TRAVELERS
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Risk Control

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 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.
- Use professional roofing contractors who stand behind their work.

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 ______
   Punctures 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: ______

For more information, visit our Web site at travelers.com/riskcontrol, contact your Risk Control consultant or email Ask-Risk-Control@travelers.com.

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