



Water Intrusion: Causes and Prevention

By M-L McKinley de Vance, Senior Vice President



Water intrusion can occur in any type of building - residential or commercial property, hi-rise or a condominium community. It can cause significant damage and lead to a variety of problems, including structural damage, mold growth, and compromised indoor air quality. Understanding the causes of water intrusion and taking preventive measures can help prevent problems from occurring.

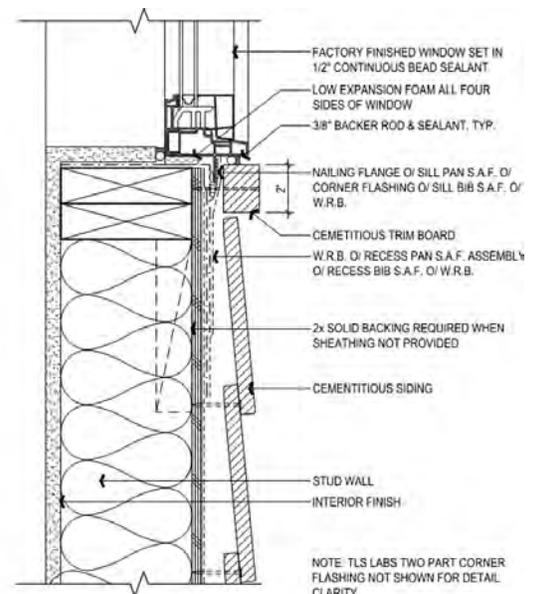
There are many causes that can lead to water intrusion in a building; however, the most common are poor construction practices and inadequate maintenance.

The construction process is detailed and requires strong coordination between the general contractor, subcontractors, and designers; but having skilled trades and hiring an experienced general contractor may not be enough to ensure a successful project build out.

The building envelope is a complex scope of work because it is the responsibility of many trades throughout different locations around the building. Every transition is critical to getting it right the first time to avoid call backs and moisture intrusion down the road. If coordination is critical to success, what are good prevention strategies to ensure this can be achieved?

Proper Construction Documents

Clearly defining the scope of work of each trade is essential to ensure proper coordination and each trade's responsibilities and sequencing should be incorporated into the project's construction documents. These documents can be the plan sets and specifications, but it can also be achieved by a detailed review and verification of shop drawings, submittal packages, and responses to RFIs. If performed and documented properly, they can be used to define the scope of work of each trade. In reviewing these documents, gaps between each trade can be identified before construction begins, avoiding delays, improper sequence, overlaps, voided warranties, and material compatibility issues.



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A best practice approach is to designate a responsible person to review and verify exterior envelope elements. A third-party inspector or waterproofing consultant designated to review all components would place them in the best position to identify transition detail issues, incorrect material substitution requests, and difficult construction sequence locations.



After a building is constructed, even with the best construction practices in place, deferred or inadequate maintenance by building owners or property managers can lead to water intrusion and costly repairs. Implementing consistent maintenance practices can help avoid these issues.

Maintenance Manuals and Schedules

All buildings require maintenance over their expected life span, but not all components in the building require the same frequency of maintenance. Components that are critical to ensure a watertight building envelope and systems and equipment that affect the health and safety of the occupants need to be regularly inspected and maintained to help prevent breakdowns, failures and larger problems in the future. Developing a Maintenance Manual as part of the project’s build out process is important to provide essential information to property management and HOA Boards. A clearly defined schedule will help to develop budgets and reserves

About the Author

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according to the specific needs of critical components, (i.e., roof and parapet, exterior sealants around window glazing, planters, etc.). A comprehensive and documented maintenance plan is needed in order to avoid deferred maintenance and help reduce the risk of water intrusion issues.

BUILDINGS/HARDSCAPE MAINTENANCE CHECKLIST

Date: _____

Item #	Vendor Code	Category/Item	Recommended Freq(%)	Inspector	Date Completed
		Doors and Windows			
	MT/PC	Inspect and maintain metal, wood and laminate doors, check sweeps, repairs, resulk, and lubricate as necessary.	4,10		
	MT	Check doors to ensure they swing freely and that all hardware and closures are functional.	4,10		
	MT/PC	Inspect condition of exterior door finishes and refinish as required.	4,10		
		Windows and Exterior Glass Surfaces			
	MT	Inspect all windows for brulis, cracks or condensation. Inspect and maintain the weather stripping, check for leaks. Clean window tracks as needed.	1,12		
	MT	Inspect exterior of glass and frames. Replace damaged sealant as needed.	4,10		
	MT	Inspect the windows/glass for any surface or finish damage, repair as necessary.	4,10		
		Curtain Wall Systems			
	MT	Inspect curtain wall system for integrity - sealant joints, gaskets, glass and aluminum surfaces. Repair as required.	4		
	MT	Document all inspection activity and retain.	As required		
		NOTE: Property Manager acknowledges having reviewed this completed checklist by initialing in box to the right. (See Next Page For More Schedules)	1-12		

Water intrusion is a serious issue that can cause significant damage and lead to health and financial problems. Understanding the causes of water intrusion and taking preventive measures can help avoid these problems and maintain a safe and healthy living or working environment. Developing detailed construction and project documents, adhering to manufacturer requirements, and following proper construction practices, and implementing regular maintenance, can reduce the risk of problems, failures and help ensure buildings are protected from water intrusion.