
INSPECTIONS PROTECT THE LIFE OF A ROOF

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The building owner, roofing contractor and roofing systems manufacturer are partners in assuring the integrity of a roofing system. One way of doing so is to regularly inspect the roof and provide ongoing maintenance. While inspection programs are time consuming in the initial phases, they offer an early warning system of any issues that need to be addressed and protect the long-term interests of all parties.

The first inspection is the most time consuming and could take from half-a-day to several days. After the initial inspection, follow-up inspections, which are conducted twice per year and after severe weather, take relatively little time. The first inspection is very thorough and should include the following elements:

Determine if the roof has a guarantee. It is extremely important to determine whether or not the roof has a guarantee before undertaking work on the roofing system. The guarantee is likely to spell out the types of products that can be used in repairing a roof. If the terms are not followed, it could invalidate the guarantee.

Search existing records. When possible, obtain and review the original specifications and drawings. They can be very helpful in evaluating the system.

Interview tenants of the building. Interview the tenants of the building to find out if they are aware of any problems. If they report a leak, try to obtain as many details as possible. Is the roof leaking now? For how long? Does it leak every time it rains? Does it only occur when there is wind and rain? Answers to these and other questions will help to pinpoint the problem.

Inspect building interior. Following the interview with the building occupants, an inspection should be made of the underside of the structural roof deck. Look for rust and water stains; asphalt drippage; indications of structural failure, corrosion or weakness; deck span; and presence, type and condition of mechanical fasteners protruding through the deck. Roof leaks should be observed from the inside of the building to determine whether the water entry is occurring through or near roof drains, air conditioning ducts, or other penetrations. A roof leak in the vicinity of a change in deck type could indicate a roof split, due to the lack of an expansion joint. Leaks at a wall line could indicate the failure of a base flashing, or water entry through the wall, coping or gravel stop.

Inspect building exterior. Before inspecting the existing roof system, a general inspection of the exterior of the building should be made from the ground level. Bowing of masonry walls or tilting of pre-cast panels indicates structural movement. Cracks in the masonry at corners, window openings, doorways, or additions may indicate structural problems, which must be resolved.

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Efflorescence on masonry walls indicates water entry through the masonry or coping. Water stains, moss, or algae on masonry usually indicate a deficiency in the gutter, gravel stop, down spouts, scuppers, or through-wall flashing.

Inspect rooftop. Only after all preliminary evaluations and inspections have been completed, can an actual rooftop inspection be made with maximum effectiveness. The first step of a rooftop inspection is a general overview of the roofing system. What is the general condition of the roof? Debris, standing water, vegetation, and obvious signs of abuse, in many cases, indicate long-standing and far-reaching problems. Your initial impressions should be followed-up with specific inquiries.

Perimeter. The perimeter of the building should be the first point of inspection, since the majority of roof leaks and related problems occur in this area. Check base flashings, counterflashings, coping and coping joints. The inside parapet walls should be checked for cracks, water stains, moss, and algae that would indicate water entry from a source other than from the base flashing.

Gutters should be checked for rusting of metal and clogged downspouts. The stripping at joints in the gravel stop should be carefully scrutinized, since leaks caused by splits at this location are common.

Field of Roof. After a thorough inspection of the roof perimeter has been completed, attention should focus on the main body of the roof. Areas of ponded water can be the result of inadequate slope in the original design, deflection of the structural deck, improper installation of the original roof insulation, or deterioration of the insulation.

The surfacing of the membrane should be inspected to determine its condition. Wind scouring of gravel surfaces is a common problem. Excessive gravel may be a problem in that it not only places too much weight on the structure, but also allows an accumulation of dirt and debris, which may foster ponded water and vegetation growth. Excessive surfacing of any type may promote membrane slippage in steep slope applications. Too little gravel can promote premature aging of the membrane and roof coatings should be checked to see that they are present in quantities sufficient to perform their intended function.

Equipment and Accessories. Next inspect all rooftop-mounted equipment. Many roof leaks have been traced to improperly installed or deteriorated rooftop equipment. Inspect drains, clamping rings, seals, flashings and expansion joint covers.

Make roof cut. While roof cuts are not generally recommended in newly constructed roofing systems, they are very valuable and, in fact, essential in a comprehensive evaluation of an existing system. Roof cuts allow the inspector to verify the exact construction of the roofing system and to determine if the roofing system contains any moisture at the point of the roof cut. After the inspection, care should be exercised to ensure that these roof cuts have been properly repaired.

Depending on the results, it may make sense to conduct non-destructive moisture detection, such as with infrared or nuclear techniques. These methods have the advantage of not penetrating the system.

When all of the inspections have been made and any moisture testing required has been performed, the information produced will be helpful in determining the most appropriate course of action. Most often, it will be helpful to work with the roofing contractor who is contracted to do the ongoing maintenance work to prioritize and cost out the items in need of addressing. This will help those owners with budget constraints to schedule the most critical needs at the earliest opportunity while delaying those items that could be accomplished at a later point. Treating the roof as a manageable asset that combines regularly scheduled inspections with an ongoing maintenance program will optimize and prolong the roof's functionality and allow building owners to gain the greatest benefit from their roofing system.