

# mildew

## Prevention in the Home

North Carolinians are familiar with mildew, that thin growth of fungus that grows on many kinds of surfaces. Mildew grows when the spores of molds settle on a welcoming surface. It commonly develops on areas that are damp, warm poorly ventilated, and dark, and it thrives in warm, humid weather. Bathrooms, closets, basements, and crawl spaces are prime sites. A musty odor often indicates mildew.

Mildew is a greater problem when the weather is warm and the relative humidity is 60 percent or more for several days. It is also a problem when moisture is trapped in an area in your home. Take special precautions to prevent mildew growth if either of these conditions occur.

Prevent mildew by keeping surfaces dry, clean, and well ventilated. To prevent excess moisture:

- Turn on air conditioners when relative humidity is 50 percent or above. Humidity is given in the weather forecast. Air conditioning helps remove moisture from the air. Make sure air conditioner condensation drains outside and away from the foundation of the house.
- Install sheets of polyethylene in crawl spaces. Open vents in foundation walls. Cover 70 to 80 percent of the ground under the house with 6-mil plastic. Weigh the plastic down along the foundation wall.
- Ventilate the attic. Continuous soffit and ridge vents in combination are recommended. Attic fans may also be used.
- Use ventilating fans in the kitchen and bathroom. Make sure these fans

vent to the outdoors, not to the attic, crawl or living spaces. Run the fans while cooking and bathing, and 15 to 20 minutes after bathing.

- Combustion appliances can contribute to excess moisture in the home. Vent a gas heater or gas logs to the outside using an approved flue.
- Vent clothes dryers to the outside of the house, never to the attic, crawl or living spaces.
- Do not let damp or wet clothes lie around the house.
- Clean or wash clothes before storing. Mildew begins on spots and stains.
- Stretch out a wet shower curtain after every shower.
- When necessary, use chemicals to control humidity by absorbing moisture. Silica gel, activated alumina, and calcium chloride can be purchased in drug stores and department stores. Put in an open box and place in the closet, but keep it out of reach of children.
- Keep closet lights on. A 40- to 60-watt bulb uses a very small amount of electricity.
- Use a dehumidifier. These are especially useful in basements and other

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naturally cool areas of the house during humid summer months when you may need to run the unit continuously. Make certain that you remove water and clean humidifier daily. Only use a dehumidifier with an Underwriters Laboratories (UL) Seal.

❑ Wax leather goods. Wax will protect leather from mildew. Spray-on fungicides are also available for leathers and fabrics. Follow the label instructions.

❑ Trim shrubs growing close to the house. They often prevent good air circulation and hold dampness.

❑ Thoroughly remove any mildew from the exterior of a house before repainting. If this is not done, the mildew will grow through the new paint coat. Scrub the painted surface with a bristle brush or sponge using the following solution: 1/3 cup of household detergent, 1 to 2 quarts of liquid household bleach (5 percent sodium hypochlorite), and 2 to 3 quarts of warm water. This mixture can also be used to remove mildew from naturally finished or unfinished wood.

*WARNING: Do not mix liquid household bleach with ammonia or with any detergents or cleansers containing ammonia. Bleach and ammonia form a lethal gas. Many household cleaners contain ammonia, so be extremely careful what type of cleaner is mixed with bleach.*

If mildewed wood is refinished without cleaning the surface, the mildew can grow through the new coating. Then it is usually impossible to control the mildew. The entire paint coat should be stripped, scrubbed with the above solution, rinsed, allowed to dry, treated with a water-repellent preservative, and refinished with mildew-resistant paint.

## Mildew Removal

### How to Remove Mildew from Fabrics

Mildew most often appears on natural fibers, such as cotton, linen, silk, and wool. It can actually rot the fabric. Remove mildew spots as soon as they are discovered. To avoid scattering the mildew spores in the house, take the fabric outdoors and brush off all surface mildew. Then sun and air the fabric thoroughly. If spots remain, non-washable articles should be dry cleaned promptly. Washable fabrics should be tested for color fastness by trying bleach on a seam or hem. Use one of the following solutions:

1. Make a mixture of lemon juice and salt. Apply to the stain and leave the fabric in the sun to bleach. Rinse thoroughly and dry.

2. Mix one tablespoon of non-chlorine bleach (sodium perborate bleach) with one pint of water. Use hot water if the fabric can take it; otherwise, use lukewarm water. Sponge and soak the stain with the solution. Leave it on for one-half hour; then rinse well. Repeat the process if the stain is not removed the first time.

3. Dilute household bleach as directed on the container. Dip stains in the solution; then rinse. Do not use on silk or wool.

### How to Remove Mildew from Leather

Make a diluted alcohol solution by mixing one cup of denatured alcohol with one cup of water. Using a cloth dampened with this solution, wipe mildew off leather. Dry it in a current of air. If mildew remains, clean the article with thick suds of mild soap, saddle soap or a soap containing a fungicide or germicide. Wipe the suds off with a damp cloth and dry in an airy place. Polish the leather with a good wax dressing.

### How to Remove Mildew and Mildew Odor from a Rug

A musty odor often indicates mildew in a rug. Brush the rug thoroughly with a broom or use a vacuum cleaner. Empty or change the vacuum cleaner bag immediately to prevent growth of the mold in the cleaner. Sun and air the rug outdoors, if possible, or use an electric heater and a fan to air and dry it. If the mildew remains, sponge the rug with thick suds of detergent or rug shampoo. Rinse with a sponge dampened in clean water. Dry the rug thoroughly.

### How to Remove Mildew from Upholstered Furniture

The first step in removing mildew from upholstered furniture is to remove loose, old spores by brushing with a soft-bristled broom. This should be done outdoors to prevent scattering the spores inside the house. Using an attachment, run a vacuum cleaner over the surface of the furniture to draw out more of the mold. If the furniture piece is moist or damp, dry by using an electric fan and electric heater to heat and carry away the moist air. If possible, place the article in direct sunlight and air to stop mold growth. Then do one of the following to remove stains:

1. Sponge with a commercial dry-cleaning solvent.\* Blot. Allow to dry. Sponge with water. Mix a Dry Spotter (1 part coconut oil and 8 parts liquid dry-

cleaning solvent\* plus a few drops of ammonia). Apply with an absorbent pad. Sponge with water

2. Wipe the stain using a cloth moistened with a diluted alcohol solution made by combining 1 cup denatured or rubbing alcohol and 1 cup water. Blot thoroughly and allow to dry (in the sun and air, if possible).

For safety's sake:

- Read labels carefully and follow instructions; some products are highly toxic and many are flammable.
- Use products in well-ventilated areas.
- Pretest products like bleach solutions on an inconspicuous area.
- Be careful with delicate fabrics like silk.
- Use rubber gloves.
- Close containers tightly when not in use.
- Follow label instructions for storage and disposal.

### How to Remove Mildew From Wood Floors, Painted Walls or Wood Surfaces

Mold can grow on damp, warm, poorly ventilated wood floors, painted walls, and wood surfaces. Painted surfaces do resist mildew, but even enamel or oil-resin paint can mildew under extreme circumstances.

Use heat and improved ventilation to dry mildewed wood. Make a mixture of 4 to 6 tablespoons of a mild alkali, such as trisodium phosphate (TSP) or washing soda, and 1 gallon of water. Scrub the mildewed surface with the solution. A solution of disinfectant, made by mixing 1 ounce of the disinfectant with 1 gallon of water, may also be used. After thoroughly cleaning the wood with one of these solutions, rinse well with water and allow wood to dry as quickly as possible. Remember, however, that too much water on a wood floor can cause shrinkage and swelling problems.

If the mold has penetrated the wood under the paint or varnish, the entire coat of paint should be stripped, scrubbed with 1/3 cup household detergent, 1 to 2 quarts of liquid household bleach (5

percent sodium hypochlorite), and 2 to 3 quarts of warm water. Rinse the surface. Allowed it to dry thoroughly. Treat it with a water-repellent preservative or paint it with mildew-resistant paint. If mildewed wood is refinished without cleaning the surface, the mildew can grow through the new coating. In this situation, it is usually impossible to control the mildew.

Mildew-resistant paint is formulated to help combat mildew. However, paint containing chlorinated phenol, phenyl mercuric compounds, and other fungicides should never be used on surfaces that could reach the mouths of small children, such as windowsills, playpens, or toys. It could be harmful.

### How to Remove Mildew from Ceramic Tile

Scrub tile with solution of detergent, Calgon, and warm water. Use a brush for grout lines. A toothbrush or fingernail brush may be helpful. Rinse with water. Follow with a rinse made of a solution of 1 cup of household bleach and 1 gallon of water. Dark spots in corners may need an application of pure bleach; apply with a cotton swab. Allow the bleach to remain on the tile for 30 minutes. Rinse and dry the entire area.

To prevent mildew from reappearing, apply a coat of silicone wax or a good liquid car wax to the tile. Do not wax floors in shower or bathrooms as it may cause dangerous slipping. Transparent silicone waterproofing intended for waterproofing masonry walls may be applied to grout using an artist's paint brush. This will prevent mildew from recurring in the grout.

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For more information about mildew removal see Cooperative Extension's computer database called *Homecare 2: Maintenance and Repair of Textile and House Surfaces*, which is on the Web at:

<http://www.ces.ncsu.edu/homecare2/data/hc2.html>

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\* Look for products containing petroleum distillates or hydrocarbon such as trichloroethane, xylene methylenechloride, methane, benzene and/or naphtha. These chemicals may also be found in spot removers and cleaners.

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