DRICORE® | SMARTWALL

DETAILED
INSTALLATION
GUIDE

Warning: Risk of Electrical Shock, Fire or Personal Injury

Once Installed and your wiring is run through your SMARTWALL system there is risk of electrical shock, fire or personal injury if your SMARTWALL system is altered while the electrical circuits are powered.

Please take the following precautions:

- In the event of needing to remove one or more of the SMARTWALL panels after the initial installation you MUST disconnect the power to the circuit feeding that wall section, and remove the wiring BEFORE removing the SMARTWALL panel(s).

- Only use NMD90 rated wire or greater rated sheathed cable as specified in your jurisdictions electrical code.

Important Safety Instructions

- The SMARTWALL system is only rated for 15amp circuits. DO NOT install 20amp circuits or larger in your SMARTWALL system.

- The intended operational voltage of the SMARTWALL system is 120Vac.

- As with any wall, potentially there is wiring within it and penetrating the wall surface with screws longer than 2 ¼" poses a risk of electrical shock and fire. You Smartwall system will have wire channels running horizontally at 17", 49" and 80.5" from the floor. Always avoid these "dimensional" areas by 1" top side and 1" bottom side when installing long screws, such as those used to hang a Flat Screen T.V., or other heavy object. Also, be aware of where the circuit wire enters the SMARTWALL system on the wall you are putting screws into, and do not penetrate that vertical feed channel with the circuit feed wire in it with your screws.

- Do not install more than 12 outlets on any single circuit.

- Do not remove or re-install any SMARTWALL Panel until all power to that panel is disconnected and the wiring removed.

Save These Instructions

We recommend taping these instructions inside a closet area or to the back of an exposed wall panel section where they are easily accessible.

Before you begin:

The SMARTWALL system you have purchased has several unique conveniences built into the panel design. The first of these are the integrated wire channels, of which there are 2 vertical and 3 horizontal in every panel. It is important when cutting your SMARTWALL panels to your basement height you **NEVER cut from the bottom, always cut off at the top. This is to ensure your electrical wire channels will always line up.**

The second convenience of your SMARTWALL system is the patented "Micro Bevel" edge detail, which eliminates the traditional taping stage of finishing your drywall surface. The micro bevel also means using much less filler to achieve your finished surface, resulting in far less sanding and therefore less dust created. It also speeds up the process of the drywall finishing, reducing to a single day what would normally be 3 to 4 days of much more intense work. It is important to use ONLY the SMARTWALL Patch Pro for seaming the micro bevels and inside corners seams. It is specially formulated not to crack in normal use applications.

When cutting the SMARTWALL panels, a good quality hand saw is all you will need. You are cutting drywall and foam, plus the engineered OSB structural members, and these will easily cut with a handsaw. You can use a circular saw or table saw, but doing so will create far more dust and debris, and the blades of these power saws will not fully penetrate the thickness of the wall panels, so you will have to cut each panel twice, once from the face side, and once from the back side. Cutting with a handsaw is the preferred method.

Tools required:

- Safety glasses (if using power equipment)
- Safety shoes
- Good quality hand saw
- Two saw horses or stands
- Level and Tape Measure
- 2" and 6" Drywall Trowels
- Drill and screw driving bit
- Chalk line and plumb line
- 4" Hole saw (if needed)
- Scissors

Materials required:

- SMARTWALL panels – make sure you have the correct amount of each panel type; light switch panels, wall plug panels and plain panels.
- 2 x 2 lumber for top and bottom cleats.
- SMARTWALL screw kit. Enough to do your project.
- SMARTWALL Patch Pro seam filler
- Electrical wire, plugs and switches, and plug and switch cover plates
- Polyethylene for vapour barrier tie in if required

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Code Compliancy:

Always check your local requirements with reference to building codes and electrical codes. SMARTWALL panels are designed around National Building and Electrical Codes, and should be acceptable to most State, Provincial, County or Municipal codes. It is recommended that all projects be done under both a proper Building Permit and a proper Electrical Permit. This is for your protection, giving you the peace of mind that your renovation project has been done correctly and safely. If you are having trouble achieving Code Compliance, please contact us directly at 1-866-767-6374.

Please note, the SMARTWALL system is **rated for 15 AMP electrical circuits only**. If you have applications that require a 20 amp circuit (such as a basement kitchen plug) you will need to frame that section of your wall traditionally and then install your 20 amp circuit as normal, or use a separate conduit in behind your SMARTWALL panel and bring that conduit into the back of the pre-installed electrical box using the approved connectors for the conduit in place of the standard cable strain relief (Iberville C14040)used with this system. **It is also important to note that this system must use NMD90 wire or greater sheathed cable as specified in Table 19 of the CEC.**

The number of outlets supplied by any one circuit MUST NOT exceed 12 in total.

The intended operational voltage of the SMARTWALL system is 120Vac.

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Step 1:

Install the 2 x 2 cleating material around the room. Start at the floor joists that make up your basement ceiling, attaching the 2 x 2 cleats using 2 ½" #8 wood screws. Start with the cleats that will run perpendicular to your floor joists. Leave enough room to clear any obstructions that may exist on your job, such as plumbing, plumbing stacks, uneven walls, etc. For installing the cleats that will run parallel to the floor joists, you may need to install blocking between two floor joists to provide a surface to attach your top cleat to. Blocking, if required, should be spaced no wider than 24" apart. The top cleats may be installed touching in the corners.

Once all the top cleats are installed, drop a plumb line from each end of each wall, and mark the floor surface. From this mark, measure into the room 2 3/8" and mark the floor again. These are the marks you will use for the chalkline, so make them bigger and clearer so not to confuse with the original plumb line mark. Do this at each end of each wall. Chalk line between these marks, and then install the bottom cleats using the appropriate length of concrete nail or screw, depending on your flooring application (Subfloor installed, no subfloor installed, PWF construction etc). Make sure you level the cleats using shims if needed since almost all basement floors will slope toward the floor drain area, and level cleats will ensure the wire channels align perfectly. Also, if the cleats are level each panel should then be the same height, which simplifies your cutting the panels to the required height. Also, in the corners of the bottom cleats, when turning a corner do not butt the cleats tight. Leave a 2" space between the two cleats.

At this stage, if you are constructing under a Building Permit, you would call for your initial framing inspection.

Step 2:

You will need to access the type of insulation that your basement currently has and determine how best to deal with it. Earlier building codes only required the insulation to go roughly 4' below grade (outside ground level). This insulation is usually installed in a continuous "bag" around the basement perimeter walls. Because the SMARTWALL system is a Vapour Barrier, you will need to effectively destroy the vapour you currently have in place. Simply slicing it is not effective, to do it properly cut out large sections of the polyethylene bag, leaving just enough plastic at the edges to continue to hold the fiberglass batting in place (see photos below) If your basement has a framed wall section 4' below grade with insulation batts installed between the studs, you can either remove the stapled on vapour barrier, leaving the studs and insulation in place, or to save space, you can fully remove the vapour barrier, insulation and studs and install your SMARTWALL closer to the concrete wall.

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Step 3:

To reduce work-site clutter and tripping hazards, it is recommended to do your cutting of the SMARTWALL panels in your garage if possible, or outside on saw horses if the weather permits. It is also advisable to bring the panels through the basement windows so not to damage your existing interior walls of your home. Start at the left side of your longest wall, and measure the height of the first panel. After determining where your light switch and plug panels will be needed on this wall, cut the first panel, remembering to cut off the top, not the bottom. To facilitate easier placement of the panel, it is suggested to leave a ¼" space at the top, so adjust your dimension after measuring if need be. Install this panel using 4 screws, one in each corner, and ensuring the screws penetrate through the OSB T+G member and into the 2 x 2 lumber cleat. The top screws need to be 5" long (pre-drilling the top holes is recommended), the bottom screws 2 ½" long (DO NOT FULLY TIGHTEN THE SCREWS YET). Once this panel is installed, cut the next panel. If your bottom cleat is level, it should be the same height as the first panel. Set this panel beside your first panel. Align the Tongue of the first panel with the Groove of the second panel, and push the second panel tightly against the first panel. Once the two panels are tightly fitted together, TIGHTEN the screws on the first panel. Now, repeat for the third panel, and after it is tightly fitted against the second panel, then TIGHTEN the screws on the second panel. Doing it this way will make joining the two panels together much easier. Continue this process, until you have reached the end of the first wall. Unless you are very lucky, the last panel on each wall will need to be trimmed both for height and for width.

Step 4:

You've finished installing the first wall, and now you need to turn the corner.

If it is an inside corner: Cut the first panel of this wall to the required height. Test fit the panel in the corner to ensure that both the wall you just finished and the wall you are starting to install are plumb. If the inside corner joint is tight then place a bead of PL Premium adhesive along the length of the foam of the first panel, carefully slide this panel into place, and then fasten with 4 screws, one in each corner. Then repeat the processes in Step 2 to complete this wall.

If you are doing your project under permits, this is the stage where you will have your electrician install the wiring rough in. After he has done this and it has passed inspection you can then proceed to tie in the vapour barrier at the floor joist cavities, and then call for your insulation and vapour barrier inspections.

Doors and Windows:

Installing a door in your SMARTWALL system:

To create a door opening, measure, mark, and cut the opening where required. You will need to install a rough frame for the door jambs to be fastened to, so remember to add this dimension when marking your opening. For example, let's say we are installing a 30" wide door. The door itself is 30" wide, the door jambs are usually ¾", so add 1½" to the 30". Then you need to add a little room for shimming and adjusting, so add another ½". Then you need to add room for the rough frame. We suggest using 5/8" spruce plywood sheathing, so you would need to add 1¼" to the total opening to be cut. Therefore you would cut your opening 33¼" wide to install a 30" door.

Cut the plywood into strips 4" wide and the height required for the door opening. Simply run a "squiggly" bead of P.L. Premium adhesive on the back of the plywood strips, and wedge them securely into place using scraps of lumber cut ½" wider than the opening between the plywood pieces once they are in place. Make sure the 5/8" rough frame strips are flush to the surface of the drywall. Let this glue set up for a minimum of 12 hours before removing the bracing and installing the door.

Once the door is placed in the opening shim it so it is square and plumb and is operating properly and then fasten it in place with 2 ½" screws or nails through the door jamb and into the rough frame you have installed. After the door is in place, install your casing to finish off the opening . This is usually done after all seaming is completely finished and sanded, and it is usually easier to paint the walls first before installing the casing and baseboards.

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Installing a window box extension in your SMARTWALL system:

As you are installing your SMARTWALL panels you will eventually come to a basement window. The window is already installed in the concrete or block, so what you need to do is cut an opening in the Smartwall panels to allow for the installation of a window box extension. First, determine the dimensions and locations of the window box required. The window box will basically be the same size as the existing window frame. Let's say the window frame we are extending is 24" high x 30" wide (outside of the jamb to outside of the jamb). You will be building a window box out of finished grade plywood that is this same dimension. Now you are ready to mark the SMARTWALL opening on the surface of the panels. Add an additional 1" to the height and width to allow for a little adjusting. Also add 1¼" to the dimension of your opening to allow for the rough frame you will need to install in the opening. Therefore you will be cutting an opening in the SMARTWALL panels 26¼" x 32¼". Make sure this opening is roughly centered with the actual window (you have 1" of play, the 1" we added for adjusting). Cut your opening in the SMARTWALL panels and install the panels as normal (see photos on right). You are now ready to build the rough frame from the 5/8" plywood and install it. Measure the distance from the surface of the drywall to the front side of the existing window jamb. Check this dimension at all 4 corners of the window, they should be the same. If your basement window was not installed plumb by the builder (this sometimes happens) adjust your window jamb extension pieces accordingly. Install the rough frame the same way as a door opening rough frame, and then install your window box, adjusting it to line up with the existing window jamb and fastening into place using 2 ½" screws or nails.

Vapour Barrier Tie In:

You will need to tie your existing vapour barrier in your joist cavities to your SMARTWALL vapour barrier (the drywall skin of SMARTWALL is pre-coated with an effective Vapour Barrier paint, thereby acting as your vapour barrier) to ensure continuity of the vapour barrier system. To do so, follow the steps listed below.

1. Remove any vapour barrier tape that may already be in place at the joist cavities. Then pull the existing polyethylene barrier down and away from the flooring cavity (it should now be hanging over the face of the SMARTWALL.

2. Add 4" (or whatever is required) of insulation in the cavity to bring the insulation even to the surface of the SMARTWALL drywall skin, and then fold the poly you pulled down back up into place. Do not staple or tape this.

3. From your list of materials, take your roll of polyethylene and measure off a manageable length, 6' to 8' usually, and cut it into 14" wide strips. Then carefully tape the length of one edge of the poly leaving ½" of tape exposed. Tape this piece at the very top of the SMARTWALL panel. Using a pair of scissors cut the poly along the bottom of each floor joist so it can fold up into the cavity. Fold the poly up into each floor joist cavity.

4. Re-tape the new piece of poly in the cavity to the sides of the floor joists and bottom of the floor sheathing ensuring no open area's for air leakage (see photo below).

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Protecting EPS Foam:

The National Building Code requires that any EPS Foam be protected by a Thermal Barrier, of which ½" Drywall is an accepted Thermal Barrier. Please ensure that with-in your installation, if the back side of any SMARTWALL panel is exposed, such as in a utility closet or wall around a staircase etc. that you cover the exposed foam surface on the backside of the SMARTWALL panel with ½" drywall. You should screw this drywall barrier in place by screwing through the foam and into the OSB structural members with 4" drywall screws, available at your local Gypsum Supply Dealer. You are not required to tape and fill this drywall barrier, BUT keep your joints tight.

Installation of Electrical Wiring:

Once your wall system is completely installed, you can install your wiring rough in. This MUST be done BEFORE you proceed with the Vapour Barrier tie in, since you or your electrician will need to feed the wiring into the SMARTWALL panels via the two vertical channels within each SMARTWALL panel. It may be necessary to use a fish tape to pull the wires through the horizontal channels between the boxes, but if you leveled your cleats the wires should go through the wire channels without problems.

Clamping the wires:

The SMARTWALL system uses a traditional flush mount electrical box and therefore when the wires enter the box they must be clamped to ensure they cannot be accidentally pulled out. Use ONLY metal clamps such as Iberville C14040 (see photo) or equivalent. This clamp also acts as a bushing to protect the protective coating on the wires from rubbing on the raw metal edge of the box knock outs.

Traditionally these clamps are installed on the outside of the box, but since you will not be able to access the outside of the box, you can install them on the inside of the box. The box itself

Clamping the wires (cont):

is specifically an 18.8 cu.in. box to allow room within the box for up to 4 clamps.

We recommend leaving a minimum of 7" of wire length inside the box.

NOTE CAREFULLY: If you are doing your own wiring and calling for your own permit, then you can install the wiring as you install the panels, which makes the wiring between panels much easier. However, if you are having an electrician do the electrical work, you cannot install the wiring as you go. The electrician must place the wires in the panels, so he will do that once all the panels are installed.

The SMARTWALL system is rated for 15 AMP electrical circuits only. If you have applications that require a 20 amp circuit (such as a basement kitchen plug) you will need to frame that section of your wall traditionally and then install your 20 amp circuit as normal, or use a separate conduit in behind your SMARTWALL panel and bring that conduit into the back of the pre-installed electrical box using the approved connectors for the conduit in place of the Iberville C14040 strain relief clip shown above.

Finishing your SMARTWALL seams:

Your wall system is now completely installed and you are ready to finish the seams between each panel. Using only the SMARTWALL Patch Pro, use a 2" trowel and force the filler into the micro bevel between the panels. Do this from bottom to top, working quickly and removing any excess as you go. Once the seam if completely filled, take a wider 6" trowel, wet it, and start from the bottom and while exerting some pressure on the blade of the trowel, and keeping the trowel at roughly a 45 degree angle, drag it up the surface of the drywall to the top of the seam. Remove any excess filler off the trowel blade, and repeat this process in the next seam. Do one seam at a time. By the time you have worked your way around a normal size basement, you will be able to do the second coat. Do not sand between coats, simply use the drywall trowel to knock off any high spots or debris from the first fill, and then repeat the fill process. Two fill

coats is all that should be required. Once the filler has fully cured, usually overnight, then sand very lightly and you are ready for your finish paint. It is common after the first coat of paint that you will spot defective areas you didn't notice with just the filler in them. Simply repair as needed, repaint these areas only, and once everything has one coat of paint, apply your second finish coat.

If you find the filler is a little too "stiff", you can add some water and stir it in until the filler is the consistency you need. The filler should not be so creamy that it slumps, but not so stiff that it is tough to trowel into place or to feather out on the final coat.

NOTE: SMARTWALL Patch Pro has an illumination agent mixed in to it that will glow when exposed to a black light. If your basement application will utilize black lights for any reason, you will see the seams glow from exposure to the lights, even through 2 coats of paint. This is not a defect, it is designed to do this for the purpose if identifying that the correct filler was used in the event of cracked seams.

Hanging items on your SMARTWALL system:

Your SMARTWALL system has two structural OSB members in each panel, one at each edge. It is recommended that where possible you always screw into the "tongue" portion of the structural member. The tongue portion is the member on the right hand side of the panel when the panel is in the upright position and you are looking at the drywall surface. The system can support up to 70lbs hanging on it provided you are securely fastened to the OSB members. These members will be located every 23" O.C throughout your wall system, BUT not always in a corner. In a corner situation, such as hanging a cabinet, you will need to screw the corner part of the cabinet into the perpendicular wall and the OSB member located at the start of that wall will be the Groove member. Always use caution to ensure your screw is penetrating the full part of the OSB member, not into the grooved area (3/4" in from the edge).

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