



How to Repair a Hole in the Ceiling

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INTRODUCTION

You've fixed your leaky roof and replaced the wet insulation in your attic—now what do you do about the unsightly hole over your head where that soaking mess dripped through your gypsum ceiling? You cut a piece of drywall to fit, fasten it securely, fill in the gaps with joint compound, and smooth out the patched areas to match the texture of your undamaged ceiling. Paint to match and voila! you can check your ceiling off your “to do” list! This guide will show you how.

Safety first

A few basic precautions will get you through this repair safely and successfully:

- Reduce tripping hazards by clearing furniture, pets, and people from the area under the repair
- Use drop cloths or painter's cloths to cover the repair zone and group your tools and materials several feet from the base of your ladder
- Place the ladder squarely beneath the area you're repairing so you won't overextend your reach or get overbalanced
- Ask a friend to help if materials are too heavy or awkward for you to handle on your own
- Always wear eye protection when working with materials above your head



TOOLS:

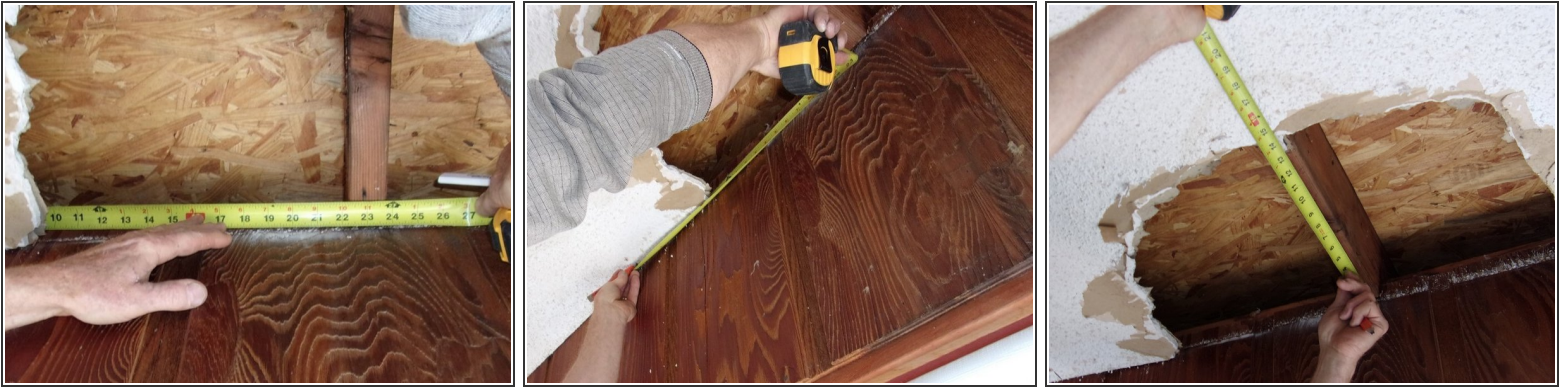
- Framing square (1)
or other straight-edge tool
- 3" Putty knife (1)
- 6" Taping knife (1)
- Utility Knife (1)
- Pencil (1)
- Screw gun (1)
- Drop Cloth (1)
- Block Sanding Sponge (1)
- Tape Measure (1)
- Nail puller (1)
- All-Purpose Sponge (1)
- Safety Glasses (1)



PARTS:

- Drywall screws 1 1/4 to 1 1/2" depending on thickness of drywall (1)
- Gypsum board--also known as wallboard, drywall, greenboard, etc. Try to match the thickness of your existing ceiling when you buy your replacement piece. (1)
- Self-sticking mesh tape (1)
- Pre-mixed wallboard joint compound (1)
- Ceiling popcorn (raised pebbly texture--buy whatever matches the rest of your ceiling) (1)
- Furring strip or other short length of trim--you only need a piece long enough to support the new piece at ceiling level while you're attaching it. (1)

Step 1 — How to Repair a Hole in the Ceiling



- i** The new piece of ceiling will need to be attached to rafters at both ends and to any rafters crossing the middle of the damaged area.
- Determine the distance to the rafters on each side by measuring above the ceiling to the center of the exposed beam. Pic 1.
 - Add 3/4" to that measurement and measure the same way below the ceiling. This ensures your cut will be made along the approximate center of the rafter. Measure and mark with a pencil at several points, then draw through them to mark the cut lines you'll make right up the center of the ceiling rafter on each side. Pic 2.
 - Starting at the end of the rafter in the middle of the hole, measure outward to a point where the ceiling is undamaged. Mark it at the center and on each side, then draw a line through to intersect with the lines drawn up the centers of the side rafters. Pic 3.

Step 2



- Connect your pencil marks along each length.
- ⓘ You should now have a penciled outline of a squared-off rectangle on your ceiling. These are your cut lines.

Step 3



- Cut by laying the framing square flat on the ceiling parallel to the area to be trimmed away and drawing the blade of your utility knife straight down along its edge, making a clean, shallow cut in the solid material. Pic 1.
- Support the piece being cut away with your free hand, deepening the cuts until you have cut completely through and the damaged piece can be removed. Pic 2.
- ⓘ There might still be old drywall nails or screws holding damaged pieces to the side rafters; you might need to break the old pieces away.

Step 4



- Prepare the opening for the new piece by pulling nails and removing any screws on the underside of the rafters to ensure a flat mounting.
- Use the 6" tapping knife to skim away a swath of the popcorn texture along the edges of the undamaged ceiling surrounding the opening.

Step 5



- Stabilize the sections of undamaged ceiling around the opening with drywall screws placed a little back from the edge—this helps to avoid crumbling or buckling of your nice, clean-cut edge. Pic 1.
- Use enough pressure when driving screws so that the screw heads imbed slightly into the wallboard surface.
- ⓘ Center rafter screws go in straight.
- Hold the screw gun at a slight angle and drive screws into the side rafters, starting the screws a little back from the edge as before. Pic 2.
- ⓘ Screws in side rafters are angled because you are fastening to half a rafter—a straight-in screw may miss the rafter altogether.
- ⓘ If the opening needs insulation replaced, do it now.

Step 6



- Use your utility knife to cut the new piece of wallboard, making it a little smaller than the actual size of the ceiling opening, so that the installed piece will have a small gap around the edges.

Step 7



⚠ Unless you have a helper or a very small area to repair, affix a furring strip or similar-sized piece of trim to the wall under the ceiling, running side to side the width of the new piece going in. This will bear the weight of the replacement piece while you are securing it with screws. Pic 1.

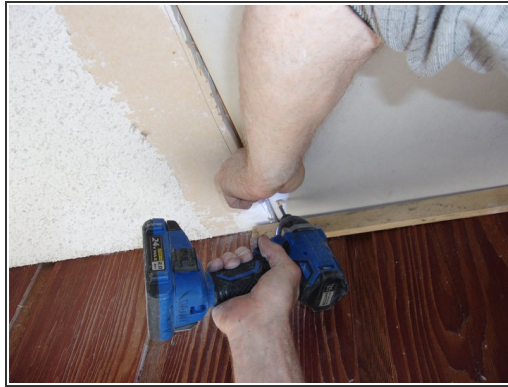
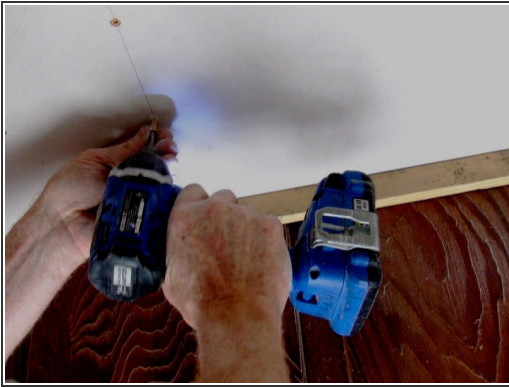
- Mark an arrow on the wall (or trim piece, as shown) and another arrow on the existing ceiling opposite, both pointing to the **center** of the middle ceiling rafter. Pic 2.
- i** These arrows are your points of reference for drawing a line across the new piece to indicate where the drywall screws will go to secure the new piece to the dead center of the middle rafter.

Step 8



- Dry fit the new piece into position (don't attach yet). It should be flush with the existing ceiling, rest on half a ceiling rafter on each side, and have a slight gap around the edges. Pic 1.
 - ⓘ Trim the new piece **or** the existing ceiling edges if you need more room on a rafter to affix it securely.
 - Dry fit again after trimming. Use the framing square and pencil to draw a line from the trim arrow to the ceiling arrow you marked in Step 4. Pic 2.
- ⚠ Bring the new piece back down until you have placed your screw gun and drywall screws in easy reach of your position on the ladder before you begin the installation.

Step 9



- Slide the new piece into position. Hold it in place with the forearm of your free hand as you affix the new piece to the middle ceiling rafter along your penciled line. Pic 1.

⚠ Continue to support the new piece until at least three screws firmly attach the new piece to the middle rafter.

- Attach the new piece to the rafters on each side, placing the screws a little back from the edge as before and angled slightly into the rafter. Pic 2.
 - Anchor both sides with screws spaced evenly from corner to corner. Pic 3.
- i** When the new piece is **fully secured**, remove the support piece you screwed to the wall and patch the screw holes with joint compound, if noticeable.

Step 10



- Cover the cut lines with strips of self-sticking mesh tape, overlapping the ends. Press lightly to help them stick—you might have to do one at a time if gravity starts working against you.
- ⓘ If your mesh isn't the self-sticking kind, use the 3" putty knife to fill the gaps with joint compound and then lay tape along the top of each one. Then continue the process as follows.

Step 11



- Use the 3" putty knife to scoop up the pre-mixed joint compound and apply liberally along the mesh tape, working the joint compound through the mesh holes and completely filling the gaps along the wallboard edges. Pic 1.
- Continue working your way along each cut line, smoothing the joint compound along over the top of the mesh tape to cover it completely, both lengthwise and side to side. Pic 2.
- ⓘ You may have to hold one end of the mesh in place occasionally, if it wants to start sliding along with the movements of your putty knife.

Step 12



- Switch to the 6" tapping knife and continue applying joint compound in smooth swaths, working both side to side and lengthwise along the repair lines, until you have a flat, uniform layer that feathers over onto the existing ceiling. Pic 1.
- Your layering should completely conceal the mesh tape; pay particular attention to overlapped corners where it is thicker—the idea is to blend the new piece with the existing ceiling so the repair isn't obvious. Pic 2.
- Use joint compound to fill the slight depressions over each screw and any blemishes in the surface of the new piece. Pic 3.
- ⓘ Now STOP and allow the joint compound to dry thoroughly before sanding and applying a skim coat, popcorn mixture, ceiling texture, or paint. Allow at least 24 hours to dry thoroughly under most weather conditions.

Step 13



- When dry, sand repaired areas lightly with 100 grit sandpaper or sanding sponge. Sand in a circular motion with light pressure so the area is smoothed but doesn't cause the mesh tape to become exposed. Pic 1.
- ⓘ If the mesh does show through, pat the sanded area with a lightly dampened sponge, reapply a thin layer of joint compound, let dry and sand again before proceeding.
- ⓘ If matching a ceiling with any other texture but popcorn, pat the sanded areas with a lightly dampened sponge and skim a moderately thick layer of joint compound across the entire repair, including the bare areas of the new piece. Feather patches onto the existing ceiling to conceal the lines of repair and let dry before painting. Pic 2.
- For popcorn ceilings, pat repairs with a lightly dampened sponge after sanding, then apply the popcorn mixture with the 6" tapping knife. The mixture is heavy and soggy, so apply a thin layer and let dry, then apply additional coats until the texture matches the rest of your ceiling. Pic 3.
- ⓘ No matter what finishing texture you use, let your repairs dry thoroughly, then prime and paint to match the rest of your ceiling.

Repairing a hole in your ceiling is more time-consuming than difficult, and now, doesn't it look nice?
Good job!