BELOW GRADE

WATERPROOFING DESIGNED FOR PROTECTION & DURABILITY

TREMCO®

Commercial Sealants & Waterproofing

PROJECT: Oregon Health Sciences University (OHSU), Portland, OR

PRODUCTS USED: TREMproof® 250GC, Paraseal® LG Sheet Membrane, TREMDrain® 1000 Drainage and Protection Board, POWERply® Sheeting, Tremco Protection Mat

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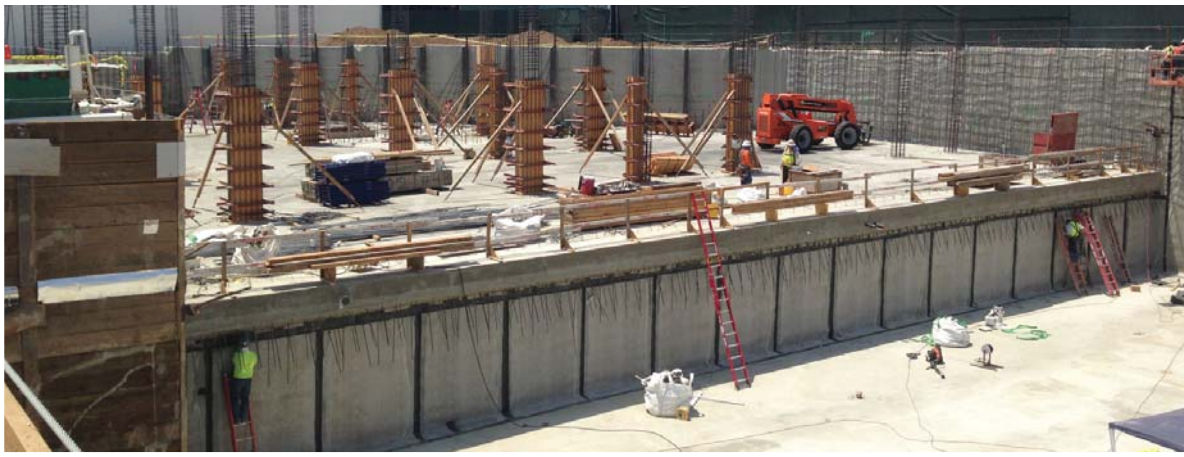


RAISING THE BAR ON WATERPROOFING TECHNOLOGY

Below-grade waterproofing prevents water intrusion and is critical to avoiding costly problems in the future. Tremco Commercial Sealants & Waterproofing offers an array of options for maximum protection and expedited schedules.

COLD APPLIED MEMBRANES

HOT FLUID-APPLIED MEMBRANES

SHEET MEMBRANES

DRAINAGE SYSTEMS

BACKFILLED WALL APPLICATION

BACKFILLED WALLS: Fluid-applied or sheet systems may be used in backfilled wall applications. Fluid-applied membranes 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. 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. The waterproofing system for a backfilled wall should include TREMDrain drainage components to enhance the performance of the overall waterproofing system.

PROJECT: Pacific Amphitheatre, Costa Mesa, CA

PRODUCTS USED: TREMproof® 250 GC

TREMproof 250GC – This cold fluid-applied elastomeric modified polyurethane waterproofing membrane is rapid-curing, high solids, VOC-compliant and can be applied to damp or green concrete. It is a one-part moisture-curing elastomer available in three viscosities: self-leveling, roller and trowel (for detailing only).

- Dramatically expedite construction schedules when using on concrete in as few as 24 hours after the forms are removed
- Can be applied up to 215 mils for high-build applications
- Further compress construction schedules by catalyzing TP250GC with water

TREMproof 260 – This spray-applied, polymer enhanced, single component, fluid-applied, asphalt emulsion below-grade waterproofing membrane can be applied to damp or green concrete. Also available in roller grade.

- Fast-track construction and reduce washout potential by co-spraying to speed the curing process

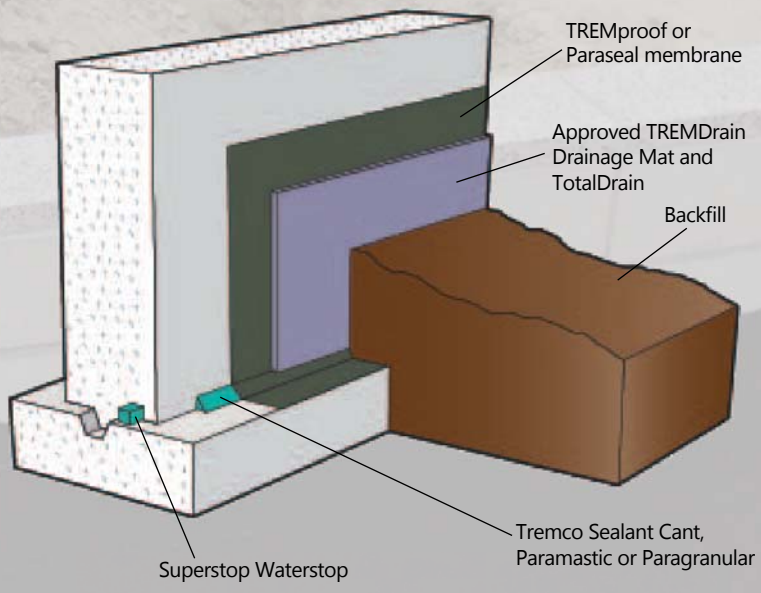
TREMproof 201/60 – This high-solids, VOC-compliant, modified polyurethane waterproofing membrane is a one-part, moisture-curing elastomer available in three viscosities: self-leveling, roller and trowel (for detailing only).

- When time constraints are more relaxed, this waterproofing membrane is an economical choice

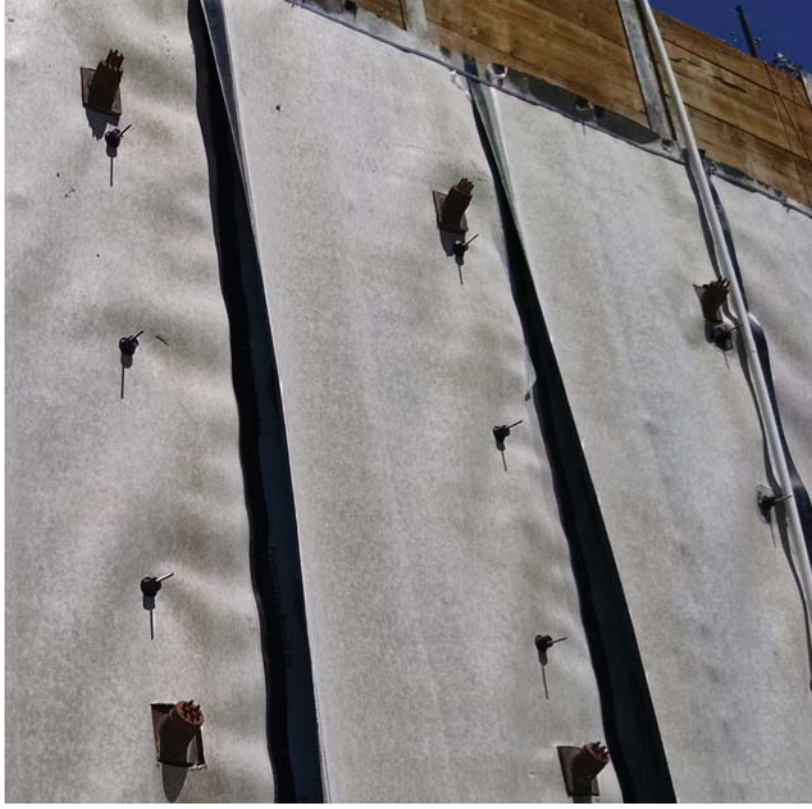
Paraseal Sheet Dual Waterproofing System - The nature of the Paraseal sheet dual waterproofing system allows for installation over green or damp surfaces accelerating the construction process. The bentonite can expand up to eight times its original thickness to stop water that may make it past the HDPE layer, providing a second layer of protection. Paraseal can be used in conjunction with TREMDrain series drainage mats.

Paraseal – This sheet waterproofing membrane consists of 15 mils of HDPE and a layer of expandable granular bentonite. Also available in a salt water formula.

Paraseal LG – This sheet waterproofing membrane consists of 20 mils of HDPE, expandable granular bentonite, and a protective layer of spun-bonded polyester.



BLINDSIDE WALL APPLICATION



BLINDSIDE WALLS: Blindside waterproofing is considerably more complex than traditional below-grade waterproofing because the process is "reversed" and waterproofing is installed before the concrete/ shotcrete is installed. Applications can go many levels below grade and can reach into the water table.

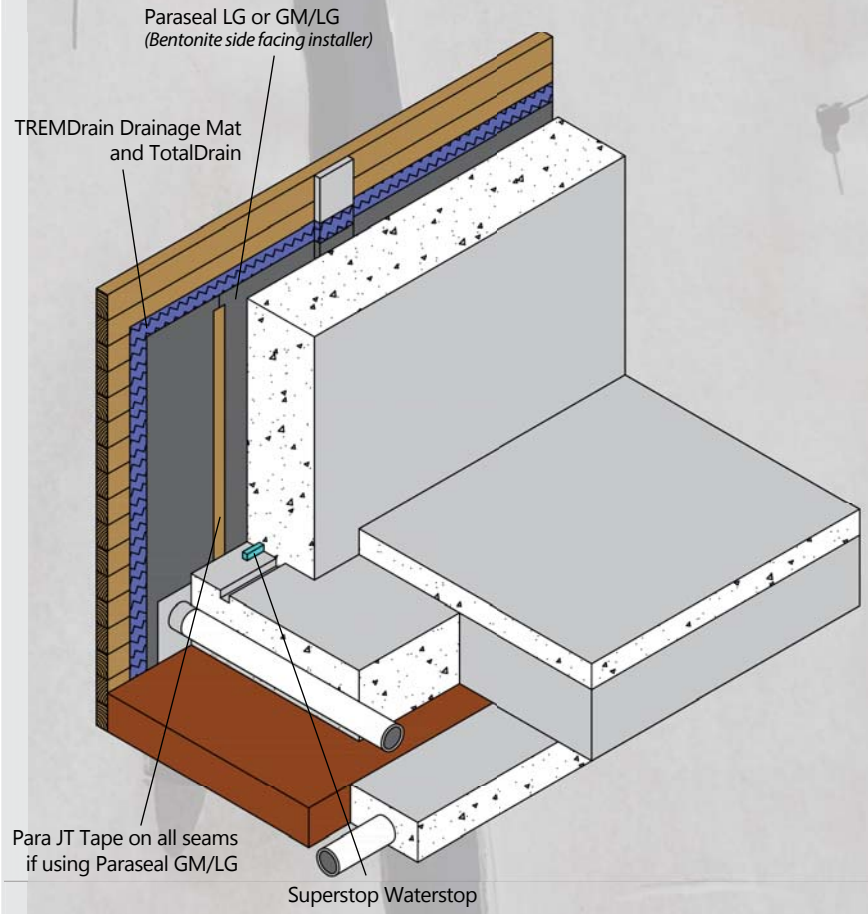
Typically, blindside projects are required in high-density areas where property lines, nearby structures and terrain limit excavation access and result in congested jobsites.

Bentonite is a proven solution for blindside applications due to its ability to seal a puncture or rip and, once hydrated, it is virtually impermeable to water and other chemicals. It can also be applied in cold weather and is tough enough to withstand shotcrete applications directly on the face of the membrane.

When not in the watertable, the waterproofing system for blindside walls should include TREMDrain drainage components to enhance the performance of the overall waterproofing system.

PROJECT: Taglyan Complex, Los Angeles, CA

PRODUCTS USED: Paraseal® GM/LG 60 Mil



Paraseal Sheet Dual Waterproofing System - The nature of the Paraseal sheet dual waterproofing system allows for installation over green or damp surfaces accelerating the construction process. The bentonite can expand up to eight times its original thickness to stop water that may make it past the HDPE layer, providing a second layer of protection.

Paraseal LG – This sheet waterproofing membrane consists of 20 mils of HDPE, expandable granular bentonite, and a protective layer of spun-bonded polyester.

Paraseal GM – This sheet waterproofing and methane-mitigating membrane consists of 20 mils of HDPE and expandable granular bentonite. The HDPE extends beyond the bentonite on the perimeter edges to create a clean surface for Para JT Tape and Parastick 'n' Dry Tape installation. Also available in salt water formula.

Paraseal GM/LG 20 Mil – This sheet waterproofing and methane-mitigating membrane consists of 20 mils of HDPE, expandable granular bentonite and a protective layer of spun-bonded polyester. The HDPE extends beyond the bentonite on the perimeter edges to create a clean surface for Para JT Tape and Parastick 'n' Dry Tape installation.

Paraseal GM/LG 60 Mil – This sheet waterproofing and methane-mitigating membrane consists of 60 mils of HDPE, expandable granular bentonite and a protective layer of spun-bonded polyester. The HDPE extends beyond the bentonite on the perimeter edges to create a clean surface for extruded weld or wedge weld installation.

SPLIT SLAB APPLICATION

SPLIT SLAB: A split slab, also known as a "sandwich slab", is made up of a horizontal structural slab over which the waterproofing membrane is applied. A topping slab, or wear course, is then installed over the waterproofing membrane to protect it from weathering and wear. Split-slab design is commonly found in plaza decks, also known as podium decks. The waterproofing system for split-slab applications should include TREMDrain drainage components to enhance the performance of the overall waterproofing system.

TREMproof 250GC – This cold fluid-applied elastomeric modified polyurethane waterproofing membrane is rapid-curing, high solids, VOC-compliant and can be applied to damp or green concrete. It's a one-part moisture-curing elastomer available in three viscosities: self-leveling, roller and trowel (for detailing only).

- Dramatically expedite construction schedules when using on concrete in as few as 24 hours after the forms are removed
- Can be applied up to 215 mils for high-build applications
- Further compress construction schedules by catalyzing TP250GC with water
- No melter required on-site means convenient installation and easier repairs

TREMproof 201/60 – This high-solids, VOC-compliant, modified polyurethane waterproofing membrane is a one-part, moisture-curing elastomer available in three viscosities: self-leveling, roller and trowel (for detailing only).

- When time constraints are more relaxed, this waterproofing membrane is an economical choice

TREMproof 6100 – A one-part, 100% solids, hot-applied, rubberized asphalt waterproofing membrane.

- Create a full system by combining with reinforcing layer and other components
- Reliable technology with an extensive history and trusted for over 35 years

TREMproof 6145 – A part of the Permaphalt System, this hot-applied rubberized asphalt membrane is designed for use in waterproofing underneath traffic-bearing asphalt and concrete overlays.

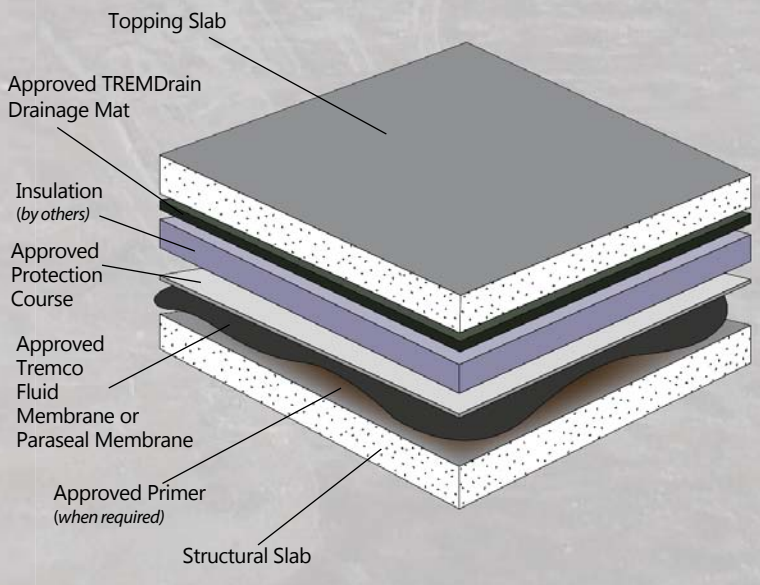
- This formulation of an optimum balance of rubbers, asphalt and inert fillers has the toughness required at a lesser mil thickness for applications under traffic-bearing asphalt and concrete overlays
- The decreased mil thickness makes it an economically feasible option for applications such as exterior parking deck surfaces and surfaces topped with traffic-bearing topping course

Paraseal Sheet Dual Waterproofing System – The nature of the Paraseal sheet dual waterproofing system allows for installation over green or damp surfaces accelerating the construction process. The bentonite can expand up to eight times its original thickness to stop water that may make it past the HDPE layer, providing a second layer of protection.

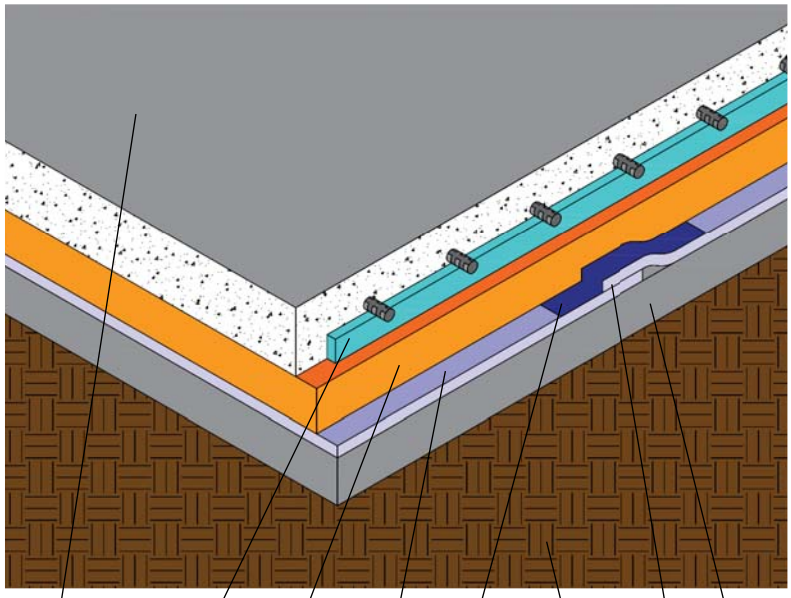
Paraseal LG – This sheet waterproofing membrane consists of 20 mils of HDPE, expandable granular bentonite, and a protective layer of spun-bonded polyester.

Paraseal GM/LG – This sheet waterproofing and methane-mitigating membrane consists of 20 mils of HDPE, expandable granular bentonite and a protective layer of spun-bonded polyester. The HDPE extends beyond the bentonite on the perimeter edges to create a clean surface for Para JT Tape and Parastick 'n' Dry Tape installation. Also available in 60 mil thickness for heat welded methane mitigating applications.

Deckseal – This sheet waterproofing system is primarily used when the concrete substrate has been placed on top of a non-vented metal deck. Deckseal consists of 20 mils of transparent HDPE and a layer of expandable granular betonite. The unique transparent HDPE layer allows for thermal and dimensional stability while the membrane is exposed during installation.



BELOW SLAB ON GRADE APPLICATION



BELOW SLAB ON GRADE: It is important to consider the waterproofing system for all six sides of the structure. In a below slab on grade application it is necessary to protect the slab from the intrusion of groundwater. The waterproofing system for below slab on grade applications should include TREMDrain drainage components, when in non-submerged conditions, to enhance the performance of the overall waterproofing system.

Paraseal Sheet Dual Waterproofing System -

The nature of the Paraseal sheet dual waterproofing system allows for installation over green or damp surfaces accelerating the construction process. The bentonite can expand up to eight times its original thickness to stop water that may make it past the HDPE layer, providing a second layer of protection. Can be used in conjunction with TREMDrain series drainage mats.

Paraseal LG – This sheet waterproofing membrane consists of 20 mils of HDPE, expandable granular bentonite, and a protective layer of spun-bonded polyester.

Paraseal GM/LG – This sheet waterproofing and methane-mitigating membrane consists of 20 mils of HDPE, expandable granular bentonite and a protective layer of spun-bonded polyester. The HDPE extends beyond the bentonite on the perimeter edges to create a clean surface for Para JT Tape and Parastick 'n' Dry Tape installation. Also available in 60 mil thickness for waterproofing and heat welded methane mitigating applications.

PROJECT: La Brea Gateway Apartments, West Hollywood, CA

PRODUCTS USED: Paraseal® GM/LG 60 mil

PLANTER APPLICATION

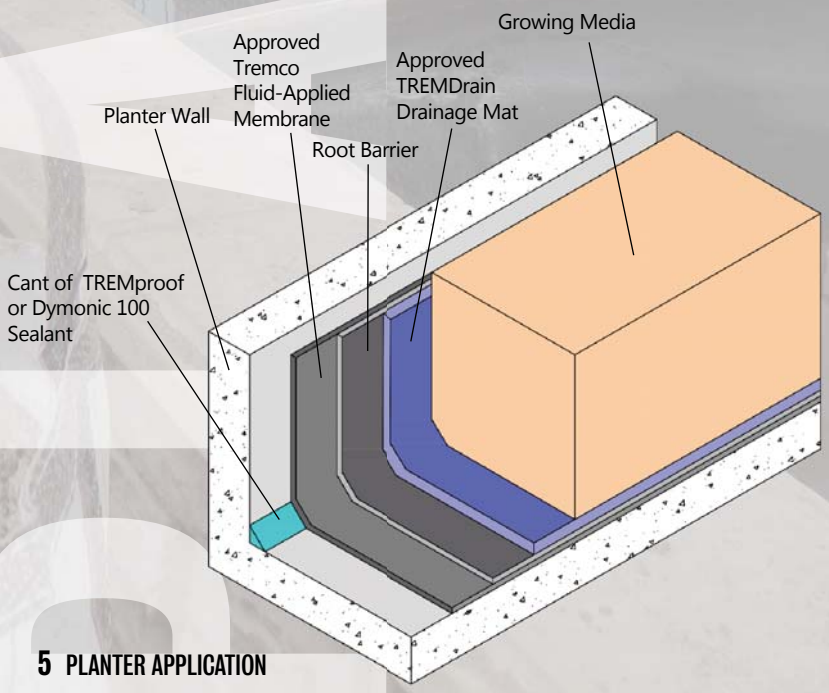
PLANTER: Properly waterproofing a planter is just as important as any other part of the structure. When waterproofing a planter, the waterproofing membrane should be protected from possible damage during backfilling and garden maintenance. Fluid-applied membranes are particularly attractive for this type of application because they allow no part of the planter to be left untreated or exposed to moisture penetration, even in areas of complex detailing. The waterproofing system for planter applications should include TREMDrain drainage components to enhance the performance of the overall waterproofing system.

TREMproof 250GC – This cold fluid-applied elastomeric modified polyurethane waterproofing membrane is rapid-curing, high solids, VOC-compliant and can be applied to damp or green concrete. It's a one-part moisture-curing elastomer available in three viscosities: self-leveling, roller and trowel (for detailing only).

- Dramatically expedite construction schedules when using on concrete in as few as 24 hours after the forms are removed
- Can be applied up to 215 mils for high-build applications
- Further compress construction schedules by catalyzing TP250GC with water
- No melter required on-site means convenient installation and easier repairs

TREMproof 6100 – A one-part, 100% solids, hot-applied, rubberized asphalt waterproofing membrane.

- Create a full system by combining with reinforcing layer and other components
- Reliable technology with an extensive history and trusted for over 50 years



DRAINAGE SYSTEMS

Drainage components, when incorporated, enhance the performance of the overall waterproofing system and reduce the amount of hydrostatic pressure and weight of water-saturated soil. Prefabricated drainage is engineered to create air space when applied over a membrane.

Tremco's TREMDrain series of prefabricated drainage boards consists of a dimpled core which provides excellent water flow when under compaction. TREMDrain can be used for vertical and horizontal applications.

TREMDrain products are offered with a variety of combinations of filter fabrics, drainage cores, an optional protective polymeric film and a TotalDrain System to replace perforated pipe/aggregate collection systems. Tremco's TREMDrain series of drainage mats are compatible with TREMproof and Paraseal membranes.

PROJECT: Chanhassen High School, Chanhassen, MN

PRODUCTS USED: TREMDrain® 1000

TREMDrain – This two-layer drainage mat consists of a polystyrene core and a spun-bonded polypropylene fabric.

TREMDrain 1000 – This two-layer drainage mat consists of a polystyrene core and spun-bonded polypropylene fabric. It is available with or without the polymeric film attached to the back of the drainage core and offers great compressive strength.

TREMDrain 2000 – This three-layer drainage mat consists of a woven polypropylene fabric, polystyrene core and polymeric film. The woven fabric has great puncture resistance making it ideal for horizontal applications where concrete will be poured on top of the drainage mat.

TREMDrain 3000 – This two-part prefabricated drainage material and protection board consists of a formed polystyrene core covered on one side with a woven polypropylene filter fabric. This fabric allows water to pass into the drainage core while restricting the movement of soil particles. The plastic core provides compressive strength and moderate flow capacity.

TREMDrain S – This drainage mat consists of a spun-bonded polypropylene fabric, polystyrene core and polymeric film backing. It has the highest compressive strength available within the TREMDrain Series.

TREMDrain GS – This drainage mat consist of a perforated polystyrene core with fabrics attached to both sides. Installed with the dimples down, the core also functions as a water retention layer.

TREMDrain 6000 – This multi-composite prefabricated drainage material and protection board consists of a formed polypropylene core covered on one side with a high-strength, spun-bonded polypropylene filter fabric. The fabric allows water to pass into the drainage core while filtering out extremely fine particulates.

TREMDrain 6600 – This multi-composite prefabricated drainage material and protection board consists of a formed polypropylene core covered on one side with a high strength, non-woven needle-punched polypropylene filter fabric that is heat bonded to the core.

TREMDrain QSP – This three-part prefabricated drainage panel and protection board consists of a formed, perforated polystyrene core covered on a dimpled side with a non-woven, needle-punched polypropylene filter fabric along with a breathable cross-hatched fabric on the backside.

TREMDrain Total Drain– This two-layer drainage mat with a unique polystyrene core that consists of a high-profile drainage section for water collection and flow around the structure and a transition section to connect to other TREMDrain Series drainage mats.

SYSTEMS

Other configurations may be available on our website: www.tremcosealants.com

COLD FLUID-APPLIED MEMBRANES

- ☐ **TREMproof® 250GC**
- ☐ **TREMproof® 260**
- ☐ **TREMproof® 201/60**

HOT FLUID-APPLIED MEMBRANES

- ☐ **TREMproof® 6100**
- ☐ **TREMproof® 6145**

SHEET WATERPROOFING MEMBRANES

- ☐ **Paraseal®***
- ☐ **Paraseal® LG**
- ☐ **Paraseal® GM***
- ☐ **Paraseal® GM/LG 20 Mil**
- ☐ **Paraseal® GM/LG 60 Mil**
- ☐ **Deckseal**

**Also available in salt water formula*

DRAINAGE

- ☐ **TREMDrain®**
- ☐ **TREMDrain® 2000**
- ☐ **TREMDrain® S**
- ☐ **TREMDrain® 6000**
- ☐ **TREMDrain® QSP**
- ☐ **TREMDrain® 1000**
- ☐ **TREMDrain® 3000**
- ☐ **TREMDrain® GS**
- ☐ **TREMDrain® 6600**
- ☐ **TREMDrain® Total Drain**

ADDITIONAL SYSTEM COMPONENTS

Every job has a unique set of challenges and requirements, Tremco Commercial Sealants & Waterproofing offers system components to address these applications.

PROTECTION COURSES

Protection Courses are designed to absorb the impact of aggregate shock, safeguard against normal jobsite foot traffic and to protect the waterproofing membrane from penetration by sharp aggregate during backfilling, slab pouring and later, settlement.

- ☐ **POLYETHYLENE PROTECTION/BARRIER COURSES**
- ☐ **POWERply® STANDARD SMOOTH**
- ☐ **POWERply® STANDARD WHITE GRANULAR**
- ☐ **TREMCO® 2178 GLASS PLY SHEET**
- ☐ **TREMCO® 2190**
- ☐ **TREMCO® 2450 PROTECTION BOARD**
- ☐ **TREMCO® 2550/2560 PROTECTION BOARD**
- ☐ **TREMCO® PROTECTION MAT**

DETAILS

Detailing can include a variety of challenges including movement, transitions, penetrations, and changes in plane.

- ☐ **DYMONIC® 100**
- ☐ **VULKEM® 445SSL**
- ☐ **iLLMOD 600®**
- ☐ **PARAGRANULAR**
- ☐ **PARAMASTIC**
- ☐ **PARASEAL® PARATERM BAR**
- ☐ **PARASTICK 'N' DRY®**
- ☐ **PARA JT TAPE**
- ☐ **PERMANENT SEAM TAPE**

WATER STOPS

A multi-composite waterstop with the self-sealing ability of bentonite used to seal cold joints in concrete.

- ☐ **SUPERSTOP**

PRIMERS

In some cases it's necessary to prime the area prior to application.

- ☐ **PARAPRIMER®**
- ☐ **TREMprime® WB PRIMER**
- ☐ **TREMCO® EPOXY PRIMER**
- ☐ **TREMprime® QD LOW-ODOR PRIMER**
- ☐ **TREMprime® HR**

REINFORCING

In particularly challenging applications additional reinforcing may be required.

- ☐ **ELASTOMERIC SHEETING**
- ☐ **TREMCO® 2011**
- ☐ **TREMCO® 2178 GLASS PLY SHEET**
- ☐ **TREMCO® DUALFLEX®**
- ☐ **TREMCO® REINFORCING FABRIC**

CONNECTIONS: THE KEY TO LONG-TERM SUCCESS

A SINGLE SOURCE FOR A SUPERIOR SOLUTION

Tremco provides comprehensive waterproofing solutions including effective terminations and connectivity to above grade conditions. Waterproofing and gas mitigation protects the integrity of a structure and its occupants by forming a barrier that mitigates water and gas from entering the building envelope and occupied space. In order to eliminate potential sources of water and/or gas infiltration there must be continuity, without areas of weakness such as at transitions. Connections must be able to accommodate any normal movement of the building structure. Of critical importance is any incompatibility between the membrane and any connecting components which may result in membrane failure and ultimately lead to water infiltration.

Tremco Commercial Sealants & Waterproofing offers sustainable building solutions from below-grade through to the roof. Products are formulated and tested to ensure performance over the long term not only in lab settings but under real world conditions where they may abut, adjoin or overlap with other components or systems.

WATERPROOFING DESIGNED FOR PROTECTION & DURABILITY

PROJECT: Toronto Transit Commission - Subway Extension, Toronto, ON.

PRODUCTS USED: Paraseal® LG, Paraseal® GM/LG, and TREMproof® 6100

**Contact your local Tremco sales representative for job specific application or installation recommendations for Paraseal products.*

TREMCO®
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