

UKCMB
UK CENTRE FOR
MOISTURE
IN BUILDINGS

Moisture in New Homes

A Guide for Occupants

Moisture is part of life

- but needs to be in balance

Moisture is naturally present in the air and within most materials found in homes. Indoors we need the right amount of moisture for comfort and good health - not too damp and not too dry.

Quite a large amount of moisture is created in homes by normal living activities such as cooking, showering, washing clothes and also by breathing. New homes are designed to cope with normal levels of moisture generated by occupants, but it is important that the ventilation and heating systems are used correctly.

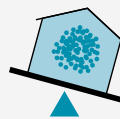
This guide explains where moisture comes from and the things you can do to maintain the right moisture balance in your home.



Your moisture-balanced home

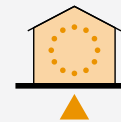
- Good insulation standards and well built to avoid cold internal surfaces
- Moisture generation is not too high
- The home is well heated in cool or cold weather
- Ventilation is increased at times when moisture generation is higher
- Properly maintained to detect and fix any rainwater or plumbing leaks.

Why moisture balance is important



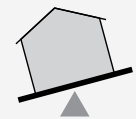
Too moist

Dampness and mould more likely, and not good for health



Balanced

Comfortable and healthy home



Too dry

If the air is too dry this may irritate our skin, eyes and throat

Moisture balance

Warmth + Good ventilation + Regular maintenance

Where moisture comes from

- there are two main sources in a new home:

1 Moisture from the construction stage

A lot of water is added during construction, particularly by activities like concreting, laying screed floors, bricklaying, plastering and painting. Up to 8000 litres of water (about 800 full buckets) may be included in mixtures and materials as construction proceeds, though this varies depending on the design of the home.

This construction moisture will steadily dry out over time with much escaping directly to the outdoor air. However, it also contributes to the moisture inside a newly-built home.

Additionally, rainwater may dampen parts of the structure before the roof and walls are completed and this can add to the amount of moisture that needs to be dried out.

2 Moisture generated by occupants

Everyday, normal living activities add significant amounts of moisture inside our homes. The chart on page 3 illustrates the main moisture-generating activities in homes and compares some typical households. Household size, lifestyle, household appliances and their use all have marked effects on moisture generation.

Households that generate the most moisture will be closer to the limits that their homes are designed for, particularly during the time when construction moisture is drying out. If this applies to you, see if you can reduce the amount of moisture you generate and give special attention to increasing your ventilation and ensuring your heating is switched on in cool and cold weather.

Watch here:
Moisture guidance for
existing homeowners























Moisture: estimating how much you generate

If you would like to estimate your own level of moisture generation, there is a simple calculator tool available from the UK Centre for Moisture in Buildings. Please visit moisture-balance.netlify.com

Note that as well as the main sources of moisture shown on page 3, other sources can be significant: pets, plants and frequent floor washing can contribute to the moisture level in a home.

The four main moisture-generating activities in homes

- comparing different types of households

Main sources of moisture in a home (litres per year)					Total moisture generated each year from these main sources
Breathing 	Cooking 	Showering 	Drying clothes 		
Working couple <ul style="list-style-type: none"> Working away from home Electric cooker Daily 5 min showers Tumble dry washing or dry outdoors 	 550 litres	 250 litres	 180 litres	 Zero	About 100 Full buckets
Retired couple <ul style="list-style-type: none"> At home most of the time Gas cooker Daily 5 min showers Washing dried indoors on racks or radiators 	 790 litres	 1020 litres	 180 litres	 160 litres	About 215 Full buckets
Family of four (two infants) <ul style="list-style-type: none"> One adult at work Electric cooker Daily 5 min showers (baths for infants) Tumble dry washing or dry outdoors 	 970 litres	 360 litres	 200 litres	 Zero	About 155 Full buckets
Family of four (two teenagers) <ul style="list-style-type: none"> Nobody at home during day Gas cooker Daily 5 min showers Washing dried indoors on racks or radiators 	 1110 litres	 770 litres	 360 litres	 550 litres	About 280 Full buckets

Drying out your newly-built home

As described on page 2, a newly-built home will contain a lot of construction moisture. Over time this moisture will gradually disappear and, as shown in the diagram below, you should expect your new home to reach a moisture-balanced state within 18 months to 2 years.

The normal operation of heating and ventilation systems should ensure that drying proceeds at the right pace, provided not too much moisture is generated by the occupants.

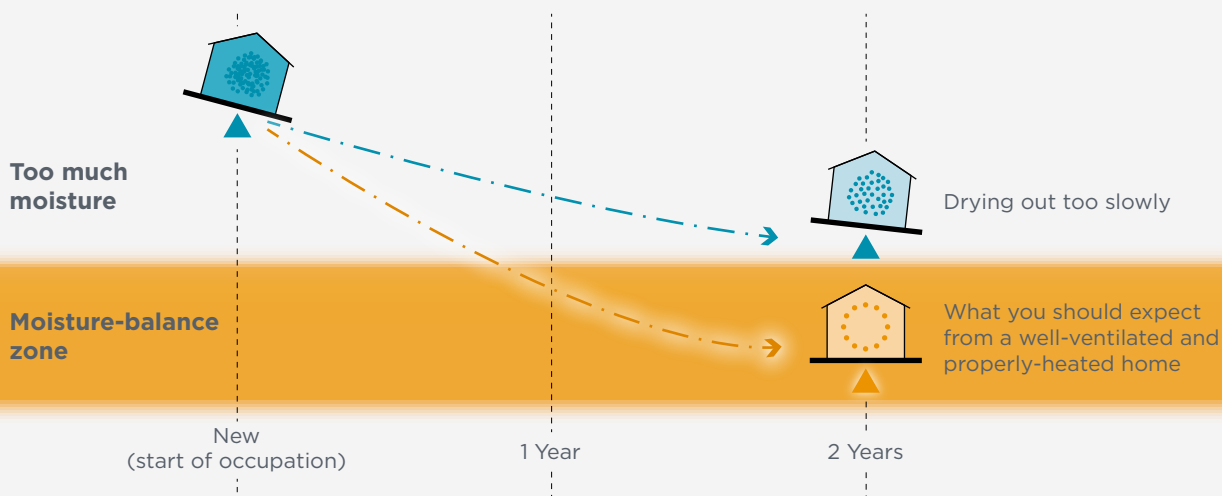
If during the early months you notice damp or mould growth and you think that this is becoming a more serious problem, your home may not be approaching a moisture-balanced state quickly enough. The decision tree on page 6 may help to pinpoint the more likely causes of an ongoing problem and what to do to reach moisture balance as soon as possible.

Once a home has reached moisture balance, the heating and ventilation systems should cope with typical amounts of moisture generated by households, and even short periods of high moisture generation, without any obvious dampness occurring.

During the first few months in your new home

- Keep your home well heated especially in cool or cold weather
- If you have trickle vents on your windows check that these are always open
- Try to minimise moisture generation. Not too many long showers. Avoid drying clothes indoors, on radiators, if possible
- If safe to do so, open windows to let steamy air out and fresh air in
- Ensure extract fans are working when showering
- Ensure the cooker hood operates correctly to extract moisture and smells from cooking
- If the air in your home seems damp, use the boost mode if you have a whole house mechanical ventilation system
- Clear household clutter to allow air flow within rooms and between rooms.

How long should drying out take?



Ventilation

- the key to moisture balance

Good ventilation is essential to maintain moisture balance in your home. All new homes therefore have ventilation systems that are designed to prevent the build up of moisture in normal circumstances.

Sometimes a temporarily increase in ventilation may be needed to avoid dampness and the growth of mould in your home. For example, if your household activities are generating a lot of moisture (see page 3) while the construction of your home is still drying out (see page 4).

The information given to you by your builder will describe the ventilation system in your home and how to make adjustments to ensure excessive moist air is expelled. You may be able to run extract fans for longer, or there may be a boost function. Opening your windows for a few minutes each day may be all that is required when there is any obvious sign of excess moisture.

More advice

An NHBC Foundation guide* includes more details on using your ventilation system, whether trickle vents plus extract fans in bathrooms and kitchens, or whole-house systems like mechanical ventilation with heat recovery (MVHR).

**Home comforts: guidance on using ventilation, heating and renewable energy systems. NF68. Available for free download from www.nhbcfoundation.org*

Your ventilation

Windows

Windows can provide additional ventilation when needed.



An extract fan

These, together with trickle vents in window frames, provide the ventilation in some homes.



Air supply or extract valve

You will have these if your house has a whole-house mechanical ventilation system.



Cooker hood

In some homes the cooker hood is part of the home's ventilation system.

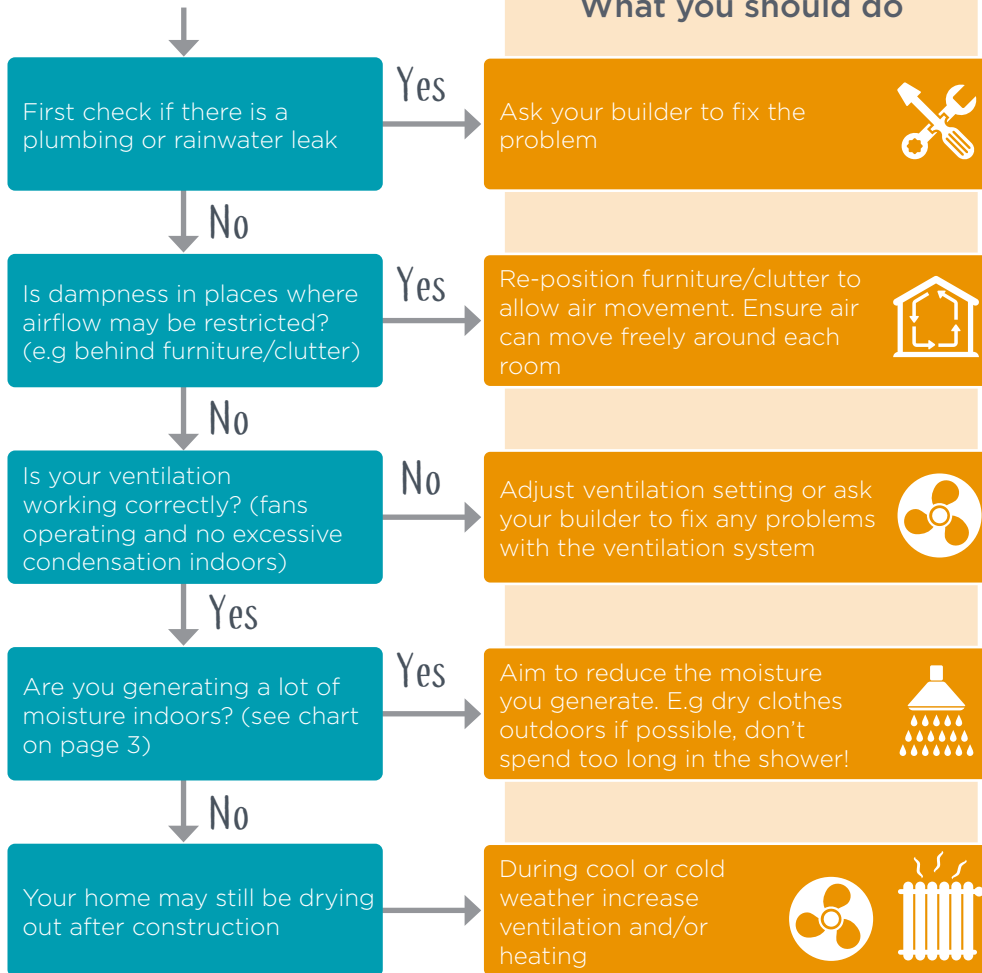


Worried about moisture in your home?

- if so, follow the steps below

Dampness

A new home should not be damp. If you notice any dampness follow the steps below:

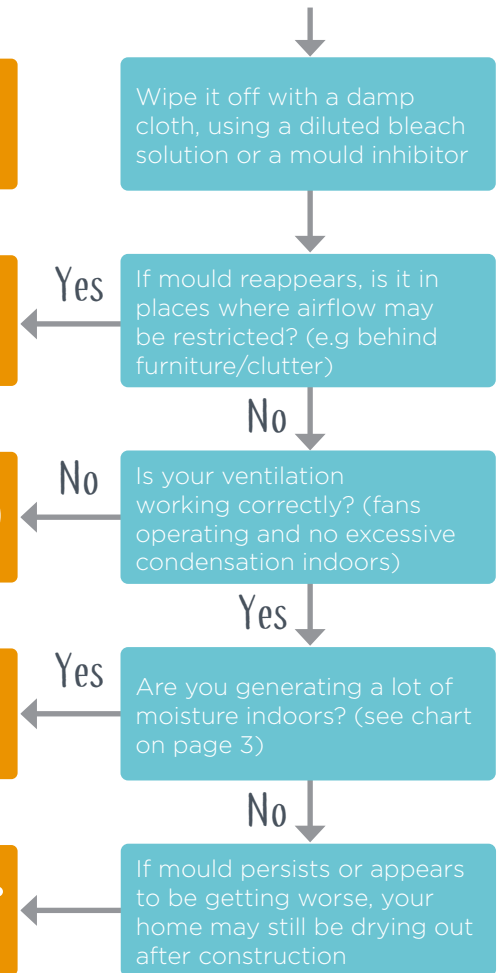


If, despite taking the steps in the orange boxes you still have persistent signs of dampness, contact your builder for advice

Your new-build home should steadily dry out, over about 18 months of occupation, and be free of mould, dampness or excessive condensation

Mould

In some circumstances mould may occur. If you notice any mould growth follow the steps below:



If, despite taking the measures in the orange boxes, mould growth is persistent and worsening, contact your builder for advice

A guide to understanding moisture in your new-build home

- 💧 Moisture balance
- 💧 Where moisture comes from
- 💧 Drying out your new home
- 💧 Importance of ventilation
- 💧 Tackling moisture-related problems.

This guidance was prepared by **Neil May, Isabel Carmona, Valentina Marincioni and Hector Altamirano-Medina from the UKCMB**

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