

BUILDING SURVEYING –NOTES ON GENERAL DEFECTS

Dry rot

Dry rot refers to the decay of timber in buildings and other wooden structures caused by certain type of fungus. The fungus causes brown rot decay, removing cellulose and hemicelluloses from the timber leaving it brittle often with square shaped cracking.

Eventually the decay can cause instability and even collapse. Both dry rot species require an elevated moisture content to initiate an attack on timber (28–30%). Once established, the fungi can remain active in timber with a moisture content of more than 30%.



Removing the source of moisture should form the core of any dry rot eradication strategy.

Timber can become damp for a number of reasons. Among the most common causes are leaking washing machines, shower trays, baths, condensation etc... The dampness can also come from outside the building, for example, leaking roofs, rising dampness, or dampness penetrating through walls.

Any affected timbers should be removed and replaced with pre-treated timber. Any remaining timbers at risk of being affected by the dry rot should be treated with an effective fungicide.

Where the dry rot has passed through the masonry, it should be isolated using physical containment and/or masonry sterilisation.

Flat Roof leaks

The main reasons why a flat roof leaks are:

Bad design - Not having an adequate fall on the roof or adequate outlets for water to drain from the roof.

Bad workmanship - The roof covering not being installed to the manufacturer's specifications.

Settlement - The roof holds water because the timbers supporting it have sagged and now allow water to pond on the roof.

Lack of maintenance - Solar-reflective stones or paint haven't been applied regularly to prevent the sun from blistering and splitting the surface.

Puncturing - People walking and working on the roof without taking care.

Poorly installed flashings - Flashings not dressed to the surrounding walls correctly or incorrect use of

Flat roofs can fail for a number of reasons.

Localised repairs can extend the roofs life, and these repairs are often carried out using the same materials as those originally used. If the roof is defective due to poor design a more extensive repair may be required to rectify the defect, often removing existing roof coverings and relaying the flat roof to correct falls.

flashing materials, such as lead not being used correctly.



Pitched roof sagging

Usually where a concrete tile roof is used as a replacement of an original roof the timber structure within the roof, unless it is amended, will not be able to cope with the extra weight. A worst case scenario involves the walls of the property being pushed out; causing what is known as wall spread. This may also manifest as a sag in the roof. If you are adding roof tiles to an older roof you need to add support as well. The Building Regulations now make this a requirement before such work is carried out.



In this instance more extensive repairs are required often renewing the roof coverings and replacing any damaged rafters and renewing the roof coverings with suitable tiles.

Subsidence

Subsidence is the downward movement of the ground supporting the building. Particular problems arise when the movement varies from one part of the building to another.

It can be caused by:

- Certain soils - Clay soils are particularly vulnerable to subsidence since they shrink and swell depending on their moisture content.
- Vegetation - Trees and shrubs take moisture from soils causing them to shrink. This is especially so during long periods of dry weather as roots extend

Once you are aware of possible subsidence you should inform your insurance company who may arrange for a structural engineer and other specialists to carry out detailed investigations to decide the best course of action.

Investigations may include digging holes to find out the type of soil, the depth and condition of the foundation and whether roots are causing a problem – this is quite normal.

It may also be necessary to monitor the width of cracks or other signs of movements over a period

in search of water.

-Leaking Drains - Damaged drains can soften or wash away the ground beneath the foundations.

-Less commonly, problems may occur where properties are built over, or close to, mine workings.

Other types of ground movement, which can result in cracking and structural damage, are:

-Heave - the upward movement of the ground supporting the building.

-Landslip - movement of ground down a slope.



of time, usually for at least twelve months, so that the extent of the problem can be accurately established. Once all the information has been collected and analysed, then a plan of action can be drawn up to cure the problem.

If the subsidence has abated it may simply be a case of making good and redecoration, if it is progressive some underpinning may be required.

Rising damp

Rising Damp is the term used to describe dampness in a wall structure, where there is higher moisture content at the base of the wall, which rises further up the wall. The problem of rising damp can be identified by a number of different signs, which include, damaged internal decoration – damp, discoloured tidemarks on internal decoration, damaged Plaster - blistering, salting and disintegration rotting skirting boards, floor timbers – wet rot decay.

Localised dampness – dampness on walls rarely exceeds one metre above ground level, but may go much higher in extreme cases.

The main causes of rising damp are: Failure of an existing damp proof course, no damp proof course at all, high external ground bridging an existing damp proof course, internal plaster bridging an existing damp proof course, bridging of damp proof course due to a build up of rubble inside a cavity wall, leaking water pipes at the base of a wall.

Treatment or repair will depend on the nature of the problem but may include the installation of a damp proof course. A low odour water based silicone injection system is generally regarded as the most effective type of damp proof course. Installation of damp proof course is dependant on the thickness of walls. Holes are drilled in the mortar / brick of external and internal walls to a pre-determined depth and at the correct level and spacing between holes. These holes are then injected with damp proofing fluid to reduce the movement of water through the capillaries. Following the insertion of a damp proof course it is common for re-plastering to be required. Any new plastering has to prevent dampness and salts present within the wall migrating onto the internal wall finish. The most common approach to re-plastering is using a dense sand and cement render as a backing coat incorporating a waterproof additive. Once dry, a gypsum skim coat is applied to give a smooth finish.

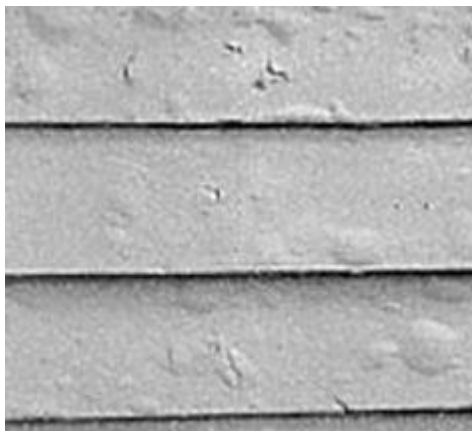


Blistering paintwork

Blistering paint is identified by small to medium sized bubbles or blisters under the paint film and is most common on wood siding and trim.

Potential Causes:

Painting in direct sunlight on a hot substrate (surface being painted) which traps solvent vapour as the paint dries too quickly. Painting when the wood is damp causing trapped moisture to expand the paint film. Dew, rain or very high humidity after latex paint has dried if the latex paint is of lower quality or the substrate surface preparation was inadequate. House moisture escaping through the walls due to improper house ventilation.



Repairs:

Scrape away blistered paint and sand to bare wood. Let wood completely dry.
Sand, prime and paint in non-direct sunlight and non-humid conditions. Use high quality latex paint.
If due to lack of home ventilation, corrective repairs must be made to properly ventilate the home's walls, roof and eaves, bathrooms, etc.
Check and repair any loose or missing caulking around windows and doors.
Consider providing further ventilation.