

Below-Grade Waterproofing of Back-filled Walls



Preserving Structural Integrity Requires Careful Attention to System Design and the Construction Process

The success of the below-grade building enclosure system, and selection of the components within the waterproofing system, depends heavily on site conditions and factors such as soil conditions, water table information and the construction process. Fluid-applied or sheet systems may be used, but the prevention of water infiltration is critical. Water allowed to enter will travel either under pressure or by capillary action to any and all points where it finds a path to enter the structure. Ground movement will only add to the problem, making leak detection and repair a challenge.

Fluid-applied systems are particularly attractive for this type of application because they allow no part of the wall to be left untreated or exposed to moisture penetration, even areas of complex detailing. In addition, the excellent flexibility, strength and adhesive characteristics of these systems enable them to bridge non-structural cracks, remain flexible at low temperatures and protect against water under hydrostatic pressure.

Cold fluid-applied systems are available in technologies which may be applied to damp and green concrete instead of requiring lengthy waiting periods following a concrete pour. These membranes can be applied to concrete as soon as the forms are removed and to masonry as soon as the mortar is dry by spray, roller, squeegee or trowel. In some cases, protection courses may be applied the same day instead of having to

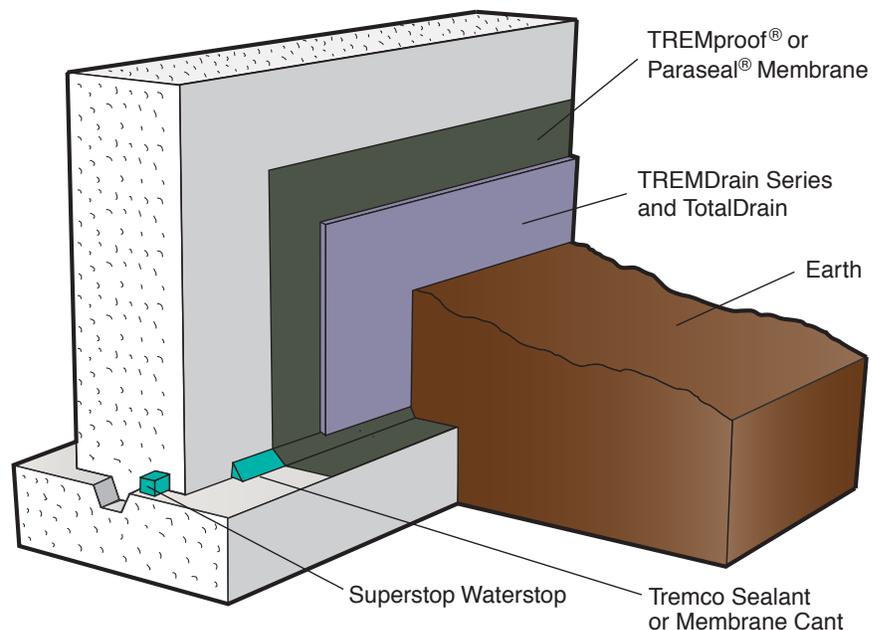
specially prepare them for installation within the next couple of days. This dramatically impacts contractor productivity, job scheduling and construction schedules.

With fast-track construction schedules pushing contractors for faster turnarounds, ease and speed of application, TREMproof Membranes can be applied even in temperatures down to 20° F. (-7° C).

When designing the below-grade system, removal of any moisture in the most complete and expeditious manner possible will reduce the possibility of moisture intrusion so installation of **drainage/protection/insulation boards** should be done as quickly as possible. These also help provide protection against damage from construction. For

successful system performance, the system must be designed to collect, drain and discharge ground water and surface water. Design considerations should include selection of appropriate products to achieve flow rate required.

Critical to the successful protection of any building enclosure is the proper detailing and integration of the above grade vertical façade system and the below-grade waterproofing system. Integration of the two systems at the transition must take into consideration long-term performance where the components overlap, abut and connect. Compatibility at these connections is of primary importance to ensure a long-term bond as well as their ability to perform against all moisture, air and thermal exposures.



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Membranes:

TREMproof 250GC Cold Fluid-Applied Waterproofing Membrane is a high solids, one-part, VOC-compliant modified polyurethane membrane that can be applied to green and damp concrete.

TREMproof 260 Spray-Applied Waterproofing Membrane is a polymer-enhanced, single component, asphalt emulsion waterproofing membrane designed for spray application to concrete, masonry and other structural substrates, primarily in vertical installations.

TREMproof 201/60 Fluid-Applied Waterproofing Membrane is a high solids, VOC-compliant, one-part, moisture-curing elastomeric waterproofing membrane.

Paraseal HDPE/Bentonite Sheet Membrane Dual Waterproofing System is a series of self-healing composite membranes manufactured to controlled thicknesses of 150 to 200 mils of tough, high-density polyethylene (HDPE) and expandable, quality granular Bentonite.

Paraseal is the standard composite membrane for back-filled wall applications with 15-mil HDPE and granular bentonite.

Paraseal LG with 20-mil HDPE for blindside applications contains an additional protective layer of spunbound fabric and is designed to resist damage from multiple exposures to inclement weather, extremely abrasive concrete pours or direct installation of shotcrete and will exhibit outstanding protection against water intrusion in areas of high water heads.

Paraseal GM/LG-20 mil installed with Para JT Tape and Parastick 'n' Dry Tape forms a superior membrane barrier to both water and aliphatic gases.

For hydrostatic and gas vapor barrier conditions, contact your local Tremco field sales representative or Technical Service.

Detailing, Connections and Drainage:

TREMDrain Series is a family of drainage mats with a variety of combinations of filter fabrics, drainage cores and protective polymeric film.

TREMDrain QSP (Quick Set Panels) is a three-part prefabricated drainage panel and protection board with a breathable cross-hatched fabric on the backside, allowing it to adhere to the tacky membrane while still allowing the membrane to cure from the flow of air through the perforated drainage core.

TREMDrain TotalDrain is a two-part, prefabricated drain consisting of a drainage section with a transition section to couple with TREMDrain, TREMDrain 1000 and TREMDrain 2000 providing both water collection plus a high profile section for water flow around the perimeter of the structure.



Sheet-Applied
Membranes

Drainage

Compatible
Transitions