By Appointment to H.M. the Queen, Building Material Manufacturers
Sovereign Chemicals Limited, Barrow in Furness

# Condensation

## The Sovereign Householders' Guide to condensation, its causes and treatment




Sovereign
the gold standard in building products

Part of the ARKEMA group of companies.



**Black Mould**

*The most common and ugly result of condensation is easy to spot. Black mould, which takes the form of powdery, sooty black blotches and dusting over walls, is often seen around windows, on outside walls, or in corners where condensation provides moisture for it to grow.*

# What IS Condensation?

One of the most common causes of dampness in the home is '**Condensation**'. Moisture is always present in the air, even if it cannot be seen. Cooking, heating, showering and washing and drying clothes further elevate moisture levels in homes.

Warm air holds more moisture than cold air. When warm air is cooled the amount of moisture it can hold reduces. If cooled far enough the air releases its excess moisture, forming droplets of water on sufficiently cool surfaces. This is known as 'condensation'.

Examples of condensation include times when you see your breath in cold weather, dew and in the bathroom when mirrors and the cold tap 'steam up'. In the home condensation is most noticeable on cold mornings, often seen on windows, on the inside faces of external walls, or in places where air movement is restricted, such as in the corners of rooms and behind items of furniture placed close against walls, and even inside wardrobes.

The presence of condensation is often first indicated by the development of mould on walls, ceilings, and even furniture, clothes and other fabrics. Condensed water can go on to provide sufficient moisture to allow timbers to rot.

Condensation is most problematic during the cold winter months, with the October to April period generally acknowledged as 'condensation season', although it can occur throughout the year.



**AVOID Unvented Tumble Dryers!**

*Washing in general, and particularly using unvented tumble dryers can be a major cause of high moisture levels and problem condensation in the home. Make sure you vent the hose outside the house or choose a condensing type dryer with a drain pipe.*

# What causes Condensation?

**Condensation affects almost every home to some degree, it develops as a result of modern living practices like washing and cooking; inadequate heating and bad insulation due to economic pressure; and changes in building design that mean the old draughts that kept a home well ventilated have all been sealed up. Here are the major factors that can cause condensation:**

### Generating too much Water

Water in the air in the form of steam and vapour is produced in large quantities by all sorts of everyday activities within a home. These include drying clothes on or around radiators and using unvented tumble dryers; as well as showering and washing; cooking and making hot drinks; and using portable flueless paraffin or bottled gas heaters. In fact, even breathing adds to moisture in the air!

### Inadequate Heating

It is not good practice to use your heating system intermittently, for short periods. Typically people will turn up the heat in a morning when they get up and in the evening when they get home, leaving it off whilst they are out. It's a false economy that warms the air in your home, but does not allow the walls to achieve a suitable, stable temperature, so that water in the air condenses on the cold walls.

Moisture producing activities, as mentioned earlier, also tend to be concentrated into relatively short periods. The sudden increase in warm, moist air from bathing and cooking can produce condensation as it comes into contact with cold areas and surfaces, such as external walls.

### Lack of Ventilation

The problem of moisture generation is aggravated by inadequate ventilation. In the past there was usually plenty of natural ventilation due to open fires, draughty sash windows, poorly fitted doors and gaps under floor boards. All of these sources of 'draughts' meant that air naturally flowed through a property, preventing the build-up of excess moisture. By contrast, modern homes are much more efficiently sealed; saving on heating costs, but often limiting ventilation and resulting in condensation problems.

### Poor Insulation

Unless cold surfaces are completely eliminated, condensation is likely to occur at some point in your home. Use of wall and attic insulation will reduce heating costs and will help to prevent condensation by eliminating cold surfaces and reducing the occurrence of cold spots.



### AVOID Portable Heaters!

*Avoid using portable gas or paraffin heaters. They may keep you toasty warm, but aside from being very expensive to run, the fuel they burn releases high levels of water vapour into your home, making it not only muggy and uncomfortable, but importantly also substantially increasing the risk of condensation.*



**Insulate!**

*Effective insulation of walls and roofs helps significantly reduce heating bills and cuts condensation by reducing cold surfaces on which water can condense.*

*Keep an eye open for any grants towards insulation costs or even FREE insulation programmes operated by your Local Council.*

# How to avoid Condensation

**There are a number of simple steps that can be taken to deal with condensation. However, in the short term, each morning dry windows, window sills and other affected surfaces using a dry cloth, wringing it out rather than drying it on a radiator so you don't put the moisture straight back into the air in your home. Every day the average household releases around SIXTEEN pints of moisture into the air in their home - and it has to go somewhere! If steps are not taken to reduce or control this moisture, then condensation is almost inevitable. The following simple steps will help greatly reduce condensation in your home:**

### When Cooking

- Cover boiling pans.
- Don't leave kettles boiling.
- Keep the interior kitchen door closed, but open the kitchen window.
- Use an extractor fan and cooker hood, if fitted.

### When Bathing

- Keep the bathroom door closed, but open the bathroom window and use the extractor fan, if fitted.
- When filling the bath, run cold water first and then add hot water; this will greatly reduce the amount of steam.



### When Washing/Drying

- Dry washing outside, if possible.
- If drying washing inside is unavoidable then do so in a closed, warm well ventilated room.
- Use an extract fan, if fitted.
- If a tumble dryer is used it must be ventilated directly to the outside air.
- Remember, placing damp clothes on or near a radiator will dry them, but will release the moisture straight into your room.

### Heating

- Portable Flueless Gas and Paraffin Heaters produce a lot of moisture, amounting to around a litre of water for every litre of fuel burnt. These heaters should be avoided.
- To warm a room aim to use your heating system for an extended period on a low setting, rather than high for a short time.

### AVOID Drying Clothes inside!

*Drying clothes inside the house on a rack or over a radiator should be avoided if at all possible. Moisture from damp clothes is released straight back into the atmosphere of the room, making it damp and prone to condensation and the problems this causes.*

### Good Ventilation is ESSENTIAL!

*If it gets steamy in your bathroom, utility room or kitchen the best solution is a powered extractor fan (like Sovereign's Merlin unit, pictured right) to help expel the damp air... Of course the easiest answer is to ensure good ventilation by opening a window, but keep internal doors closed to prevent the damp air spreading round your home.*

## Improve Ventilation

In homes some ventilation is required all of the time. This will create air changes and help to reduce condensation by removing moist air from the home and replacing it with drier air and can be achieved by doing the following:

- Keep open trickle vents in window frames.
- Open windows, even if only slightly and on the security setting.
- Ideally 'cross ventilate' by opening windows upstairs AND downstairs, and on opposite sides of the property. At the same time open interior doors to allow air to circulate.
- Open windows wider during cooking, washing, drying clothes, bathing, etc.
- Use extract fans, if fitted.
- Ventilate cupboards and wardrobes, possibly by drilling breather holes into the false backs.
- DO NOT overfill cupboards and wardrobes, and use slatted shelves. Leave sufficient space to allow air circulation between the back of furniture and walls.
- Place furniture on blocks or feet to raise it, allowing air to circulate beneath.
- Avoid putting furniture against external walls.

**Important Note:** *Ensure open windows don't cause a security problem by remembering to close and lock them when out of the house.*




## Provide Adequate Heating

The best way to heat your home effectively is to maintain CONSTANT but low background heat. This will enable not only the air to be warmed, but also the building itself, therefore creating warmer surfaces that won't gather condensation. DO NOT use the gas cooker to heat a kitchen as it produces a lot of moisture when burning the gas.

## Eliminate Cold Spots

Insulation will reduce your heating costs and help to prevent condensation by eliminating cold spots. Double glazed windows will reduce heat loss, but keep the trickle vents OPEN to maintain ventilation. Where draught proofing is to be installed observe the following factors:

- DO NOT draught proof rooms with a condensation problem, or where there is a heater or cooker that burns gas or solid fuel, this actually makes the problem worse.
- DO NOT block or close permanent vents or airbricks, particularly those installed for heating appliances.
- DO NOT draught proof your bathroom, shower room or kitchen windows.



**Cover that simmering Pan!**

*Putting a lid on cuts cooking costs, and all that steam has to end up somewhere. Unless you open a window or two, it will probably be running down your windows and saturating your walls and furnishings!*

# Treating A Current Problem

### Treating Mould

The development of mould in affected areas is often the first indication of condensation. What can be done to treat or get rid of this mould, which usually appears as black spots on surfaces?

- Mould should NOT be brushed off or vacuumed, as this can release spores into the air, further spreading the problem.
- Remove any wallpaper and non-wipeable/ washable coatings and loose material and make good any surface defects.
- Use a cloth soaked with an appropriate fungicidal solution, such as Sovereign Dentolite, to wash down the surfaces.
- Re-apply a second fungicidal wash to the affected areas and allow to dry thoroughly.
- Redecorate using an appropriate fungicidal paint, such as Sovereign's Fungi-Chek and Fungi-Chek AntiCon, or use Sovereign's Warm Touch® insulating lining system*.
- Take the simple steps to eliminate unnecessary condensation.

### Dentolite Sterilising Solution

This concentrated sterilising solution contains a powerful fungicide that eradicates black mould growth, mildew and fungus on internal surfaces prior to decoration. It may also be used as a 'maintenance wash' to control mould growth where painting is not possible or desireable.

### Scrub Out Black Mould

Scrub Out Black Mould is supplied ready to use in a trigger-operated spray bottle. The fungicidal solution contains a powerful blend of biocide and detergent suitable for sterilising mould-infected surfaces prior to decorating with Fungi-Chek.

### Sovereign Mould Control Pack

This handy all you need pack contains Dentolite Sterilising Solution Concentrate for removing black mould and sterilising surfaces, as well as two pots of Mould Eradication Additive for mixing into emulsion paint to prevent its return. The pack also includes a pair of protective gloves and protective goggles, plus a paint brush and a sponge.



# Preventing Future Condensation



### Passyfier/Passive Vapour Vents

Sovereign's extensive range of quality Passive Vapour Vents provide un-powered ventilation directly through a wall. Airflow is controlled by a special mineral wool baffle which allows ventilation - without letting in cold draughts!

### Merlin Humidity Tracking Extractor Fan

This is an inexpensive powered ventilation fan for bathrooms, shower rooms, kitchens and utility rooms that combines the latest advances in fan technology, significant noise reduction and zero maintenance with miserly power consumption.

The high-tech Merlin fan uses a sensor and intelligent micro processor controls to monitor relative humidity, automatically turning on and increasing speed when required. A pull cord can also be used to manually select high speed for fast acting extraction of moisture and odours.

**Remember to also take the simple steps to avoiding problem condensation detailed on the previous pages!**

### Sovereign Loft Mounted Auto and Wall Mounted Concure 20/20 units

Sovereign make a Auto Concure 20/20 Positive Input Ventilation (PIV) unit for use in houses and one for flats. PIV units increase ventilation, by gently forcing air into and around the home from either a house's loft space or from the outside into a flat or basement.

Sovereign's intelligent Concure 20/20 PIV units offer a simple, highly cost-effective, but well proven system for controlling condensation problems and black spot mould growth, whilst improving air quality throughout the property. The clean, fresh air drawn in by the unit mixes with warm air at ceiling level and re-distributes heat evenly around the home.

Ideal for holiday homes and properties that often stand empty, Sovereign's Concure 20/20 units also feature a microprocessor controlled integral pulse heater as standard, ensuring the air temperature of the air it outputs is slightly warmed when it drops below 10°C, further cutting the risk of problem condensation and preventing icy-cold draughts.



# Preventing future condensation



## Warm Touch® Insulation

Warm Touch® is a simple solution to common problems caused by cold, solid walls, such as condensation and black mould. Traditional internal insulation is costly and intrusive to fit, requiring the removal of skirting boards, doors, kitchen and bathroom furniture. This is particularly problematic for social housing occupants who may require costly, disruptive alternative accommodation.

Sovereign Warm Touch can be applied easily by decorators, builders and even competent DIY'ers. It is classified as 'M1: Permanently Non-Flammable' and is supplied in flexible rolls of either 5mm or 10mm thickness. Applied like wallpaper, it gives instant insulation and sound proofing. Once fitted, Warm Touch can be painted, wallpapered or even tiled.

In addition to providing a warmer surface, Warm Touch can also be used to renovate cracked and damaged walls. Warm Touch is also ideal for use on chimney breasts and ceilings, particularly dormers and in loft conversions.

## Fungi-Chek & Fungi-Chek AntiCon Emulsion

**Fungi-Chek:** A high quality acrylic emulsion that contains a powerful fungicide, suitable for wall and ceiling surfaces where mould growth is problematic. Fungi-Chek is fully washable and is resistant to the effects of condensation, black mould and mildew. Available as a silk finish Bright White or Magnolia Emulsion.

**Fungi-Chek AntiCon:** Is the latest advance in mould and condensation prevention. It combines Fungi-Chek properties with cutting-edge thermal insulation technology and diatomaceous moisture balancing additives; providing quick, simple, brush or roller applied condensation prevention.

Available as a fine textured Bright White or Magnolia Silk Emulsion, AntiCon's tiny glass nanospheres reflect both heat and light back into the room, whilst also creating a 'heat cushion' that enables the wall surface to warm up rapidly, helping to significantly reduce the risk of condensation.

**Please Note:** *The anti-fungal properties of Fungi-Chek and Fungi-Chek AntiCon are lost if over-painted with an ordinary paint, or wallpapered over.*



Sovereign Chemicals Limited has been researching, developing and manufacturing a market-leading range of over 800 remedial treatments and general building products since 1965. Each one combines exacting formulation and premium level specifications with an unrivalled technical support service. In addition to being in receipt of the prestigious Royal Warrant, Sovereign has also been accredited to BS EN ISO 9001 for its manufacturing systems and product quality, and was the first company in the damp-proofing sector to achieve BSI approval for its entire range.

Sovereign is committed to continual improvement of its products and service levels and works in close partnership with customers to constantly develop innovative new solutions and technologies. As part of this process, the company has become a leader in the promotion of environmentally responsible technologies; where possible using recycled raw materials to cut waste and water-dilutable concentrates to reduce transport volumes and the carbon footprint.

In 2015 Sovereign became part of Arkema; a global leader in the manufacture of industrial coatings, construction chemicals and adhesives with an exceptional record for delivering innovative client-centred solutions. Membership of the group offers Sovereign access to substantial financial and technological resources and the opportunity to extend its offering to new markets.

Comprehensive information on Sovereign Chemicals' extensive range of innovative building and construction products may be found by visiting the Company's website, www.sovchem.co.uk

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