GUIDANCE NOTE C11
CONDENSATION

Revised - August 2021

Guidance Note Contents

Overview

- **Condensation can be a major cause of dampness within buildings. This Guidance Note is to assist managing agents who receive queries from leaseholders about condensation. It gives guidance on how to deal with reports from leaseholders about condensation or dampness and when an inspection is required. It should enable you to give general advice and to point leaseholders in the right direction if they want to take further advice.**
- **Quite often it seems the effects of condensation are misinterpreted or thought to arise from rising or penetrating dampness, and so it is essential that a managing agent is able to recognise both of them and be able to explain them to others.**
- **Condensation is usually a lifestyle issue so the Managing Agent is only able to give advice and assistance**

What Is Condensation?

Condensation is a situation where moisture is deposited on cooler surfaces, such as internal faces of external walls of a building, and frequently gives rise to the growth of mould (especially where sustained high humidity is present). Such organisms need pure water as is produced by condensation, to sustain their life.

How Does It Occur?

Condensation can occur naturally as a result of changes in temperature or artificially by the actions of people themselves.

The Building Research Establishment Digest No. 110 states:

"When warm damp weather follows a period of cold, the fabric of a heavy structure which has not been fully heated will not warm up immediately but will remain comparatively cold for several hours, or if the walls are very thick, for a day or more. When the warm, moist, incoming air comes into contact with cold wall surfaces which are below its dew point, water will condense upon them, but as the walls warm up and eventually exceed the dew point, condensation ceases and the condensed moisture evaporates."

With regard to artificial influences, the document also states that:

"The humidity inside an occupied building is usually higher than outside. People themselves, and many of their activities, increase the amount of moisture in the air."

The document goes on to say that condensation:

"Does not necessarily occur in the room where the water vapour is produced. A kitchen or bathroom in which water vapour is produced may be warm enough to remain free from condensation except perhaps on cold, single glazed windows, cold water pipes and other cold surfaces. But if this water vapour is allowed to defuse through the building into cold parts, such as the stairwell and unheated bedrooms, condensation will occur on the cold surfaces of those rooms, which may be remote from the source of the moisture".

Conditions For Condensation

Air naturally contains water vapour (often referred to as “humidity”) in varying quantities and its capacity to do so is related to its temperature as warm air holds more moisture than cold air.

In Britain, condensation in flats and houses is often a winter problem particularly where warm moist air is generated in living areas and then penetrates to the cooler parts of the building. As long as the air is cooled sufficiently below its “Dew Point” by the colder surface it comes into contact with, moisture will be released.

In order to have condensation, moisture must be present in the air and this can come from a number of sources within a house. Water vapour is produced in relatively large quantities from normal day to day activities; a 5 person household puts about 10 kg of water into the air every day (without taking into account any heating):

- Breathing (asleep) 0.3 kg;
- Breathing (awake) 0.85 kg;
- Cooking 3 kg;
- Personal washing 1.0 kg;
- Washing and drying clothes 5.5 kg;

- Heating - especially paraffin and flueless gas heaters. For every litre of paraffin burnt over one litre of moisture vaporises into air. Every carbon fuel produces some amount of water from combustion. (1 kg of water equates to about 1 litre).

Moisture can also be drawn from the structure of the building into the internal air; from below the floor or through the walls/ceilings. Buildings can often lack or have insufficient airbricks to allow adequate ventilation of the accommodation and structure.

The effect of moisture "generation" is made worse by keeping the moist air in the property. Usually in certain areas of a property (such as bathrooms and kitchens) the warmer air contains a lot more moisture than other parts of the building.

Older Homes And Effects Of Modern Methods Of Construction

Up until the latter part of the twentieth century, most properties had high natural ventilation as the level of home insulation was low and often the acts of people in homes, naturally increase ventilation; e.g. the Victorians particularly used to "air" their houses in the morning by opening windows.

As conservation has become popular and natural ventilation has been greatly reduced by the introduction of double glazing, draught excluders, fitted carpets (which prevent air movement up through suspended wooden floors) and the removal of open fire places with the introduction of central heating, property has become more effectively sealed, trapping any moisture produced within it and providing better conditions for condensation to occur.

Modern life styles mean that many properties remain unoccupied and unheated throughout the greater part of the day, allowing the fabric of the building to cool down. The moisture producing activities are then concentrated into relatively short periods (morning and evening) when the structure is relatively cold while the building is still warming up.

New homes may be more prone to condensation problems especially if first occupied in winter months. They may not have dried out and water (used in the methods of construction) remains long after building work has stopped. It usually takes 9 - 18 months for building like this to "dry".

Mould

One of the most common visual effects of condensation, apart from water being deposited on cooler surfaces, is that of mould growth. This will often look like 'black spots' (although it will completely cover a surface when conditions are right).

For mould growth to occur there needs to be a sufficient amount of clean water available (in relatively humid conditions) for extended periods of time.

Mould can be removed by washing down with a bleach type solution and special paints can be applied which may help prevent growth of mould but the only permanent cure is to reduce the amount of condensation in a property.

Ways To Control Condensation

There are three primary measures that can be taken to prevent condensation. These are to:

1. Increase ventilation – to remove moist air from the building and not allow it to come into contact with cold surfaces;
2. Increase insulation – to prevent a cold surface reaching below "Dew Point"; and
3. Maintain consistent heating – to prevent the structure to become cold.

Controls In Practice

There are three primary measures that can be taken to prevent condensation. These are to:

Where condensation is suspected as a problem advise leaseholders of some/all of the following to relieve the situation:

- Leave some background heat on through the day in cold weather. Most dwellings take quite a long time to warm up, and it may cost you more if you try to heat it up quickly;
- After a bath or shower, ventilate the room to the outside, not to the rest of the property - just opening a window (and closing the door) will help;
- Ideally dry clothes out of doors. Where this is not possible, dry them in a cool area of the house or flat. Whilst this will take longer, less moisture can be held in colder air and with good ventilation, the risk of condensation is lower;
- When people come in with wet coats, hang them outside the living area to dry;
- Try to increase the change of air in the premises - increase ventilation. Trickle vents can be added to double gazed units;
- Add forced ventilation/extraction to areas which produce a lot of moisture (kitchens and bathroom). Extractor fans are available with an air-moisture switch (humidistat) so that they operate automatically while the moisture in the air is above a set amount. Other units (heat exchangers – although more expensive) are available which remove the moist air and reuse the thermal energy within it which would otherwise be wasted;
- Consider changing the fuel you use, electric is the driest, paraffin probably the wettest;
- Consider using a dehumidifier - domestic types are now available and can remove a surprising amount of water from the air; and
- Don't overfill cupboards and wardrobes. Always make sure that some air can circulate freely by fitting ventilators in doors and leaving a space at the back of the shelves.

If condensation persists after dealing with the basic structure of the building and the residents' life style, there are still some other changes to try:

- In Britain, condensation will almost always occur with single glazed windows. The inside surfaces of these windows can be almost the same as the outside temperature, overnight in winter their temperature can drop below freezing; often the inside window sill will be awash first thing in the morning. Simple secondary glazing consisting of little more than a sheet of glass (or plastic) screwed to the window frame with a seal in between can be fitted. This is relatively cheap. Fixed secondary glazing must not be installed on all opening windows in a room as some ventilation is essential. DIY kits are available which allow the secondary glazing to be temporary removed or opened to allow the original window to be opened for ventilation;
- Although secondary or double-glazing are unlikely to eliminate all condensation, they should reduce it to an acceptable amount;
- Alternatively new double-glazing windows can be considered. Although much more expensive than simple secondary glazing, there are additional benefits; existing wooden or metal windows will need continuous maintenance and repair - with new double glazed windows, you get new window frames which will probably be low maintenance or maintenance free;
- Some decorative materials always have cold surfaces, (i.e. ceramic tiles, mirrors etc.) and are well known for the formation of condensation. Unfortunately we tend to use tiles in the kitchen and bathroom, two rooms where high humidity is likely. There is not much you can do where this occurs other than keeping the room (and so the tiles) evenly heated throughout the day or improve ventilation;

- Some wall surfaces can also be a problem. Where the wall is papered the situation may be made worse if there are many layers of paper, (this can just act like blotting paper). All the layers should be stripped and the wall re-papered;
- Things can also be improved by lining the wall before hanging new wallpaper;
- Painted walls can also have a cold surface. If the wall is not to be papered, lining it with wooden panelling or another material such as cork tiles could be considered. Alternatively a wall can be insulated by fitting a false wall with a layer of insulation behind and in front; either being panelled or covered with plasterboard so that the new surface can be papered. However; remember that with all these 'covering up' methods they possibly just hide and do not cure the problem. If the wall is suffering from rising or other damp problems, with the passage of time, the damp will cause damage to the lining (wet rot to the timber etc.) and this will not be seen until it is really serious;
- Ceilings under the roof will suffer from condensation where the original construction of the block does not provide any roof insulation. If there is no or little roof insulation, additional insulation should be installed and a false ceiling with insulation can be fitted. For some groups of people, there are financial grants in the UK for such work - check with the Local Authority or advice centre for details. Additional insulation will not only reduce condensation, but also reduce energy loss and so save money; and
- Where ceilings have a high gloss finish, consider covering with cork or fibre tiles; alternatively wooden panelling can be installed. Solid floors (i.e. a slab of concrete) are often cold because of their large thermal mass (they take a long time to warm up). Even vinyl floor tiles tend to be cold, however there are a number of 'warm' floorings available such as cork or cushion tiles. Thin wood flooring can be fitted on most existing solid floors, but do check that this is allowed under the terms of leases and will not cause a nuisance to neighbours.

It is unlikely that a British home can be condensation free, however by keeping the property properly maintained and making leaseholders aware of the causes of condensation and options for decoration, it should be possible to control and manage condensation.

NB: Some of the measures described above may need permission from the freeholder/ RMC, and/or the local authority's Planning/Building Control/Listed Buildings departments. If in doubt, check!

Handling A Report Of Dampness From A Resident

What are the relevant questions to ask the occupier of the flat when making an initial assessment in order to gain the information necessary to make an accurate assessment, supported by evidence and reasons? It is probably best not to ask the following as direct questions but to find information through a conversation.

1. Note the time of year and weather conditions as might be appropriate to either condensation or penetration problems;
2. (If not known) how long have you lived at the flat?
3. When did the dampness or water problem start?
4. Is it permanent or is it intermittent?
5. Is it wet or damp following rainfall and dry following dry periods?
6. Is there any reason to suggest that it might be in connection with defective plumbing in the flat above or an adjoining flat?
7. Is it limited to a particular area in the flat or is it generally over a large area?
8. Are the main effects near floor level, near ceiling level, around windows, or other identifiable areas?
9. Do you have brown staining, uneven plasterwork developing or any white fluffy stuff on the surface?
10. Do you have black mould spots over the effected areas?

11. Are there any rotten timbers near to the dampness or the worst part of the dampness?

12. Explain the different types of damp get them to agree it's probably condensation
13. Ask them to send you photos
14. Does it wash off easily

When The Leaseholder Is Absolutely Insistent That It Is Penetration And Will Not Accept The Managing Agent's/Property Manager's Evidence Or Reasoning, What Should The Managing Agent/Property Manager Do?

1. If this is the position reached at the end of a phone call before anybody has been to see and inspect the flat, then an inspection should be carried out;
2. If this is a block with a porter then it is useful to ask the porter to inspect with a view to getting answers to the sort of questions outlined above;
3. The managing agent should check his/her own records as to whether this is a block that has had water problems recently which might affect this flat, or does have a history of known condensation problems;
4. It is often the case that the managing agent has a regular maintenance contractor and expects to use such contractor in circumstances like this to make an initial assessment and report back. Otherwise the property manager must do so;
5. Send the leaseholder the ARMA Advisory Note on Condensation so they are fully aware of the issues;
6. If a leaseholder is insistent, they almost always have an alternative moisture source to blame. The managing agent should be aware that some water/dampness problems have more than one cause, and all causes are going to have to be eliminated;
7. On inspection, all outside water sources should be checked and eliminated or repaired: relevant areas of roof, gutters, down pipes, defective plumbing joints, overflow pipes, defective window sill or surround details, vulnerability to driven rain against poorly pointed brickwork etc;
8. Adjoining flats, and the flat above the complaining flat, might need contact or inspection to check water fittings, plumbing, tiling around showers (a common cause of otherwise undiagnosed dampness) and other sources of moisture from immediately adjoining flats;
9. Low level dampness might be rising dampness, might be a broken heating or water pipe in a concrete floor spreading across the concrete above the damp proof membrane and up the walls; or maybe defective plumbing in the subject flat resulting in spreading dampness at low level; and
10. A careful examination of windows and their surrounds should be made. Is there evidence that they are regularly opened or not, information about how the occupiers of the flat use the heating, whether they are out at work all day and only in at evenings or weekends, whether there is mould growth and what type of mould or fungus is found, whether the problems are worst in the bathroom and kitchen or other rooms etc.

When Should An Outside Specialist Be Instructed?

On receipt of relevant information and facts, the managing agent will then be in a position to write a formal letter to the leaseholder giving the property manager's opinion of the cause of the dampness. If the leaseholder is insistent that it is penetration and not condensation, the managing agent is going to have to consider his position carefully before taking any steps which result in financial cost beyond a call out charge type cost.

The managing agent needs an agreement with the occupier that, if a consultant is instructed and finds that it is condensation or something from within the flat itself, the leaseholder will pay. If it is found to be something from outside the flat, which is a service charge matter, the service charge will pay. If it is found to be a matter from another adjoining flat, then the complaining leaseholder will have to pay subject to

recovery from the adjoining flat. If the complaining leaseholder agrees then a report can be commissioned.
If the complaining leaseholder refuses to come to such an agreement (as is often the case) then the managing agent needs to be quite clear about the lease terms and who has the repairing obligation.

If the managing agent is satisfied that he/she has checked all other possible sources and it is condensation, then he/she is left with little alternative but to advise the leaseholder that they must obtain their own report because the manifestation of the defects are internal to the demise for which they are responsible.

It may be that when the managing agent advises his clients, possibly the directors of an RMC, with a letter setting out the facts and his opinion and asking for their instructions, the managing agent may be instructed to take further steps at a cost to the service charge.

One way or the other, the matter should not be allowed to develop into one of those situations which festers on for a long time with nobody bringing it to a head and hopefully finding a resolution.

The Association of Residential Managing Agents Ltd
3rd Floor, 2-4 St George's Road
London
SW19 4DP

Tel 020 7978 2607
info@arma.org.uk
www.arma.org.uk