

RUTGERS COOPERATIVE EXTENSION

NEW JERSEY AGRICULTURAL EXPERIMENT STATION

When to Dehumidify the Basement to Reduce Moisture Problems

Basement moisture problems can be quite troublesome, causing unpleasant odors as well as mold and mildew problems that render this area unfit for many uses.

In dealing with persistent basement moisture and flooding, the first and best step is to identify and correct outside drainage conditions that may be the cause of such problems. Ensuring that rainwater is properly directed away from the house will reduce or eliminate excessive basement moisture in many cases.

Sometimes, however, it is impossible to control the entry of moisture adequately; in such cases, removal is necessary. Under some conditions, this can be accomplished by ventilation; if not, a dehumidifier can be used.

DIAGNOSIS: When there are serious moisture problems, the walls and/or floor may be wet. This moisture often comes from soil surrounding the basement (moisture is able to pass through sound concrete). Sometimes, however, moisture from humid outdoor air will condense when it meets the cool surfaces in a basement. In the latter situation, ventilation of the basement would be useless. In some cases, both of these mechanisms may add moisture to the basement, and their relative importance may vary with the season or weather.

To distinguish between these two cases, place a 12" square sheet of plastic film or aluminum foil on the wall or floor, and seal the edges with tape. After 24 hours, check for moisture. If it appears on top of the sheet, moist air is the culprit; if there is moisture beneath the sheet it has come from the soil.

DEHUMIDIFIERS: ADVANTAGES AND DISADVANTAGES

A properly operating dehumidifier can extract large amounts of moisture from the air. When adequately sized, these appliances can solve basement moisture problems, keeping the area dry and comfortable.

One of the main disadvantages of dehumidifiers is the cost to run them, which is comparable to the cost of operating a room-sized air conditioner. If a floor drain is not available for disposal of the condensate, this will have to be emptied by hand.

Dehumidifiers used in a basement or other cool location may collect frost and cease to be effective if the temperature is too low (below about 65°F). For these operating conditions, select a dehumidifier with an automatic defrost control.

SELECTING A DEHUMIDIFIER:

As discussed on the preceding page, automatic defrost can be an important feature when a dehumidifier is operated in a basement. Many models are also equipped with a humidistat that controls dehumidifier operation according to the level of humidity in the surrounding air. Another common feature is an automatic shutoff, which stops operation when the bucket is full.

The most important selection factor is the dehumidifier's capacity, rated in pints of water produced under standard test conditions per 24 hours. The capacity needed for a given space depends on the moisture level and size of that space. The Selection Guide (below) can serve as a useful means for choosing the appropriate capacity.

USING THE DEHUMIDIFIER:

Ideally, a dehumidifier should be located near the center of the area to be dehumidified.

It should **not** be placed in a corner, and there should be ample space for free air circulation around it.

As a general rule, doors and windows leading to the area should be kept closed during dehumidifier operation, to minimize loss of the air that has been dried. (Make sure, however, that you don't deprive fuel burning equipment - furnaces, boilers, hot water heaters - of combustion air).

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AHAM Dehumidification Selection Guide

| Condition Without Dehumidification During warm and humid outdoor conditions | Area (square feet) | | | | |
|--|--------------------|---------|---------|---------|---------|
| | 500 | 1000 | 1500 | 2000 | 2500 |
| Moderately damp—Space feels damp and has musty odor only in humid weather. | 10 pts. | 14 pts. | 18 pts. | 22 pts. | 26 pts. |
| Very damp—Space always feels damp and has musty odor. Damp spots show on walls or floor. | 12 pts. | 17 pts. | 22 pts. | 27 pts. | 32 pts. |
| Wet—Space feels and smells wet. Walls or floor sweat, or seepage is present. | 14 pts. | 20 pts. | 26 pts. | 32 pts. | 38 pts. |
| Extremely wet—Laundry drying, wet floor, high load conditions. | 16 pts. | 23 pts. | 30 pts. | 37 pts. | 44 pts. |

Source: Association of Home Appliance Manufacturers

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