

Condensation

Air

What is Air ?

Air is all around us, making up the atmosphere, a thin layer that surrounds our planet earth. It is made up of a number of different gases, dust, dirt & other pollutants, plus water in all of its forms, solid, (*Ice & Snow*) liquid (*Water*) & gas (*Vapour*).

Air contains various amounts of Water Vapour - about 1% at sea level - average of 0.04% over entire the atmosphere.

Water Vapour

As the temperature of a given volume of air increases, the capacity to hold & carry water vapour with it increases.

Water vapour has a greater capacity to hold energy, than air. With more water vapour being held in air, the more energy a similar volume of air will hold.

There is a point at which water vapour can no longer remain as a vapour, this is called the **Dew Point**, & is the temperature at which when air is cooling reaches **100% Relative Humidity** & must change state into water (*Condenses*) by forming droplets. This may be on a colder surface, or within a cloud, as the droplet size (*& weight*) increases it forms rain, or runs down the cold surface.

If water vapour forms on a cold surface it is called Condensation, [*Dangerous because it can encourage bacterial growths*] if it forms within a building structure (*inside insulation*) it is called Interstitial Condensation. [*Dangerous because it can lead to rotting of the structure*]

Condensation

Dampness is a huge problem in the U.K. Damaging to both humans, and to the fabric of building. Condensation forms when the temperature of a surface (walls, mirror etc.) is below the dew point of the surrounding air. This leads to streaming windows and walls and ultimately to mould.

Signs of Condensation:

- Streaming windows
- Black mould on walls or fabrics and furnishings
- Musty smells

Condensation accounts for approximately 70% of reported damp problems in domestic dwellings.



Does your property have this problem?

How to combat condensation problems

By installing an effective ventilation solution into your property, you are ensuring that the moisture generated from day to day living is either extracted or replaced with good quality air and this will significantly reduce or eliminate condensation dampness.

The best way to tackle condensation dampness is to provide adequate ventilation into your property; however, for optimum performance it is recommended that you also take the following simple steps:

- ✓ Dry your clothes outside whenever possible and when drying inside is the only option, try and isolate drying to a small room that is well ventilated.
- ✓ Avoid drying clothes on radiators as this is a major contribution to condensation.
- ✓ When producing steam in a bathroom or kitchen, make sure you keep the door shut tight to prevent the steam from spreading to the rest of the house.
- ✓ Open a window in your bathroom and kitchen whilst cooking or bathing, to allow the steam to vacate your property.
- ✓ Cover pans when cooking, (*This will also save some energy!*)
- ✓ Do not block air vents and make sure your furniture and cupboards are not up tight against walls, especially external walls.
- ✓ If you use a tumble drier make sure it's vented correctly, preferably to the outside.
- ✓ Keeping your heating at a low level for a long period of time will gently warm the fabric of the building, reducing the cold surfaces on which warm wet air will condense.

Finding the Condensation Problem

Finding condensation problems is not always straight forward, and you must be sure the problem is not caused by another water related source, such as an internal water leak, rising damp or a broken rainwater drain.

The occupants of any home can exacerbate condensation problems, the way they use the home can increase the water vapour in the air. If there is no ventilation & the relative humidity inside rises to 80% or more for prolonged periods condensation starts to form on the colder surfaces in the home.

These are generally inside wardrobes where the air is still, in corners high up in bedrooms, usually on the inside of exterior walls.

Leaving bathroom & kitchen doors open allows this vapour to move around the home seeking out these cold areas.

By using our thermal camera we can locate these areas where potential condensation may form & advise the home owner the best way of avoiding the problem of condensation.

Condensation if not tackled can lead on to more serious problems with Mould & Fungal growths.

See our link "[18. Mould & Fungi](#)"

Trevor Clark - 07.08.2015