

D.I.Y. Damp Assessment Guide.

An overview of things you should know when assessing damp walls.

Rising Damp is ground moisture that creeps up through the pores and capillaries of masonry structures. This moisture contains varying amounts of dissolved soluble minerals such as nitrates, chlorides, sulphates etc commonly referred to as “salts”. This salt contamination creates a saline solution within and on the surface of masonry walls. **Saline solutions are a deterrent against the growth of mould and are hostile to mould spores.** The capillary moisture will affect **the full thickness of the wall – not just the inside or outside.** As the exposed masonry surfaces are subject to the surface evaporation of the capillary moisture surface salt deposits will accumulate on the walls surface - efflorescence. As moisture contents vary the internal salt content will go through a wetting/drying cycle which causes the salts to expand and contract within the wall. This expansion can cause the surface of the masonry to flake and fall off and the mortar to become very powdery – sub-florescence. Rising damp is a natural phenomenon hence the requirement of a damp-proof course. When a damp-proof course is either missing, failed or been improperly installed the dampness will continue to rise to heights occasionally exceeding one metre. Damp proof courses are installed to protect **the full thickness** of masonry walls it would be **extremely rare** to have “rising damp” affecting only the inside and not the outside of a solid masonry wall. Similarly brick cavity walls would also have a damp-course extending through the full thickness of the brick wall **below** the start of the brick cavity and a timber floor structure. It would also be **extremely rare** to have “rising damp” affecting only the inside brick leaf and not the outside leaf. The volume of capillary moisture is fairly minimal and would never be seen to run down the surface of a damp wall similar to moisture running down the inside of windows. Rising damp **does not smell** – But rotting timbers supported by wet masonry may emit a noticeable odour!

Where the damp symptoms are confined to the **internal faces only** , (surface dampness), of exterior masonry walls the most likely causes are Condensation and/or Sub-Floor Dampness.

Condensation occurs when warm moist air comes in contact with cooler surfaces. The water vapour cools and condenses back to a liquid state and can often leave “run” stains on painted wall surfaces. Water vapour cannot carry salts and condensation from it will support the growth of moulds. Condensation occurs as a surface dampness only and often will affect one side only of a masonry wall especially when a heated room is separated from the cooler outdoor surface by an un-insulated wall, (similar to a single glazed window). Poorly ventilated brick cavity walls can also suffer from condensation occurring within the cavity. This may well visibly saturate the masonry at cavity level whilst the lower solid base brickwork looks much drier! Plasterboard fixed to battens on masonry also provides a “cavity” which, if poorly or un-ventilated will provide an opportunity for condensation to form within the cavity which will saturate the plasterboard causing swelling and the paper finish to delaminate.

Sub-Floor Dampness will not only cause problems with painted masonry surfaces but may cause serious decay of the structural floor timbers. Sub timber floor areas require sufficient air flow to prevent moisture building up from under the floor from the exposed soil. Insufficient air movement allows the humidity to increase and the vapour will impregnate and raise the moisture content of floor boards, joists, bearers and even wooden stumps. As the damp moist air rises to the underside of the floor boards it will spread horizontally under the whole floor area. Masonry walls, internal as well as external, impede the sub-floor ventilation and can lead to moisture seeping up around the perimeter of the timber floor, behind the skirting boards until it is able to evaporate from any exposed porous surface. “White set” plaster will absorb this moisture will become soft and swollen – this may be mistaken for efflorescence cause by rising damp. Obvious signs are increased dampness higher up the walls in the internal corners of rooms, blistering paint and cracks around the top of the skirting boards. Mould will often be evident as this moisture is formed from condensation and does not contain ground salts. Exposed polished timber floors will often be swollen and “cupped” at the joints and may display a “rippled” appearance. Signs of black spots or stains around the nail heads will also indicate high humidity levels under the timber floor as the saturated timbers cause the nails to rust.

Assuming that the damp areas **are not related** to leaking drainage, leaking shower recesses, plumbing fixtures and the like, planter boxes, materials or sheds piled or built against the brickwork to “bridge” the existing damp-course, the following symptoms may be determined by a quick visual inspection – (consider multiple causes).

Rising Damp - **Surface salt deposits**, flaking deteriorating brick or stonework, symptoms apparent on **both surfaces** of the wall, (inside and out including brick cavity walls), and usually **no** mould due to the presence of salts.

Condensation. – Mould on exposed wall surfaces, normally more concentrated along lower sections of wall, internal corners, mould behind furniture, bed-heads, paintings and wall hangings, etc., located on external walls. Surface run stains. (Restricted to the **internal face only** of external walls).

Sub-Floor Dampness. - Blistering paint, soft swollen plaster surface, occasional mould, cracking along the tops of the skirting boards, height of dampness increasing in internal corners, musty earthy damp smell evident, swollen rippled timber floor surface with accompanying rust staining around nail heads. With external walls it is normally restricted to forming on the **inside face only** unless severely saturated.

Suggested Remedial Works.

Rising Damp – check that the damp-course has not been bridged by, garden beds, paving, or log piles etc., against the outside walls. - Install a new damp-course.

Condensation – improve insulation, improve heating and air circulation, and increase ventilation when laundering, cooking, washing and showering. If occurring in a bedroom, improve ventilation by leaving the door open and/or window slightly open whilst sleeping. In extreme cases a ceiling fan may be required to be run in the winter to circulate and force the warmer air to the colder lower walls and furnishings, etc. to provide heat.

Sub-Floor Dampness – check that external sub-floor wall vents are unobscured and sufficient in number - install more wall vents if required, (check that the internal floor bearers are not at the same height as the vents restricting air movement). Consider installing a sub-floor ventilation system.

PLEASE NOTE

A new damp-course will not cure a sub-floor dampness or condensation problem.

Removing damp plaster and re-plastering with render containing a salt and water retarder will only reduce vapour saturation of the render from the sub-floor area and will merely mask the problem.

Treating the inner skin **only** of cavity brickwork with a new damp-course indicates that the problem is probably not rising damp but a condensation or sub-floor dampness problem.

Moisture meters will indicate not only the presence of moisture but the presence of hygroscopic salts – they **do not differentiate** between dampness caused by condensation, sub-floor dampness or rising damp. **THEY CANNOT BE USED BY THEMSELVES TO DETERMINE THAT A WALL HAS “RISING DAMP”.**

The purpose of a damp course is to protect both the masonry and any structural timbers supported by that masonry – installing a chemical damp-course or plastic membrane in a masonry wall behind skirting boards **above** a suspended timber floor would **not** be allowed or accepted in a newly constructed house –

Why would you accept it in your home?

Only an “electro – osmotic” damp-course will dry masonry below the level of installation.



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