



WATERPROOFING

Blindside Waterproofing – “You only get one chance to get it right”

Background – Blindside waterproofing – or pre-applied waterproofing – is a below-grade waterproofing system applied prior to the building construction. With increasing redevelopment of urban areas and more buildings being constructed deeper below grade, construction sites cannot be over-excavated to expose the exterior side of the foundation wall. This situation prohibits the use of a post-applied waterproofing system. Examples of blindside waterproofing include installations against shoring systems and existing buildings, and include most mat foundations or slab-on-grade conditions.

Challenges – As with any trade or installation, post-applied waterproofing presents unique challenges. Blindside waterproofing, however, presents more complex challenges, specifically with sequencing, tie-ins and protection from other trades. Outside of the site preparation work, waterproofing contractors are essentially the first trade on-site. Their work is followed by other related trades such as the foundation contractor, concrete contractor, steel reinforcement contractor, utility contractors and others. Inefficient coordination with any of these trades can result in discontinuous waterproofing resulting in a damaged membrane or lack of tie-in for adjacent areas. Once the steel reinforcement has been placed, access to the membrane may be limited. Once the concrete has been cast, access to the membrane is impractical. Once the waterproofing system has been concealed, reasonable and cost-effective resolutions are not an option to correct any discontinuous waterproofing conditions. Fundamentally, “**you only get one chance to get it right.**”

Things to Consider – design professionals and contractors, have the opportunity-- *and the responsibility*-- to influence the success of the blindside waterproofing installation. Below are a few significant areas **that influence the success of the installation**:

Geotechnical Investigation

- A Geotechnical Report with analytical results for **soil or groundwater contaminants** should be forwarded to the waterproofing manufacturer to confirm that the product specified is acceptable for use on a given project. Different blindside materials may have different properties with respect to chemical resistance. Reviewing these contaminants allows the manufacturer to approve or recommend the appropriate material based on these contaminants and their concentrations.
- Boring samples showing **groundwater elevations** should also be provided to the waterproofing manufacturer to confirm proper product selection. Again, different materials may have different properties including how much hydrostatic pressure

they can resist. Reviewing the groundwater elevations not only allows the manufacturer to approve or recommend the appropriate material, but also potentially provides the design professional the ability to specify different materials or different detailing at various elevations provided the materials are compatible.

Quality Assurance

- The pre-installation conference should include **other trades that could influence the waterproofing integrity**. Trades that work on, are adjacent to, or are above the waterproofing should participate in the meeting. This step will ensure that the waterproofing is protected and the work between all trades is properly coordinated and sequenced resulting in continuous waterproofing.
- “First Point of Verification” relative to blindside waterproofing is a common practice. This is an **in-place mockup for the first time each construction phase relevant to the waterproofing is performed**. For example, the means and methods to erect and remove a bulkhead/pour stop/header may have been discussed and agreed to during the pre-Installation conference. However, until this work is done, waterproofing contractors cannot verify that the continuous waterproofing is intact or whether it has been compromised.
- Hold-Points relative to blindside waterproofing are **ongoing verification or inspection stages used to ensure that the quality of the installation meets the specification and manufacturer requirements**. The following inspection stages performed by an engineer or consultant approved by the waterproofing manufacturer need to be discussed, understood and agreed to at the pre-installation conference:
 - After substrate preparation, but before waterproofing system installation;
 - After waterproofing system installation, but before steel placement;
 - After steel placement, but before concrete placement;
 - Periodically during concrete placement.
 - Any other work that could compromise the waterproofing such as:
 - During installation and removal of bulkheads, pour-stops, etc.;
 - During welding/cutting operations;
 - After excavation at grade.

Transitions & Tie-Ins

- As mentioned, it is **imperative to properly sequence work** to allow for continuous blindside waterproofing. It is also imperative to properly sequence how the blindside waterproofing transitions at grade with the rest of the building envelope.
- Dissimilar materials and/or different manufacturers may create an incompatible tie-in, for example, between the blindside waterproofing and the air barrier. These transitions may even be performed by different contractors creating an additional layer of complexity.

- Specifications typically cross-reference each other, but **due diligence in specifying compatible materials will better ensure that these transitions and tie-ins are properly designed**. If materials are submitted and approved as alternates, the manufacturers for both the blindside waterproofing and air barrier (for the example above) should be consulted.

“You only get one chance to get it right” is relevant once the blindside waterproofing is no longer accessible. Design professionals and contractors have many opportunities to “get it right” prior to concealment through proper planning, sequencing and coordinating the work with the general Contractor and relevant trades.