

Treatment of Mold and Mildew on Gypsum Board

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The following article is brought to you courtesy of the Foundation of the Wall and Ceiling Industry.

About the Author:

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Moisture is perhaps the worst enemy of gypsum board products. Not only can it cause sagging ceilings, but delamination, nail pops, discoloration, poor working qualities and mildew all can be attributed in whole or in part to the devastating effects of severe or continuous high levels of moisture.

In today's construction climate, there is a tendency to push jobs beyond their normal sequence schedule. Many general contractors are willing to take that "calculated risk" to proceed before the job is properly closed-in or dried. Consequently, interior drywall work frequently becomes exposed to the elements or excessive moisture.

During progress of the job certain conditions should be documented by the Drywall contractor that pose a potential for causing delayed water related problems. Such conditions in-

clude unprotected shafts and roof vents, accidental plumbing or sprinkler leaks and unfinished exterior wall sections open during precipitation.

Gypsum board is remarkably resilient to the effects of short-term doublings when installed on sidewalls. Sidewalls generally dry quickly and, if the paper remains firmly bonded to the core, the board will most likely perform adequately. Ceilings, however, present a different set of circumstances that are aggravated by the horizontal orientation of the product. Insulation (that is often in place) may become soaked, heavily weighted and trap water for an extended period of time.

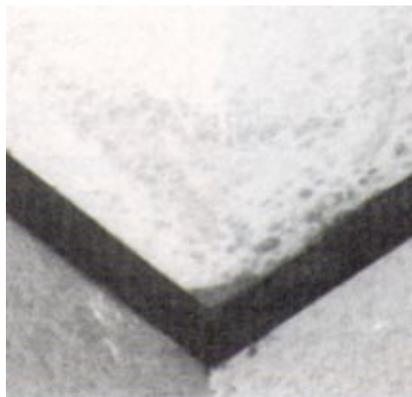
Gypsum board derives most of its rigidity from the tensile strength of its surfacing papers. Severe or prolonged exposure to moisture will cause the paper fiber to relax or expand and a permanent deformation (sag) will occur when the area dries.

There is little that can be done to correct a set-sag in a ceiling other than installing another layer under the sag or replacing the ceilings with new products.

One of the most perplexing problems to deal with is the growth of mold and mildew under various moisture conditions. It is much easier to prevent than to cure once you have been plagued with its presence.

Mold and mildew usually occur in areas of extended dampness, moisture migration, poor air circulation and temperatures above 65 degrees Fahrenheit.

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1. Mildew in early stages. Often starts in corners on ceilings or near floors.



2. Untreated growth has come through two coats of latex paint.

Mold and mildew are caused by fungus spores naturally occurring in the air. The presence may be indicated by a myriad of small spotty patches in colors of greyish-green to black. Growth of mold and mildew usually begins in smaller rooms or corner areas. *See picture #1.*

If left untreated, the patches will continue to grow and intensify. Deterioration of the paper surface may occur as the fungus feeds on the cellulose fiber and organic binders. *See picture #3.*

The first step in the treatment of the area is to eliminate or substantially reduce the source of the moisture to a normal ambient level. Next, thoroughly dry the affected area with forced air and heat, if necessary. Then wipe the surface growth off with a clean dry cloth. A terrycloth towel works well.

The next step may require some experimentation. Recommend starting with a solution of 40% *white vinegar* in water (about six 8 oz. cups in a gallon container then fill with clean water). This should kill the fungus. "TSP" or Trisodium phosphate, used in a saturated solution, is another good and rather inexpensive compound which is usually effective.

Try a small test section first to see if the remainder of the spots disappear. Apply the solution lightly with a sponge but do not scrub back and forth in the same area as the paper could become roughened or damaged. If the results

are not satisfactory, gradually increase the concentration of vinegar up to full strength if necessary. If solution works, a spray applicator may be used to cover large areas.

Caution: Wear rubber gloves. . .even vinegar can be an irritant to the skin.

There are other commercial products on the market. "Tilex" or "Clorox" type bleaches will work; however, **sodium hypo-chlorites** are extremely

caustic and not recommended, especially in closed areas.

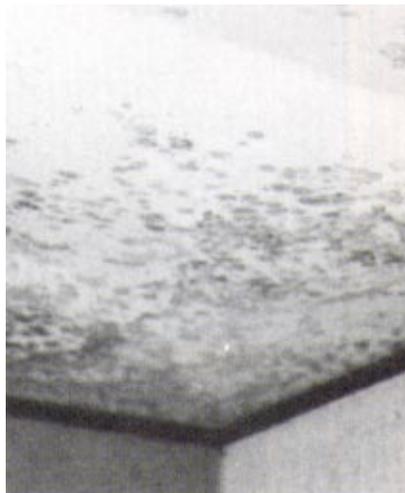
The final step is to again thoroughly dry the area and apply a roller coat of white shellac or a quality primer/sealer to ensure against the possibility of bleed-through in subsequent finishes. Don't be misled about **vinyl wallcoverings** (mildew has been known to eventually show right through). Contaminated wallcovering adhesives

(pastes) are another source in which mold can originate.

Prevention of mold and mildew is relatively easy with a few common sense precautions.



3. Severe deterioration in process.



4. Note sagging gypsum board ceiling from moisture saturation.

1. Keep the gypsum board dry. Comment: Job site storage should always be off the floor on slutters or risers and away from direct weather exposure or protected with tarps.

2. Keep the installed areas dry and ventilated. Comment: Stagnant air, warm, moist, darkened conditions are a perfect environment for mold and mildew to grow.

3. Prevent wicking. comment: Gypsum should not be installed resting

directly on the floor. A ¼-inch space at the floor line will usually eliminate the potential for water wicking into the panel.

4. A special precaution should be observed where gypsum panels are in direct contact with masonry or concrete walls. Vinyl wallcoverings can trap moisture and many adhesives are organic based. Be certain such walls are above grade, sufficiently cured, thoroughly dried and properly insulated and sealed.

5. Inspect your completed work areas frequently. Comment: It will take several days for mold and mildew to develop. The sooner it is recognized and a cure commenced, the easier it will be. The chance of reoccurrence will also be lessened.

Many manufacturers today use chemical inhibitors in their paper-making process. This helps, but isn't total insurance against extreme and continuous moisture conditions that occur more often than one would like.

Mold and mildew can be corrected and treated for long term performance without reoccurrence. The treatment is certainly more costly than prevention and the delay in job progress often more costly than both.

The always potential presence of mold and mildew is a classic example of that old adage "*an ounce of prevention is worth a pound of cure.*"

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