1. **Purpose**

1.1 The purpose of this document is to establish uniform procedures for installing TREMproof Amphibia membranes on blindside walls.

1.2 The techniques involved may require modifications to adjust to job site conditions. Tremco recognizes that site specific conditions, weather patterns, contractor preferences and membrane detailing may require deviation or alteration from these prescribed installation procedures. When such circumstances exist on a project, Tremco recommends that the local Tremco Sales Representative or Technical Services be contacted for assistance as required.

2. **Scope**

2.1 This document will provide the necessary instructions for the application of TREMproof Amphibia membranes to qualify for the manufacturer’s warranty.

3. **Possible System Components**

3.1 Recommended materials and their use are as follow. For more information on the following materials, please contact your local Tremco Sales Representative or visit our website for product specific data sheet and application instructions at www.tremcosealants.com.

- TREMproof Amphibia Waterproofing Membrane is a self-healing, self-sealing and self-repairing sheet waterproofing membrane. This co-extruded, watertight membrane has three active layers – a watertight EPDM barrier, an active core with the ability to seal when penetrated, and an active barrier which seals the overlap and prevents lateral movement of water. Also, a non-woven fabric layer promotes the mechanical adhesion of the membrane to the concrete.

- TREMproof® Safety Tape
- TREMproof® Amphibia Grip Tape
- Tremco 830 (or, 830 Clear in California)
- AKTI-VO 201 Hydro-Reactive Mastic, or other approved material
- Superstop Waterstop
- Paraterm™ Bar
- Parasand N Dry®
- Paraprimer®
- Paragraanular®
- Paramastic®
- Dymonic® 100 Sealant
- TREMDrain® Series Drainage Mat

4. **Limitations**

4.1 Due to the variables present when installing shotcrete, all shotcrete applications must be first reviewed and approved by Tremco prior to installation.

4.2 Reinforced concrete structures need to be designed to withstand hydrostatic pressures.

5. **Storage**

5.1 Store in a dry place protected for UV and humidity, preferably in a horizontal position. Do not double stack pallets.

6. **Substrate Preparation**

6.1 WOOD LAGGING WITH STEEL PILES

6.1.1. Be sure all lagging board nails are pounded flush or removed. Check for missing or damaged lagging boards and repair using concrete grout, treated wood or both. Fill or cover any gaps between lagging board exceeding 1” (2.5 cm) using concrete grout or treated plywood.

6.1.2. If top of steel I-beams are to be removed by way of a torch or other mechanical cut-off method, cover/protect the front face of the Amphibia with a cement board to prevent damage to the installed membrane.

6.2 AUGERED CAISSON

6.2.1. When the surfaces of the individual augered piers, which make up the caisson wall, are relatively smooth, TREMproof Amphibia may be installed directly against piers. However, the “crotch” between each pier must be removed from the caisson wall.

6.2.2. When the surfaces of the augered piers are very rough and irregular, continuous minimum ¾” (19mm) or thicker (as determined by the engineer-of-record) pressure-treated plywood must be anchored every 12” (30 cm) O.C. to the caisson wall. The void created behind the plywood shall be filled with sand or aggregate. The proper plywood thickness and anchor spacing shall be determined by a civil, structural or soil engineer at the site and depend on the height of the caisson wall, the span of the plywood between piers and the resultant lateral pressure exerted by the sand/aggregate fill.

6.3 STEEL SHEET PILING

6.3.1. When the waterproofing is going to be in continuous contact with the profile of the steel piling, all sharp protrusions must be removed. In these areas where steel has been removed, the resultant surface shall be smooth and flat to the bare hand.

6.3.2. When the waterproofing installation is going to span the sheet piling voids, sheets of a minimum ¾” (19mm) or thicker (as determined by the engineer-of-record) pressure-treated plywood should first be installed across the void and anchored into place every 12” (30 cm) O.C. The void behind the plywood should be filled with sand and/or aggregate. The proper plywood thickness and anchor spacing shall be determined by a civil, structural or soil engineer at the site and depends on the height of the piling, the span of the plywood and the resultant lateral pressure exerted by the sand fill.

6.4 SLURRY WALL

6.4.1. Prior to the installation of TREMproof Amphibia against the exposed slurry wall, clean off all mud and dirt.

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6.4.2. Remove all sharp protrusions and fill all voids which exceed 2" (5 cm) wide by 1" (2.5 cm) with concrete grout.

7. Detail Work

7.1 All penetrations shall be secured prior to detailing. For single pipe penetrations, refer to Tremco details. Multiple penetrations shall be spaced a minimum of 6" (15 cm) apart to allow for proper detailing. If 6" (15 cm) spacing is not available, contact Tremco for a job-specific recommendation. If sealed or cored pipes are present, contact Tremco.

7.2 Following good concrete industry practices, a waterstop should be used at all construction cold joints. Install Superstop a minimum of 2" (5 cm) from face of wall or floor slab. It is recommended to apply Paraprimer to clean surface prior to adhering Superstop on vertical surfaces. Primer is also recommended for horizontal surfaces. Remove release paper from Superstop to expose adhesive. Butt ends together and fasten with nails and 1" (2.5 cm) washer every 12" (30 cm) O.C. If installing in keyways. When attaching to thru wall or slab penetrations, please consult Tremco’s library of detail drawings; some applications require secondary fastening (i.e.—a wire tie or zip tie securing the Superstop around the penetration if applicable).

7.3 If nails are pounded flush in the lagging boards, install a protective layer of TREMDrain over the I-Beam.

8. Membrane Application

8.1 If a drainage mat is required, install the proper TREMDrain drainage mat. This should be done in accordance with the associated application instructions, which are available on Tremco’s website. Contact your Tremco Sales Representative or Technical Services for assistance.

8.2 TREMproof Amphibia shall be installed with the white, non-woven “fleece” fabric layer facing the installer. TREMproof Amphibia may be installed with the long seams running either vertically or horizontally with equal performance. Pre-cut the membrane to the size required – the sheets can be folded and cut in any direction.

8.3 WOOD LAGGING WITH STEEL PILES

8.3.1. Tack the top edge of the membrane into the wood lagging boards every 16" (40cm) O.C. Leaving a flap of excess material above the tack line is optional; if employed, be sure to fold back and secure this material until a final termination or tie-in to above grade materials takes place. Ensure that fasteners do not interfere with any potential seam overlap areas. 1-1/2" (3.8cm) long low-profile head (no integral washer) powder-actuated or manually installed nails should be used. The membrane can then be draped over the lagging wall.

8.3.2. Ensure that adjacent courses of draped membrane are overlapped a minimum of 2" to 4" (5cm to 10cm) and sufficiently perpendicular to each other. The membrane features a red printed dashed line, which is 2" (5cm) from the sheet edge for quick reference when installing. This will ensure that the seam detail treatment in section 8.6 can be properly completed.

8.3.3. Once draped, only if needed, fasteners may be used intermittently in locations where the membrane needs to be in closer contact with the soil retention structure. Please note, as few fasteners as practical should be used to ensure the membrane is allowed to break free of the soil retention structure and move with the structural wall once complete. Ensure fasteners do not interfere with any seams.

8.3.4. Proceed to section 8.6 for proper seam detailing instructions.

8.4 AUGERED CAISSON

8.4.1. Tack the top edge of the membrane into the augered caisson wall every 16" (40cm) O.C. Leaving a flap of excess material above the tack line is optional; if employed, be sure to fold back and secure this material until a final termination or tie-in to above grade materials takes place. Ensure fasteners do not interfere with any potential seam overlap areas. 1-1/2" (3.8cm) long low-profile head (no integral washer) powder-actuated or manually installed nails should be used. The membrane can then be draped over the lagging wall.

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8.4.4. Proceed to section 8.6 for proper seam detailing instructions.

8.5 STEEL SHEET PILING

8.5.1. Allow for a 12” to 24” (30cm to 60cm) flap of excess material above the top edge of the piling system. This will be used to secure the draped courses of membrane temporarily until the structural wall has been placed and is cured.

8.5.2. Utilize form stakes or other robust, temporary anchors spaced every 24” (60cm) to nail through the flap of excess material directly into the soil. The membrane can then be draped over the lagging wall. These temporary anchors will allow the membrane courses to hang draped over the edge of the piling system until the structural wall has been placed and is cured.

8.5.3. Ensure that adjacent courses of draped membrane are overlapped a minimum of 2” to 4” (5cm to 10cm) and sufficiently perpendicular to each other. The membrane features a red printed dashed line, which is 2” (5cm) from the sheet edge for quick reference when installing. This will ensure that the seam detail treatment in section 8.6 can be properly completed.

8.5.4. Proceed to section 8.6 for proper seam detailing instructions.

8.6 All seams should be overlapped a minimum of 4” (10 cm). Gun a ½” (12mm) bead of Tremco 830 (or, 830 Clear in California) sealant between the overlaps. The seam shall then be compressed with a 2”x2” (5cm x 5cm) steel seam roller using pressure sufficient to adequately flatten/spread the sealant bead. Immediately following the rolling operation, seal all overlaps with TREMproof Amphibia Grip Tape centered on the adjacent sheet edge. The TREMproof Amphibia Grip Tape should be adhered to the white, non-woven “fleece” fabric layer facing the installer and pressed or rolled down to ensure full adhesion. Care must be taken to minimize wrinkles, fishmouths, or other irregularities in the adhered tape to maximize seam performance.

8.7 Seal around penetrations with a 1”x1” (2.5cm x 2.5cm) cant bead of AKTI-VO 201, or other approved water-swelling sealant or mastic. Contact Tremco before using products other than AKTI-VO 201.

8.8 When the placement of either footings or a mat slab is scheduled prior to waterproofing installation, a horizontal starter strip of TREMproof Amphibia should be installed first.

8.9 When there is below-floor and/or below-footing waterproofing, the tie-in detail between wall and floor waterproofing varies depending on the floor waterproofing system. Contact Tremco for recommendations.

8.10 Temporarily terminate TREMproof Amphibia at the top of the earth retaining system by folding it over and tacking it in place.

8.11 Concrete Wall Placement

8.11.1. Prior to concrete wall placement, repair any TREMproof Amphibia which has been damaged. This is typically accomplished by adhering an appropriately sized piece (or pieces) of TREMproof Amphibia Grip Tape to the white, non-woven “fleece” fabric layer facing the installer. These repairs shall be pressed or rolled down to ensure full adhesion. Care must be taken to minimize wrinkles, fishmouths, or other irregularities in the adhered tape to maximize repair performance.

8.11.2. Detail all rebar support anchors. Contact Tremco for specific instructions.

8.11.3. If the structural wall is poured-in-place, the concrete should not be dropped from higher than 4’ (1.2M), and the concrete should be forced towards the form work and not the membrane.

8.11.4. When there is below-floor and/or below-footing waterproofing, the tie-in detail between wall and floor waterproofing varies depending on the floor waterproofing system. Contact Tremco for recommendations.