What is condensation?

Condensation occurs because of a very complex relationship between moisture content of the air, the temperature of both the air and the building. It cannot be controlled if other sources of damp have not been addressed.

Essentially, warm air holds more water vapour than cold air. When this air cools, this vapour turns to liquid (the temperature at which this occurs is referred to as the dew-point). If any surface in the building is below the dew-point, then this will cool the air, and condensation will form.

This often occurs on external walls, on windows, and in rooms where there is considerable extra moisture in the air, such as utility rooms, bathrooms, and kitchens. Activities such as drying clothes, cooking, and running a bath or shower all introduce additional water into the atmosphere, and without adequate ventilation, this will result in condensation.

Why does my building suffer from condensation?

Whilst many historic buildings can deal with an average amount of water vapour and moisture, through breathing, problems can occur when modern elements are introduced into the building. This can range from creating a shower room, or using cement renders on external brickwork, through to drying clothes on radiators, or in a tumble-dryer, or the addition of a modern extension constructed without any understanding of vapour in historic buildings. Other elements can also be problematic, including the blocking up of chimney breasts, the sealing up of window surrounds, or the use of non-breathable sarking felts in the roof.

With the introduction of any of these items, the building will need adequate ventilation to ensure that there is a good circulation of air, and that any additional water moisture or vapour can escape harmlessly out of the building – typical solutions would be venting through to the outside, with vents for tumble-dryers and cookers, through to trickle vents in windows or ensuring that they are not completely air-tight, and the use of a breathable membrane in the roof rather than a non-breathable sarking felt.

If your historic building is suffering from condensation, it is highly likely that one or more of these elements is the root cause of the problem. It is essential to identify where the additional water vapour comes from, before identifying a correct way to deal with it. Sometimes, condensation may be combined with other issues such as leaking pipes, or rising damp – to fully resolve the issues of condensation, these issues need to be tackled properly.

How can I address this?

There are three principal methods to assist in prevention of condensation – ventilation, heating and moisture control. In order to successfully tackle condensation, there needs to be an understanding of where the excess water vapour is coming from, and how to tackle it. These methods will each address certain causes of condensation, and may be used either by themselves, or in conjunction with each other, and if necessary other damp-prevention methods. It is always advised to seek professional guidance on damp, from an independent expert damp advisor (i.e., a company whose primary target is not to sell some form of damp prevention). It is important for any advice to be impartial, and to ensure that it addresses the issue of damp, and its source, whilst also understanding how historic buildings function.

Ventilation

Depending on the source or sources of the water vapour, appropriate venting to ensure that any additional water vapour is taken directly out of the building needs to be undertaken. The method of venting will depend on the need, the type of appliance or source of water vapour. Venting will be required for bathrooms, showers or where new utility rooms are to be created in existing rooms usually through extraction fans, which will be essential to help remove the excess vapour created. As these uses create a much higher quantity of water vapour than would be normal, these measures will need to be able to cope with the relative quantity of extraction required.

If windows have been completely air-sealed, then the introduction of air vents or trickle vents to the windows will help, or removing any additional sealing. If the windows are draughty, then making sure that they are in good order, and fit well without any additional sealant will reduce the draughts, and prevent a condensation build up, which increases the potential for damage to the window frame.

Heating

Whilst the absence or existence of heating in a property will not necessarily increase or reduce water vapour in a property, this is only true if the heating is not sporadic, and that the temperature of surfaces are continually warmer than the dew-point. In order to reduce potential for condensation, historic buildings should...
have a continuous low-level heating, and adequate ventilation to ensure a good circulation of air.

**Moisture control**

The most common form of moisture control in modern days is the dehumidifier. Whilst these are very useful in removing excess water moisture from the air, they are really only effective in either a sealed environment, or in buildings where environmental control can be easily achieved. With a normal domestic house, they do not tend to be very efficient, due to continual opening of doors, the movements of people, and the retention of the water within the room from which it is being extracted. The principals explained elsewhere in this pamphlet will be more efficient, and generally more successful in controlling the moisture in any normal room or building.

**Further Information**

Further information and advice on damp and historic buildings, as well as other conservation practices and principles can be found at various web-sites, including:

- [www.buildingconservation.com](http://www.buildingconservation.com)
- [www.handr.co.uk](http://www.handr.co.uk)
- [www.ridoutassociates.co.uk](http://www.ridoutassociates.co.uk)
- [www.ukdamp.co.uk](http://www.ukdamp.co.uk)

English Heritage publish specialist technical advisory leaflets which are available free from [www.helm.org.uk](http://www.helm.org.uk)

The Society for Protection of Ancient Buildings (SPAB) have information on traditional construction methods, and hold training days and courses for their members, detail of which can be found at [www.spab.org.uk](http://www.spab.org.uk)

It is important to note that when working with Listed Buildings, special consent (Listed Building Consent) may be required for some works. It is advisable to check with the Council’s Conservation Officer prior to starting any such works. If consent is necessary, full details of damp protection and/or damp proofing may be required as a condition of any consent, together with appropriate surveys and detailed reasoning for the use of such products.

For further information and advice on the historic environment you can contact us in the following ways:

**Writing:**
Wyre Forest District Council
Planning & Regulatory Services
Duke House, Clensmore Street, Kidderminster, Worcestershire, DY10 2JX

**Email:**
conservation@wyreforestdc.gov.uk

**Telephone:**
01562 732928

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**Conservation Practice**

**Note 6**

**Damp & Historic Buildings Condensation**

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