Roof Inspection Checklist

School		Date of inspection
School district	Location/Building #	Year roof installed

Reason for inspection

☐ Annual inspection

☐ Following severe weather (Check all that apply)

□ Damaging wind □ Lightning
□ Hail □ Excess snow accumulation
□ Heavy rain □ Falling debris

☐ Other condition(s)_____

General approach

Before inspection, review: past inspection reports and photographs; construction documents; particulars of any repairs/replacements

1. Inspect exterior for: condition of roof covering; deterioration/damaged/missing roofing materials and/or performance of equipment.
2. Inspect interior ceilings/walls for signs of water penetration and structural distress.
3. Record and report inspection findings.
4. Report any unsafe working conditions or potential system failures immediately.
5. Initiate maintenance and repair work orders.

Type of roofing system (Check all that apply)

☐ Thermoset single-ply membrane ☐ Built-up
☐ Thermoplastic single-ply membrane ☐ Metal
☐ Modified bitumen ☐ Shingle

☐ Other (describe)_____

Rooftop HVAC and exhaust system components (Check all that apply)

☐ Air handling units ☐ Kitchen exhaust stacks ☐ Combustion flues
☐ Dryer vent stacks ☐ Sanitary system vent stacks
☐ Chemical fume hood exhaust stacks ☐ Restroom exhaust stacks

☐ Any damage (describe)_____

Inspection Items ("Y" = Yes, "N" = No, "N/A" = Not applicable)

Adverse conditions indicated by "Y" responses:

Y	N	N/A	Condition
☐	☐	☐	Evidence of standing water on ground adjacent to storm drains
☐	☐	☐	Gutters/downspouts/storm drains blocked with debris
☐	☐	☐	Cracks, gaps, or other damage to gutters/downspouts/storm drains
☐	☐	☐	Standing water (ponding) or evidence of past standing water on roof deck
☐	☐	☐	Accumulation of excessive debris on roof deck
☐	☐	☐	Suspected microbial growth or other water damage on roof deck
☐	☐	☐	Roof surface tearing, splitting, blistering, separation, holes, or other potential sources of leakage
☐	☐	☐	Roof deck material cracked, punctured, alligatoring, damaged, or missing
☐	☐	☐	Roof deck seals cracked or broken creating openings for water intrusion
☐	☐	☐	Flashing systems improperly sealed creating openings for water intrusion
☐	☐	☐	Cracks, gaps, or other damage to walls (staining, deterioration)
☐	☐	☐	Any structural deformation (cracking, rot, or rust)
☐	☐	☐	Other conditions that may result in water intrusion into the building
☐	☐	☐	Damage to fascia, soffit, skylights, vents
☐	☐	☐	Cooling tower basins "watertight"? (note: floor openings often occur around penetrations made for pipe and conduit)
☐	☐	☐	Outside air intakes blocked, obstructed, or broken
☐	☐	☐	Expansion joints cut, torn, or have visible gaps
☐	☐	☐	Interior (water stained ceiling tiles, mold, wall cracks, leaks)

☐ ☐ ☐ Other safety concerns

For each item marked "Y," provide detailed explanation below:

List actions undertaken (or planned) by District to remediate above conditions:

Inspected by	Title	Department
Signature	Date	Phone

Roof Inspection Checklist

School Roof Inspection: Roof Types

Built-up: A continuous, semi-flexible, multi-ply roof membrane consisting of plies (layers) of saturated felts, coated felts, fabrics, or mats between which alternate layers of bitumen are applied. Generally, built-up roof membranes are surfaced with mineral aggregate and bitumen, a liquid-applied coating or a granule-surfaced cap sheet.

Metal: Metal roofing panels come in two types: structural (hydrostatic) and architectural (hydrokinetic). Structural panels are designed not to have a continuous substrate and can span between purlins unsupported. Architectural panels need a continuous substrate and cannot span between purlins.

Modified Bitumen: A bitumen modified through the inclusion of one or more polymers (e.g., atactic polypropylene, styrene butadiene styrene, etc.).

Composite sheets consisting of a polymer modified bitumen often reinforced and sometimes surfaced with various types of mats, films, foils and mineral granules.

Thermoset: A material that solidifies or sets irreversibly when heated (e.g., EPDM Single-ply Membrane).

Thermoplastic: Materials that soften when heated and harden when cooled (e.g., PVC Single-ply Membrane)

GLOSSARY OF ROOFING TERMS

Alligatoring	Shrinkage cracking of the bituminous surface of built-up or smooth surface roofing, producing a pattern of deep cracks resembling an alligator hide.	Eaves	The protective overhang at the lower edge of a sloped roof.
		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.
		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.
Ballast	An anchoring material (such as rock, gravel, pavers) used to resist wind uplift forces of roof membrane.		
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 vapor.		
		Modified Bitumen	Asphalt with the addition of polymer modifiers to increase cold temperature flexibility and warm temperature flow resistance and stability.
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.	PVC	A generic term for single-ply plastic sheet membrane (poly vinyl chloride); seams are fused by solvent or hot-air welding techniques.
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.	Parapet	The part of the wall entirely above the roof.
		Ponding	The collection of water in shallow pools on the roof surface.
		Slope	The ratio between the measures of the rise and the horizontal span.
Crack	A break in a roofing membrane as a result of flexing, often occurring at a ridge or wrinkle.	Soffit	The finish on the underside of a roof overhang.
EPDM	A synthetic rubber sheet used in single-ply roof membrane (ethylene propylene diene monomer).		
Expansion Joint	A deliberate separation of two roof areas to allow expansion and contraction movements of the parts.		

Roof Inspection Checklist

Examples of what you should be looking for (sample photos).

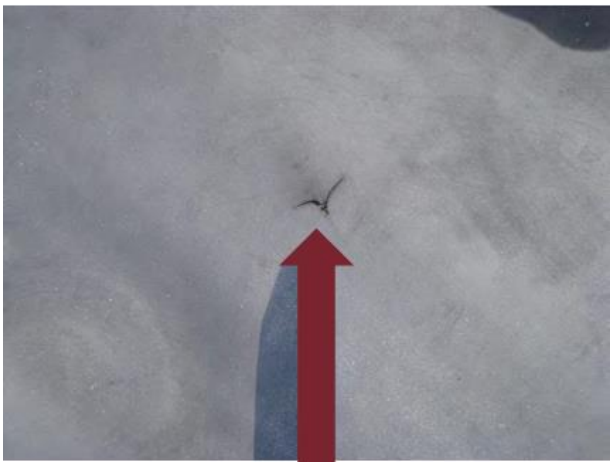
Standing-water (ponding) on the roof area

Interior leakage/damage inside roof area

Leakage from/behind/under roof/damaging/staining the brick

Standing-water (ponding) due to a covered-over roof drain

Wet-insulation over classroom. A hole/puncture in the membrane is the source of the damage.

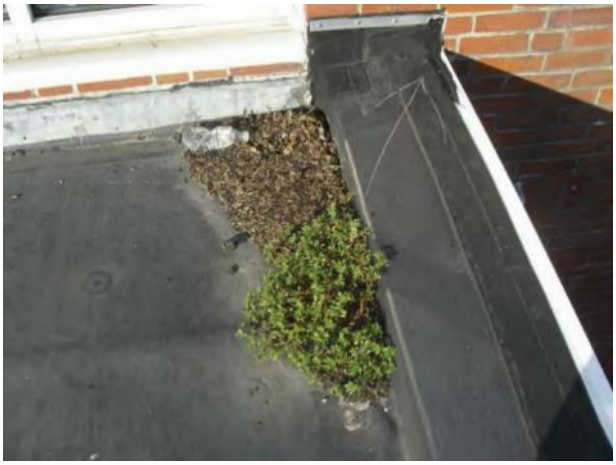


Close-up of the small hole responsible for the wet-insulation.

Roof Inspection Checklist

Examples of what you should be looking for (sample photos).

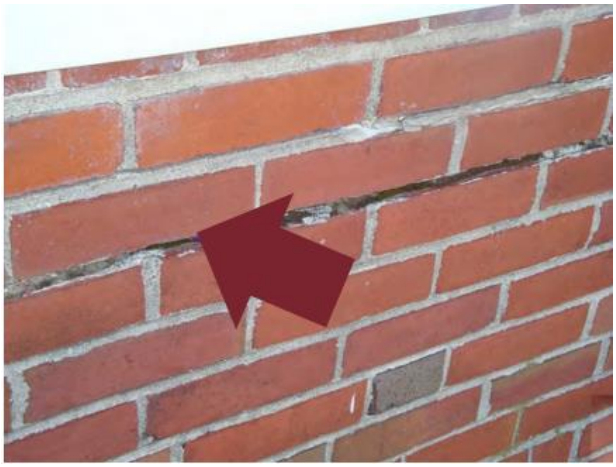
Clogged gutters



Accumulation of debris – clogged-gutters

Missing roof drain strainers

Poorly-installed flashing-boot detail at an electrical feed



Missing/deteriorated mortar joints

Missing/deteriorated copper flashing at the rising wall

Roof Inspection Checklist

Roof Maintenance Best Practices

When Should You Inspect Your Roof?

It is recommended to inspect roofs before and after inclement weather seasons. Inclement weather includes both the winter cold and the high heat and direct sunlight experienced during summers. Both types of inclement weather can cause damage to roofs, therefore, it is recommended to prepare for them, and to inspect for damage after inclement weather happens. Roofs should also be inspected periodically, especially if severe weather is on its way. Water damage to buildings is an expensive cost to the district and having the opportunity to correct issues through inspections can help lower these costs. Below are some best practices that a trained inspector can recognize and report when conducting a roof inspection.

Tailor Your Roof Inspection Checklist: As part of your roofing maintenance, it is important to conduct a thorough inspection. Tailoring your roof inspection checklist to meet the needs of your facilities will help ensure that you do not miss any critical components and that you conduct an effective inspection. In addition, the checklist will provide your District with proper maintenance and documentation for insurance purposes**.**

Interior Inspections: A complete roof inspection includes inspecting the interior side (ceilings and walls) of each building and room. Check for signs of water damage such as mold, mildew, drips and leaks, water stains, and peeling paint. Don't forget to inspect above the ceiling tiles. Keep in mind that leaks can travel sideways through a building, so the cause of the damage may not be located directly above it. In locations with high snow load or on roofs that carry heavy equipment, you might also want to do an annual inspection of trusses and beams for signs of structural stress like cracking, rot, or rust.

Check for Housekeeping: It is very easy for debris such as dirt, leaves, branches, etc. to accumulate on the roof top and gutters. While inspecting, inspect for accumulated dirt and debris. These can clog drains and cause roofing surfaces to rot or decay prematurely. Fallen tree limbs can damage roof membranes and elements. If you consistently notice fallen branches, you may need to schedule tree maintenance as well.

Inspecting the Roof Surface: Look for signs of damage or weathering (Alligatoring). On a flat roof, one of the biggest red flags is a low spot that will collect standing water (Ponding). Make note of any blistering, cracking, tears or holes, abrasions, or deep scratches in the membrane. If it is a gravel-top roof, check to see that the gravel layer is uniform and free of bare spots. For metal roofs, inspect for corrosion and loose or damaged panels. Tile and shingle roofs should be checked for loose, missing, or damaged pieces.

Make note as well of any fungus or moss growing on the roof. These should be slated for removal as they can deteriorate roof surfaces.

Expansion Joints: If you have these on your roof, inspect them thoroughly for cuts, gaps, and tears.

Flashings: 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. If flashing were used on your rooftop, you need to pay extra attention to these areas! Make sure they are not pulling away from the roof or leaving gaps. This can be an indication that you may have leaking or serious damage to your roof membrane. This should also be a place in which you check for mold.

Roof Inspection Checklist

Roof Maintenance Best Practices Continued

Drain: Backed up water, moss, watermarks, and mold are all signs of clogged drains. Check also for deteriorated or damaged flashings and seals. These will need immediate attention.

Exterior Structural Components: Elements such as vents, pipes, skylights, and equipment should each appear separately on your checklist. Inspect their surfaces for cleanliness and look for signs of aging such as peeling paint, rust, rot, and moss or fungus. Also look for structural damage such as bent elements, missing parts, and sagging pipes.

Pipe and Equipment Supports: Check to be sure that pipes are not sagging, there are no cracks in the base of the support, deflected hangers, or supports digging into the roof membrane. These are all signs that your supports have signs of failing and will need be replaced/repaired soon.

Old Repairs: Old repairs can sometimes be the first thing to fail, especially if they were not done correctly. It is good to indicate each repair separately on your roof maintenance checklist, so all future inspectors know what to look for. Double check to make sure the previous issue has been fixed and still working correctly.

Once the inspection is completed: After the inspection is completed, it is recommended that a system be in place to prioritize the issues found. An example, of an effective system is to use a Good-Fair-Poor rating system. A “Good” rating means the element is considered in good shape and needs no attention beyond routine inspection. “Fair” indicates elements that are showing some wear but have not yet reached a state of emergency. These should be scheduled for maintenance and/or inspection or be put on the list for future replacement. Items in “Poor” condition – including any issues that involve current or potential water damage – will need immediate attention.

Ultimately, what you include on your checklist will depend on your specific roof. We recommend starting with the elements listed above and add or delete items as appropriate for your building. You are certain to find that your checklist is a vital tool for proper maintenance of your commercial roof.