Photos by Scott Gutheridge

Green Glue offers a simple sound-dampening method the author employed in a basement apartment. He hung a second layer of ceiling drywall, using two quart-size tubes of Green Glue per sheet. The product is not an adhesive but a sound-absorbing layer that evens out to a 1/8-inch-thick layer when the second sheet of drywall is pressed into place with a drywall lift.

Sound-Dampening A Basement Ceiling

BY SCOTT GUTHERIDGE

I was recently in the final phase of remodeling a basement apartment, painting the kitchen and living-room ceilings, when I heard someone talking on the phone in the room directly above. I was surprised, and extremely disheartened, to hear this sound because I thought I had addressed a lot of the noise issues by filling the floor-joist cavities with netted and blown cellulose insulation. That had been my go-to method for mitigating sound transfer on other projects, and I had gotten positive feedback from past clients who convinced me it worked. My current client had a limited budget, and while we were discussing what could be done about sound, he said his chief concern was reducing the noise of tenant conversations. I didn't expect the insulation to stop sound from foot traffic above, but if I could hear a phone conversation above me, clearly what I had promised wasn't working.

Thinking through my options, I remembered talking with a past client who had a basement home theater. He had explained that the contractor who built the house used a second layer of drywall on the ceiling with a special sound-absorbing glue between the drywall layers. According to that client, that method had worked well, and he could barely hear the sound from that room when it was in use.

I did some online research and came across several different products, settling on Green Glue (greengluecompany.com) after watching YouTube videos of various product tests. The method using Green Glue seemed simple enough, and while adding a second layer of drywall to the ceiling was the "least effective" of the methods using this product, doing so wouldn't significantly alter my project and in that way would be a good test. While not a big disruption, this additional step would throw my completion schedule off. I figured the best thing to do was just to admit to the client I had been mistaken about my sound-muffling strategy.

The client understood and gave me the go-ahead for the extra step. I ordered a case of 12 large (quart-size) caulk tubes from an online source that offered free shipping (buyinsulationproductstore.com), and it arrived in a couple of days. The case cost around $200, or about $17 per tube. With just the cost of glue, some sheets of drywall, and my labor, I felt the project was inching forward. I decided to hang the extra drywall in the living room and kitchen area first, and if it was successful at reducing noise there, I would continue into the bedroom and bathroom.

According to the manufacturer's instructions, Green Glue should be applied in a random, squiggly pattern on each sheet of drywall. It takes approximately two tubes of glue per 4x8 sheet of drywall. The glue is sticky, and following the instructions, I tried to keep it back from the perimeter of the board to minimize the amount that oozed out around the edges when the sheet was hung. The glue did not run much and stayed where I placed it. When I cranked the sheet up against the ceiling with the lift, I used twice as many screws as I usually do, following the manufacturer's instructions to fasten every 12 inches on-center for ceilings. The glue is not really functioning as an adhesive, but as a vibration-absorbing substance.

As each sheet was hung, a bit of glue squeezed through the outer edges. According to the manufacturer, the compressed glue results in a layer a little thicker than 1/8 inch, or 0.5mm, between the sheets. The manufacturer recommends using a product called Green Glue Sealant to fill gaps. I hadn't ordered any, so I used the same Green Glue to fill in the gaps around the perimeter and any gaps in the field. Here, the glue kept wanting to ooze out, and I used my putty knife to trowel it up tight until it set up and stayed. (I imagine the sealant designed for this purpose would have oozed less.)

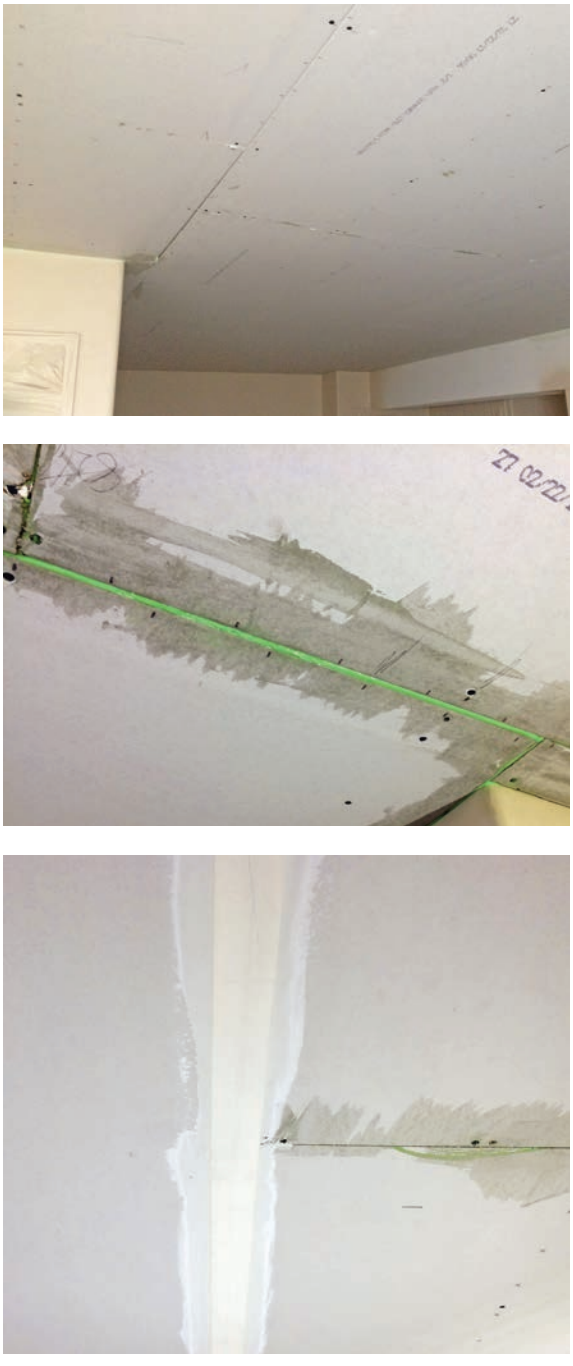
I also had to make sure any extra glue that had oozed between the joints was scraped off so that the drywall mud could bond. The next day, when I went to place the first coat of mud, some of the glue had started to sag around the edges, so I pushed it back into place and quickly taped and mudded the joints. Because of adding a second layer of drywall, I couldn't use products like Rock Splicers to help create recessed butt joints. Instead, I coated the butt joints with a wider swath of mud to create as flat a finish as possible.

When we painted the ceiling, we found a couple of spots of Green Glue that had been accidentally left on the surface. I had to rub and sand all these areas as thoroughly as possible; otherwise, paint would not adhere on them.

After all was done, I was relieved it seemed to work effectively. When someone was talking or walking upstairs, I could still hear sound and voices, but I couldn't make out what they were saying. In retrospect, I realized some of the sound was coming through the ventilation ductwork. Having the basement on a separate heating and cooling zone with no shared ductwork would have also helped to prevent sound travel between floors.

If a project looks beautiful, but doesn't perform well acoustically, you risk having a less-than-satisfied client. To stop sound, there are many other things that can be done—hanging the initial ceiling drywall on hat-channel with isolation clips, using thicker layers of ceiling drywall, and separating the floor structure from the ceiling structure are all effective ways to stop sound vibration that I will continue to explore on other projects when the budgets allow. But it's reassuring to know that something as simple as separating two layers of drywall with squishy layer using a product like Green Glue can be effective at reducing noise transfer.

Scott Guthridge is the principal of Guthridge Construction Services, based in Lancaster, Pa.



In a basement ceiling, if you can get all the wires, pipes, and ductwork above the bottom edge of the joists, two layers of drywall is an easy retrofit for sound control. Gaps can be filled with a thick bead of Green Glue, but it gets messy and you want to scrape it off the face so it won't affect drywall finishing.

Tiling a Backsplash

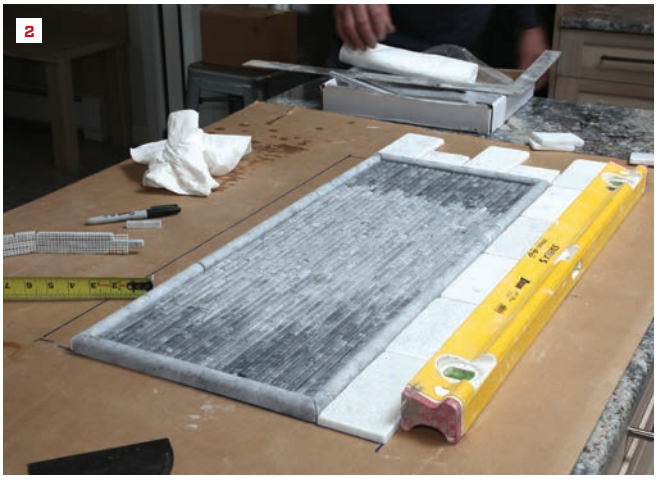
BY TOM MEEHAN

Nothing can put a new kitchen over the top like a tiled backsplash. After bathrooms and tiled floors, it's one of the most common tile jobs that I do.

During a recent remodel that included opening up their kitchen and dining room, clients replaced their old cabinets with Craftsman-style bleached oak and their old countertops with beautifully figured black and white granite. For the space between the countertop and upper cabinets, they chose tumbled marble subway tile, with a framed mural of horizontal mosaics over the stove. They also wanted the same mosaic tile installed under the window behind the sink.

Knowing that with proper prep-work a tiled backsplash installation usually goes smoothly and quickly, I started there. In this kitchen, part of the prep was patching old outlet holes, left in the wall when the outlets were relocated to strips below the upper cabinets. With that small task completed, I was ready to roll.

Tom Meehan, co-author of Working with Tile, *is a second-generation tile installer who lives and works in Harwich, Mass.*



Prepping the backsplash. The author begins by screwing a temporary ledger to the wall behind the stove to support the tile **(1)**. For the mural that will be installed above the stove, he does a dry layout first, cutting the mosaic sheets to fit inside a mitered border **(2)**. Drywall patches bedded in thinset fill the holes left over from relocated outlets **(3)**. Behind the sink, a bead of silicone seals the seam between the tile and the countertop **(4)**.

Photos by Roe Osborn

Tiling the mosaic wall. After determining the exact location of the mosaic mural over the stove, the author installs the subway tile, working from one side of the mural toward the corner, using wedges to keep the tiles spaced evenly **(5)**. He then takes the mural tiles directly from the layout board and installs them behind the stove. A rubber trowel beds the mural tile into the thinset and flattens the mosaic **(6)**. The subway tile then runs from the other side of the mosaic mural to the other corner to complete the first backsplash wall **(7)**.

Tiling the second backsplash wall. Tile layout for this wall begins with a full tile at the window casing, where the tile will be the most visible **(8)**. Odd sizes won't be nearly as noticeable in the corner under the cabinets. The installation continues from that first tile toward the corner **(9)**. Then, after the author installs the mosaics under the window casing and behind the sink, he works from the other side of the window over to the opposite corner **(10)**.

Bring on the grout. The author applies a coat of sealer to function as a grout release on the stone tile **(11)**. The grout goes onto the field tile in the usual fashion, applied with diagonal strokes in opposite directions until all the joints are filled **(12)**. A narrow grout trowel can be used in hard-to-reach places, such as under the mural and behind the sink. After the grout begins to set up, the author uses a dry paper towel to make the first wipe. He purposefully does not add water, because too much water can weaken the grout **(13)**.

Special grout for the mosaics. After taping around the edges of the mosaic mural, the author applies a darker color unsanded grout **(14)**. While the grout on the mosaics sets up, a damp sponge cleans the surface of the field tile **(15)**. When all the tile has been grouted, the author then removes the final grout haze with paper towels **(16)**. Even when stone tile has been presealed, a final wash with grout cleaner may be necessary to clean the last of the grout off the stone. The author finishes the job with a coat of sealer on both the tile and the grout, and the kitchen is ready for the chef.

Close-Up on Taping Drywall Seams

BY MYRON FERGUSON

All drywall seams need to have tape embedded in joint compound. The tape strengthens the joint, and the joint compound, or mud, is the adhesive that holds the tape in place. But there's a lot more to hand-taping beveled drywall seams than slapping a bunch of mud on the wall and running tape. In this article, I'll focus on the methods I use for taping beveled (or tapered) seams with the most common types of tape—paper, fiberglass-mat, and fiberglass-mesh.

Paper tape is the tape used most often by professionals. Fiberglass-mesh tape is self-adhesive and is more popular with people who tape only occasionally, because it has a light adhesive on it and you can run it out over the seams and then cover it with compound. This saves you from the juggling act of applying mud and tape simultaneously. Fiberglass-mat tape is at least as strong as paper tape and gets embedded in a similar manner but, like fiberglass mesh, is made from an inorganic material.

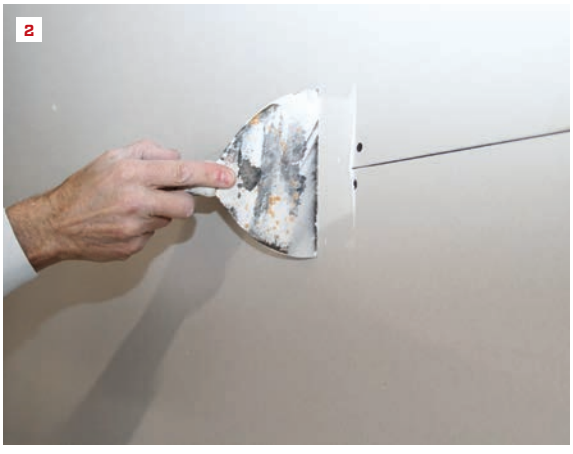
CRITICAL FIRST COAT

In my opinion, the first coat (when you embed the tape) is the most important part of the drywall finishing process. Some folks think that it's the sanding or the finish coats that are most important. But if you get the tape embedded properly in joint compound to begin with, you create a strong foundation. This is critical to a good finish. The joints must be as strong as the drywall itself, otherwise normal movement of the wall and ceiling framing can cause cracks to appear at the seams. If you get the first coat right, the other two coats are relatively simple.

Mud matters. I prefer to use an all-purpose, heavyweight, drying-type joint compound for embedding paper and fiberglass-mat tapes. The heavyweight, all-purpose material (the original type of all-purpose compound) is stronger than lightweight or mid-weight compounds.

By a "drying-type "compound, I am referring to a compound has to air dry before subsequent coats can be applied. Drying compounds shrink slightly when they dry, but this shrinkage is not a problem if you use a paper or fiberglass-mat tape, as I will explain further on. In contrast, a setting compound (sometimes called "hot mud") does not dry, but rather it cures by a chemical reaction. Setting compounds are stronger than drying compounds, but if you're using a paper or fiberglass-mat tape, added strength is not the reason to use hot mud, it's speed. Setting compounds will cure faster than drying compounds will dry, so you can apply the finish two coats sooner.

Drying compounds are purchased in premixed form, and most of the time, the premixed drying compounds are the proper consistency for embedding tape right out of the bucket or box, but mixing the compound is still recommended. Mixing loosens up



First coat. For hand-taping, there are three options for carrying mud **(1)**—a hawk (left), a large trowel (center) or a pan (right). The author uses a 6-inch knife for the first coat **(2)**, applying a healthy 1/8-inch-thick bed of compound on the seam. He coats the entire length (up to about 20 feet) before rolling out the tape and gently pressing it into the mud every 18 inches or so to keep it in place **(3)**.

Photos by Linda Ferguson

the compound; for minimal effort, the mud becomes easier to apply. Older mud may be stiff and you can add a little water to it. But use caution: Over-thinning can also reduce the strength and adhesion qualities of the compound. Whether added water is needed is a judgment call. Too thick of a compound means working harder physically and working slower. But if it's too thin, the mud won't stay on the tools. This slows you down, too, and the jobsite soon becomes messy.

Taping tools. There are basically two tools needed to embed the tape—one to hold the compound and the other to apply the compound on the wall and embed the tape.

There are three options for holding the compound. A mud pan can hold quite a bit of compound, and its edges work well for removing compound from a taping knife. Because it is shaped like a bread pan, even thin compound won't end up on the floor; a pan is a must when you're working with thinner compounds.

A hawk can also hold a lot of compound, even more than the average pan, but it takes experience to hold a hawk so the compound doesn't run off. The compound can't be too thin or it will. The edges are used for removing compound from the taping knife.

A large, 11- or 12-inch drywall trowel can also be used to hold the compound, but of the three options, it holds the least amount of mud, and thin compound will run off the edges. Because the trowel holds less compound, a person using a trowel generally makes sure the compound bucket is always close at hand. The one benefit that a trowel has is that it can be used to smooth out compound that is applied with the taping knife, if the need arises.

Taping knives come in different widths, typically from 3 or 4 inches to 10 or 12 inches wide. For the first coat, I use a 5- or a 6-inch taping knife to apply compound over the seams.

Getting mud on the seam. The basic technique I'll describe is for beveled seams—the long edges of a sheet of drywall. The drywall sheets should lightly butt each other. Any gaps that are wider than 3/16 inch between two sheets of drywall should be prefilled with a curing-type compound and allowed to dry before you begin to tape out the seams.

When I'm ready to tape, I grab a taping knife and remove some compound from my container by pushing the knife under the compound, and then twisting the knife over, cutting the compound off against the side of the pan or the surface of the hawk or trowel.

On the first pass, I spread the compound over the seam. With the knife blade centered on the seam, I guide the knife along the seam at about a 20-degree angle from the drywall surface. Grabbing more compound, I make the next pass. My goal is to leave an even layer about 1/8 inch thick over the seam. This is thicker than compound manufacturers say you need, but at this initial stage, you want plenty of mud on the wall so you don't end up with dry areas under the tape. The excess mud at this stage will get forced out from under the tape later, as I will explain.

I apply the compound over the entire length of the seam, up to about 20 feet long. I work multiple seams in my immediate area, applying mud on the entire length of each seam before I begin to embed the tape.

Embedding the tape. With the tape positioned over the seam, the author draws his taping knife along the length, holding the knife at a steep 60-degree angle while pinning the tape in place with the trowel he uses to carry compound **(4)**. He tests the embedded tape **(5)**; if it leaves a dimple, not enough mud has been forced from the back of the tape. You can also peel back the end of the tape to inspect **(6)**: There should be an even layer no more 1/16 inch thick.

Embedding paper tape. Once the compound has been applied, center the tape over the seam. For efficiency, I keep a tape reel on my belt and roll it out from there. This saves me from bending down to grab the roll off the floor and from hunting around for it.

I press the end of the paper tape into the compound with my hand at one end of the seam, and as the tape is pulled off the reel and centered over the seam, I press it lightly into the compound every 18 inches or so to hold it in place. The tape has to be kept tightly pulled as it is centered over the joint. Once the end of the seam is reached, the tape can be cut. I do this by pushing the edge of the blade tight into the compound with my taping knife, then pulling the tape across the blade, tearing it crisply.

Pre-creased paper tape is not just for corners. It works well for flat seams, too, but you want to place the tape so the crease creates a valley, so to speak, rather than a peak. (If the end of the roll of paper tape sticks out of the bottom of a reel, the tape will be pulled off the reel with the correct side—the back—facing down into the compound.) If the tape gets embedded backwards, the center of the tape could ridge out slightly after embedding, which may be difficult to conceal later when you're applying the finish coats.

Once the paper tape is positioned over the seam correctly, it has to be embedded into the compound. Start at the center, regardless of the length of the seam, and draw the knife along the tape towards one end, holding the blade and handle at about a 60-degree angle to the wall. This steep angle makes it easier to apply the necessary pressure to properly embed the tape. But even so, it requires a lot of pressure to pull a knife along the tape and force excess compound out from behind the tape. To avoid pulling the tape along, I hold it in place with the corner of whatever tool I'm using to hold compound (in photos 4 and 5 on the previous page, I'm using a trowel, but the corner of a hawk or pan also works).

One way to test whether the tape is embedded properly is to tap on the embedded tape with a finger or the edge of a trowel. The surface should not dimple enough to wrinkle the paper or cause a visible indentation. If I'm concerned about removing too much compound, I'll lift the end of the tape to inspect the amount of compound left behind. I want an even layer no more than about 1/16 inch thick. Leaving too much compound behind can make seams difficult to conceal later because the tape may form a slight ridge.

Fiberglass-mat tape. When finishing tapered seams, I prefer mat tape because it is so easy to embed and I am confident in its strength. It gets embedded into seams in the exact same manner as paper tape, using the same heavyweight all-purpose joint compound. However, fiberglass-mat tape is easier to embed because the mat is porous, making it easier to force excess compound out from behind the tape. You can freely apply plenty of compound over the seam and not worry about working too hard to smooth it out, eliminating the likelihood of dry areas behind the tape. The only precaution is that mat tape cuts a lot easier than paper tape, and you need to be careful not to apply too much pressure with a taping knife, otherwise you can damage the tape.

Fiberglass mesh tape. There is a wide variety of fiberglass mesh tapes on the market. Some have very close fiberglass strands, while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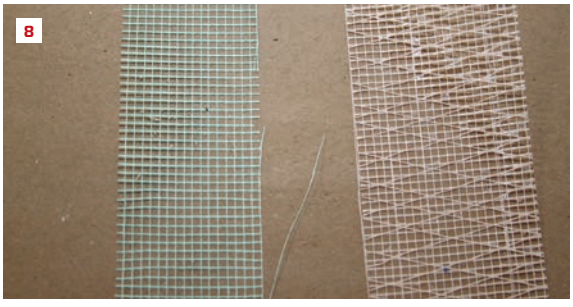
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Non-paper tape. Fiberglass-mat tape gets embedded into joint compound the same way as paper tape **(7)**. The mat is woven in such a way that it can stretch slightly as the compound dries. Fiberglass-mesh tape is a different animal. While there are different varieties, including different weaves **(8)**, all fiberglass-mesh tape gets applied over a dry seam **(9)**. This can save time because it eliminates the step of pressing the tape. All mesh tapes should be coated with a setting compound **(10)**, not a drying compound. Mesh tape is more resistant to stretching and can leave fine cracks at the tape edge when a drying compound dries and shrinks.

others have strands that are quite wide apart; there are even different weaves available. As far as I know, all varieties are self-adhesive.

Unlike paper or fiberglass-mat tape, fiberglass mesh resists stretching. This means that when the seam is put under stress, which happens when a drying compound dries and shrinks, you can get fine cracks along the seams. For this reason, drying-type joint compounds are not recommended for most fiberglass tape; you should use a setting compound. The added strength and bond of a setting compound give the fiberglass mesh tape the necessary strength. The setting compound is mixed to the same consistency as the drying-type compound. There is no need for a fast setting time; the main goal is to strengthen the seams. But, of course, if the taper wants to apply the first finish coat earlier, there is no detriment to using a faster setting compound.

With mesh tape, you just roll out the self-adhesive tape, pressing it into place over the seam by hand or with a taping knife. At the end of each seam, the tape can be cut, either with the taping knife or with a utility knife. The mesh tape gets embedded when it gets covered with joint compound. I typically apply this compound with the same 5- or 6-inch-wide taping knife, firmly pressing the compound through the tape. A trowel or knife can then be used to remove the excess and smooth out the remaining compound. Because the tape just has to be coated, the same tools you use to apply the tape are kept in hand, speeding up the process.

Mesh tape offers several advantages over paper and fiberglass-mat tape. The main advantage is speed. Using mesh tape as I just described is typically faster (at least for hand-taping) than embedding paper or fiberglass-mat tape. You can tape over all the seams in an entire room before applying any compound. Taping and mudding become two separate steps, and you eliminate the step of pressing the tape into the compound to force out the excess mud, which saves a lot of time and effort.

Using fiberglass mesh tape also greatly reduces the likelihood of any blisters under the tape. A tape blister is a small dry area under paper tape that may not be noticeable until a finish coat is applied over the tape. The area will then show as a blister-like spot.

Myron Ferguson is a drywall and home performance contractor in Galway, N.Y.