

Preventive Maintenance of Roofs

By Howard McKew, P.E., C.P.E.

INTRODUCTION TO PREVENTIVE MAINTENANCE (PM)

Those responsible for preventive maintenance of roofs know that being proactive in maintaining roofs will inherently extend the useful service life of the roof. For pitched roofs a visual inspection monthly may be all that is needed until the change in seasons. This is especially true for fall and early winter visual inspection because this could lead to the need to clean the roof gutters of leaves.

Flat roofs require more attention than pitched roofs. For flat roofs a quarterly visual inspection is recommended because debris, such as leaves and branches, can collect on the roof and be drawn to roof drains that probably exist at the low point(s) of flat roofs. This visual inspection can lead to immediately cleaning this debris around the roof drain to prevent the collection of water on the roof that could lead to leaks to the ceiling below, resulting in water damage and the potential for mold to grow on the ceiling, as well as wall surfaces below. Whether pitched or flat roofs, a simple visual inspection is a good preventive maintenance initiative towards maximizing the roof's useful service life while avoiding ceiling repairs and repainting of this surface.

Maintaining roofs begins with understanding the type of roof that is to be maintained. Those roof types we discuss in this month's asset management column where we provide more detail, but for this facility management column the roof types are as follows:

- **Asphalt** used on flat roofs and pitched roofs
- **Slate** used on pitched roofs
- **Metal roof** (copper, aluminum, zinc, steel, and tin) used on pitched roofs
- **PVC** (polyvinyl Chloride) used on flat roofs and pitched roofs
- **TPO** (Thermoplastic Polyolefin) usually used on flat roofs but has been used on pitched roofs also
- **EPDM** (ethylene propylene diene terpolymer) usually used on flat roofs but has been used on pitched roofs too

Preventive maintenance of roofs is more focused on maintaining a clean roof, but a scheduled PM work order can be created that focuses on the various "weak links" in roofing. Those potential deficiencies that make up a finished, water-



tight roof are deterioration of sealant around objects that butt up to or pass through the roof e.g., adjacent wall rising above a lower roof or a chimney penetrating through the roof.

Other potential point of roof failure is when a piece of equipment e.g., roof vent or roof exhaust fan where the weight of the equipment can, over time, penetrate the roofing material resulting in a water leak to the floor below.





Roofing sealant can fail over time when used with flashing material to seal the roof water-tight to the adjacent raised wall. Self-flashing vent pipes can fail overtime and so visual inspections are needed outside and inside where water damage will show up when water leaks through into the building.

When it makes sense e.g., to have a PM work order for proactive, planned maintenance of a roof, whether flat or pitched, one should make the effort to standardize the process as a quality control approach to maintenance. For further information on PM work orders please refer back to our facility management columns, August 2019 "[What a Preventive Maintenance Work Order Includes](#)", October 2020 "[A Facility Maintenance Checklist](#)", and November 2020 "[Embracing Checklists for Your Job Description](#)".

SCHEDULED PM WORK ORDERS

Special Instructions:

1. Use of correct sealant for the roofing material should be stated on the work order. This list of sealants should also include "Safety Data Sheets" (SDSs) formerly MSDSs or Material Safety Data Sheets to assure protection of the user.

2. Use of cleaning tool e.g., grease removal solution found under certain kitchen exhaust fan installations.
3. Safety precautions:
 - a. Notifying someone responsible and in charge that the maintenance person will be working on the roof.
 - b. Following safety requirements, usually posted on ladders, when cleaning out the gutters at the end of the roof.
 - c. Wearing proper Personal Protection Equipment (PPE) e.g., safety harness when on a roof. Refer to past asset management column, titled "[Personal Protection Equipment - When and Where](#)", October 2020.
4. Consider contracting the services of a consultant to perform a thermal scan of roof to identify wet insulation below the exterior roof surface.
5. Bring a note pad to document observations.

Materials to Bring:

- Hornet spray
- Sealant(s) (for chimney, equipment and pipe vents,)
- Liquids to remove algae, moss, etc.
- Trash bag
- Grease removal
- PPE

Tasking:

- Semi-annual (before the winter & after the winter)
- Roof shingle repairs (follow up work order)
- Flashing and sealant repairs e.g., chimneys, expansion joints, roof penetrations, & roof-mounted equipment (possibly requiring a follow up work order)
- Remove debris
- Clean around drains and gutters

Observations:

- The PM person should use a note pad to document additional comments e.g., roof not lying flat, caulking and masonry damaged or missing, roof metal termination bars damaged or missing, etc. This note pad could also be a prepared checklist of standard things to look for when performing maintenance.
- Bring a digital phone to communicate and to also take photographs (a picture is worth a 1,000 words).

Focus on Facilities: Preventive Maintenance of Roofs (cont.)

- Note flat roof water ponding.
- Note any tree branch overhanging the roof presenting potential damage in the future.
- Recommend pads for roof to accommodate foot traffic.
- Inspect roof safety rails and, if there is no railing, recommend safety rail(s).
- Recommend snow guards.
- Recommend leaf guards over roof gutters.



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SUMMARY

It has been said that the number one priority, when it comes maintaining a building is the roof. A weather-tight and water-tight roof will protect everything below it, such as ceilings, walls, and floors. Facility managers who operate and maintain buildings e.g., churches, parish buildings, senior centers, etc. have an obligation to make sure roofs are well maintained to ensure the interior of these facilities are dry.

For more on roofs read our *Focus on Facilities* column this month titled, "[Roofs –New and Replacement Options.](#)"

<https://www.facilitiesnet.com/roofing/article/8-Tips-for-Roofing-Preventive-Maintenance-Inspections--18586>

https://www.sentryroofing.com/blog/commercial-roofing-types-advantages-and-disadvantages-they-provide/#Types_of_Roofs

<https://eustisroofing.com/eustis-roofing/preventative-roof-maintenance-checklist/>

<https://www.phpsd.com/blog/11-step-roof-maintenance-checklist>

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