

## **Roofapedia Maintenance Plan**

### **Outside Inspection**

What you will need – binoculars / ladder

Generally you can inspect the outside of your roof from ground level using binoculars, providing you can get access to stand far enough back. But if there are areas you cannot see, perhaps due to nearby trees, or a neighbouring house etc, then it may be necessary to use ladders. But care must be taken to ensure the ladders are safe and secure.

### **Loose, missing or broken tiles/slates**

Strong winds, foot traffic or simple age can result in tiles or slates being damaged or dislodged. Slates and tiles can also become loose when fixings fail. This is most likely to occur with natural slates and peg tiles, as they have no nibs to hold them in place. Most roof tiles have nibs, which means that if the nails corrode they will not immediately slip down. However, over time, the roof tiles would also succumb to the effect of strong winds and become dislodged.

**What to look for** - Tiles debris on the ground or in gutters. If you find fragments of nails this means that the fixings could be failing.

A handy way to tell if a tile or slate is loose is to look for a tile that looks crooked and is a different colour to those around it. A loose tile will usually slip down exposing an un-weathered surface that is a different colour to the adjacent tiles.

**What to do** – Unfortunately you only need one tile or slate out of place for rainwater to penetrate the roof. If this happens it is always best to have your roof inspected by a roofing contractor. Your contractor can easily fix the broken or loose tile/slate. Another reason for contacting a professional roofing contractor is to ensure that the loose slate is not a sign of further deterioration such as nail fatigue which can affect all tiles/slates on the roof.

### **Cracked, loose or missing mortar**

Mortar is used to secure ridges, hips and tiles or slates at the verge and failure of the mortar bedding is one of the most common causes of roof problems. Mortar is prone to failure and requires regular maintenance. Mortar will fail due to natural weathering, slight structural movement and sometimes due to poor workmanship when the roof was installed.

Mortar failure, especially on ridges and hips carries the added danger of ridge tiles becoming dislodged and falling from the roof. Since a ridge tile can weigh up to 5 kg this can cause fairly significant damage.

**What to look for** - Mortar pieces on the ground. Damaged mortar joints at ridges, hips and verges.

**What to do** – You will need a professional roofing contractor to either reinstate the mortar bedding or to replace it with a dry roof system. A dry system will remove the cost of doing such repairs in the future and makes the ridges/ hips more secure in high winds.

Investing in a dry system will mean that all the ridges or verges will have to be removed and a suitable ridge timber added as a secure point to fix the ridges or hips to. The end result will be a securely fixed ridge or hip line that will not require any future maintenance.

If you decide to stick with mortar bedding then you should still ask your contractor to inspect the condition of all the mortar bedding, not just the areas that have obviously failed. This will avoid you having to go to the expense of similar repairs, further down the line. It might also be worth considering having your ridges mechanically fixed at the same time. This is relevant, particularly if you live in an exposed area, with high winds. As with a dry system, all ridges or hips would have to be removed and a suitable ridge timber added for the fixings to be secured to. This solution means that future mortar failures would not result in the ridges or hips blowing off.

### **Blocked or damaged gutters**

Pitched roofs are designed to efficiently carry away rainwater into the gutter system, which channels the water into drains. If your gutters are blocked with leaves or other debris, or if they become damaged, this water can find its way into more vulnerable areas of your home. Water is very damaging to buildings and can rot fascias, soffits and roof timbers. If water is allowed to run down walls it can damage render and most forms of cladding, including brickwork and window frames.

**What to look for** – Debris spilling over the gutters, or water dripping from gutters, and staining on walls and lower roofs.

**What to do** – Provided you can gain safe access the roof using a ladder then it is feasible to clean your gutters yourself. This should be done twice a year. Remove any leaves, twigs, moss and debris from gutters and downpipes. If downpipes appear blocked, they can be unblocked by running water down them with a garden hose.

### **Blocked valleys**

A valley is the intersection between two roof slopes and plays a critical role in removing water from the roof. If it becomes blocked then the water is unable to drain away, which can lead to water penetrating the roof structure. Leaks like this can go unnoticed for long periods but they can lead to serious long term damage to the roof structure and even internally within the building...

**What to look for** - Leaves, debris and even plant growth collecting in the valley (which is the internal junction at the bottom of two intersecting roof slopes)

**What to do** – Unless you can gain safe access to the roof, this is a job to best done by a roofing contractor.

### **Missing or damaged flashings**

Flashings are usually made from lead and are used to seal junctions between the roof slope and any vertical surface, such as walls, chimneys or dormers. If the flashing is not fixed correctly or is coming loose then water can penetrate into the roof structure. Leaks like this can go unnoticed for long periods, which can lead to serious long-term damage. See notes on internal inspection to follow this further from the inside.

**What to look for** – cracks in the flashing or slipped pieces Also look for signs of previous repairs/patches.

### **Snow**

Following a period of heavy snow it is worth checking your roof. Generally, we design our roofs in the UK to take the weight of snow, but because we only get spasmodic falls of heavy snow we do not generally install snow arrest systems, such as snow guards. So there can be a tendency for snow to slid off the roof and damage gutters and fascias, and if allowed to fall onto a lower roof or conservatory etc, it may do damage to these also. If this does become a problem it may be worth considering upgrading the gutter system to a stronger type and/or fitting snowguards at the eaves.

**What to look for** – once the snow has melted check for any signs of damage caused to gutters and downpipes.

### **Overhanging trees or climbing plants**

If left unattended, tree growth can lead to roof damage. If branches of nearby trees are allowed to make contact with any part of the roof slope or gutters this can easily cause damage. Overhanging branches can also drop leaves and debris into gutters causing blockages. Climbing plants like Ivy can penetrate the roof and cause serious damage, dislodging gutters, roof coverings and underlay.

## **Sagging of the ridge**

Many roofs on old buildings can display signs of 'sagging'. Don't forget that roof structures are usually timber and timber does have a tendency to move and change with age. In particular, where there are heavy purlins these can often sag under the weight of the roof covering without any danger of collapse. Even the more modern roof trusses can settle in relation to the gable walls, giving the appearance of a sagging roof.

So, it is quite possible that sag in the roof is just part of the natural ageing process of the building and is nothing to worry about. But equally, it could be the sign of a problem. For example, has the original roof covering been replaced at some time with a heavier material? For example, has slates been replaced with single lap tiles? Do you think that the sag has just appeared or got worse recently? If you have any doubts – and perhaps even if you don't – then it may be worth asking a roofing professional to take a look. If there is access into the loft space then it should not be difficult to carry out an inspection.

**What to look for** - From the ground, look for signs of the general roof slope 'sagging' towards the centre, or look for the tell-tale 'zig-zag' pattern of roof tiles or slates not sitting correctly.

**What to do** - If you think this has just appeared, or is perhaps getting worse, call in a professional surveyor or roofer.

## **Inside Inspection**

A roof leak will not always be visible from the outside but clearly the most obvious sign of a problem will be a damp patch appearing on a ceiling or wall in the living space. However, a problem may not always be this obvious, so it pays to inspect the loft periodically.

One thing to remember when performing an internal roof inspection is that water can travel some distance before revealing itself. It is not unusual for water to access at one point then flow across the underlay for some distance before finding a way into the roof void.

Your ability to perform an internal inspection will depend what type of loft space you have. A house with a loft has the insulation laid across the ceiling joists –is known as a cold roof because, the loft space is unheated.

Where the upper storey rooms are within the roof (and have sloping ceilings), the insulation is under, or over, or inbetween the rafters and this is commonly known as a warm roof. It is not usually possible to inspect a warm roof internally, so this would have to be left to a roofer who may need to remove tiles/slates from above to inspect between the underlay and insulation for sign of condensation.

## **Inspecting a cold roof**

**The underlay** - Is the underlay on the underside of roof damp or moldy?, are there signs of damp or wetness around junctions between roofs or around anything that penetrates the roof. Underlay, particularly the bituminous (felt) types used extensively from the 1950's right through to the 1990's are prone to rotting, if continually exposed to water. Look for tell-tale signs is cracks, holes or the sections of the underlay hanging down loose between the rafters.

**Roof Timbers** - Are there signs of damp or mold growth on the roof timbers?. look for - signs of cracks and/or sagging in timbers. In particular, check the purlins; these are the heavy cross beams running horizontally to support the rafters in traditionally construction roofs. In trussed rafters, check the junctions and metal fixings for any signs of stress or rot, rust etc.

**Chimneys** – Chimneys are also a common source of leaks due to the difficulties in creating efficient flashings around the tiling. Even with good flashings, some types of brick or stone can be a little porous, so water may pass by the flashings if the dpc is less than 100% efficient.

It is worth noting that in older buildings sometimes the chimney relied on the warmth of the coal fire to absorb any dampness before it reached the ceiling. So don't be too alarmed if you spot a little dampness directly below the roof – this is sometimes unavoidable and is not a problem so long as it does not reach the ceiling.

**Ventilation Pipes** – Pipes may run from the kitchen and bathroom extraction fans and the soil stack up to special ventilating roof tiles. Because they penetrate the underlay these pipes can cause leaks if the underlay is not properly sealed around the penetration. So if you spot a leak, check to see if it is anywhere below the pipe. But also, people often forget about lagging the section of pipe in the loftspace. This can lead to condensation forming on the outside of the pipe, which could drip off and give the impression of a leak – so check the pipe and insulate it if necessary.

**Build up at the eaves** - Leaks can occur at eaves if the underlay has not been properly supported behind the fascia during construction. This then means any water penetrating higher up the roof will pond behind the fascia, eventually rotting the underlay and then leaking through the structure. Depending upon the roof design water may then either drip through the soffit or it could penetrate into the building on to ceilings etc. If this occurs look for possible areas of leakage but in any event have a roofer check the eaves under the tiles.

**External leak or internal leak** - It is quite common for a homeowner to discover that their roof leak does not originate from water getting into the roof but instead comes from condensation created within the home.

In recent years many older homes have had the loft insulation topped up, which can in some cases, cause a build-up of condensation in the loft space if not properly vented. Tell-tale signs are dampness generally on the underlay, possibly also on the timbers, and in extreme cases water actually dripping off the underlay and timbers onto the insulation and ceiling. If you suspect this problem then it may be necessary to install extra roof space ventilation. Generally, the easiest way to do this is by installing extra tile/slate vents, but this would require the services of a roofer.