ROOF INSPECTION CHECKLIST

for Assets Maintained and Operated *by* Public Works and Services (GNWT)

BACKGROUND

Roof systems can deteriorate from: normal wear; severe weather conditions (e.g., wind and snow loads); building movement (e.g., settlement, material contraction/ expansion); and improper design, construction and maintenance. Any roof repairs not dealt with after the first signs of failure can result in increased damage to the building envelope and interior finishes, and loss of occupant productivity, if damage causes interruption in client services and program delivery. Failure of structural integrity can endanger occupant safety.

PURPOSE

Regular inspection of building roof systems will lead to early detection of roof problems, protection of Government capital assets, and maintenance of safe working environments for building occupants.

OBJECTIVES

- To determine if the roof system is performing according to its intended function.
- To identify signs of weakness, deterioration or hazard.
- To identify needed repairs.

GENERAL APPROACH

- Inspect exterior for: continuity of roof covering; deterioration of fascias, gutters and soffits; and performance of flashings.
- Inspect interior finishes (ceilings and walls) for signs of water penetration, frost buildup and structural distress.
- Record and report inspection findings.
- Initiate maintenance and repair projects.
- Report any unsafe working conditions or potential system failures immediately to the PW&S Regional Superintendent.

PROCESS

Regional maintenance personnel are to:

- Perform annual formal visual roof inspections when roofs are free of snow and materials, and informal inspections after every severe wind or rain condition.
- Review, learn and follow roof safety procedures, including those in the *Fall Prevention and Roof Safety* pamphlet; learn about problem roof conditions and terminologies.
- Before performing a roof inspection, review: past inspection reports and photographs; construction documents; particulars of any repair/maintenance/ replacement, and the most current *Roof Snow Overload Risk Assessment* checklist.
- Include non-destructive investigation (e.g., infrared thermography) if moisture infiltration is suspected.
- Obtain approval of PW&S Regional Superintendent prior to any demolition detection work on any wall, ceiling, or roof cavity.
- Include photographs and test data in the report, so that changes in roof condition can be verified, and so that a historic record of roof condition is available to future inspectors.
- Keep and maintain records of all: inspections (including this checklist); test investigations (thermographic readings); and roofing repairs and replacements.
- Develop a maintenance workplan to correct deficient conditions in a timely manner.
- Monitor the snow loading on roofs. When the snow loading on *High Risk Roofs* exceeds the usual winter accumulation, steps are to be taken to remove the excess snow. Inform the PW&S Regional Superintendent when usual winter snow accumulations are exceeded on *High Risk Roofs*. Removal of snow must be done in such a manner as to ensure the safety of maintenance personnel and minimize damage to the roof structure and membrane.

INSPECTION CHECKLIST

General Roof Conditions	
Item	**Remarks**
Debris on Roof	
Drainage	
Physical Damage	
Attic Conditions	
Structural Deformation	
Other	

Flat / Membrane Roof	
Item	**Remarks**
Condition of Coating	
Granular Loss	
Punctures	
Cracks / Alligatoring	
Blisters / Fishmouths	
Ponding	
Other	

Sloped Roof	
Item	**Remarks**
Roof Material	
Condition of Surface	
Deformed Edges	
Shingle: Buckled	
Curled	
Missing Tabs	
Granular Loss	
Other	
Metal: Corrosion	
Fasteners	
Other	

Roof Features	
Item	**Remarks**
Fascia	
Soffit	
Flashing	
Gutters / Drains, etc.	
Skylights	
Chimneys / Vents	
Fall Arrest Anchors	
Control Zone Access	
Drains / Vents	
Other	

Ceiling Conditions	
Item	**Remarks**
Cracks	
Water Staining	
Water Leaks	
Seasonal Change	
Other	

Exterior Wall Surfaces	
Item	**Remarks**
Deformed Finish	
Surface Deterioration	
Staining	
Other	

Interior Wall Surfaces	
Item	**Remarks**
Cracks	
Water Staining	
Water Leaks	
Deformed Finish	
Seasonal Change	
Window Leaks	
Door/Window Alignment	
Other	

Summary/Comments

(Highlight areas of concern and any rapid degradation in roof system)

OCCUPANT RESPONSIBILITIES

- Immediately report signs of envelope movement, and degradation, especially after extreme weather conditions.
- Immediately report signs of roof damage, structural anomalies and/or leaks to PW&S Regional maintenance personnel.
- Coordinate impacts on facility program activities, once PW&S regional maintenance staff informs occupants about planned roof inspection, maintenance and repair programs.

Comment on changes from previous inspections, and overall roof condition. Indicate recommended action of roof repair and/or further assessment, and estimated remaining life expectancy of roof system. Include any photographs and thermography records in this report.

ROOF PLAN AND DETAILS

USE THIS AREA ONLY IF DEFICIENCIES ARE OBSERVED.

Sketch roof plan. Include north arrow, the location of the items listed below, approximate dimensions of building, roofing materials, and other relevant items located on the roof. Show changes in roof elevations in a separate sketch.

Identification Code

A – Access Hatch
B – Base Flashing
C – Cap Flashing
D – Roof Drain
E – Expansion Joint Cover
F – Fascia and Gravel Stop
G – Gutter System
H – Vent / Fan Hood
K – Chimney
R – Roof Vent
U – HVAC Unit
J – Flag Pole
W – Ponded Water
P – Parapet or Fire Wall
V – Vent Pipe
L – Ladder
S – Skylight
T – Walkway

PWS RESPONSIBILITIES

- Develop and implement a maintenance program, including using the *Roof Inspection Checklist*.
- Perform annual visual roof inspections for all GNWT operated facilities, and complete a report based on the checklist.
- Interview occupants concerning building performance.
- Recommend actions to repair unsatisfactory conditions, including developing a maintenance workplan based on the urgency of required upgrades.
- Maintain a history of roof inspection reports for each GNWT owned/operated facility at the Regional PW&S office in order to monitor changes in roof system performance.
- Report rapidly deteriorating roofs and/or water damage to the PW&S Regional Superintendent.
- The PWS Regional Superintendent is to notify the PW&S Deputy Minister of significant roof deterioration when the risk of a major failure becomes apparent.
- Inform Technical Support Services of significant roof degradation for their review related to failed building system performance and consideration of changes to building design standards.

GLOSSARY OF ROOFING TERMS USED IN THIS CHECKLIST

Alligatoring	Shrinkage cracking of the bituminous surface of built-up or smooth surface roofing, producing a pattern of deep cracks resembling an alligator hide.	Fascia	The finish member covering the edge or eaves of a flat or sloping roof or roof overhang.
Asphalt	A highly viscous hydrocarbon produced from the residuum left after the distillation of petroleum; used as a waterproofing agent of a built-up roof.	Fishmouth	An opening of the lapped edge of applied felt in built-up roofing due to adhesion failure.
Ballast	An anchoring material (such as rock, gravel, pavers) used to resist wind uplift forces of roof membrane.	Flashing	Connecting devices that seal membrane joints, drains, gravel stops and other places where membrane is interrupted. Base flashing forms the upturned edges of the watertight membrane. Cap or counter flashing shields the exposed edges and joints of the base flashing.
Bitumen	A generic term for asphalt or coal tar pitch roofing.	Gravel Stop	Flanged device, normally metallic, designed to prevent loose aggregate from washing off roof. It also provides a finished edge detail for built-up roofing assembly.
Blister	A spongy raised portion of roofing membrane as a result of pressure of entrapped air or water vapour.	High Risk Roof	A roof which scores 15 or greater out of 20 using the Snow Overload Risk Assessment checklist.
Built-up Roofing (BUR)	A continuous, semi-flexible roof covering consisting of laminations or plies of saturated or coated felts alternated with layers of bitumen.	Modified Bitumen	Asphalt with the addition of polymer modifiers to increase cold temperature flexibility and warm temperature flow resistance and stability.
Cant Strip	A continuous strip of triangular cross-section, fitted into the angle formed by a structural deck and a wall or other vertical surface, and used to provide gradual transition for base flashing and horizontal roof membrane.	PVC	A generic term for single ply plastic sheet membrane (poly vinyl chloride); seams are fused by solvent or hot-air welding techniques.
Crack	A break in a roofing membrane as a result of flexing, often occurring at a ridge or wrinkle.	Parapet	The part of the wall entirely above the roof.
EPDM	A synthetic rubber sheet used in single ply roof membrane (ethylene propylene diene monomer).	Ponding	The collection of water in shallow pools on the roof surface.
Expansion Joint	A deliberate separation of two roof areas to allow expansion and contraction movements of the parts.	Slope	The ratio between the measures of the rise and the horizontal span.
Eaves	The protective overhang at the lower edge of a sloped roof.	Soffit	The finish on the underside of a roof overhang.

Facility Name: _____ **TCA#:** _____

Community: _____

Type of Roof: **Flat / Membrane:** _____

Sloped: _____ **Slope:** _____ **in 12**

Construction / Re-roofing / Repair Dates: _____

Roof Snow Overload Risk Assessment _____ **out of 20**
Checklist (copy attached)

Inspected by: _____ **Date:** _____

Preventive roof maintenance

Proper roof maintenance will:

- **increase the life expectancy of your roof**
- **save you the high cost of roof replacement**
- **protect your assets from costly damage**

For further information, please contact

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