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MOLD IN ATTICS

We get a lot of calls regarding mold or mildew staining to sheathing and framing components in attics.

Let's go through the processes that allowed the mold to grow there in the first place and how to solve the issue.

This is caused when moisture/condensation forms on the attic framing and sheathing and is most often the result of air leakage from the house below working its way into the attic space, however it is sometimes a result of poor attic ventilation as well. Homes built before the 1990's were not completely air sealed, and have many hidden openings or cavities through which air can leak into these spaces

These can include but are not limited to:

- 1- Wiring, plumbing, and chimney penetrations
- 2- Attic hatches which are not weather stripped or insulated
- 3- Light fixtures, especially pot lights
- 4- Lack of insulation and/or proper vapor barrier
- 5- Poorly managed humidity in the living space

A home acts like a chimney, pulling cold air in from the lower portions of the home and leaving through the top (called stack effect). During the winter, this warm and/or humid air finds its way into the attic forming condensation on the sheathing which is the first available condensing surface. The insulation in the attic may slow air leakage, but it does not stop it as these materials are usually porous in nature. Even a lack of insulation can allow warm air to meet cold resulting in this condition.

The heated house air also contains invisible water vapor (humidity) from household activities such as showering/bathing, cooking, washing floors, breathing, watering plants, etc. When the attic and roof sheathing are cool enough, the water condenses as liquid moisture and then as frost as it gets colder.

If the attic roofing/framing wood does not dry before attic temperatures rise to a higher temperature, mold begins to grow on the surface. The best solution to attic mold growth is to stop the air leakage and moisture from getting to the attic in the first place. Once the air leakage and moisture are removed from the equation, the mould growth will stop and you may also save on heating costs.

There is also misleading information that growth in the attic will affect indoor air quality which in most cases is not true. That being said, if this condition continues it can lead to rot and deterioration of building materials and long term structural problems.

To solve attic moisture problems the following steps should be taken:

(A) Change how you deal with moisture sources in the house. Try to eliminate internal sources of moisture by curing wet/damp basements, venting dryers or not drying clothes indoors, placing damp firewood outside, covering aquariums, not having too many plants

(B) Vent bathrooms and kitchens and cloths dryers properly to the outdoors.

All exhaust ducts should be:

1- Insulated in unconditioned spaces such as attics and crawlspaces.

2- Made of ridged materials - flexible plastic can gather moisture at the low points (sags) and deteriorate prematurely.

3- Exhausted to the exterior through proper dedicated vent terminations (hood vents with check flaps (avoids heat loss) - preferably through the roof or an end gable and not the soffit where humidity can back draft into the space

4- Attach to vents with mechanical fasteners and red technical tape or foil tape (not duct tape which will fail when exposed to heat and humidity).

(C) Air seal the attic and ceiling to stop the air and moisture leakage from the house below. This includes light fixtures and other ceiling penetrations like, attic hatches, or pull down steps (prone to significant heat loss) which should be insulated and weather stripped.

(D) Increase attic ventilation if necessary. Insure that there is adequate venting at soffit/eaves and at the ridge of the roof to promote proper cross ventilation. Gable vents or ridge vents alone are inadequate

For further information or questions regarding condensation and moisture/mold issues, indoor air quality, or general home inspection questions please contact me at All In One Home Inspections Inc (250-248-3654) You can also visit us on Facebook and share our page with family and friends

Steve Klassen CMI RHI