

Gypsum Wallboard with Mold Growth

Where does mold come from and how does it grow?

Every home has mold. Mold spores are brought in on your shoes and clothing and by your pets. Spores blow in through open windows and doors, and can even be circulated throughout your home by heating, air conditioning and ventilation systems.¹

Once mold spores are inside your home, they need these things to grow and thrive:

- Moisture (from showers, steam, structural or plumbing leaks, etc.)
- Food source (paper, wallboard, cloth)
- Warm temperatures

HardieBacker[®]
Cement Board with MoldBlock[®] Technology



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Bathrooms. Kitchens. Laundry rooms. Basements. They may not sound like threatening environments, but the fact is, each of these rooms is susceptible to moisture damage. And moisture damage can turn any room into a breeding ground for mold.

HardieBacker[®] cement board with MoldBlock[®] Technology provides moisture and mold resistance on wet area walls, floors and ceilings. Durable HardieBacker board is easy to install and can be tiled, painted, textured or wallpapered. Help protect your home and resist moisture that can lead to mold growth *before* it starts— with HardieBacker board. America's best-selling backerboard.

HardieBacker cement board with MoldBlock Technology is recognized by the Asthma and Allergy Foundation of America as an approved alternative to gypsum-based backerboards in wet areas.



Asthma and Allergy Foundation of America

For more information about asthma and your home, visit www.hardiebacker.com/asthma



Sources:
1. Health Centers Online
2. U.S. Environmental Protection Agency, "Ten Things You Should Know About Mold" <http://www.epa.gov/mold/moldresources.html>
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Protect Your Wet Areas From Mold & Moisture Damage with Cement

HardieBacker[®] boards do not contain gypsum, which is known to disintegrate with moisture contact



The problems and costs posed by mold.

A low level of mold spores in your home isn't abnormal. But if left untreated, mold can colonize and release millions of airborne, breathable spores. Potential health effects and symptoms associated with mold exposure may include allergic reactions, asthma and other respiratory complaints in certain individuals?

Beyond its potential health effects, mold can also pose a threat to the value of your home. Once mold has established itself, it:

- could be very expensive to clean up
- could cause the market value of your home to decrease
- could require you to move out until the mold is properly cleaned up

A little water can do a lot of damage.

Moisture comes from many sources—plumbing leaks, an overflowing bathtub or sink, the steam from a shower. Even if the wall or floor surface is tiled, it's not waterproof. Although tile isn't moisture-permeable, grout is. If moisture penetrates the surface of a wall, ceiling or floor and reaches the interior, the substrate (also called "backerboard" or "underlayment") can buckle, swell or deteriorate.

This in turn can:

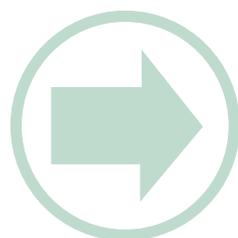
- cause tiles to loosen or fall off, allowing even more moisture to reach the substrate
- damage wallpaper, paint, textured applications and other finishes
- require expensive replacement

In extreme cases, undetected or untreated moisture damage can ultimately cause expensive structural damage to wood studs and support beams.

Selecting the proper substrate.

Not all substrates are equal! It's important to remember that although the substrate isn't visible once it's tiled or painted over, it's the foundation for floor and wall systems. While no system is completely mold proof, you can help to protect your family and home by using—or requesting from your builder/contractor—mold growth and moisture-resistant substrate materials.

To make sure your new or existing home has the greatest mold and moisture protection built in, you should be familiar with all the various substrates.



Gypsum backerboards

Because gypsum can disintegrate with continuous moisture exposure, building codes are changing to no longer allow water-resistant gypsum board in wet areas.

There are 3 main types of gypsum backerboards:

Water-resistant gypsum board (ASTM C630/C1396) (i.e., greenboard)

- Gypsum core—susceptible to water damage
- Paper facing serves as food source for mold
- Not warranted or recommended by manufacturers for use in wet areas
- Not approved by the current International Residential Code or International Building Code for use in wet areas

Glass Mat Water-Resistant Gypsum Backing Panel (ASTM C1178) (i.e., Dens-Shield®)

- Gypsum core—susceptible to water damage
- Tile size and weight limitations

Water-Resistant Fiber-Reinforced Gypsum Backing Panels (ASTM C1278) (i.e., Fiberock® Aqua Tough™)

- Gypsum core—similar composition to greenboard
- Not approved by the International Building Code for use in wet areas
- Lower compressive and flexural strength than cement backerboards
- Requires special storage and handling
- Tile size limitations

Cement backerboards

Experts agree that cement backerboards are the best choice for wet area walls and floors. There are two types of cement backerboards—fiber-cement and fiber-mat reinforced boards.

Fiber-Mat Reinforced Cementitious Backer Units (ASTM C1325) (i.e., Durock®, Wonderboard®)

- Better alternative than gypsum
- Durable cement formulation
- Approved by building codes
- Glass mesh is abrasive to work with
- Contains aggregate that can scratch porcelain and enamel surfaces, as well as floors



Backerboard—also called “underlayment” or “substrate”—is typically installed over a wood subfloor or wall studs and provides a surface for tile to bond to.

Your best choice

HardieBacker® fiber-cement backerboard (ASTM C1288)

- Integrated MoldBlock® Technology passes both industry mold tests with a perfect score*
- Approved by International Residential Code and International Building Code
- Proven track record—America's best-selling brand of backerboard
- Provides flexibility of surface finish—can be tiled, painted or wallpapered
- Superior durability and strength
- Easy to install—lightest cement board on the market

*ASTM International tests ASTM G21 and ASTM D3273

