobsite Fabrication



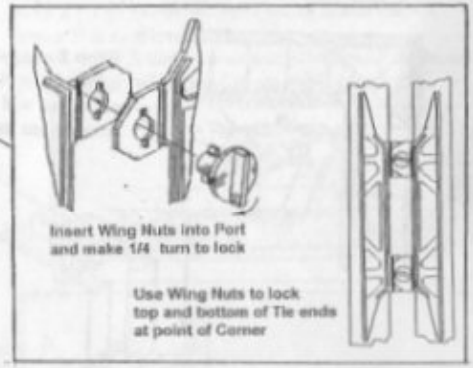
Step 1 – Cut a full Block in half as shown. Both Pieces will be used to assemble Short Corner.
Step 2 – Cut 2-inches from end of Block and cut Spacer Ties as shown
Step 3 – Cut 12-nches from end of Blocka as shown.
Step 4 – Cut 2-inches from end of cut panel as shown. Cut panel will be used to assemble corner.



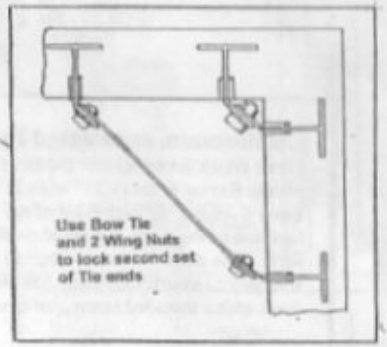
Step 5 – Position cut panel as shown. Bend Tie ends near point of corner and insert Wing Nuts as shown
Step 6 – Bend second set of Tie ends and attach plastic Bow Tie, using Wing Nuts as shown



Second half of Block is used to complete assembly of Short Corner

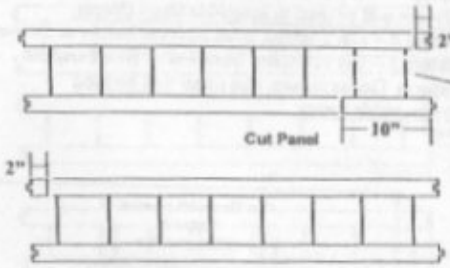


To complete Corner Assembly, repeat **Step 6** and **Step 7** from **Page 3**

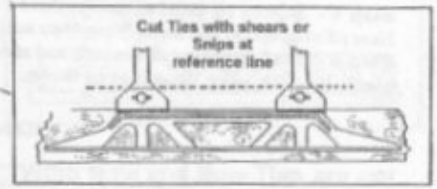


Begin assembly at a corner and work toward the center of wall. Reinforce common seams between corners (page 10).

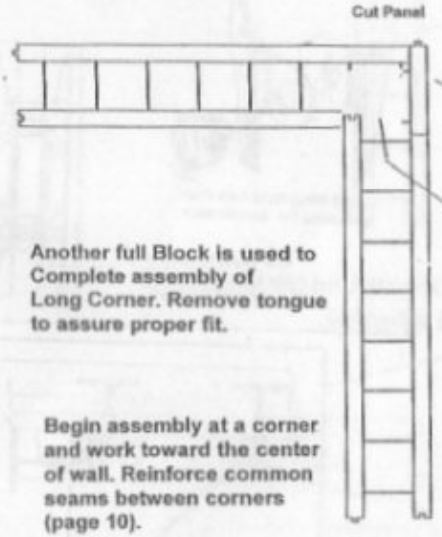
Long Corner Assembly – 6" Concrete Wall
Jobsite Fabrication



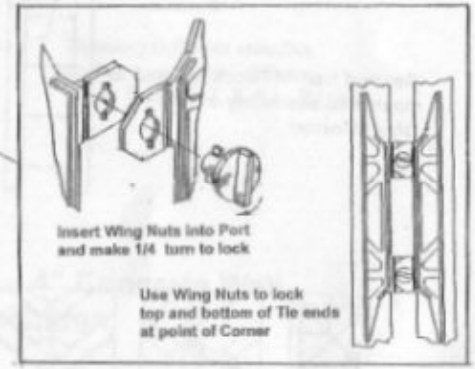
Step 1 – Cut 2-inches from end of Block as shown.
Step 2 – Cut 10-inches from end of Block and cut Spacer Ties as shown.
Step 3 – Cut 2-inches from end of second Block as shown



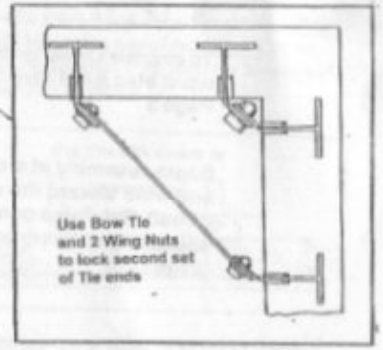
Step 3 – Position cut panel as shown. Bend Tie ends near point of corner and insert Wing Nuts as shown.
Step 4 – Bend second set of Tie ends and attached plastic Bow Tie, using Wing Nuts as shown.



Another full Block is used to Complete assembly of Long Corner. Remove tongue to assure proper fit.

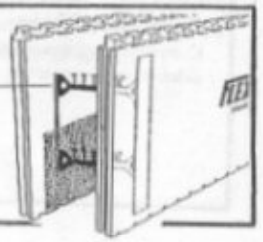


Begin assembly at a corner and work toward the center of wall. Reinforce common seams between corners (page 10).



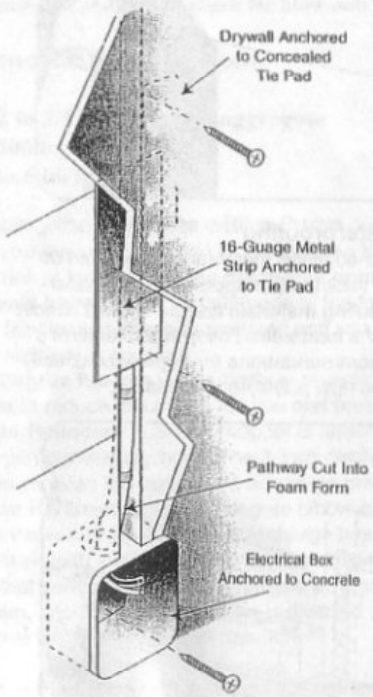
To complete Corner Assembly for first course (row) of forms, follow **Steps 6, 7, 8, 9** on **Page 3**

Assembly Ports
Assembly Ports allow for the field assembly of 90-degree corners (8" and 6"), using Wing Nuts and Bow Ties. T Intersections are assembled by placing standard No. 4 (1/2 inch) rebar into the ports.



Electrical and Plumbing Lines

Follow local codes for the types of electrical and plumbing components which are acceptable for the your project.



Electrical and plumbing lines are concealed in the insulation by cutting or carving a pathway approximately 1½-inches deep with a saw, router, or electric hot knife. For junctions or switch boxes, insulation is completely removed and items are anchored directly into the concrete. Electric lines can be protected by running them inside approved metal or plastic conduit. Damage to lines can also be avoided by covering the pathway with a 16-gauge metal strip, approximately 2-inches wide, anchored to the concealed tie pads with a drywall screw. *diagram 13-1)*

Electric lines can be held to the back of the pathway by using approved electrical anchors or expandable insulation placed approximately 2-feet apart.

If you have questions about the assembly and installation techniques in this guide, contact your Flexx Block supplier or Lite-Form Technologies.

For assembly and construction techniques which are not covered in this guide, contact your Flexx Block supplier or Lite-Form Technologies.

LITE FORM

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U.S. Patent Numbers 4765109, 4916879, 4889310, 5039056, 5209039, 3617100, 4866891, 4885888, 4706429, 4730422, 5497592. Canadian Patent Number 1314727. Patents Pending. Flexx Block is a trademark of Lite-Form Technologies, LLC.

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