

## Pre-applied waterproofing transitions

# A Blindside Waterproofing Warning: Watch out for the Transitions

Blindside waterproofing (AKA “pre-applied” waterproofing) is often the only below-grade waterproofing option when excavation past the foundation walls isn’t possible – think zero lot line sites, or locations inaccessible to heavy equipment.

With blindside waterproofing, crews apply a waterproofing membrane to the underslab and adjacent shoring walls before the building’s concrete foundation is poured against them. A pre-applied waterproofing membrane protects the foundation and the structure from moisture and vapors and becomes part of a watertight building envelope.

It’s a specialized waterproofing approach, but like all building waterproofing applications it’s subject to the 90%/1% principle – just 1% of the building envelope’s total surface area will account for 90% of its water intrusion issues.

These blindside weak spots are usually found at the transitions between slabs, shoring walls, plaza decks, or wherever the foundation waterproofing membrane meets the building envelope. And invariably, the water intrusion at these spots is attributable to improper installation and/or chemically incompatible products.

### Underslab to walls

Blindside waterproofing generally begins with the pouring of an unreinforced concrete underslab, or “mud mat”. Considered a must-have for sites with high water tables, the underslab helps repel groundwater and provides the application surface for the pre-applied waterproofing membrane. It also supports the rebar chairs/rebar needed for the reinforced foundation slab.

Where this underslab meets shoring walls is a critical transition area, as it provides waterproofing system continuity and helps protect system integrity when groundwater levels rise. Proper installation techniques

and careful detailing are essential to preventing water ingress between the underslab and walls, especially at the corners, joints, seams, and any penetrations.

### Slab-to-slab/wall-to wall

A pre-applied waterproofing membrane itself represents one big transitional barrier between the underslab and foundation slab, and between shoring walls and foundation walls. As such, it requires a lot of planning, prep work, and protection to ensure it is installed properly to prevent water breaches later.

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Before the membrane is applied to the underslab, its surface must be smooth, clean, and free from any debris that would interfere with membrane placement or adhesion. The use of vapor retarders that are chemically incompatible with the membrane should also be avoided.

Once the membrane is in place, it must be cleaned and dried to help ensure a complete bond. Proper rebar chairs are also required to help protect the membrane from damage, and any penetrations or cuts to the membrane must be detailed.

That same detailing will extend across the membrane-covered shoring walls as well. Walls are also at risk when rebar is installed for the structural wall, and detailing is usually required here too. During the concrete pour or shotcrete spray-applied application of the foundation slab and walls, any concrete over-splash and contamination can compromise the tie-in between the tail and new membrane.

# Waterproofing Systems

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### Above grade to plaza decks

As the blindside waterproofing membrane rises above grade, it may transition to a plaza deck with a different waterproofing membrane/technology. To ensure continuous waterproofing protection at this transition, chemical compatibility of the different systems and products is essential. Incompatible products can degrade over time, allowing water to bypass this critical area. Proper installation of any transition tapes, strips or sealants is also key to long-term waterproofing performance.

### Above grade to the building envelope

Today's energy codes require the below-grade waterproofing system to meet the building envelope or air barrier at the sill or above grade. This can involve a transition between sheet and liquid-applied air barrier products and the waterproofing membrane, and often requires a transitional membrane.

Chemical compatibility between the sheet- or liquid-applied air barrier products and the waterproofing membranes is crucial – incompatibility can cause sealants and/or membranes to fail, enabling water ingress at grade that could travel down the pre-applied waterproofing membrane and eventually damage the foundation. Of course, even compatible products that are installed improperly – with too little or too much caulk or sealants, for example – could lead to the same costly results.

### Minimize the risks before the pour

As with countless other construction applications, design teams only get one chance to select the right blindside waterproofing system and address all installation issues before the foundation pour. Failure to do so could be catastrophic, as the cost of excavation for repairs can easily dwarf the cost of the entire waterproofing system. Fortunately, there are ways that designers and installers can take to help avoid the worst.

First, as the product selection process unfolds, architects should look for manufacturers and products that can help simplify the blindside waterproofing process and make success more likely. For example, to eliminate product compatibility issues, look for single-source suppliers that can provide waterproofing systems that are fully compatible with the building envelope system. To help prevent installation and detailing problems, look for systems designed with ease of application in mind. Similarly, make sure the manufacturer provides on-site installation training and support, both of which will go a long way toward preventing problems.

Architects should also consider requiring a preconstruction meeting in the project specifications. Preconstruction meetings are the time for all parties involved in the project to discuss expectations and assign responsibilities. This includes discussion of product compatibility between multiple manufacturers and systems, as well as any relevant warranty issues. Clarification of all installation and detailing requirements and challenges should also be covered during the preconstruction meeting.

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