Dampness is often misdiagnosed within buildings, the approved document deals with prevention of moisture ingress in buildings and with the effects of contamination from gases.

This guide seeks to assist in providing details to reduce dampness within buildings. Details of sloping roof coverings are also provided in this guide.
Floors: damp proof membrane

A damp proof membrane is normally inserted under a floor to protect from dampness in the ground. These should be formed from polyethylene 1200 gauge minimum laid on a material that will not damage the sheet such as sand blinding or insulation.

Damp proof course in walls should link with damp proof membrane in floors.

Floors: ground contaminants

Gas protection

In certain instances a different type of membrane is required to protect from harmful gases in the ground rather than a standard damp proof membrane.

The use of a gas membrane will be advised either by a building control surveyor or as a condition under planning permission. Different systems are required dependant upon risk factors and generally determined by the Councils Environmental Health Department.

It is important to note that insulation should be placed above gas membranes.

A typical detail for junctions at walls and floors for gas protection is shown below.

Gas membrane detail

- Cavity tray
- Weep holes
- Floor slab
- Insulation with 500g visqueen separation layer on top.
- Proprietary gas membrane
- Sand blinding
- Well compacted hardcore
Floors: radon

Radon is a natural radioactive gas originating from minute amounts of Uranium that occur naturally in all rocks and soil. Radon was formerly associated with the south west of the UK however recently it has been discovered elsewhere in the UK. The BRE report 211 details areas at risk from radon and measures to be used for protection.

In certain areas of Rochdale there is a risk of from radon gas, however only basic protection measures are required. Basic protection consists of 1200g visqueen installed in similar fashion to a gas membrane. (As seen in the diagram above)

Building Control or Environmental Health are able to provide guidance in relation to which properties require protection from radon.

Floors: sub-floor ventilation

Suspended floors whether timber or pre cast concrete require a ventilated air gap of 150mm below the underside of joists or units. If floor joists sit below dpc level they must be wrapped in dpc material. A typical detail is shown below.

Where sleeved air bricks or telescopic air vents are used a cavity tray should be inserted over.
Walls: damp proof course

Damp proof courses are the modern way of preventing rising dampness, these came into wide use after 1875.

Damp proof courses are often referred to as dpc’s which should be positioned 150mm minimum above the outside ground level. Concrete cavity fill must be at least 225mm below the lowest dpc level.

Damp courses are often installed as a solution to damp issues in old properties, it is always advisable to consult a building surveyor familiar with historic buildings for advice prior to undertaking remedial measures which may result in damage to the structure. Advice is available from the Society for Protection of Ancient Buildings (SPAB).

Walls: cavity closers

Cavities should be closed with insulated cavity closers which also act as dpc as shown in the detail adjacent.

Walls: cavity width

In partial fill cavity wall construction a minimum residual cavity of 50mm is required.
Walls: roof and wall junctions

Cavity trays should be provided at the junction of roofs and walls as shown adjacent and over lintel openings.

Roofs: condensation

Roofs are at risk from moisture within the building and rain externally.

To prevent the build up of moisture within roof voids which can lead to mould growth and timber decay adequate ventilation is required. Over recent years the emergence of breathable roofing felt has caused much confusion. The primary guidance which clarifies this is BS 5250.

Roofs: ceilings

In all cases these should be effectively sealed by providing either a vapour control layer or foilbacked plasterboard to prevent moisture entering roof space. Loft access hatches should not be provided in kitchens or bathrooms. Any recessed lighting should also be sealed.

Roofs: eaves ventilation

25mm continuous air gap at eaves is required for pitches of 15 degrees or less.
10mm continuous air gap at eaves for pitches over 15 degrees.
Roofs: high level ventilation

Ventilation is required at high level with a continuous gap of 5mm where
1. the pitch exceeds 35 degrees
2. span is greater than 10m
3. lean to or mono pitch roofs.

Roofs: breathable membranes

These should be installed to manufacturer instructions, which is either by draping between battens or counter battens, this should always be in conjunction with an effectively sealed ceiling.

If not installed to manufacturer’s instructions or if the ceiling is not effectively sealed ventilation will be required as mentioned above.

Roofs: roof lights

When installing roof lights it is important to follow the manufacturer’s installation instructions. As a general rule the minimum pitch for velux roof lights is 15 degrees. (for further information contact the manufacturer’s technical department). The flashing detailing around the roof lights is dependant upon the roof pitch and material used. Special kerbs are available from manufacturers to raise the pitch to 15 degrees.

Roofs: rain penetration

To prevent rain from entering the building it is vital that suitable roofing material is used and installed in accordance with manufacturer’s recommendations.

The table on the next page indicates some of the roofing materials available at present and their minimum pitch which they can be used. For further information always refer to manufacturers guides.
<table>
<thead>
<tr>
<th>Pitch</th>
<th>Roofing material</th>
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<tbody>
<tr>
<td>10</td>
<td>FORTICRETE Centurion after consultation with <strong>Technical Department 0800262136</strong></td>
</tr>
</tbody>
</table>
| 12.5  | FORTICRETE Centurion  
        REDLAND regent (15 degrees if roof includes valleys) |
| 15    | REDLAND Cambrian slate  
        REDLAND grovebury, landmark double pantile  
        MARLEY Malvern, Wessex, Marley Mendip  
        SANDTOFT 20/20 (plain clay appearance) |
| 17.5  | REDLAND Stonewold II (slate appearance),  
        REDLAND Richmond, landmark slate.  
        REDLAND landmark double roman, renown, Norfolk pantile, 49 tile  
        FORTICRETE Hardrow Solos, Duets, Harmonies (slate appearance), V2  
        MARLEY Modern, Edgemere (slate)  
        SANDTOFT Britlock (slate) |
| 22.5  | FORTICRETE Gemini (plain clay equivalent)  
        SANDTOFT Cassius, 20/20 (plain clay equivalent)  
        MARLEY Birkdale, Rivendale, Garsdale, Thrutone Fibre Cement Slates  
        MARLEY Duo  
        MARLEY Ashmore Double plain tile (plain clay equivalent) |
| 25    | Natural Stone Slates  
        REDLAND duo plain (plain clay equivalent)  
        MARLEY Domino Clay interlocking tiles (slate appearance) |
| 30    | Natural Slate - **refer to BS 5534:2003**  
        MARLEY acme single camber & Hawkins plain clay tiles |
| 35    | Plain Clay Tiles (Rosemary’s) |
Bibliography/Further Guidance


BSI 2006, BS 8500 part 1 Concrete - Complementary British Standard to BS EN 206-1 - Part 1: Method of specifying and guidance for the specifier, British Standards Institution, London.

BSI 2009, BS 8102 Code of practice for protection of below ground structures against water from the ground, British Standards Institution, London.


CIRIA 2006, CIRIA C659 Assessing risks posed by hazardous ground gases to buildings, CIRIA, London.


