

# The Commercial Inspector

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## ask the inspector

### Q. What is a built-up roof system?

A. The low-slope roofs of more than a century ago were covered in corrugated iron or wood with a thick layer of hot liquid bitumen applied over them to waterproof the surface. Over time, the bitumen expanded and contracted causing it to crack and leak, and this led to the design of built-up roof (BUR) systems.

Early BUR used layers of heavy paper covered with pine tar and sprinkled with sand and gravel on the top. In the mid-1800s, the pine pitch was replaced with natural asphalt that could be combined with petroleum tar to produce a roofing pitch.



Until 35 years ago, asphalt products — including BURs — dominated the commercial roofing industry. In the early 1980s, the commercial roofing market began shifting to single-membrane roofing. Today, BUR is applied to about 20 to 25 percent of low-slope roofs on new commercial buildings, and a BUR system can be expected to last 20 to 30 years.

A modern-day BUR consists of layers of roofing that are felt-bonded together on site with hot bitumen. It is installed to conform to the roof deck and protect all angles formed by the roof deck and projecting surfaces. A protective surface coating of gravel

## snapshots from the field

### What Is This Photo?



- A ) A sidewalk that has been recently sealed
- B ) An old deck
- C ) A new art form
- D ) A built-up roof (BUR) system that is well beyond its design life

*( answer on the back )*

or slag is typically embedded in a heavy top coating of hot bitumen.

If the BUR is not well-anchored, then roof splits can occur or the roof can pull away from flashings and curbs.

The following items are typically observed when inspecting a BUR system:

- » Flashings at all walls, pipes, ventilators and other penetrations
- » Missing ventilator hoods, gutters or downspouts
- » Soft spots, blisters, splits, ridging and bare spots on aggregate surfaced roofs
- » Indications of ponding water or

other signs of poor drainage (pools of water should dissipate within 48 hours of rainfall)

- » Accumulation of debris that can clog drains or be blown about during a storm, causing damage



Flashings and penetrations are usually the most likely to leak. Water can enter into the roof system in one area but may exit to the interior in an area several feet away from where it entered.

## maintenance matters

### Prepare for Cold Weather: Caulk, Seal and Weather-strip

As you prepare your commercial building for the cold weather, you'll want to be sure to eliminate drafts, which can cause cold spots and waste energy. Caulking, sealing and weather-stripping windows and doors is the way to stop drafts in their tracks.



## Did You Know?

### What's a Kilowatt and Kilowatt Hour?

Each month, your electric bill shows how much you are charged for kilowatt hours (kWh) of electricity — simply, how much energy you use per hour in your home. Watts are a unit of power, and one kilowatt (kW) equals 1,000 watts. The average price for electricity in the United States is 12 cents per kWh.

Regardless of the season, sealing cracks around doors and windows offers a number of benefits and is wise for any building owner:

- » Saves money by preventing cold air from entering the building in the winter or hot air in the summer.
- » Eliminates easy entry points for insects.
- » Requires no special skills to apply caulk, sealant or weather-stripping.
- » Offers an inexpensive solution. You can purchase any type of weather stripping, caulk or sealer from your local hardware store, and it will be well worth the investment.
- » Prevents rain and snow from entering the building.
- » Dampens some of the outdoor noise levels (animals, mowers, vehicles).

## for your information

### Make an Appointment to Have Your Irrigation System Winterized

Irrigation systems are an important part of maintaining the beauty of your building's landscaping. If you live in colder climates be sure to have it winterized before freezing temperatures hit:

- » **Turn off the water.** The first step in the winterization process is to shut off the water to the system.
- » **Shut down the system controller.**
- » **Blow out the system.** In areas where temperatures drop to freezing or below, water or moisture in the irrigation system could cause it to freeze and crack. Blowouts are done with air compressors and can be extremely dangerous — we highly recommend that you have a professional perform this maintenance.

What will winterizing your building's irrigation system cost? Generally, professionals charge around \$10 per zone for winterization services.

## Snapshots from the field

*The correct answer is D. This is a photo of a BUR that is well beyond its intended life.*