OSBLOCK™

CHANGE THE CONSTRUCTION ONE BLOCK AT A TIME

OSBLOCK™

INSTALLATION MANUAL

Foreword

Osblock is a construction system created and produced in Quebec, Canada. Thanks to its simple and efficient components, the Osblock system allows you to erect walls quickly and securely by eliminating many of the steps involved in a traditional build.

Job Site Preparation

Before you start, make sure the base on which your walls will be built is level, square and plumb. Osblocks can accommodate a 1/8" variance, which will correct itself on the third row of blocks. If the base level exceeds 1/8", you will need to make an adjustment under the sill plate. This is very important to ensure that your installation goes smoothly.

Wall height*

The total wall height depends on the number of Osblocks that you stack. Here is a table of final wall heights. Note that walls that do not match the measurements shown must be raised at the base or top of the wall using materials such as 2x6s.

Number of blocks	Height
8	8'-2"
9	9'-1 3/4"
10	10-1 1/2"
11	11'-1 1/4"
12	12'-1"
13	13'-0 3/4"
14	14'-0 1/2"

*(Including the plates)

Materials included

OSBLOCK (in 20-block pallets)

SILL PLATE (Figures 1-2 / Page 4)

TOP PLATE (Figures 3-4 / Page 4)

LOCK (Figure 6 / Page 5)

OSBLOCK HANDEL (Figure 7 / Page 5)

CORNER (Figure 8 / Page 5)

CONNECTING PLATE (Figure 9 / Page 5)

OSBLOCK KEY (Figure 10 / Page 5)

HOUSE WRAP

Materials you will need

2 1/2" #8 SCREWS AND 3 1/2" #10 SCREWS (FLAT HEAD) 3/16"X4' TAPCON SCREW FLAT HEAD (IF THE SILL PLATE NEED TO BE FIXED INTO CONCRETE)

URETHANE FOAM (low expansion, approx. 1 can per 10 blocks)

1/2" OSB OR PLYWOOD

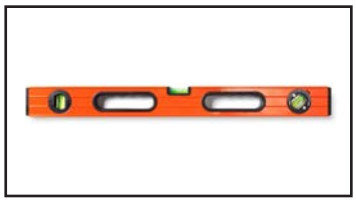
2" THICK SHEET OF FOAM

FURRING STRIPS

LVL BEAMS OR OTHERS FOR LINTELS (as required)

Tools required for installation

CHAIN SAW



LEVEL

URETHANE FOAM APPLICATOR

DRILL

OSBLOCK components

Figure 1

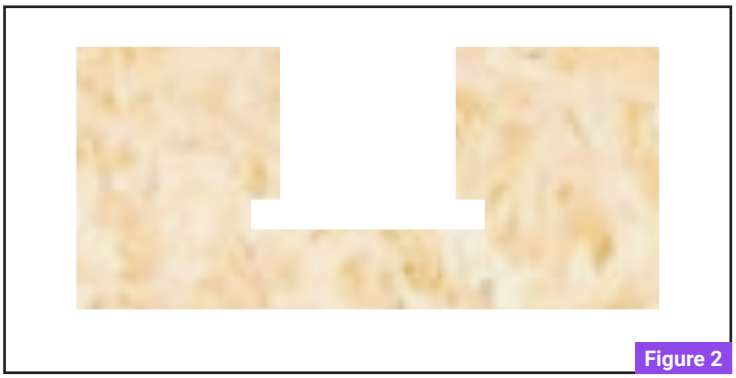


Figure 2

SILL PLATE (SOLE PLATE) (Figure 1 et 2)

96” x 5”x 2 1/4”
They are manufactured to accommodate Osblock corners and lengths.

Figure 3

Figure 4

TOP PLATE (TOP RAIL) (Figure 3 et 4)

96” X 3 7/8” X 1 3/4”
Ends the wall and supports the rafters or joists.

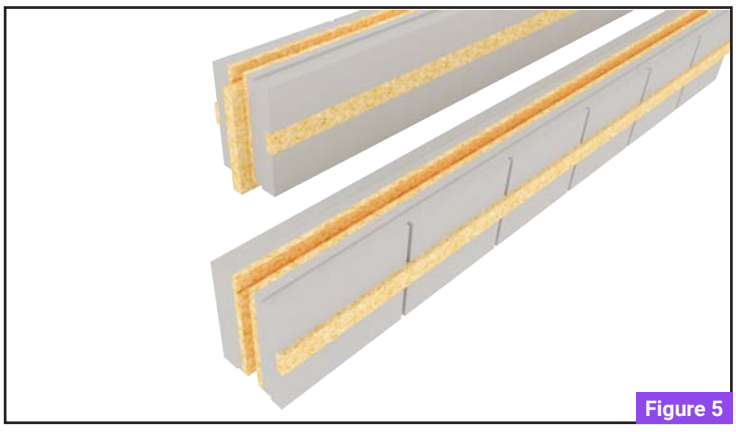


Figure 5

OSBLOCK LENGTH (Figure 5)

95 1/2” x 8 7/8” x 11 3/4”, to be cut as required. Its design ensures easy installation and insulation that is free of thermal bridges. One end is tenoned, the other is mortised which results in strong and well-sealed joints. The wood braces are used on one side to attach the furring strips and exterior covering, and on the other side to attach the desired interior covering (gypsum, wainscot, etc.). The interior side insulation is grooved to accommodate wiring.

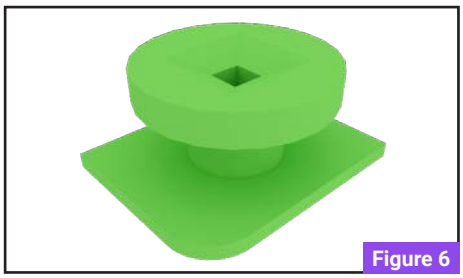


Figure 6

LOCK (Figure 6)

The locks are fastened to the Osblock's longitudinal tenon at designated spots. They bind the lengths together and ensure rock-solid alignment.

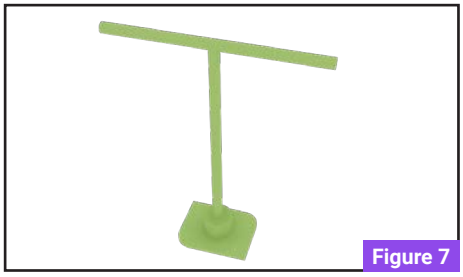


Figure 7

OSBLOCK HANDEL (Figure 7)

The OSBLOCK™ handle fits into the block groove much like a lock. It facilitates handling of the block, but under no circumstances should it be used as a fastener to move the block other than by hand. The handle may come off if not turned correctly.

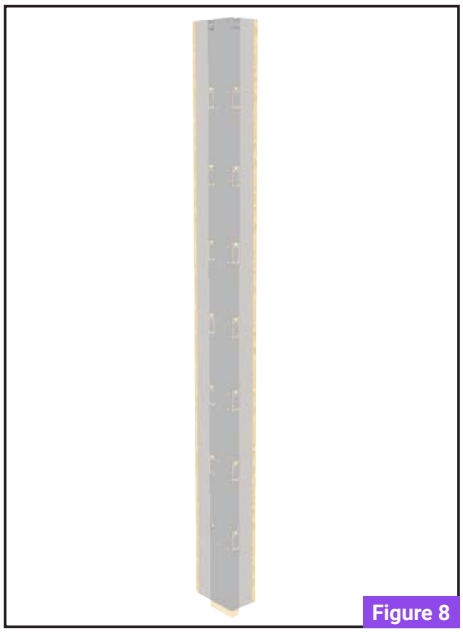


Figure 8

CORNERS (Figure 7)

94"x 8 5/8" x 5"
Thanks to a built-in connecting plate, they ensure that Osblocks are firmly anchored and perfectly aligned. *Also available in 11 3/4" and 23 1/2" lengths.

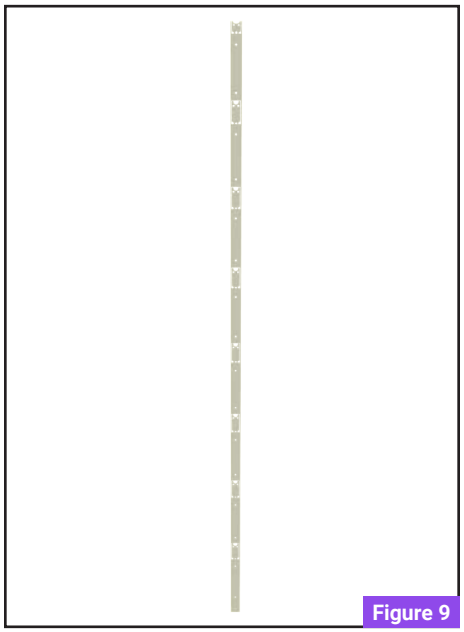


Figure 9

CONNECTING PLATE (Figure 8)

94" X 3"
This metal part connects Osblocks to an existing wall.

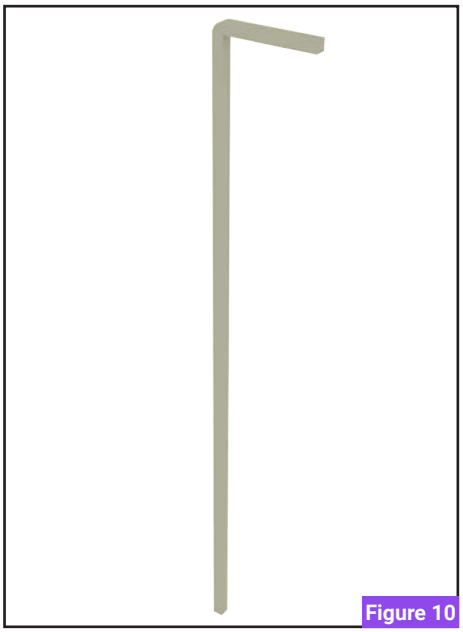


Figure 10

OSBLOCK KEY (Figure 9)

A metal tool used to rotate the locks.

Construction Steps and Methods

INSTALLING THE SILL PLATES

The sill plates must be cut and assembled at a 45° angle. They must be fastened at their thick parts. Do not nail or screw anything into the plate groove. Before screwing (3 1/2” screws recommended on each side @ 24” on centre) the plate, we recommend applying a bead of glue or urethane underneath. The use of a self-sticky membrane could be a good option when the sill plate is in contact with concrete.

There are two ways to do this.

FIRST WAY :
Installed flush with the floor perimeter.

This option results in the Osblock insulation extending 2" beyond the floor perimeter, increasing the living area and making it easier to insulate the concrete slab or the area surrounding the floor.

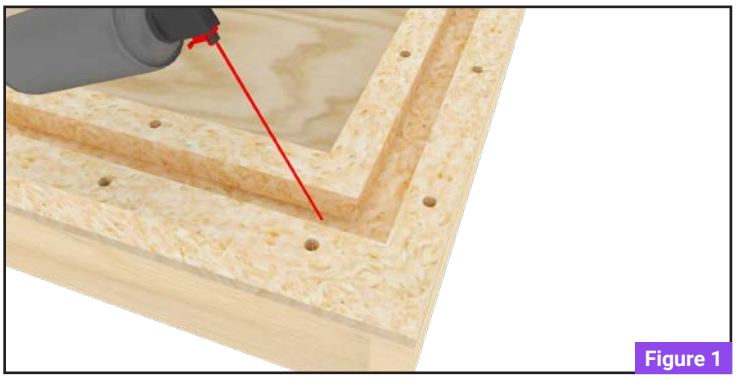


Figure 1

Figure 2

PLATES INSTALLED AT A 45° ANGLE (Figure 1)

Flush with the floor perimeter.

ADDING A 2" THICK INSULATION AROUND THE FLOOR PERIMETER (Figure 2)

(traditional slab or floor).

SECOND WAY:
Installed with a 2" setback from the floor perimeter.

This option results in the Osblock insulation being even with the floor perimeter. Rigid insulation will then need to be added around the perimeter of the wall.


Figure 3

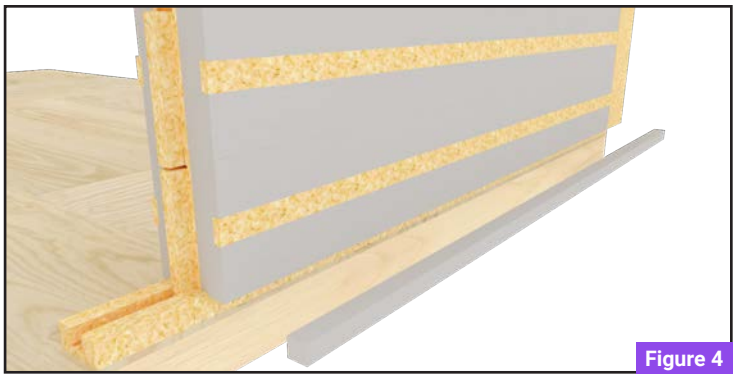


Figure 4

PLATES INSTALLED AT A 45° ANGLE (Figure 3)

Set back 2" from the floor perimeter.

ADDING 2" X 2" INSULATION (Figure 4)

On the inside and outside of Osblock walls. Apply a spray of foam and then add your rigid insulation all around the walls to ensure effective insulation.

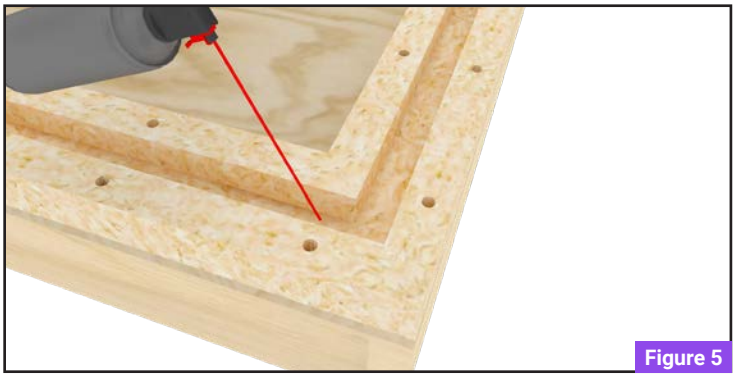


Figure 5

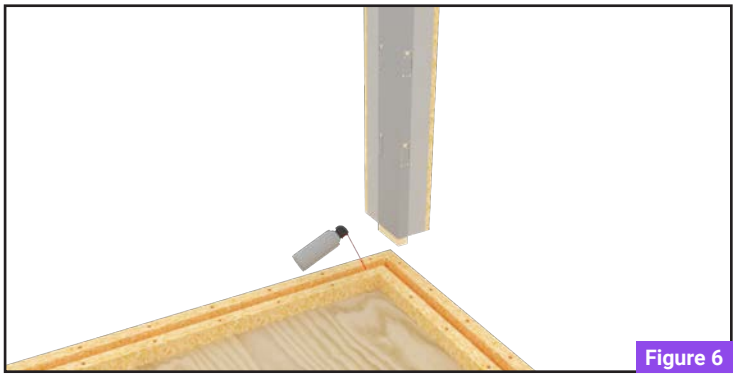


Figure 6


Figure 7


Figure 8

INSTALLING THE CORNERS (Figures 5-6-7-8)

After applying a spray of urethane in the sill plate groove, install your corners and carefully adjust them to square and level by using temporary braces. Take care to unfold the small metal part at the bottom of the corner to help it stay in place during alignment.

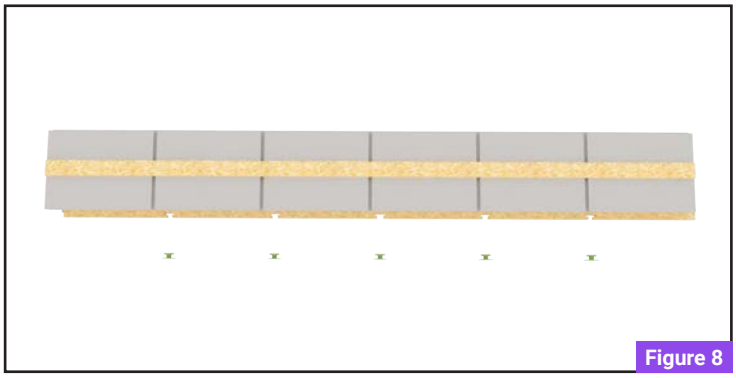


Figure 8

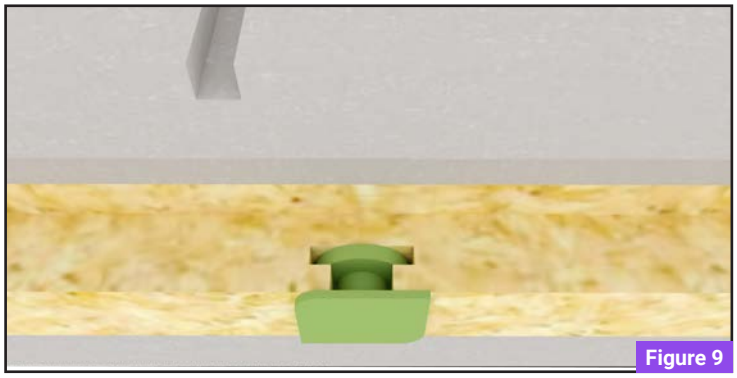


Figure 9

INSTALLING THE LOCKS (Figure 8-9)

Before placing each Osblock, insert the locks into the bottom of the piece in the designated spots. Once the Osblock is in position, you will simply need to rotate them 1/4 turn for the final installation using the key included with your order.

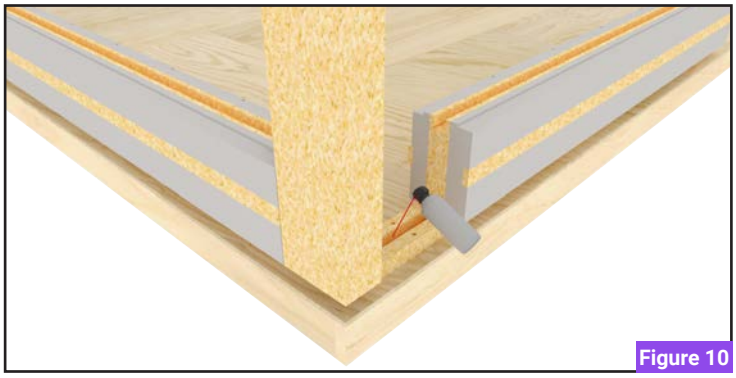


Figure 10

JOINING LENGTHS TO CORNERS (Figure 10)

Apply a small amount of urethane in the sill plate groove to ensure a perfect seal. After cutting the tenon or mortise of the first Osblock, set it in place.

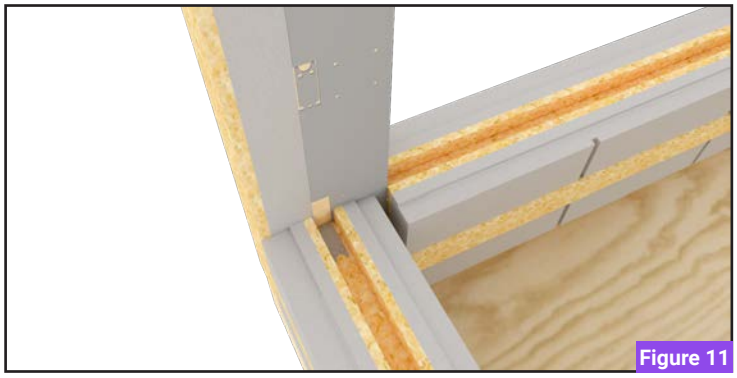


Figure 11

ATTACHING LENGTHS TO CORNERS (Figure 11)

Unfold the metal slat and attach your Osblock to the corner with a 2 1/2” screw.

*Do not use excessive force. A space must be maintained between the lengths and the corner. This space will eventually be filled with a bead of urethane.

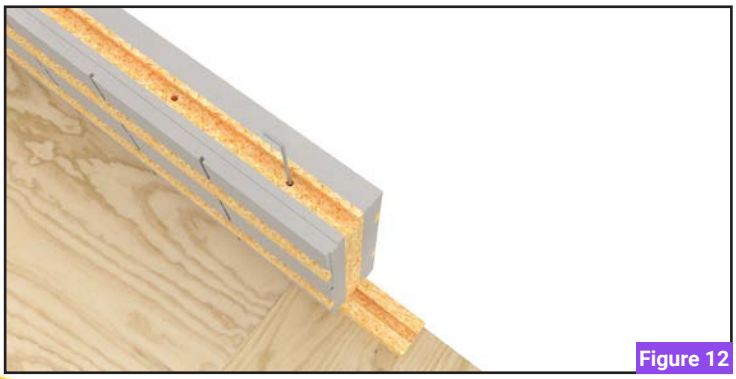


Figure 12

ROTATING THE LOCKS (Figure 12)

Now, rotate your locks clockwise 1/4 turn into the sill plate to ensure that they are secure.


Figure 13

JOINING THE OSBLOCKS (Figure 13)

Osblocks are joined by mortises and tenons. Start with a block cut with a chainsaw. For a perfect alignment and thermal bridge free installation, remember to always put a bead of urethane in the sill plate groove, in every Osblock groove as well as in the mortise.

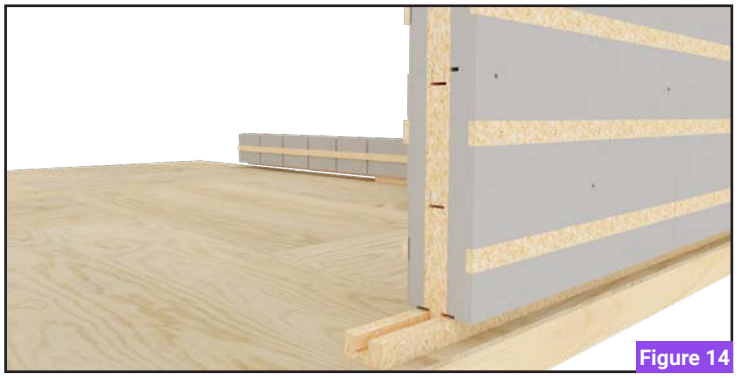


Figure 14

STACKING THE OSBLOCKS (Figure 14)

The Osblock manufacturing process ensures that each length stacks up perfectly against the others. Be sure to spread out your joints over the entire wall; a minimum 12" offset is required. **Do not stack vertical joints one on top of the other.**


Figure 15

BRACING SCREWS (Figure 15)

A 3-1/2” #10 flat head wood screw must be install every 32” at 1/8” below the Osblock’s horizontal line.Screw must be installed inside, in the electrical groove line. See picture (figure 15)


Figure 16

TEMPORARY BRACING (Figure 16)

Temporary braces are recommended to support the walls during construction.

The wall will be more stable than a conventional wall, but bracing will make it easier to achieve the perfect alignment required before building the roof or second floor.

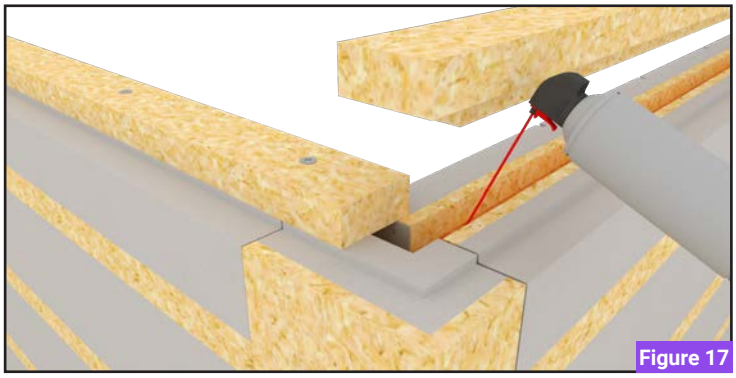


Figure 17

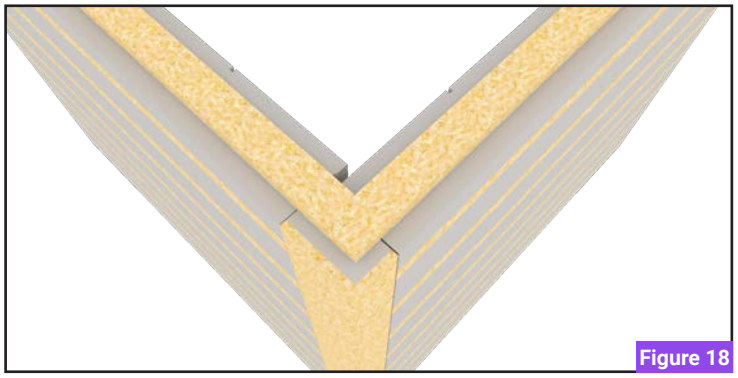


Figure 18

TOP PLATE (TOP RAIL) (Figures 17-18)

Top plate must be cut and install in the groove of the final row of Osblock. Start by applying a bead of urethane in the groove, then place the top plate and fasten it with #10 5” screws every 24” on center.

NOTICE: The widest part of the top plate moulding need to be installed on the outside portion of the wall.

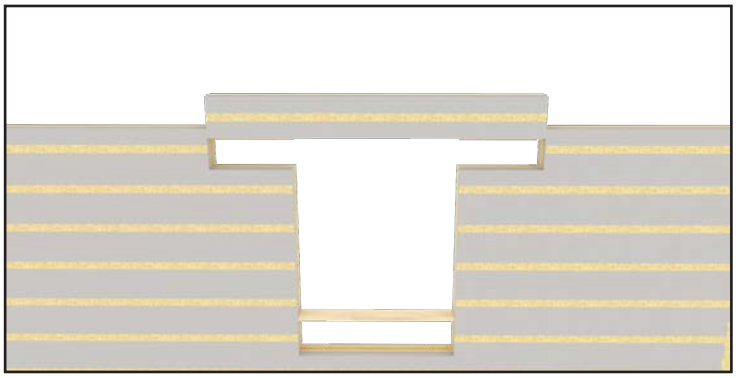
At each corner, the tenon on one of the plates must be cut by 4", or cut at a 45-degree angle in order to get a uniform joint on the top of the wall. The wall is now ready to receive second-floor joists or roof rafters.

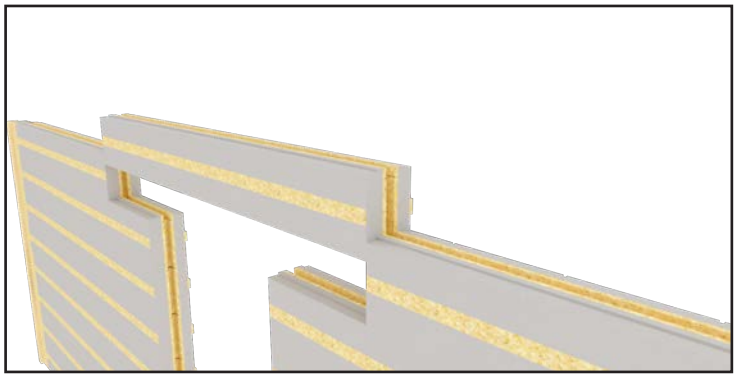
* For walls higher than 8' 2", position your corner extensions (11 3/4” or 23 1/2” or cut to length), before installing your top plates. To install the corner extensions, you need to remove the 2x6 piece inserted in the end of the corner. A sticker explaining the procedure is applied to the corner for this purpose.

Windows and Doors

The Osblock system greatly simplifies the installation of windows and doors. Thanks to their 11 3/4” height, Osblock lengths automatically adjust to the standard window and door top height (84”). To avoid having to cut the bottom Osblocks horizontally, refer to the window table on page 15.

* For all other window heights, Osblocks from the bottom block could be cut horizontally in order to free up space for installation.





For the upper part of your openings, cut the tenon under the Osblock. NEVER EDGE MORE THAN THE TENON ON THE TOP OSBLOCK WHEN USED AS A LINTEL. For windows with dimensions listed in the table, insert a rough sill (2" × 6”) at the bottom of your openings. For window heights other than those mentioned, your Osblock pieces will need to be cut in order to free up the height required for installation. In this situation, the window rests directly on the Osblock’s wood core. Depending on the type of windows, you’ll be installing, you may need to make a box inside the opening with OSB, plywood or 2x6. You’ll need to factor this addition into the size of your windows.

Figure 1

VERTICAL STUDS (Figure 1)

Windows and doors are installed directly at the end of Osblock lengths unless the width of the opening exceeds 72". In that case, install a 2" X 6" vertical stud to reinforce the structure. Also, a width of more than 84" will require the installation of lintel different from OSBLOCK (such as LVL (11 7/8” x 1 3/4”) in order to provide increased support for the top of the wall. (see page 14)

* Loads above the opening must also be taken into account.

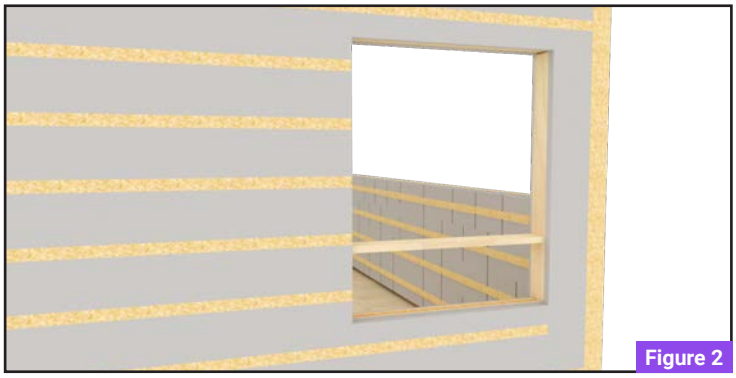


Figure 2

OPENINGS NEAR A CORNER (Figure 2)

For windows or doors installed less than 12" from a corner of the building, we recommend traditional framing (stick framing and insulation).

Final Steps

Once your walls are up, your openings are made, and your top plates are installed, all that's left to do is to make sure your envelope is well sealed. To do so, inject insulating foam wherever air could seep in.

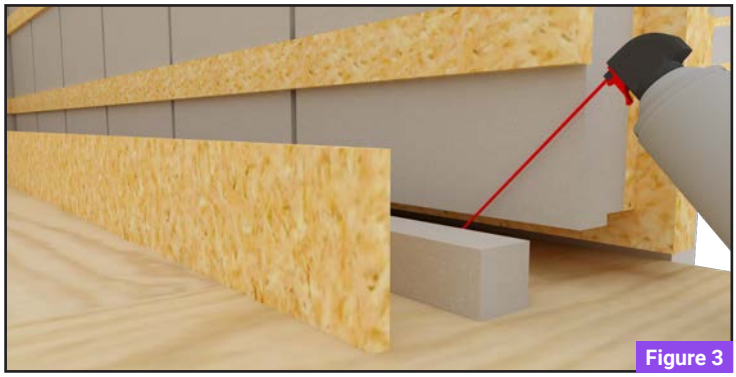


Figure 3

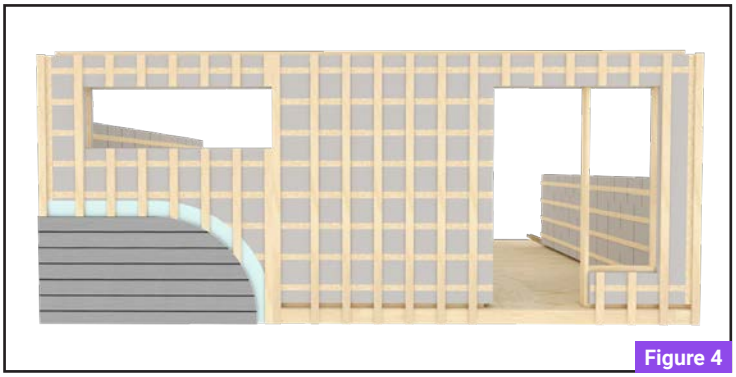


Figure 4

BOTTOM AND TOP OF INTERIOR WALLS (Figure 3)

A strip of rigid insulation must be installed at the bottom of all your interior and exterior walls. Apply urethane foam, install the rigid insulation, and screw ((# 8 x 4 ½" or 5" screws) the "OSB" strips that protect the packaging to ensure that the bottom of your walls is sturdy.

FINISHING (Figure 4)

Once your walls are assembled using the Osblock concept, all you have to do is finish your build.

Exterior:
Housewrap + furring + finish of your choice

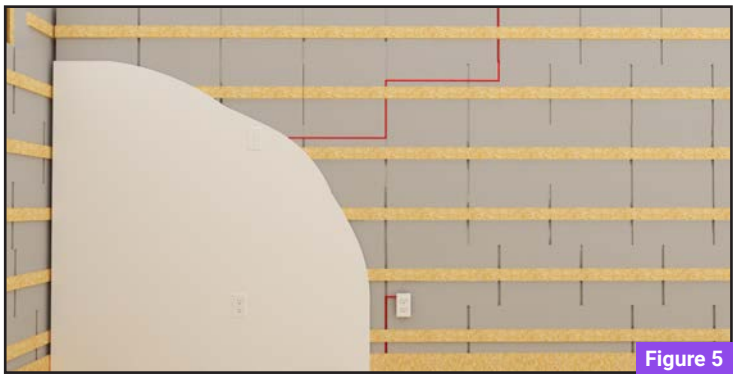


Figure 5

INTERIOR (Figure 5)

Install your electrical boxes by removing a thin layer of insulation and attaching them to the block core. Then run your electrical wires in the grooves behind the furring. Complete the process by attaching your interior finish (gypsum or other material) directly to the Osblock furring.

*Vapour barrier not required.

Installing Floor Joists and Roof Trusses

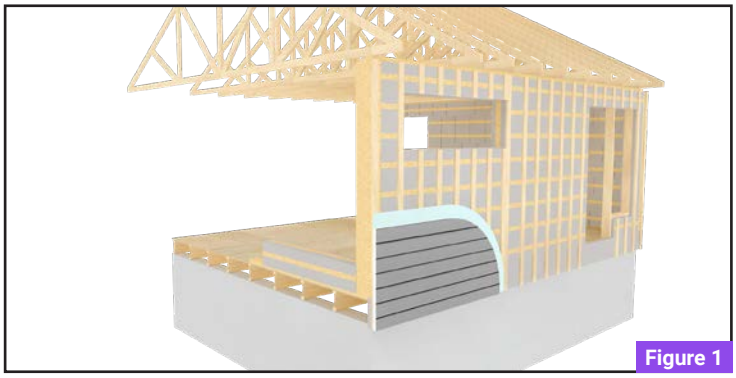


Figure 1


Figure 2

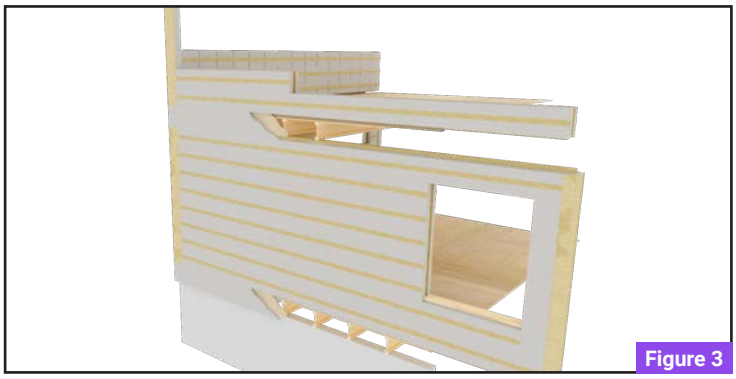


Figure 3

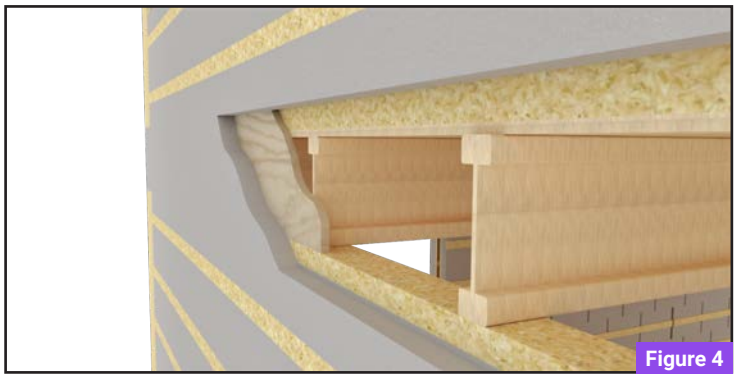


Figure 4

Attach the roof trusses or your second-floor joists directly to the top plate. (See figures 1-2-3-4)

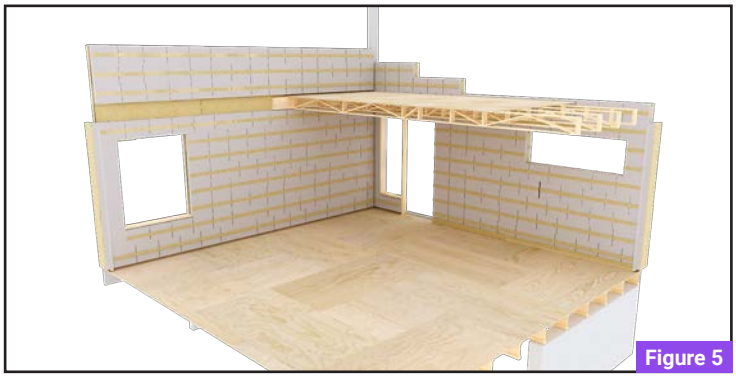


Figure 5


Figure 6

The mezzanine can be attached on the inside of the Osblock wall by removing the interior layer of insulation. A support will then need to be attached (nailed and glued) to the Osblock core in order to support the joists. (See figures 5–6)

Building Insulated Gables

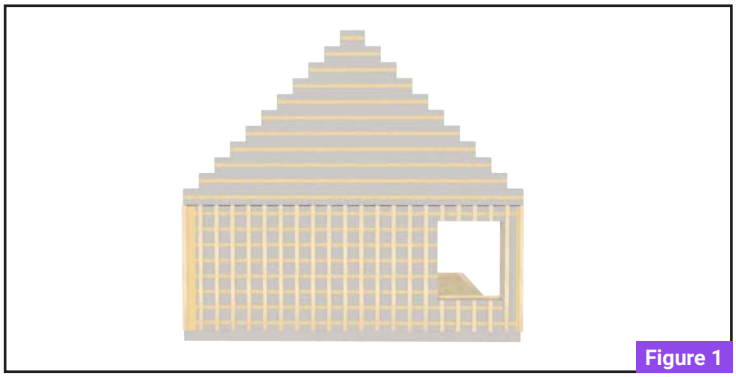


Figure 1

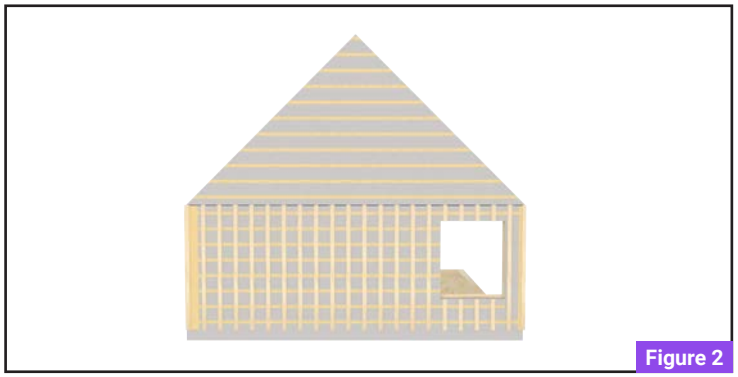


Figure 2

First, set a line from the top to the bottom of your triangle. Then, install your Osblocks, creating steps that follow your line. Once the installation is completed, cut the excess with your chainsaw, following the line.

Special cases

Figure 1

Figure 2

LINTEL FOR OPENING MORE THAN 84” (Figures 1-2)

Openings that exceed 7 feet in width must have a lintel other than OSBLOCK. If you decide to use 1 ¾” LVL you will need to remove about 1/8” from both sides of the mortise, making it bigger. Depending on the number of lay recommended, place the first LVL at the bottom of the mortise. Then, screw and glue the other LVL on either side of the first one to form a solid beam. Insulate it with 2" thick foam, matching up with the Osblock finish.

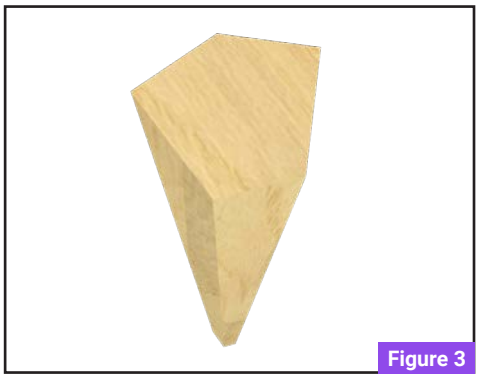


Figure 3

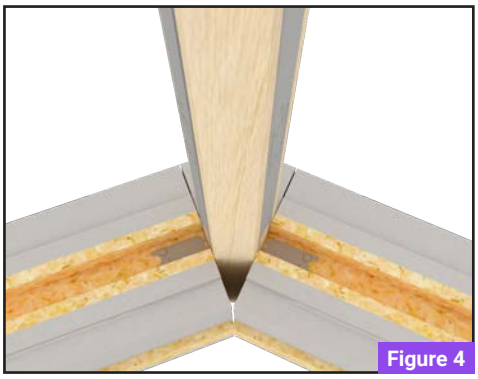


Figure 4

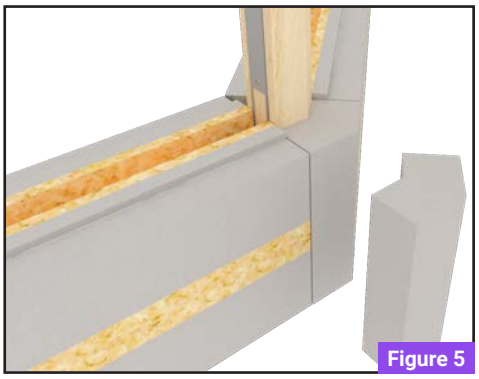


Figure 5

FOR 45-DEGREE WALLS (Figures 3-4-5)

Use a 6" x 6" to make a column on which you will install your connecting plates. This will allow you to connect your Osblocks.


Figure 6


Figure 7


Figure 8

ADDING AN OSBLOCK WALL (Figures 6-7-8)

The connecting plates are used to anchor an “Osblock” wall to another wall of either the same type (partition wall) or a different type (existing wall). Simply screw the connecting plate to the wall for extensions to existing buildings. For party walls, we recommend removing the Styrofoam along the length of the joint and installing the connecting plate directly on the core of the block

WINDOWS TABLE

Number of blocks	Opening withou tenon	Recommended window size
1	11 3/4"	9 1/4"
2	23 1/2"	21"
3	35 1/4"	32 3/4"
4	47"	44 1/2"
5	58 3/4"	56 1/4"
6	70 1/2"	68"
7	82 1/4"	79 3/4"
8	94"	91 1/2"
9	105 3/4"	103 1/4"
10	117 1/2"	115"
11	129 1/4"	126 3/4"
12	141"	138 1/2"
13	152 3/4"	150 1/4"
14	164 1/2"	162"
15	176 1/4"	173 3/4"
16	188"	185 1/2"

**** Windows 6' and wider require a 2 × 6 stud to support the lintel.***

WATCH

OUR WEB CAPSULES

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CHANGE THE CONSTRUCTION ONE BLOCK AT A TIME

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