

Does your property get condensation?

The answer is almost certainly 'yes'. This is because at one time or other, every home will be affected by condensation. When you have cooked a big meal, had a long bath or hosted a big family party, it is usual to find the windows have misted over with some water running down and collecting in small pools on the window sill. For most homes, the water soon dries without a problem. However, other people are not so fortunate.

According to government statistics*, 15% of the homes in this country, are regularly affected by condensation. Starting in the autumn, persistent dampness can affect homes through the winter until the following spring. This continuous moisture will damage decorations, ruin curtains, spoil clothes and in the worst cases, lead to wood rot. It is difficult to get rid of condensation and the resulting mould growth can be the cause of serious ill-health. This is because mould gives off tiny 'spores' that can affect people with respiratory illnesses (for example, asthma). This BlueBox partners factsheet describes what condensation is, how it occurs, and what can be done to get rid of it.

What is condensation?

The air that we breathe contains moisture in the form of water vapour. This is an invisible gas, and warm air can carry more water vapour than cold air. When a home cools down, this water vapour begins to change from an invisible gas to water. Small droplets begin to form on the coldest parts of a room (for example, the window panes, behind furniture, in wardrobes, and around window and door openings) and this is called 'surface condensation'. This will allow mould to grow. Some of this moisture will also pass into the building itself to form 'interstitial condensation'. This can have a damaging effect especially on homes built of timber.

What causes condensation?

Putting it simply, condensation is caused by the relationship between how we heat our homes, how well it is thermally insulated, how it is ventilated and how we live. In most homes, these factors are balanced and condensation is never a problem. For some dwellings, these factors can get 'out of balance' resulting in excessive surface condensation and mould growth. Take a few typical examples:

- *Poorly insulated brick and concrete walls will always remain cold and no matter how well the dwelling is heated, there will be a high risk of condensation;*
- *An occupier can leave their windows open all day and night but if the windows are single glazing, they will regularly run with water (called 'condensate');*
- *If an occupier does not use their extract fans or open windows from time to time, the increasingly humid environments will lead to mould growth.*

One thing is clear; surface condensation and mould growth means something is wrong.

*taken from BS5250:2002



Mould grew on this bathroom ceiling because of missing insulation in the loft



Wind blown rain caused the dampness problem in this lounge wall.



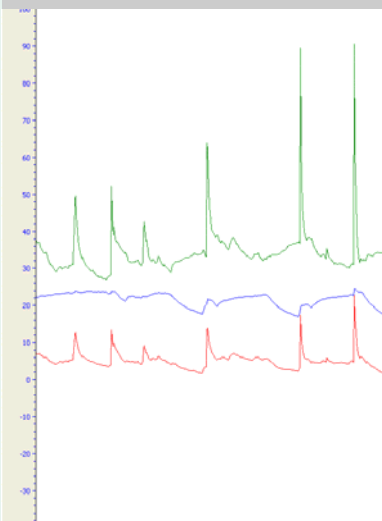
Persistent condensation affected every window in this house during the winter.

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Data loggers used to collect temperature and humidity data for condensation cases.



The data from the loggers can be analysed so 'lifestyles' can be properly analysed

4	2	Sun 03 of Jan at 12:40:00 2010	17.14	50.24	7
5	3	Sun 03 of Jan at 12:50:00 2010	18.66	64.12	12
6	4	Sun 03 of Jan at 13:00:00 2010	18.14	50.56	8
7	5	Sun 03 of Jan at 13:10:00 2010	17.82	48.25	7
8	6	Sun 03 of Jan at 13:20:00 2010	17.58	47.71	6
9	7	Sun 03 of Jan at 13:30:00 2010	17.5	44.59	5
10	8	Sun 03 of Jan at 13:40:00 2010	17.26	43.17	5
11	9	Sun 03 of Jan at 13:50:00 2010	17.26	43.1	5
12	10	Sun 03 of Jan at 14:00:00 2010	17.22	42.64	4
13	11	Sun 03 of Jan at 14:10:00 2010	17.26	43.78	5
14	12	Sun 03 of Jan at 14:20:00 2010	17.22	44.27	5
15	13	Sun 03 of Jan at 14:30:00 2010	17.18	43.61	5
16	14	Sun 03 of Jan at 14:40:00 2010	17.18	43.55	5
17	15	Sun 03 of Jan at 14:50:00 2010	17.1	43.12	4
18	16	Sun 03 of Jan at 15:00:00 2010	17.1	42.95	4
19	17	Sun 03 of Jan at 15:10:00 2010	17.1	42.17	4
20	18	Sun 03 of Jan at 15:20:00 2010	17.06	41.64	4
21	19	Sun 03 of Jan at 15:30:00 2010	17.02	41.24	4
22	20	Sun 03 of Jan at 15:40:00 2010	17.02	41.11	4
23	21	Sun 03 of Jan at 15:50:00 2010	17.02	40.91	4
24	22	Sun 03 of Jan at 16:00:00 2010	17.02	40.78	4
25	23	Sun 03 of Jan at 16:10:00 2010	16.94	40.77	4
26	24	Sun 03 of Jan at 16:20:00 2010	17.02	40.52	4
27	25	Sun 03 of Jan at 16:30:00 2010	17.06	40.45	4
28	26	Sun 03 of Jan at 16:40:00 2010	17.1	40.66	4
29	27	Sun 03 of Jan at 16:50:00 2010	17.14	40.3	4
30	28	Sun 03 of Jan at 17:00:00 2010	17.18	40.1	4
31	29	Sun 03 of Jan at 17:10:00 2010	17.18	40.04	3
32	30	Sun 03 of Jan at 17:20:00 2010	17.18	39.81	3
33	31	Sun 03 of Jan at 17:30:00 2010	17.18	39.71	3
34	32	Sun 03 of Jan at 17:40:00 2010	17.26	39.45	3
35	33	Sun 03 of Jan at 17:50:00 2010	17.26	39.78	3
36	34	Sun 03 of Jan at 18:00:00 2010	17.3	39.95	4
37	35	Sun 03 of Jan at 18:10:00 2010	17.34	39.95	4
38	36	Sun 03 of Jan at 18:20:00 2010	17.3	39.88	4
39	37	Sun 03 of Jan at 18:30:00 2010	17.34	39.76	4
40	38	Sun 03 of Jan at 18:40:00 2010	17.34	39.32	3
41	39	Sun 03 of Jan at 18:50:00 2010	17.42	45.16	5
42	40	Sun 03 of Jan at 19:00:00 2010	17.5	47	6
43	41	Sun 03 of Jan at 19:10:00 2010	17.42	46.99	6
44	42	Sun 03 of Jan at 19:20:00 2010	18.22	46.45	7

How can the 'cause' be identified?

It is important to identify the true cause of the problem. If not, any 'treatment' will be ineffective and the condensation and mould growth will quickly return. At BlueBox partners, we adopt a step by step approach to diagnosing the problem:

- *Firstly, is it condensation? Sometimes the signs can be caused by other forms of dampness such as high ground levels, a leaking gutter or a plumbing problem;*
- *If it is condensation, the next task is to identify which of the influencing factors are 'out-of-balance'. This can be challenging because the problem may be related to how the building is used. Consequently, in addition to a thorough physical inspection of the dwelling, talking to occupants is very important part of the process.*

Analysis of this information can often identify the cause but in some cases, further investigations may be required. For example, we use electronic 'data loggers' to record temperature and humidity levels in the dwelling over a period of time. Once downloaded into a computer, this data can give a more accurate picture of how a building is used.

What are the solutions?

When the cause of the condensation has been properly identified, the solution can range from a simple adjustment of the ventilation system through to more substantial (and expensive) alterations such as increasing the thermal insulation of the building and the provision of a more effective heating system, and so on.

Watch out for the 'cheap fixes'

Some advisors take a narrow view of what causes condensation. They will focus on 'lifestyle' issues such as ventilation and moisture production and ignore other important influencing factors. We have come across a range of inappropriate advice including:

- *'Open your windows wide and turn up your heating';*
- *'Wash your walls down with bleach';*
- *'Don't dry your washing indoors' to an occupier who lives on the 13th floor of a block of flats without a balcony.*

In addition, a large number of condensation related 'products' are now available and some of these target owners looking for a 'quick' and less costly 'fix'. Extract fans with automatic controls, 'whole house' ventilation systems and chemicals that kill mould growth are products that can play a part in a balanced package of repair work but will rarely be effective when used on their own. After spending money on the promised solutions, disappointed property owners can only watch in frustration as the problems gradually return at the start of the next heating season.

An independent diagnostic service

At BlueBox partners, we base our recommendations on objective analysis of the facts. We have no commercial links and offer a fully independent and comprehensive diagnostic service for property owners. For more information or a confidential discussion about the service we offer, please contact the BlueBox office.