Chapter 14. Wall Sheetrock

Tools needed by volunteers:

Nail apron
Tape measure
Utility knife
Pencil

Materials needed:

½" Sheetrock
⅝" Sheetrock
1¼" Sheetrock screws
1⅝" Sheetrock screws
2½" Sheetrock screws
Tapered shims
Cardboard shims
Air sealing tape

Tools and equipment needed:

Extension cord
6' Level
Lighting
Driver/Screw gun
Sheetrock bit (dimpler bit)
Drill with ¼" bit
Spiral Saw
2' and 4' Sheetrock T-square
2½" Holesaw
Sheetrock rasp
Sheetrock hand saw
Foot lifter
Step ladder/stool
Putty or drywall knife
Ratcheting T-driver
Black felt-tipped pen
Red marking crayon
Vacuum

Personal Protection Equipment:

Safety glasses (required)
Dust mask (recommended)

Safety First! Review the Safety Checklist before performing tasks in this chapter.

14.1. PREPARATION

1. Verify that the sheetrock supply staged for house installation is ½" thick. The ⅝" thick sheetrock is to be used for the garage only.

2. Verify that all stud centers have been marked on the floor with red crayon. Mark any missing stud center references.

3. Verify that all electrical boxes, HVAC ducts, and protruding pipe locations have been marked on the floor. Mark any that are missing (see Sections 12.2.2 and 12.2.3 for marking instructions).

4. Verify that all walls have blocking where required. Install blocking where missing (see Section 10.5.3).

5. Verify that the Jack studs of sliding door openings have been checked for straightness and plumb. If they are not shimmed or do not have "OK" written on the stud faces, check and shim per instructions provided in Section 12.2.5.

6. Verify that the exterior wall studs adjacent to flush sliding doors have been checked for straightness and plumb. If they are not shimmed or do not have "OK" written on the stud face, check and shim per instructions provided in Section 12.2.6.

7. Verify that the poly vapor barrier in the corners will not interfere with installing sheetrock. Poly should be neatly tucked into corners to allow sheetrock to fit squarely into corners. If poly will prevent sheetrock from fitting tight to the framing, pull out staples and refold if possible, or cut poly in the corners and re-seal with air sealing. Also check for holes and tape any holes that develop with air sealing tape.

8. Verify that the doorbell chime and thermostat wires are not covered with insulation or vapor barrier, and that the bathroom vanity light wire is either hanging outside the vapor barrier or connected to an electrical box. If these wires are not visible, locate and uncover them before installing the sheetrock.

9. Verify that cold air return boots don't extend more than ½" beyond the face of the wall studs. Use a piece of sheetrock or 2x long enough to span adjacent studs and try sliding it down past the boot. If contact is made, manually push boot back to within ½". This ensures that covers fit tight to the wall after plastering.

10. Verify exterior walls in basement are covered with 1" foamboard, gaps between the top of foamboard and the upper plate have been sealed, and the foamboard is pushed tight to the walls and held with scrap 2x or OSB.

11. Remove any residual spray foam and caulk from the face of all window frames (do not mar the painted frames).

12. Remove temporary stairway handrail prior to installing sheetrock in the stairway areas.

14.2. PLANNING

1. Develop an installation plan to maximize efficient use of people and material to minimize building costs.

2. Divide the task of installing sheetrock into two functions, with a separate team for each function. For example, one team conducts the measuring and cutting, and installs each sheet with enough staggered 1¼" sheetrock screws to secure the sheet to the wall. Another team pencil marks the stud centerlines using a 4' T-square, completes sheetrock securement, and conducts quality checks of all the screws (see Section 14.4.1.4 for quality check instructions).

3. Determine the best individual sheetrock lengths required to complete each row (see Section 14.4.1.2 and accompanying note).

   NOTE: Some sites will have wall areas pre-measured by a dedicated team who will cut and deliver sheets to all rooms for installation by the crews.

14.3. GENERAL INSTALLATION RULES

1. House sheetrock is installed with 1¼" sheetrock screws; garage sheetrock is installed with 1⅝" screws. The exception is the garage sheetrock covering the common house/garage wall which requires 2½" sheetrock screws.

2. **Screws should be installed so the head is slightly recessed (countersunk) below the surface of the sheetrock.** Adjust the depth setting of the driver to ensure the correct depth. **If the outer layer of paper is torn, the screw is too deep. Leave screw in place but add another 2" away.**

3. All butt joints must be centered on a stud unless over a window or door header.

4. All sheetrock must be secured to at least three studs or two studs and end blocking (i.e., each sheet must have at least three rows of screws). Exceptions are closet side walls and pieces above door and window headers.

5. Each full width sheet must be fastened with seven screws on each end and five in the field. Keep the screws at the bottom of the stud 3"-4" above the floor. In addition, bottom sheets should be fastened to the bottom plate, two screws between each stud.

6. Undercut the sheetrock by the following amounts relative to the actual measured dimension:

   - by ½" if the piece will span the entire distance between two parallel walls (e.g. a closet or pantry).
   - by ¼" when butting tight to an adjacent sheetrock piece (as between a sheetrock factory edge on one end and a stud or intersecting wall on the other end).

7. When measuring sheetrock to fit around exterior doors, allow for a ½"–¾" gap between sheetrock and the outside edge of exterior door jambs.

8. When measuring sheetrock to fit around windows, allow for a 1/8"- ¼" gap between the sheetrock and the outside perimeter of the frames. A gap is required by plasterers for installation of tear-away corner beads.

9. Factory edges of sheetrock pieces should butt to factory edges of adjacent pieces wherever possible. Try to limit cut edges to inside and outside corners, filler pieces above doors and windows and the bottom row of basement sheetrock.

10. End joints on each successive row should be staggered a minimum of two and preferably three studs.

11. After cutting sheetrock, measure and record the length on the drop and set the drop aside. To maximize efficiency, always check the drop pile first before cutting from a longer sheet.

12. Holes for plumbing and HVAC ducts are typically pre-cut prior to installation and electrical boxes are cut with a spiral saw after installation (for cutting instructions, see Section 14.4.1.9 for cold air returns, Section 14.4.1.10 for switch boxes, and Sections 14.4.1.11 and 14.4.1.12 for receptacle boxes). A 2½" hole saw or a sheetrock hand saw (keyhole type) can be used for cutting the opening for the sink drain.

    NOTE: When cutting with a spiral saw, run a vacuum to reduce dust generated by the cutting tool. This will result in a cleaner work environment.

13. When sheetrocking the upper row, completely cover the upper portion of doors and windows with sheetrock. Preferably use a single sheet to cover, but if two pieces are used the seam should be at least 6" inside the widow/door framing.

14. Sheetrock pieces above doors or windows with headers do not need to seam on a stud, as headers and top plates provide sufficient support.

15. When attaching narrow strips of sheetrock (e.g., ends of walls, inside face of sliding closet doors, 4 x 4 posts, window frames, etc.), use two screws at each end, and fill in between with two staggered rows, every 12"-16".

16. All exposed wall foamboard in the entire house must be covered by sheetrock, per Building Code. Pay particular attention to covering edges of foamboard in the basement.

14.4. INSTALLING WALL SHEETROCK

14.4.1. Walls

1. For each room, begin installation at the top of an interior wall corner, where it abuts an exterior wall or at an exterior wall corner. Finish entire top row before installing bottom row.

2. Measure the total length of the first wall selected for sheetrocking. Then, determine how many full-length sheets can be used to fill the measured length and the size required for the end pieces. The standard size for main floor wall sheetrock is 12' long; basement sheets are 8' long.

   NOTE: Every sheet must be attached to at least three studs or two studs and end blocking. All butt joints must be centered on a stud.

3. Position the piece tight to the ceiling sheetrock and install enough staggered 1¼" sheetrock screws to secure it to the wall. Continue installation until all top row pieces are in place and fully secured, using the recommended approaches provided in Section 14.3.

4. Conduct the quality control checks listed below on **every screw.** When completed, mark "OK" on every sheet with a piece of sheetrock used as a chalk. Conducting quality checks as soon as each individual sheet is installed is preferred over waiting until a room is complete. This helps identify any bad habits or equipment problems early in the installation process and helps ensure that the quality checks are not rushed at the end of the work day.

   NOTE: Never write on sheetrock with crayons or felt tipped marking pens.

   a. Use a putty knife to make certain the head of each screw is recessed below the surface of the sheetrock (a slight dimple is best). Slide the putty knife along the sheetrock surface and move it over every screw. Listen for a "click". If the screwhead is exposed, hand tighten with a ratcheting T-driver until slightly recessed.

   b. If a screw "spins" during driving or seems loose during tightening, it is not secured to framing and must be removed and relocated.

   c. **If the screwhead or dimpler bit has completely broken the exterior paper layer of the sheetrock, leave the screw in place but add an additional screw about 2" away.**

   d. Check the screw count on each full width sheet to ensure there are seven screws on each end and five in the field. Add screws if the actual number is short of the desired count.

e. Check to ensure that all narrow sheetrock strips are secured as stated in Section 14.3.15.

f. Check to make sure that all screws used to secure bottom row sheets to wall studs (or wall corner blocking) are at least 3" above the floor. If not, remove and relocate 3"-4" above the floor.

5. When installing the top row of sheetrock, install screws about 1½" down from the ceiling. There is 2½" of wood support for the top row of screws (below the ceiling sheetrock). Screw straight in, NOT at an angle. Screwing straight in will reduce the number of screw heads that need to be reset.

6. Install corner screws 1"-1½" in from the corner rather than at the very edge of the sheetrock (there is sufficient blocking width at all inside corners.) Screw straight in, NOT at an angle.

7. After installing sheetrock over windows, remove the sheetrock portion covering the window by cutting with a spiral saw along the inside edge of the framing. Set the saw bit depth to ¾"–1".

   NOTE: Save the window cutout for sheetrocking the window sill and the bottom of the window header.

8. When the top row of sheetrock is secured and checked, install the bottom row of sheetrock using a pair of foot lifters to hold the sheet up snug to the upper sheet and fasten as in Section 14.3. **For basement walls (including knee walls) sheetrock must be ½" off the concrete floor (or ledge for knee walls) to prevent moisture wicking.** Place sheetrock scraps under the lower edge to provide proper spacing. Drive two screws into the bottom plate evenly spaced between each stud.

9. Before covering a cold air return, determine the distances from both sides as well as the top and bottom of the duct boot to adjacent sheetrock surfaces. Transfer these dimensions to the sheet to be cut and use a square to mark the lines for the cut-out. Cut the bottom first, then both sides with a hand saw. Scribe and snap off the top. As an alternative, the duct opening can be cut with a spiral saw after installation, but it is more challenging because the sheet metal is very thin. Take care to preserve the bottom section of sheetrock under the duct boot.

   NOTE: If the room opposite the return duct has not been sheetrocked, set the sheetrock in place and trace the perimeter of the duct on the back side of the sheetrock. This will simplify the process.

10. Before covering a wall switch, temporarily position the sheetrock where it will be installed and mark the right and left edge of the box on the sheet. Extend these marks down about 6". Measure from the bottom of the upper sheet to the bottom of the switch box and transfer this dimension to the bottom sheet. This is the height of the cut. Use a hand saw to cut the left and right sides down to the measured height, then use a utility knife to score the bottom side and snap off the cut-out.

11. Before covering a receptacle, determine the approximate vertical and horizontal centers of the box and record the measurements on a scrap piece. (Receptacle mid-points are typically about 14 ½" off the floor; kitchen counter receptacles are about 44 ½" off the floor.) Install enough screws to secure the sheet. To prevent driving screws through the sheetrock, do NOT fasten within a 24" radius of the box until after the opening has been cut.

12. Use a spiral saw to cut out all receptacles. Verify that the depth of the saw bit is ⅝"-¾". Locate the approximate midpoint of the receptacle (per the preceding step). Insert the saw bit about 3" to the left or right of the midpoint. Move the bit horizontally toward the center of the receptacle until resistance from the outside edge of the box is encountered. Then, proceed to move the bit counterclockwise around the outside perimeter of the box. Moving the saw in a counterclockwise direction helps hold the saw bit against the outside surface of the electrical box. When using a spiral saw, ask someone to run a vacuum and hold the hose end close to the leading edge of the cut to reduce spreading the dust generated by the cutting tool.

    NOTE: It is important to keep the bit outside the box to prevent cutting the electrical wires. If a wire is cut, or insulation is damaged, report it to the Site Leader or Construction Supervisor.

13. **Do not bury doorbell chime or thermostat wires behind sheetrock**. Drill a ¼" hole in the sheetrock at the height the wire is attached to the stud and thread the wire through the hole.

14. If the bathroom vanity light wire is not running through an electrical box, leave it hanging at its attached height outside of the poly vapor barrier and sheet the wall. The electrician will drill through the sheetrock and fish the wire out at the appropriate location for the vanity light.

15. On outside corners of walls, install a piece of sheetrock on the first wall so its corner side edge is flush with the outside edge of the corner stud. Score and snap (or saw-cut) this piece flush to the corner. (An acceptable tolerance is a maximum of ¼" short of the corner, but do not allow the piece to extend past the outside edge of the corner stud.) Form a recessed corner by installing the second sheetrock piece on the adjacent wall so its edge is flush with the other outside edge of the corner stud. The outside corner ends of the sheetrock should not overlap the corner (see Figure 14-1).

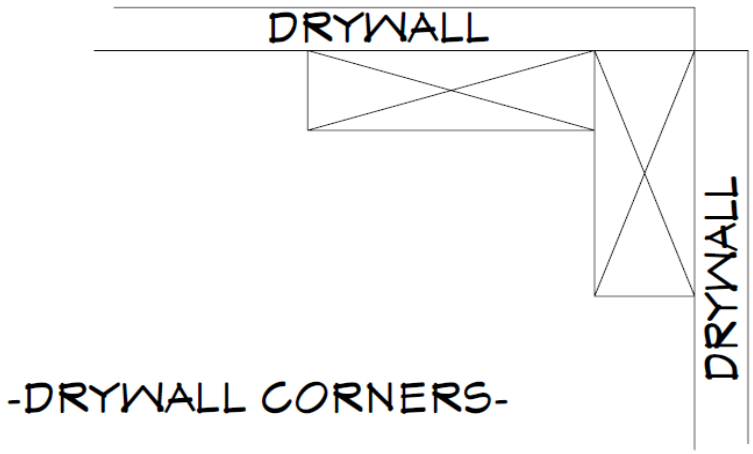

Figure 14-1. Outside Corner Installation of Sheetrock.

16. Cover the plenum for the range hood with sheetrock. The opening for the hood vent will be cut out during cabinet installation.

17. When sheetrocking the portion of the stairwell opening below the stairway closet platform, do not cover the joist hangers on the left and right side of the LVL. Cut the sheetrock short of the hangers and the plasterers will fill in the gap.

18. Re-install the temporary stairway handrail as soon as the sheetrock has been installed in the stairway area.

14.4.2. Window Frames

1. After removing the window cut-out (see Section 14.4.1.7), cut and install the four window frame pieces. Use the window cut-out for the sill and the bottom of the header and install these first; then look for other scrap to cover the side framing.

2. Cut all window frame pieces to fit tight to the window frame and flush with the interior edge of the 2x6 window framing. Secure the single layer sheetrock with 1¼" sheetrock screws. Keep screws at least 2" out from the window frames. Screws should be installed per the pattern described in Section 14.3.15.

3. Step back and review all window frame pieces for straightness (e.g., any noticeably high or low areas or bulges). If present, investigate the cause and adjust as necessary, using shims behind the sheetrock.

14.4.3. Shower Area

1. Sheetrock at the tub/shower flange should butt to the exterior edge of the flange. **NEVER OVERLAP THE FLANGE.**

14.4.4. Basement Door Area

1. On the unfinished side of the basement door, install sheetrock above the door and on either side of the door to the width of at least one stud bay.

2. Use 8”-12” wide sheetrock scraps to cover all interior horizontal wall wiring between studs in the unfinished side of the basement.

14.5. FINISHING AND CLEANUP

1. Return all unused full-length sheetrock to the main floor.

2. Any leftover pieces of sheetrock (**no full sheets**) may be given to the homeowner if they want them. Lean these pieces up against a wall underneath the stairs, supported by a few short scraps of 2x material to keep them off the floor.

3. When installation is complete, clean floors by dragging push brooms to remove debris, but do not remove the dust. Leaving dust is desirable because it facilitates plaster spill removal from the subfloor after plastering.