

## Roof Maintenance and Inspections

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### 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 major storm or construction activity that might cause damage to the roof. The roof inspection should begin inside the building.

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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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