

TECH NOTES

Prepared by Home Check

Experience Our Experience

Damp Spots and Other Steamy Subjects

We are all familiar with condensation. It's the dew or the frost that forms on our lawns, it's the moisture that beads up on the outside of a glass that's holding our favorite summertime drink, and in wintertime it's the frost or moisture on the inside of windowpanes.

SCIENTIFIC STUFF

The source of condensate is water vapour (which is the gaseous state of water) returning to its liquid form (condensing) as it is cooled. A smaller or larger amount of vapour is contained in the atmosphere as a part of its normal makeup.

Generally we generically refer to this as "damp" regardless of whether it is vapour in the "damp" air or condensate in our "damp" bedclothes or steam on the "damp" windows.

Three conditions are associated with "damp".

1. Water as vapour in the air.
2. A difference or change in temperature.
3. A lack of airflow to disperse the vapour.

When these three conditions are present, one has the catalyst for a wide range of conditions in buildings, which includes everything from steamy windows in the bathroom to toxic mold and wet and dry rot.

SWEATY BATHROOMS and FOGGY MIRRORS

In the case of bathrooms, almost perfect conditions exist for the production of "damp". Showers are the biggest source. A nice hot shower causes (I) Large amounts of water vapour to be created and (II) a general increase in the room temperature followed by cooling of the room and this is often coupled with (III) a lack of airflow.

The ability of water to remain in its gaseous state (vapour) is directly dependent on temperature. The lower the temperature, the lower the ability of the air to maintain moisture. The result is the reformation of water as a liquid on the walls and surfaces.

Condensate can be quite damaging in the bathroom if not controlled. Over time it can result in paint peeling, drywall

and plaster can become soft and in extreme cases any of a number of types of fungi can form on or behind the walls and ceiling i.e.: mildew, dry rot, wet rot.

The effects of moisture in a bathroom may be more
THAN A CHRONICALLY DAMP BATH MAT

1. **Surface and subsurface Mildew.** If mildew forms on the surface of the paint it is easily removed with a cleaning agent containing bleach, many are available on the market currently. However if the moisture is allowed to penetrate behind the paint, the mildew will follow it into the drywall. Once the mildew gets here it is not easily removed. Blue stain associated with mildew are now actually embedded in the fabric of the wall. Painting over these stains will usually result in "bleeding up" of the stain. Painting with a plastic primer (a very expensive product) or some other form of sealant will be necessary to stop this "bleeding up" condition.

2. **Drywall plaster softening.** Softening or deterioration of the drywall / plaster may occur in high damp conditions (usually in closets or areas away from warm air flow like behind furniture). If the drywall has not slumped or been deformed, it will usually dry back to near its' original condition. If it has deformed, drywall replacement will be necessary (cosmetic repair).

3. **Dry rot/wet rot & Toxic mold.** If extreme damp conditions are allowed to continue unabated the moisture can make its way and/or form in the wall cavities. Because these areas are not ventilated, moisture tends to accumulate and a "hot house" condition develops. This is a condition of extreme damp and can allow dry rot fungus, toxic mold and in very extreme case wet rot fungus to establish itself. Left unabated this can result in the fungus destroying the structural integrity of the wood members or in the case of toxic mold an unhealthy environment in the effected areas.

Doin' things better

1. Always contain the moisture in its area of origin like bathrooms. This is achieved by keeping doors closed to the remainder of the house.

2. The best control for condensation is to move the moisture outdoors while it is still in its gaseous state. This can be achieved by opening an outside window or even better by turning on a mechanical fan vented to the outside (a 60 minute timer or an automatic timer is

useful). This will move water vapour outside on a continuous basis.

3. While ventilating, room temperature should be maintained by setting the thermostat for the bathroom at or slightly above normal room temperature. Keeping the heat on will aid in keeping the moisture in its gaseous state and the re-evaporation of other moisture.

BATHROOM FANS

... aren't people who read on the throne

It was not until lately that electric fans have been required in bathrooms. And even more recently these systems have been automated.

The misunderstood ... "Leaky Condo Syndrome"

This is different in most cases to the damp discussed above. This is not intended to go into the problem in detail, but suffice it to say the damage associated with these conditions is similar to the "serious" types described above.

A common misunderstanding is that this syndrome is exclusive to "condos" when in fact it can occur in any structure where the right conditions exist, including houses, offices, warehouses, town homes etc.

The source of the moisture in this syndrome is usually not damp. Damp occurs when water vapour turns back to liquid but leaky condo syndrome is more often from water as a liquid leaking into the structure and becoming trapped. It is this continual wet that contributes to the severity of the damage. It is **not** a condition that can be controlled in the same way as damp can.

The primary difference, as far as a homeowner is concerned, is discovery and diagnosis. Most damp conditions are identifiable by the homeowner and remedies are often within the capabilities of the homeowner to undertake. Leaky condo syndrome and its' cousin "toxic mold syndrome" are much harder to identify. Owners often don't suspect a problem until the buildings' or its occupant's health begins to suffer.

Identification and remediation are the province of a highly specialized group of engineers, technicians and contractors. The cost of dealing with these conditions can be expensive, both for testing and repairing.

Fans are the very best way to remove moisture short of dehumidifiers (which would need to be huge to remove all the moisture created by a single shower).

If you do not have bathroom fans and plan to install them there are three things to know,

- 1) The fan must be vented through the eaves or roof to prevent moisture build up in the attic.

2) Makeup air (fresh air inlets) needs to be installed from the outside into one or more of the closets, to bring in air to replace that blown out by the fan.

3) Programmable timers can be installed in place of the fan switch and set to come on intermittently to automatically vent damp air outside and bring fresh dry air inside (this is also healthier).

On the other side of the bathroom door ...

Other than possibly damp crawl spaces or basements, serious damp conditions are rarer in the rest of the house. By "serious" we are referring to conditions that necessitate wood structure replacement.

Mildew is common in rooms that are kept cool in the wintertime or damp seasons. The lack of heat drops the relative humidity of the room and slow condensing of moisture can occur, particularly in corners, behind furniture or in closets. Surface mildew is a cleaning problem but not usually a serious problem.

Wet Crawlspace, Basements

Moisture in these areas is usually as a result of ground water making its' way in. Control is often related to perimeter drain maintenance (or lack thereof). Request our TECH NOTES on **Dry Basements** for more details.

Hot and Steamy Attics ... (not a romance novel)

Attic moisture is most often related to moisture making its' way from the house into the cooler attic and condensing or by having moisture vented into the attic from fans etc. (ie. bathroom and kitchen fans). Controlling moisture in the house will often control the moisture in the attic. If your insulation still feels damp or mildew persists, additional soffit and ridge venting or gable end venting can be added to better evacuate the moisture from the attic

Once more .. but briefer

Condensation is a normal condition. Control of it is essential, particularly in our damp climate. The primary controls are heat & ventilation. In bathrooms use either a window or a ceiling fan. Other places turn up the heat. Failure to control the moisture may just result in problems in room finishes, but in severe cases the structure as well the health of your homes' environment can be affected.

Prepared by,

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