



GYPSUM ASSOCIATION

The Gypsum Association is a not-for-profit trade association established in 1930. The Gypsum Association is located in Washington, DC. It represents manufacturers of gypsum board in the U.S. and Canada and provides technical information and assistance to the construction industry and code enforcement community regarding gypsum board.

ASSESSING AND REPAIRING

WATER DAMAGE TO GYPSUM BOARD

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INTRODUCTION

Roofs and pipes can leak, toilets and sinks can overflow, rivers and creeks can rise, and rain, tornadoes and hurricanes can strike at any time. All of these, and many others, are potential sources for water entry into buildings in places where water was never intended to go. Although a little water may not be a problem, building contents and building materials, including gypsum board, can be damaged by exposure to water, depending on the duration and severity of the exposure and the source of the water.

Always work safely in and around water and flood damaged buildings, following the safety guidelines issued by the Federal Emergency Management Agency (FEMA), the American Red Cross or your local civil defense organization. Since extensive visible and hidden hazards may exist depending on the severity and source of the water, do not enter a flooded or potentially water damaged structure until you are sure it is safe to do so. Foundations may have become weakened and electrical systems can be shorted out, and certain floodwaters may have left contaminants behind that can cause sickness. Many materials which absorb water can hold mud and contamination for an extended time. When in doubt, throw it out. Don't risk sickness or infection from the residue left behind by contaminated floodwaters.

DRAINING STANDING WATER

Prior to beginning any repair work, drain standing water out of wall and ceiling cavities.

Wall cavities can be drained by cutting holes at the bottom of each stud cavity just above the bottom plate. To check for water, take off the baseboard. Stick an awl or knife into the wall about 2 inches above the floor (just above the wood sill plate). If water drips out, cut a hole large enough to allow the water to drain freely. Repeat this process at each stud cavity. (With metal framing, the metal channel at the bottom of the wall can act like a gutter. Drill through the channel at the floor line to drain the water). **TO PREVENT SHOCK OR ELECTROCUTION, DO NOT USE AN ELECTRIC DRILL OR SAW.**

SAGGING OR SATURATED CEILINGS CAN BE DANGEROUS AND MUST BE DRAINED WITH CARE. Ceilings can be drained by poking holes through the gypsum board with a long handled poker made by attaching a nail or other pointed object to the end of a long stick. Begin by poking a hole at the edge of the area being drained while standing away from any sagging areas. Do not start at the center of a sagging area or the ceiling may collapse without warning. As the water drains out, poke another hole closer to the center of the area, working progressively

toward the center until the area is fully drained.

DETERMINING WHICH GYPSUM BOARD TO REMOVE

The Federal Emergency Management Agency recommends that flood soaked gypsum board be removed and thrown away since floodwaters are frequently contaminated and can cause illness. If dirty floodwaters have soaked the gypsum board four feet or more above the floor level, remove the gypsum board from the entire wall surface and replace it. If floodwater contact was limited to less than four feet, remove the lower four feet of gypsum board and replace it with four foot wide gypsum board installed horizontally.

Visually inspect wet gypsum board which has been exposed to clean water for signs of damage. Some types of damage which may require removal and replacement include gypsum board paper delamination, fastener pull through and sag. CAREFULLY tear down any damaged gypsum board ONLY AFTER it has been fully drained. In addition, remove any gypsum board from walls and ceilings which contain wet fibrous insulation in order to remove the insulation.

Certain types of damage may not appear until after the gypsum board has dried. This includes rusting fasteners and mold or mildew growth either visible, on the gypsum board face, or concealed, on the back surface of the gypsum board or on the framing. The presence of concealed mildew or mold may require the removal of the gypsum board depending on the success of removal efforts and the types of mold producing organisms present. Some mold producing organisms may cause illness.

SALVAGING UNDAMAGED GYPSUM BOARD

In the absence of damage or exposure conditions which would make removal necessary, wet gypsum board can generally be salvaged.

Dry out the building. If the gypsum board is clean and in good shape, drill or cut ventilating holes near the bottom of each wall cavity, even those that did not need to be drained. Place the holes low enough so they will be covered by the baseboard after the wall dries out. Open up both sides of interior walls and the interior side only of exterior walls.

Lower the humidity to facilitate drying. Humidity can be lowered by opening up the building when the outside air is drier than the inside air. Open all closets and cabinets to allow for air circulation. Use fans to increase air movement (do not use the central HVAC system for this purpose if the ducts were under water). Run dehumidifiers and use desiccants throughout the building to remove moisture from the air. Adequate ventilation, air circulation and drying are of critical importance to minimize the potential for mildew or mold growth.

Remove vinyl wallcoverings from wet or moist gypsum board to allow water to move out through the surface of the gypsum board.

INSPECT, CLEAN, REPAIR AND REDECORATE

CAUTION: When repairing a wall which is required to have a given fire resistance and/or sound rating, care must be taken to insure that all repairs are consistent with the specific fire or sound rated design to which the wall was initially constructed (gypsum board type, fasteners and spacing, and staggering of joints).

Do not begin this phase until the area has dried out.

Inspect the dried gypsum board for signs of damage which may have been missed earlier. Remove any gypsum board exhibiting damage which can not be easily repaired. Remove and replace fasteners exhibiting corrosion or rust.

Start cleaning where the damage was most severe. You may find that some areas will not come clean and will either need to be sealed or replaced to prevent bleed through after decoration. Pay particular attention to mildewed areas. Remove surface mildew using a commercial mildew remover or mildewcide, a solution of trisodium phosphate (5 tablespoons per gallon of water), or bleach solution (1/4 cup of laundry bleach per gallon of water). EXERCISE CARE AND OBSERVE WARNING LABELS AND MANUFACTURERS INSTRUCTIONS WHEN CLEANING WITH ANY OF THESE MATERIALS.

After the gypsum board is cleaned, repair all holes, including those made for drainage and drying, and those left where fasteners were removed. Install new gypsum board to replace the gypsum board which was removed. Seal the surface where necessary to prevent bleed through using a sealer recommended for this use by the sealant manufacturer.

Tape and finish all joints, repairs and fasteners in the usual manner. The walls and ceilings are now ready for re-decoration.