

Roof maintenance and inspections

Introduction

As part of regular building maintenance, roof inspection is critical to an overall preventative maintenance program. Planned and scheduled roof maintenance can help ensure that all roofs will provide satisfactory performance for their full life expectancy. Regular inspection and maintenance on roof surfaces and drains may prolong the life of your roof, and may reduce the number and costs of emergency repairs.

Building managers and owners often operate under the theory that once a roof has been installed, no further action is required. Many believe that the warranty will provide a remedy for performance problems. However, most warranties specify that the owner is obligated to maintain the roof properly. The problem is defining what specific requirements qualify as proper maintenance of a roof.

To maintain or not to maintain

Normal roof life expectancy is approximately 20 years in North America. The purpose of a roof maintenance program is to slow normal age-related deterioration. This is done by implementing corrective measures that restore the roof to its full level of performance; thus, extending its life. Roof maintenance programs are designed to repair minor deficiencies that may be a source for water penetration before it occurs, thus avoiding the damage and costs associated with water penetration.

The annual maintenance program

Historical information should be obtained on all existing roofs, and during design and construction of new roofs. Roofs built with maintenance in mind may reduce the yearly operational costs of the building. The following information should be compiled to complete historical and maintenance files:

- As-built specifications
- Roof plan with all roof mounted equipment, penetrations and drainage lines
- As-built drawing with roof construction details
- All roof installation inspection reports
- Roofing material specifications, data sheets, etc
- Roof warranties
- Manufacturer's suggested maintenance guidelines
- Maintenance reports (inspection reports)
- Reports of any leaks or repairs
- Records of any modifications to the roof or roof top equipment

Once the historical file is completed, the next phase is implementation. This usually consists of a roof survey, which is used to assess the condition of the roof, noting any problems and locations. This information is used to develop repair and maintenance recommendations, and long-term budgets for roof replacements.

The inspection program

Regular inspections, after the initial roof survey, should be carried out on a semiannual basis. Pay particular attention to the perimeter areas of the roof and the flashings where the wall and roof intersect. The spring inspection would reveal potential damage that might have occurred from severe winter weather and necessary repairs. A fall inspection would reveal any preventative action that would be required before winter arrives. An inspection should be conducted after any

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major storm or construction activity that might cause damage to the roof. The roof inspection should begin inside the building. All interior walls and ceilings should be inspected for signs of water stains, cracks and settling of foundation walls. All of these inspections should be systematically documented. Use the inspection forms attached if you like. A comprehensive maintenance program for roofing systems should include these basic steps:

- Keep roofs clean and free of debris.
- Keep drainage systems clear and functional.
- Train maintenance personnel on the requirements of working with the roof system.
- Restrict roof access to authorized personnel.
- Limit penetration of the roof system.

Summary

Maintaining roofs is an essential element of an overall building preventative maintenance program. Inspecting roof surfaces and maintaining the integrity of roof surfaces, along with drain lines, can prolong the life of the roof. The frequency of inspections will depend on several variables including the type of roof surface, age, geographic area and weather conditions. Scheduled roof maintenance should pay dividends in roof performance and a full life expectancy of the roof should be realized.

Note: A sample roof inspection checklist begins on the following page.

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Roof Inspection Checklist

Roof Area: _____

Inspector: _____

1. Supporting Structures:

- Exterior and Interior Walls
Expansion/Contraction _____
Settlement Cracks _____
Deterioration _____
Moisture Stains _____
Physical Damage _____
Comments: _____
- Exterior and Interior Roof
Securement _____
Expansion/Contraction _____
Structural Deterioration _____
Water Stains _____
Physical Damage _____
Attachment of Felts/Insulation _____
New Equipment/Alterations _____
Comments: _____

2. Roof Condition:

- General Appearance
Debris _____
Drainage _____
Physical Damage _____
General Condition _____
New Equipment _____
Comments: _____
- Surface Condition
Bare Spots in Ballast _____
Cracking/Splitting _____
Contamination _____
Comments: _____
- Membrane Condition
Blistering _____
Splitting _____
Ridging _____
Unwelded Laps _____
Punctures/Slices _____
Adhesion to Substrate _____
Fasteners _____
Comments: _____

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Roof Inspection Checklist (continued)

3. Flashing Condition:

- Base Flashing
Punctures _____
Deterioration _____
Open Laps _____
Attachment _____
Ridging or Wrinkling _____
Comments: _____

- Counter Flashing
Open Laps _____
Punctures _____
Attachment _____
Rusting _____
Fasteners _____
Caulking _____
Comments: _____

- Coping
Open Fractures _____
Punctures _____
Attachment _____
Rusting _____
Drainage _____
Fasteners _____
Caulking _____
Comments: _____

4. Roof Edging/Fascia:

- Splitting _____
- Securement _____
- Rusting _____
- Fasteners _____
- Punctures _____
- Comments: _____

5. Roof Penetrations:

- Equipment Base Flashing
Open Laps _____
Punctures _____
Attachments/Fasteners _____
Comments: _____

- Equipment Housing
Counter Flashing _____
Open Seams _____
Physical Damage _____
Caulking _____
Drainage _____
Comments: _____

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Roof Inspection Checklist (continued)

- Equipment Operation
Discharge of Contaminates _____
Excessive Traffic Wear _____
Comments: _____
 - Roof Jacks Vents
Attachment _____
Physical Damage _____
Vents Operable _____
Comments: _____
6. Expansion Joint Covers:
Open Joints _____
Puncture Splits _____
Rusting _____
Securement _____
Fasteners _____
Comments: _____
7. Pitch Pans:
Fill Material Shrinkage _____
Attachment _____
Comments: _____
8. Other: (Indicate deficiencies on roof plan) _____

9. Additional Observations: _____

10. Repairs Required: _____

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