

# The Commercial Inspector

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## ask the inspector

**Q. I'm looking at purchasing a building with a flat roof. What does maintenance and repair cost for this type of roof?**

A. Roofs on commercial buildings are generally referred to as flat or sloped. Flat roofs are common because they allow for condensers and other equipment to be placed on the roof. However, some slope is required in order for the roof to drain completely. A "flat roof" is more accurately a "low-sloped" roof.

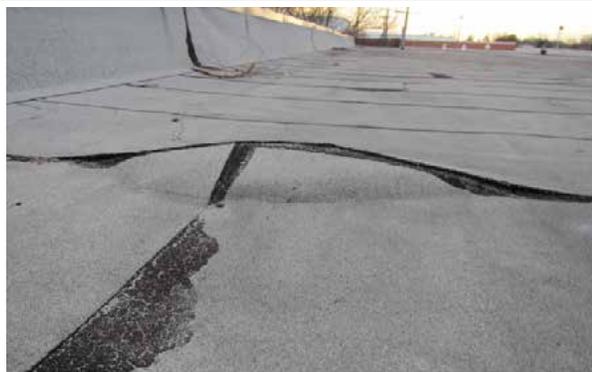
A flat roof can be challenging when it comes to leaks and potential structural damage. A small pool of water that doesn't drain from the roof can put pressure on framing and stress roofing materials.



In general, a flat roof begins with the roof decking, the material covering the metal or wooden trusses supporting the roof. Next is a layer of rigid foam insulation. The roof membrane and a waterproofing material form the topmost layer of the roof. The waterproofing material is held in place with glue, mechanical means, or a covering of ballast — small granular minerals.

## snapshots from the field

### What's Wrong With This Photo?



The photo shows a modified bitumen roof covering (mod bit), which is sold in rolls and usually applied on low-slope or flat roofs. Mod bit seams are sealed using a torch to heat the underside of the bituminous material that coats both sides of a polyester or fiberglass reinforced mat. Can you spot what's wrong with the mod bit in this photo?

- A ) The roof is blistering, caused by improper adhesion of the membrane to the substrate.
- B ) The parapet wall covering is tenting, which could cause tears.
- C ) The tar is "alligatoring," or cracking, which, over time, can damage the bitumen and reinforced mat.
- D ) All of the above.

*( answer on the back )*

Flat roofs must be properly maintained in order to maximize their life expectancy. Depending on the components involved, flat roofs usually last 10 to 50 years, sometimes more. They are expensive to repair, so regular inspections and maintenance are important. During a routine maintenance assessment of a flat roof, it is important that the inspector considers the condition of the following:

- » The flashing and joints around all roof penetrations
- » Parapet wall caps and flashing

- » Ventilator hoods, gutters and downspouts
- » The roof deck itself, especially soft spots, blisters, splits, cracks, ridging or other evidence of weak areas
- » Expansion joints

The accumulation of storm debris and ponding water that remains long after a storm are other clues the inspector should note in the inspection report, and the building owner should repair these problems before additional problems crop up.

## maintenance matters

### The Most Common Plumbing Problems in Commercial Buildings

While most of us greatly appreciate modern plumbing, it's often something we take for granted. The key is to be proactive in plumbing maintenance and address plumbing problems immediately. If you notice these common plumbing problems, call your plumber right away.

1. **Faucet and fixture leaks.** These leaks are not just annoying; they waste water and could potentially harm your building.
2. **Water temperature problems.** If water is too hot or too cold, or if hot water is in short supply, then you may simply need to adjust your building's water heater.
3. **Clogged toilets and drains.** Slow drains indicate a clog that can result in overflowing that could damage your building.

4. **Silent leaks.** Is your water bill extra high this month with no real explanation? You may have a silent leak in your building.

5. **Low water pressure.** If you notice a sudden, dramatic decrease in water pressure, you should call a plumber. Low pressure may be caused by a variety of factors:

- a. Mineral deposits on faucet aerators can clog the screens and flow.
- b. A leaky pipe could reduce water pressure, and cause structural damage.
- c. A break in a water main can temporarily reduce water pressure.

## for your information

### What You Need to Know About CPVC Fire Pipe

Chlorinated polyvinyl chloride (CPVC) piping has become more popular in new and retrofit fire sprinkler systems. It is ide-

ally suited for these applications due to its outstanding corrosion resistance: CPVC fire sprinkler products resist attack from chemicals that are corrosive to metallic pipe.



Despite its benefits, CPVC does have some limitations that commercial building owners should consider:

- » CPVC systems are intended for use at a max working pressure of 175 psi and ambient temperature of 150° F.
- » CPVC systems must use sprinkler heads having a maximum temperature rating of 225° F.
- » CPVC products should be installed in wet pipe systems only.
- » Only specifically approved Teflon tape or a thread sealant should be used with CPVC.
- » CPVC is not approved for use in combustible concealed spaces where sprinklers are required, unless specific application sprinklers and proper minimum protection are installed. This protection must meet the [National Fire Protection Association](#) (NFPA) standards.

## Snapshots from the field

*The correct answer is D. If the building owner doesn't repair these problems, the roof will likely start leaking at many points, potentially causing damage to the structure and interior.*