

# INSTALLATION GUIDELINES PRECON®

This document has been created as an addendum to our PRECON technical data sheet to provide information regarding the application of PRECON waterproofing/vaporproofing membrane when installed up against a soil retention system in a blindside application. Following are the typical installation instructions recommended by W. R. MEADOWS. It is important to review each application as there may be situations that may require this procedure to be modified based on the project requirements. If this situation arises, please contact W. R. MEADOWS technical service.

## PRODUCTS REQUIRED

- PRECON waterproofing/vaporproofing membrane: composite sheet membrane comprised of a non-woven fabric, elastomeric membrane, and W. R. MEADOWS' patented plasmatic core.
- HYDRALASTIC 836: cold-applied, solvent-free, single-component waterproofing compound used for detailing of PRECON at end laps, penetrations, and repairs.
- BEM: one-component, cold-applied, non-slump waterproofing material that can be used as an alternate to HYDRALASTIC 836.
- MEL-ROL LIQUID MEMBRANE (two-component): two component, 100% solids, cold-applied, non-slump waterproofing material that can be used as an alternate to HYDRALASTIC 836 and is recommended for low temperature installations of PRECON LOW TEMP.
- DETAIL FABRIC: polypropylene, staple fiber, needle-punched, non-woven geotextile fabric used for end laps and penetration details.
- WATERSTOP EC: regular version waterstop containing bentonite.
- WATERSTOP EC PLUS: combination of hydrophilic rubber and bentonite for use in applications below the water table.
- CLAY-TITE™ MASTIC: used for adhesion of the WATERSTOP EC or WATERSTOP EC PLUS.
- MEL-DRAIN™ drainage board: dimple-raised, molded polystyrene sheet bonded to high strength polypropylene fabric.
- MEL-DRAIN TOTAL-DRAIN™: Prefabricated strip drain consisting of molded polystyrene sheet bonded to high strength polypropylene fabric.
- TERMINATION BAR: high strength plastic strip designed to support PRECON and MEL-DRAIN at the top of wall termination point.
- FASTENERS: Flat-headed steel fasteners with washers are recommended. Must be appropriate for the substrate.

## LIMITATIONS

- Concrete should be poured within 60 days of membrane installation.
- PRECON may be applied at temperatures down to 40° F (5° C); however, in less than ideal environments or marginal conditions, consider the use of PRECON LOW TEMP below 60° F (16° C). PRECON LOW TEMP can be used in temperatures down to 25° F (-4° C). Please refer to the PRECON COLD WEATHER APPLICATION TECHNICAL BULLETIN for proper installation procedures.
- Prior to the concrete pour, any ponded water, dirt, or debris that has accumulated on PRECON needs to be removed as this could affect the bond of PRECON to the concrete.



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

## STORAGE

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

## SUBSTRATE PREPARATION

Blindside applications are very challenging which includes the substrate upon which the membrane is installed. There are several types of soil retention systems designed to retain the earth. All of these have their own challenges in installation and preparation prior to installation of the PRECON waterproofing system. Several common shoring wall construction techniques include h-piles and timber lagging, corrugated sheet piles, rock, auger cast caissons, and even cement stabilized soil.

For proper performance of the membrane, it is essential that the surface be addressed to ensure that the membrane is not damaged and will adhere fully to the concrete once poured in place. Overlooking this will allow for water intrusion into the structure.

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

W. R. MEADOWS recommends the use of MEL-DRAIN drainage board for all installations of PRECON, but due to certain site conditions and project requirements, this sometimes cannot be done effectively. The decision to remove the drainage board should be at the discretion of the engineer. In situations where a drainage board is not applied, surface preparation is even more important.

Due to the wide variety of these substrates and their conditions, it is recommended to contact your local W. R. MEADOWS technical representative for any questions prior to installation of PRECON. Following are some standard guidelines for surface preparation:

### WOOD LAGGING WITH STEEL PILES:

1. Be sure all lagging board nails are pounded flush or removed.
2. Remove all sharp protrusions, mud, debris, ice, or any other materials that will affect the membrane's performance.
3. Fill or cover any irregularities and voids between lagging board exceeding 1" (25 mm) using spray foam, concrete grout, patching mortar, rigid insulation, or treated plywood to provide a sound substrate.

### CAISSONS:

1. If the augered caissons are smooth, PRECON can be installed directly onto the caissons. Any sharp protrusions need to be removed. For the depressed areas between each pile, this area must be filled with a concrete grout prior to PRECON installation.



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2. If the augered caissons are rough and irregular, a minimum  $\frac{3}{4}$ " (19.1 mm) pressure-treated plywood must be installed. The void behind the plywood at the depressed areas shall be filled with sand, aggregate, or grout to provide a solid substrate for PRECON installation. Plywood selection and installation shall be determined by the project engineer.

## **SHEET PILING:**

1. In areas where PRECON is to be in direct contact with the steel piling, all sharp protrusions need to be removed.
2. In areas where the PRECON is to span the sheet piling, a minimum  $\frac{3}{4}$ " (19.1 mm) pressure-treated plywood must be installed. The void behind the plywood at the depressed areas shall be filled with sand, aggregate, or grout to provide a solid substrate for PRECON installation. Plywood selection and installation shall be determined by the project engineer.

## **SHOTCRETE:**

1. Remove all sharp protrusions, mud, debris, ice, or any other materials that will affect the membrane's performance.
2. Fill or cover any voids or irregularities exceeding 1" (25 mm) using a concrete grout or patching mortar.

## **SLURRY WALL:**

1. Remove all sharp protrusions, mud, debris, ice, or any other materials that will affect the membrane's performance.
2. Fill or cover any voids or irregularities exceeding 1" (25 mm) using a concrete grout or patching mortar.

**NOTE:** For all substrates, if using MEL-DRAIN drainage board prior to PRECON installation, a void of 2" (50 mm) is acceptable.

## **DETAILING**

### **PENETRATIONS:**

1. All penetrations and protrusion surfaces are to be prepared ensuring that all surfaces are clean, rust-free and sound.
2. Ensure that small penetrations, such as nails and fasteners, fully cover the fastener with HYDRALASTIC 836.
3. Larger penetrations:
  - a. Apply HYDRALASTIC 836 onto the fabric face of pre-installed PRECON and the penetration a minimum of 2  $\frac{1}{2}$ " (64 mm) in all directions.
  - b. Form a fillet or cove around the base of the penetration to aid in the transition. Application thickness of this HYDRALASTIC 836 should be 60 mils.
  - c. Embed DETAIL FABRIC into the HYDRALASTIC 836 and press into place, ensuring that the DETAIL FABRIC has been fully wetted out with the HYDRALASTIC 836.

### **TIEBACKS/SOIL NAILS:**

1. Install the PRECON waterproofing membrane up to the tieback as close as possible.
2. Apply HYDRALASTIC 836 onto the fabric face of pre-installed PRECON a minimum of 2  $\frac{1}{2}$ " (64 mm) in all directions. Form a fillet or cove around the base to aid in the transition.
3. Fully coat the tieback with HYDRALASTIC 836. Application thickness of this HYDRALASTIC 836 should be 60 mils.
4. Embed DETAIL FABRIC into the HYDRALASTIC 836 and press into place, ensuring that the DETAIL FABRIC has been fully wetted out with the HYDRALASTIC 836. This should fully encase the tieback.



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## CONSTRUCTION JOINTS:

1. Install WATERSTOP EC a minimum of 2" (50 mm) from face of wall.
2. Prior to installation, apply CLAY-TITE MASTIC in all areas to receive WATERSTOP EC or WATERSTOP EC PLUS (below water table). This is used as an adhesive to hold the waterstop in place along with the fasteners.
3. Remove release paper to expose adhesive on WATERSTOP EC.
4. Fasten with nails and washers every 12" (300 mm) O.C.
5. For subsequent applications of WATERSTOP EC, butt ends of waterstop together to ensure continuity.

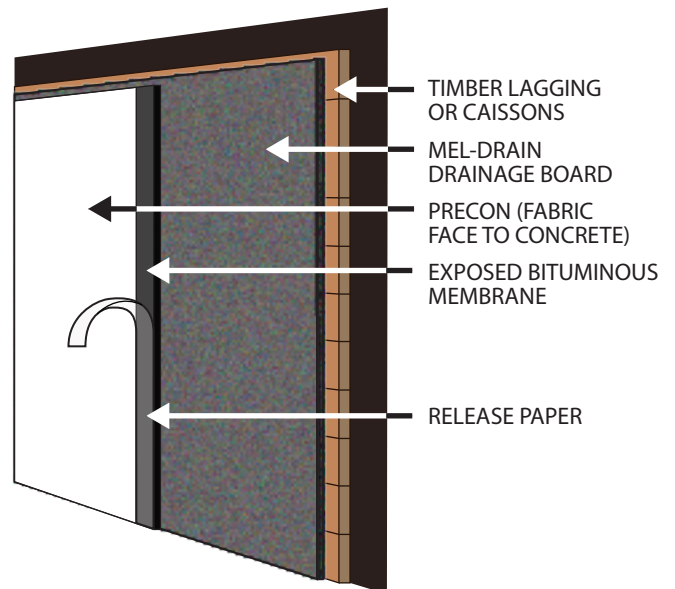
## MEMBRANE INSTALLATION

1. Mechanically fasten membrane across the top lagging at 12" (300 mm) on center, ½" (12 mm) from the top, with fasteners and termination bar approved by the manufacturer.
2. Ensure that the fabric side of the membrane is facing the interior side of the installation. This is the side that the concrete is to be poured against.
3. Apply HYDRALASTIC 836 over the areas where the fasteners have been attached.
4. If fasteners are required vertically, install at 24" (600 mm) O.C. in the factory edge of the membrane prior to overlap of subsequent sheet. These fasteners do not need any additional detailing.
5. Any fasteners to be installed in the field of the membrane need to be detailed with HYDRALASTIC 836, fully encasing the fastener.

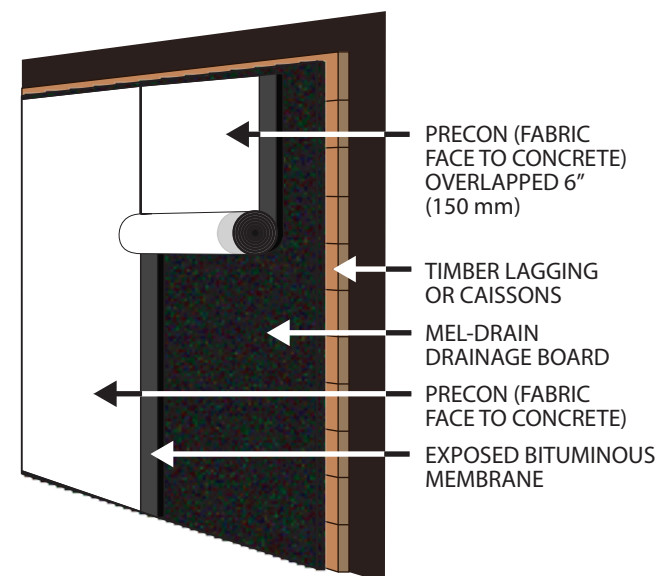
## END LAPS/FACTORY EDGE:

### FACTORY EDGE

1. Remove release paper on 6" (150 mm) factory edge exposing the bituminous membrane.



2. Overlap the edge of the subsequent sheet. Roll press into place to ensure good adhesion.

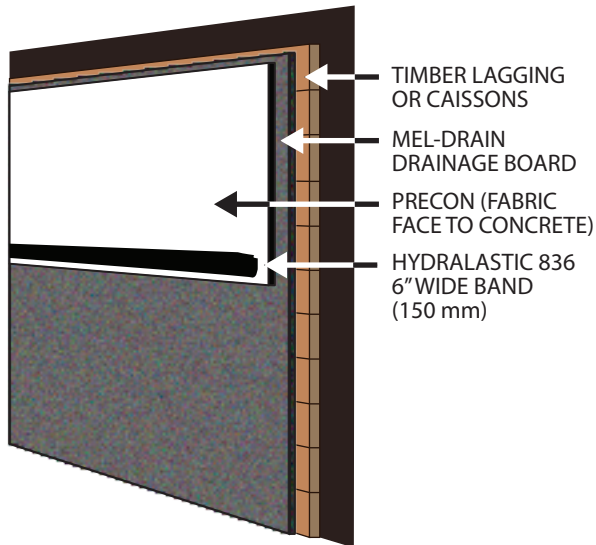


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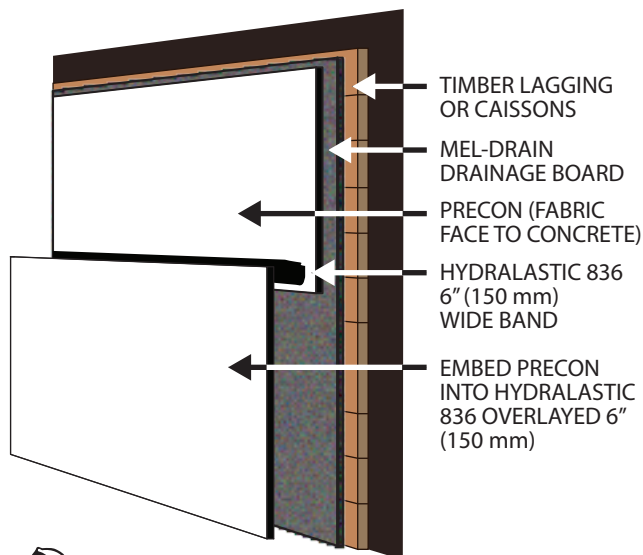
# INSTALLATION GUIDELINES PRECON®

## END LAP

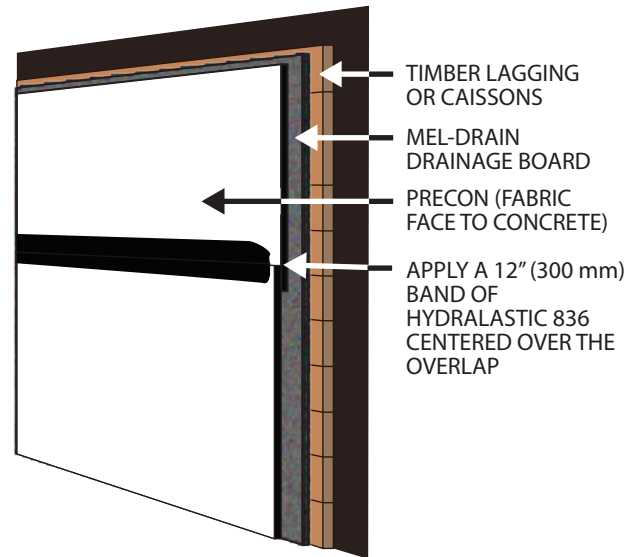
1. Apply HYDRALASTIC 836 in a 6" (150 mm) band onto the fabric face of the PRECON area to be overlapped at approximately 60 mils thickness.



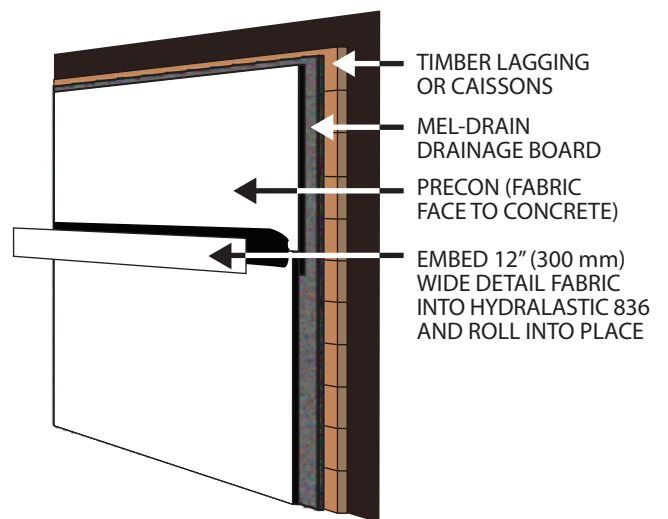
2. Overlap this area with the subsequent sheet of PRECON and roll press into place.



3. Apply HYDRALASTIC 836 in a 12" (300 mm) band centered over the lap edge and while still wet, embed 12" (300 mm) wide DETAIL FABRIC into the HYDRALASTIC 836.



4. Ensure that DETAIL FABRIC is centered over the termination with 6" (150 mm) on each side of lap edge. Press DETAIL FABRIC into place to ensure that the HYDRALASTIC 836 has fully wetted out the fabric.





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## REPAIRS

1. Small Punctures [1/2" (12.7 mm) or less]
  - a. Apply HYDRALASTIC 836 over the damaged area.
2. Punctures 1/2" to 1" (12.7 - 25.4 mm)
  - a. Apply HYDRALASTIC 836 over the damaged area extending onto PRECON.
  - b. Embed a piece of DETAIL FABRIC into the wet HYDRALASTIC 836.
3. Damaged areas greater than 1" (25.4 mm)
  - a. Remove the damaged portion of PRECON.
  - b. Apply HYDRALASTIC 836 in a 6" (150 mm) band onto the fabric face of the PRECON area to be lapped at approximately 60 mils thickness.
  - c. Install a piece of PRECON extending 6" (300 mm) from the damaged area in all directions and embed into the wet HYDRALASTIC 836. Mechanically fasten to hold into place.
  - d. Apply HYDRALASTIC 836 in a 12" (300 mm) band centered over the termination and while still wet, embed 12" (300 mm) wide DETAIL FABRIC into the HYDRALASTIC 836.
  - e. Ensure that DETAIL FABRIC is centered over the termination with 6" (150 mm) on each side of lap edge. Press DETAIL FABRIC into place to ensure that the HYDRALASTIC 836 has fully wetted out the fabric.

## INSPECTION AND PROTECTION

1. Inspect membrane prior to pouring of concrete for any punctures or damage and repair as above.
2. Protect PRECON from other trades prior to concrete placement.
3. Concrete is required to be poured within 60 days of PRECON installation.

