

# MY BUILDING IS LEAKING

Troublesome leaks cause ruin drapes, carpets, computers, and walls. All the result of typical water infiltration problems. This commentary is meant to assist building owners and the professional building maintenance engineer in the proper procedures for remedying these potentially damaging situations.

Today as never before it is important to understand the building envelope's components such as the walls, windows, roofs, decks, and parapets, as well as how they interface with one another. Understanding these systems can help remedy situations as they arise. Often, it may be necessary to secure the services of a Waterproofing Consultant or an experienced waterproofing contractor.

All reported leaks should be documented as to the location and whether they appear in gentle rains, wind driven rains from a certain direction, as well as, how long the leak continues after the rain stops. Gathering and soliciting this information will also help in mapping the source of the leaks. Create a drawing of the building and perform a survey looking at areas known to be typical sources of leaks. Note suspicious areas on the map.



## ROOFS

Roof terminations at parapet walls and exterior fascia, drains, flashings at penetrations, membrane seams, wear at traffic areas, expansion joints, and area dividers are potential leak areas.

## Walls

Cracks that stay wet for extended periods, loose masonry and components, copings and coping joints, expansion joints, window perimeter joints, and delaminated paint or coatings, are also potential leak sources. Larger cracks though masonry should be reviewed by a Structural Engineer.

## Windows

Loose, cracked or missing gaskets, obstructed weep holes, modifications made for operability, failed perimeter joints and exposed unsealed joints are common problems in the window component.

A common mistake that may become evident during a survey is the patching of window systems with a variety of differing caulks and sealants. If weep holes were sealed, then window system leaks can worsen.

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If your survey does not provide answers to leakage problems then the complexity of the problem may warrant the services of a professional consultant.

## **Products**

Many products are sold in the industry for sealing leaks on buildings. It is very important to ensure that the sealant chosen is compatible with the substrate it is being applied too. For example, sealants used for flashing must be compatible with the roof system and the materials being flashed. The roof-to-wall transition is probably the most difficult to seal and the most common source of problems. Very few sealants adhere to the hot applied asphalt used on a built up roof.

Wall and window perimeters rely on sealant to keep water out of the expansion joints. High performance sealants such as silicones and polyurethane's are typically used in these applications. Each variety has its advantages. Polyurethane's are the most common type of sealant used. However, they are susceptible to UV degradation and do require replacement every 5-10 years. Silicone materials are also appropriate to be used and are unaffected by weathering and stay elastomeric and flexible for more than twenty years. Just which material is best for your particular application may require some consultation with a professional sealant contractor.

Windows typically rely on gaskets and weep holes to control water infiltration. Water is intended to penetrate the system and weep out through the bottom. If gaskets are missing or loose, the excess water that penetrates may not be able to escape quickly enough through the weeps. If the weeps are plugged either because of insects, algae or original construction debris, then leakage to the interior can occur. A common remedy for old window gaskets is to apply a cap bead of silicone between the glass and metal window frame over the top of the old gasket as a wet seal. These old gaskets are sliced flush to the metal and glass before sealant application so that the sealant bead is no larger than the original gasket. It is important not to seal the weep holes unless every source of water infiltration around a window is eliminated.

## **Review**

1. Know your building components, systems and how they transition.
2. Document all leaks as well as the time reported
3. Survey the building to determine the system breakdowns.
4. Make an action plan to resolve system breakdown.
5. Choose quality products that provide lasting solutions to your problems.
6. Properly apply and check the products performance.

*Sources for the above material are from a reprint by Lawrence D. Carbery, Technical Service Specialist, the Dow Corning Corporation, and the experience of United Professional Caulking & Restoration, Inc.*