HOMEOWNER REPAIR GUIDE

PLASTER AND DRYWALL REPAIR

In most homes built before 1945, the interior walls were finished with plaster and lath. After WWII, drywall replaced plaster and lath, allowing for quicker and more uniform construction. Although the two products are different, repairs to plaster and drywall can be made in much the same manner.

> **NEVER USE A REGULAR ELECTRIC SANDER**
>
> One important caution – you should *never* use an electric sander to sand drywall or plaster unless it is made specifically for this purpose, as the fine plaster dust will be sucked into the motor and ruin the ball bearings.

SANDING TOOLS

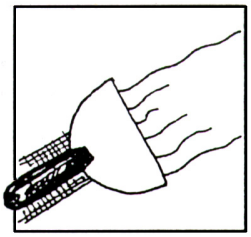
To limit the spread of dust during large-scale sanding of plaster and drywall, you can use a **power drywall sander** specially made for this purpose, with a sanding head surrounded by a shroud and attached to a vacuum. For smaller sanding jobs, use a **hand-held pole sander**, with clamps on the head that hold a piece of drywall screen. The head is attached to the pole in such a way that sanding can be done from any angle without gouging the plaster or drywall. Drywall screen, readily available at most hardware stores, will work longer than traditional sandpaper, because you can knock the plaster dust from it to prevent the surface from becoming clogged.

CRACKS

Materials and techniques to repair plaster and drywall depend on the size of the problem.

HAIRLINE CRACKS

For small hairline cracks, use **interior vinyl spackling**. This product has some elasticity and is thus more likely to remain intact than plain patching plaster. Using a flexible putty knife, push the material into the crack as firmly and thoroughly as you can, smoothing it as you go.



Applying drywall tape over a crack

Another way to repair hairline cracks is to enlarge the crack into a “V” shape with a stiff blade, so it narrows from top to bottom. Then, fill the crack with joint compound and smooth it out. Add another layer of the joint compound after the first has dried for 24 hours. Use a wider putty knife and spread the second layer a bit further, feathering the edge to the level of the surrounding wall. If a third layer is needed, apply it in the same way. Lightly sand between layers and after the last layer is applied.

LARGER CRACKS

As the cracks get larger than the hairline variety, you might want to give the patching material more support. Apply **drywall tape** over the crack – either paper tape embedded in a layer of **drywall joint compound** (a form of spreadable plaster), or self-adhesive fiberglass mesh, and cover it with a layer of joint compound. Then, apply two or three additional layers of the joint compound as described above – 24 hours apart and with each layer spread further out than the last, sanding lightly between layers and at the end.

HOLES

Holes can be treated in several different ways, depending on their nature.

SMALL HOLES

The easiest way to fill small holes is to purchase a “drywall patch kit” that contains a piece of self adhesive metal mesh (usually 6” square, but 12” square patches are available). Clean the edges of the hole back to firm material and then press on the mesh patch to cover the hole. Apply drywall tape around the edges, and then apply three layers of joint compound (24-hours apart), tapering wider around the hole with each layer.

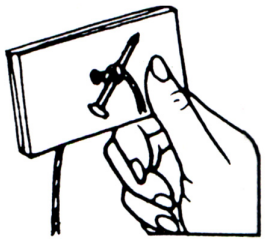
You can also fill in small holes with one or more coats of joint compound. (Allow each coat to dry before adding the next.)

LARGER HOLES

Especially with larger holes, you'll be better off installing some wall material in the hole before you add the joint compound. First, shape the hole into a square or rectangle for easier repair. Then, cut a piece of drywall to fit as a patch. (You may need to use 1/4” or 3/8” drywall to have the surface of the patch at the level of the surrounding plaster.) Install the patch with screws, nails, or construction adhesive; then, cover the seams with drywall tape and joint compound.

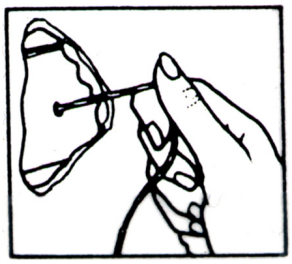
HOLES WITH NO LATH OR SUPPORT BEHIND THEM

For a hole with no lath or other support to which you can attach a patch, you'll need to make your own backing piece before patching. One way is to cut a few shims a bit longer than your hole, insert them behind the surrounding drywall, and screw the top and bottom edges in place. (You can drive a screw part-way into the wood to use as a “handle,” and then remove it once the shim is secured in place.)



Backing piece with string

Another way to add support is to cut a piece of drywall or scrap wood slightly narrower than your squared-off opening, and a few inches longer. Drill a hole in the center of this piece, and tie a piece of string through it *(see illustrations).* On the ends that you cut to be longer than your hole, apply some construction adhesive along the front edges of the piece. Insert the backing piece through the opening, and use the string to pull it tight against the wall around it; the construction adhesive will glue the support piece to the back side of your hole. Tie the string to something that will hold the backing piece in place until it dries.



Pulling the backing tight

Once you have your backing in place, you can fill the cavity with joint compound (apply several thin layers, 24 hours apart) or with a drywall patch cut to fit in the hole and glued to the backing piece you previously installed. Use drywall tape and joint compound around the edges of the patch.

LARGE AREAS

When patching a larger area with drywall, it's usually best to cut the damaged material back on each side to the center of the next wall stud, and square up the hole. Then, nail your patch to the studs, finishing with drywall tape and joint compound as described earlier.

PATCHING PLASTER WITH DRYWALL

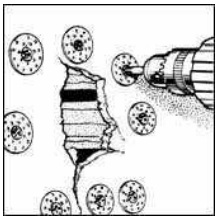
Whatever size the hole, if you repair plaster and lath with drywall, you'll generally find the drywall patch is not as thick as the plaster around it. Use a thin layer of joint compound to build up the patched area to the level of the surrounding plaster.

REPAIRING THE PLASTER ITSELF

If you don't want to use drywall for your repair, there are several products that can help you repair the plaster itself.

LOOSE PLASTER

If you have a smaller area of plaster that moves rather easily when you push on it, you can try stabilizing the plaster with **plaster washers** *(see illustration).* These devices are used with drywall screws to secure loose plaster to the lath behind it. (Plaster washers can also be used to stabilize any loose plaster around a hole, before you fill it in.) Cover with several thin layers of joint compound.



Plaster washers

LARGE OR EXTENSIVELY CRACKED AREAS

For a larger area of loose plaster, or an area that is extensively cracked, one option is to remove the plaster completely down to the lath, and replace it with new materials. Use a layer of **greycoat** (rough plaster) or **Structo-lite™,** let it dry overnight, and then dampen it with a sponge or spray bottle before applying a layer of **patching plaster**.

Another approach is to cover the entire wall with 1/4" drywall. Sometimes, this option can be easier than trying to patch the plaster, and will give you a smooth, stable surface. Before you start, remove any crown molding at the top of the wall. You should also take off the baseboards; if your baseboards are made of several pieces of wood, you can just remove the top molding strip. Don't worry that you won't be able to see the studs to which you'll be screwing the drywall; when you're removing the baseboard molding pieces, take a grease pencil and mark the location on the floor below of the nails fastening the baseboards to the studs. Install and finish the drywall as you normally would *(see separate handout on drywall installation).* If desired, you can also spread construction adhesive over the existing plaster before hanging the drywall, to help hold it in place.

FINISHING

Light sanding of all these repairs will blend them in. To avoid a "too smooth" patch and approximate the eggshell stipple of the original surface, use a **high-pigment water-base primer** (like Kilz™), applied with a semi-smooth (1/2" nap) paint roller. If you are painting over new drywall, cover the wall with one coat of **PVA primer**, then a coat of the high-pigment water-base primer, before the finish coat is applied.

Then, when you've painted, you'll wonder where the damage went!

Home Repair Resource center

Home Repair Resource Center empowers homeowners to maintain their homes for sustainable and diverse communities.

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