TEGOBLOC Pre-Wrap®

Application Guide

This Installation Guide serves as a supplement to our TEGOBLOC PRE-WRAP OR PRE-WRAP EX technical data sheets, focusing on the proper application of the waterproofing/vapor proofing membrane in scenarios where it interfaces with a soil retention system in a blindside installation. The following set of installation instructions, recommended by GMX, INC., outlines the standard procedures. However, it is imperative to assess each application individually, as project-specific needs may necessitate modifications to this protocol. In such cases, please reach out to GMX, INC. technical service for tailored guidance.

Products Required:

1. **TEGOBLOC PRE-WRAP or PRE-WRAP EX Waterproofing/Vapor Proofing Membrane:**
   - Composite sheet membrane consisting of a non-woven fabric, elastomeric membrane, and high-strength base sheet.
2. **ULTRA-GUARD EFS:**
   - Single-component moisture-cure waterproofing compound used for detailing TEGOBLOC PRE-WRAP or PRE-WRAP EX at end laps, penetrations, and repair areas.
3. **TEGOBLOC DETAIL FABRIC:**
   - Polypropylene, staple fiber, needle-punched, non-woven geotextile fabric used for end laps and penetration details.
4. **GMX WATERSTOP:**
   - Waterstop containing bentonite.
5. **DRAINMAX:**
   - Dimple-raised, molded polystyrene sheet bonded to high-strength polypropylene fabric.
6. **TOTALDRAIN:**
   - Prefabricated strip drain consisting of molded polystyrene sheet bonded to high-strength polypropylene fabric.
7. **TERMINATION BAR:**
   - High-strength metal or plastic strip designed to support TEGOBLOC PRE-WRAP or PRE-WRAP EX and DrainMax at the top of the wall termination point.
8. **FASTENERS:**
   - Flat-headed stainless-steel fasteners with washers. Must be appropriate for the substrate.

Limitations

1. **Concrete Pour Timing:**
   - Concrete should be poured within 60 days of membrane installation.
2. **Application Temperature:**
   - TEGOBLOC PRE-WRAP or PRE-WRAP EX may be applied in temperatures down to 25°F (-4°C).
3. **Pre-Pour Surface Condition:**
   - Prior to the concrete pour, any ponded water, dirt, or debris that has accumulated on TEGOBLOC PRE-WRAP or PRE-WRAP EX must be removed as this could affect the bond of the membrane to the concrete.
4. **Water Accumulation During Installation:**
   - In situations where there is water accumulation behind the membrane during installation, the presence of this water may inhibit proper bond formation at the edge and end laps due to the stress resulting from the constant hydrostatic pressure exerted by this water.
5. **High Temperature Installations:**

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- Care needs to be taken in high temperature installation situations, as softening of the elastomeric membrane could occur, causing sagging.

Storage

1. **General Storage Conditions:**
   - Store materials in a clean, dry area in accordance with the manufacturer's instructions.
2. **Membrane Storage:**
   - Store membrane cartons on pallets and cover if left outside. Keep materials away from sparks and flames.
3. **Adhesive Storage:**
   - Store adhesive at temperatures of 40°F (4.4°C) and above to facilitate handling.
   - Do not store adhesive at temperatures above 90°F (32°C) for extended periods.

Substrate Preparation:

Blindside applications present several challenges, including the condition of the substrate upon which the membrane is installed. Various soil retention systems are designed to retain the earth, each presenting unique installation and preparation challenges prior to the installation of the TEGOBLOC PRE-WRAP or PRE-WRAP EX waterproofing system. Common shoring wall construction techniques include H-piles and timber lagging, corrugated sheet piles, rock, auger cast caissons, and even cement-stabilized soil.

For the membrane to perform properly, it is essential to address the surface to ensure that the membrane is not damaged and will adhere fully to the concrete once poured in place. Overlooking this can result in water intrusion into the structure.

Regardless of the type of soil retention system, all preparation work should provide a monolithic substrate surface upon which the waterproofing can be installed without damage during installation and concrete placement.

GMX, INC. recommends using TotalDrain for all installations of TEGOBLOC PRE-WRAP or PRE-WRAP EX. However, certain site conditions and project requirements may make this difficult. The decision to omit the TotalDrain should be made by the engineer. When TotalDrain is not used, surface preparation becomes even more critical.

Due to the wide variety of these substrates and their conditions, it is recommended to contact your local GMX, INC. technical representative for any questions prior to the installation of TEGOBLOC PRE-WRAP or PRE-WRAP EX. The following are standard guidelines for surface preparation:

1. **Ensure a Clean Surface:**
   - Remove any debris, loose material, or contaminants from the substrate surface.
2. **Repair Surface Imperfections:**
   - Fill in any voids, gaps, or irregularities to create a smooth and uniform surface.
3. **Verify Stability:**
   - Ensure that the substrate is stable and will not shift or settle, which could damage the membrane.
4. **Surface Moisture:**
   - Address any issues with surface moisture to ensure proper adhesion of the membrane.
5. **Technical Consultation:**
   - Contact a GMX, INC. technical representative for guidance specific to your substrate conditions.

Substrate Preparation: Wood Lagging with Steel Piles

1. **Nail Management:**
   - Ensure all lagging board nails are pounded

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flush or removed.

2. **Surface Cleaning:**
   - Remove all sharp protrusions, mud, debris, ice, or any other materials that will affect the membrane's performance.

3. **Irregularities and Voids:**
   - Fill or cover any irregularities and voids between lagging boards exceeding 1 inch (25 mm) using appropriate materials such as spray foam, concrete grout, patching mortar, rigid insulation, or treated plywood to provide a sound substrate.

Caissons:

1. **Smooth Augured Caissons:**
   - TEGOBLOC PRE-WRAP or PRE-WRAP EX can be installed directly onto smooth caissons.
   - Remove any sharp protrusions.
   - Fill the depressed areas between each pile with concrete grout before installing TEGOBLOC PRE-WRAP or PRE-WRAP EX.

2. **Rough and Irregular Augured Caissons:**
   - Install a minimum ¾ inch (19.1 mm) pressure-treated plywood.
   - Fill the void behind the plywood in the depressed areas with sand, aggregate, or grout to provide a solid substrate.
   - Plywood selection and installation shall be determined by the project engineer.

Sheet Piling:

1. **Direct Contact with Steel Piling:**
   - Remove all sharp protrusions where TEGOBLOC PRE-WRAP or PRE-WRAP EX is to be in direct contact with the steel piling.

2. **Spanning Sheet Piling:**
   - Install a minimum ¾ inch (19.1 mm) pressure-treated plywood where TEGOBLOC PRE-WRAP or PRE-WRAP EX is to span the sheet piling.
   - Fill the void behind the plywood in the depressed areas with sand, aggregate, or grout to provide a solid substrate.
   - Plywood selection and installation shall be determined by the project engineer.

Shotcrete:

1. **Surface Cleaning:**
   - Remove all sharp protrusions, mud, debris, ice, or any other materials that could affect the membrane's performance.

2. **Void and Irregularity Management:**
   - Fill or cover any voids or irregularities exceeding 1 inch (25 mm) using concrete grout or patching mortar.

Slurry Wall:

1. **Surface Cleaning:**
   - Remove all sharp protrusions, mud, debris, ice, or any other materials that could affect the membrane's performance.

2. **Void and Irregularity Management:**
   - Fill or cover any voids or irregularities exceeding 1 inch (25 mm) using concrete grout or patching mortar**.**

General Note for All Substrates:

If using DrainMax drainage board prior to TEGOBLOC PRE-WRAP or PRE-WRAP EX installation, a void of up to 2 inches (50 mm) is acceptable.

Detailing Penetrations:

1. **Surface Preparation:**
   - Ensure all penetration and protrusion surfaces are clean, rust-free, and sound.

2. **Small Penetrations:**

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- Fully cover nails and fasteners with Ultra-Guard EFS.

3. **Larger Penetrations:**
   - Apply ULTRA-GUARD EFS onto the fabric face of pre-installed TEGOBLOC PRE-WRAP or PRE-WRAP EX and around the penetration, extending a minimum of 2 ½" (64 mm) in all directions.
   - Form a fillet or cant around the base of the penetration to aid in the transition. The application thickness of ULTRA-GUARD EFS should be 60 mils.
   - Embed TEGOBLOC DETAIL FABRIC into the ULTRA-GUARD EFS and press it into place, ensuring the fabric is fully wetted out with ULTRA-GUARD EFS.

Tiebacks/Soil Nails:

1. **Waterproofing Membrane Installation**:
   - Install the TEGOBLOC PRE-WRAP or PRE-WRAP EX waterproofing membrane as close to the tieback as possible.
2. **Application of ULTRA-GUARD EFS**:
   - Apply ULTRA-GUARD EFS onto the fabric face of the pre-installed TEGOBLOC PRE-WRAP or PRE-WRAP EX, extending a minimum of 2 ½" (64 mm) in all directions.
   - Form a fillet or cant around the base to aid in the transition.
3. **Coating the Tieback**:
   - Fully coat the tieback with ULTRA-GUARD EFS, ensuring an application thickness of 60 mils.
4. **Embedding the Fabric**:
   - Embed TEGOBLOC DETAIL FABRIC into the ULTRA-GUARD EFS and press it into place.
   - Ensure the TEGOBLOC DETAIL FABRIC is fully wetted out with Ultra-Guard EFS, fully encasing the tieback.

Construction Joints:

1. **Waterstop Installation:**
   - Install GMX WATERSTOP a minimum of 2" (50 mm) from the face of the wall.
   - Before installation, apply Ultra-Guard EFS to all areas that will receive the GMX WATERSTOP. This will act as an adhesive to hold the waterstop in place along with the fasteners.
2. **Adhesive Exposure:**
   - Remove the release paper to expose the adhesive on the GMX WATERSTOP.
3. **Fastening:**
   - Fasten with nails and washers every 12" (300 mm) on center (O.C.).
   - For subsequent applications, place the ends of the waterstop together to ensure continuity.

Membrane Installation:

1. **Mechanical Fastening:**
   - Mechanically fasten the membrane across the top lagging at 12" (300 mm) on center, ½" (12 mm) from the top, using fasteners and a termination bar approved by the manufacturer.
2. **Orientation:**
   - Ensure the fabric side of the membrane is facing the interior side of the installation. This is the side against which the concrete will be poured.
3. **Application of ULTRA-GUARD EFS:**
   - Apply ULTRA-GUARD EFS over the areas where the fasteners have been attached.
4. **Vertical Fasteners:**
   - If fasteners are required vertically, install

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them at 24" (600 mm) O.C. in the factory edge of the membrane prior to the overlap of the subsequent sheet. These fasteners do not require additional detailing.

5. **Field Fasteners:**
   - Any fasteners installed in the field of the membrane need to be detailed with ULTRA-GUARD EFS, fully encasing the fastener.

Factory Edge:

1. **Remove Release Paper:**
   - Remove the release paper from the 6" (150 mm) factory edge to expose the bituminous membrane.

2. **Overlap and Adhere:**
   - Overlap the edge of the subsequent sheet.
   - Roll and press the overlap into place to ensure good adhesion.

End Lap:

1. **Application of ULTRA-GUARD EFS:**
   - Apply ULTRA-GUARD EFS in a 6" (150 mm) band onto the fabric face of the TEGOBLOC PRE-WRAP OR PRE-WRAP EX area to be overlapped, ensuring an application thickness of approximately 60 mils.

2. **Embedding Fabric:**
   - Apply ULTRA-GUARD EFS in a 12" (300 mm) band centered over the lap edge.
   - While the ULTRA-GUARD EFS is still wet, embed 12" (300 mm) wide TEGOBLOC DETAIL FABRIC into the ULTRA-GUARD EFS.

3. **Overlap the Area:**
   - Overlap this area with the next sheet.

4. **Ensure Proper Centering:**
   - Ensure that TEGOBLOC DETAIL FABRIC is centered over the termination with 6" (150 mm) on each side of the lap edge.
   - Press the TEGOBLOC DETAIL FABRIC into place to ensure that the ULTRA-GUARD EFS has fully wetted out the fabric.

Repairs:

Small Punctures [1/2" (12.7 mm) or less]:

1. **Apply ULTRA-GUARD EFS:**
   - Apply ULTRA-GUARD EFS over the damaged area.

Punctures ½" to 1" (12.7 - 25.4 mm):

1. **Apply ULTRA-GUARD EFS:**
   - Apply ULTRA-GUARD EFS over the damaged area, extending onto TEGOBLOC PRE-WRAP or PRE-WRAP EX.
2. **Embed Fabric:**
   - Embed a piece of TEGOBLOC DETAIL FABRIC into the wet ULTRA-GUARD EFS.

Damaged Areas Greater than 1" (25.4 mm):

1. **Remove Damaged Portion:**
   - Remove the damaged portion of TEGOBLOC PRE-WRAP or PRE-WRAP EX.
2. **Apply ULTRA-GUARD EFS:**
   - Apply ULTRA-GUARD EFS in a 6" (150 mm) band onto the fabric face of the TEGOBLOC PRE-WRAP or PRE-WRAP EX area to be lapped, at approximately 60 mils thickness.
3. **Install New Piece:**
   - Install a piece of TEGOBLOC PRE-WRAP or PRE-WRAP EX extending 6" (150 mm) from the damaged area in all directions and embed it into the wet ULTRA-GUARD EFS. Mechanically fasten to hold in place.
4. **Apply ULTRA-GUARD EFS Over Termination:**
   - Apply ULTRA-GUARD EFS in a 12" (300 mm) band centered over the termination and while still wet, embed 12" (300 mm) wide TEGOBLOC DETAIL FABRIC into the ULTRA-GUARD EFS.
5. **Ensure Proper Centering:**
   - Ensure that TEGOBLOC DETAIL FABRIC is centered over the termination with 6" (150 mm) on each side of the lap edge. Press the

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TEGOBLOC DETAIL FABRIC into place to ensure that the ULTRA-GUARD EFS has fully wetted out the fabric.

Inspection and Protection:

1. **Membrane Inspection:**
   - Inspect the membrane prior to pouring concrete for any punctures or damage and repair as described above.
2. **Protection from Other Trades:**
   - Protect TEGOBLOC PRE-WRAP or PRE-WRAP EX from other trades prior to concrete placement.
3. **Concrete Placement Timeline:**
   - Ensure that concrete is poured within 60 days of TEGOBLOC PRE-WRAP or PRE-WRAP EX installation.

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