TeraPROOF™ Liquid Applied

Installer's Guide

07-2025 Version

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With you every step of the way

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I. Siplast TeraPROOF Liquid Products System Overview

Siplast TeraPROOF System

TeraPROOF STP Liquid Membrane is a liquid-applied elastomeric waterproofing membrane, using STP moisture-cure technology, which is ideal for new structural “green concrete” with high relative humidity (RH). TeraPROOF STP Liquid Membrane is applied directly to suitable concrete substrates without the need for a primer. It has a low odor and contains very low VOCs to meet environmental restrictions and other specific job site requirements. The TeraPROOF STP Liquid Membrane is designed to waterproof positive-side foundation walls, concrete slabs, mechanical equipment, wells, and other underground applications. It can also be used to waterproof above-grade applications such as plaza decks or planter boxes.

II. Products

Liquid Membranes

- TeraPROOF STP Liquid Membrane

Flashings and Sealants

- TeraPROOF STP Liquid Membrane
- PS-715 NS Elastomeric Sealant or a compatible approved sealant
- Paraflex 531 Liquid Flashing System

Protection and Drainage Course

- TeraPROOF Protection CS1000
- TeraPROOF 10-11 Drainage Mat

Accessories (as needed)

- PowerSeal Applicator
- Pro Prep Cleaner
- Pro Fleece
- Termination bar
- Fasteners with appropriate washer, attachment type, structural capacity, and head configuration

III. Personal Protection

For professional use only. Before application, refer to the applicable TeraPROOF liquid products Commercial Product Data Sheets (CPDS), Safety Data Sheets (SDS), project specifications, and application instructions. Always read the full label and product safety data sheet for precautionary instructions before use. Use appropriate safety equipment and job-site controls during application and handling. The applicator is responsible for ensuring conditions are appropriate to proceed and proper application methods are followed. When required, air monitoring should be performed by a qualified person to identify any hazards.

IV. Storage and Handling

TeraPROOF liquid applied products should be stored upright, between 50°F to 90°F (10°C to 32°C) on a clean, flat surface in dry conditions out of direct exposure to the elements. When stored in these conditions, TeraPROOF liquid applied products have a shelf life of 12 months after the date of manufacture. This shelf life assumes upright storage of factory-sealed containers. Do not open the container until preparation work has been completed. Keep the container tightly closed when not in use. Do not alter or mix with other chemicals.

Use appropriate safety equipment and job-site controls during application and handling. Pallets should not be double-stacked. The contractor shall ensure compliance with OSHA, EPA, and other local governing and disposal authorities for project-related safety and environmental requirements. Dispose of unused TeraPROOF liquid products in accordance with local, state, and federal regulations. Consult local, provincial, territorial, or state authorities to know disposal methods.

V. Installation Tools

For liquid materials such as primers, liquid membrane, liquid flashing, and sealants, the following tools are recommended, depending on the specific application:

- Wet mil gauge, tape measure, utility knife, shears, and hard rollers of various widths
- Stiff bristle brushes
- ⅜ inch to ¾ inch (10 to 19 mm) nap rollers and handles
- Flat blade or ¼ inch (6 mm) notched squeegees and handles
- Trowels, flat-blade putty knives, joint sealing tools

VI. Substrate Evaluation and Preparation

Prior to the installation of TeraPROOF STP Liquid products, the following are required:

- Inspect all substrates before applying TeraPROOF STP Liquid Membrane. Ensure that substrates are clean, repaired, prepared, and otherwise satisfactory before applying waterproofing materials.
- The concrete finish should be wood-float, wood trowel, and light broom finish with a Concrete Surface Profile (CSP) of 3 to 4 per the International Concrete Repair Institute (ICRI). See the International Concrete Repair Institute (ICRI) Concrete Repair Manual for more information. The concrete should NOT have a hard, smooth finish where the TeraPROOF STP Liquid Membrane is applied. Smooth surfaces should be mechanically abraded by grinding, sandblasting, or shotblasting where concrete is too smooth to achieve an acceptable bond.
- Rough, pitted, porous concrete surfaces and other surface irregularities may result in pinholes in the TeraPROOF STP Liquid Membrane. Surface irregularities must be repaired using appropriate concrete repair materials and methods, including additional coats of TeraPROOF STP Liquid Membrane, Siplast PS 715 Sealant, epoxy, or repair mortars. Refer to Substrate repairs below for appropriate treatments.
- Examine the adhesion of the TeraPROOF STP Liquid Membrane to concrete substrates. Refer to the Adhesion section noted below for adhesion test guidance.
- Notify the design professional, general contractor, or other responsible party if the substrate has not been properly prepared for the application of TeraPROOF STP Liquid Membrane. Ensure that corrective actions are taken, repairs are made, and conditions are acceptable before applying TeraPROOF STP Liquid Membrane.
- See the applicable TeraPROOF details for additional information on inspection, overlap, and repair of the TeraPROOF STP Liquid Membrane waterproofing membrane.

Concrete Substrate Evaluation

The following are requirements for new and existing concrete substrate evaluation:

- TeraPROOF STP Liquid Membrane can be applied on green concrete. For optimum bonding, concrete cure time should be 3 to 7 days. If necessary, conduct a 180-degree Peel Test to confirm the adhesion (see Adhesion Evaluation section).
- Concrete substrates should be sufficiently cured as specified by the design professional. Refer to ACI 301, Specifications for Structural Concrete, and ACI 308, Specification for Curing Concrete, for the examination and evaluation of concrete substrates.
- Concrete should be allowed to cure 3 to 7 days, and the surface should be dry to the touch, in order to apply TeraPROOF STP Liquid Membrane. Concrete cure time varies based on project environment, and the concrete should be water cured. Comply with the project's concrete specifications for cure time. Concrete curing time will vary depending on the project environment.
- Examine concrete substrates to ensure substrates are flat, free of fins or planar irregularities greater than 1/4 inch in 10 ft. Verify that surfaces are free of mortar spills, concrete debris, and foreign materials.
- When specified or otherwise necessary to measure the relative humidity (RH) of the concrete, complete testing in accordance with ASTM F2170, Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. For horizontal applications, a maximum limit of 75% relative humidity (RH) is acceptable for the TeraPROOF STP Liquid Membrane.
- Curing compounds and concrete admixtures can inhibit adhesion. Curing compounds and concrete admixtures must be compatible with the TeraPROOF STP Liquid Membrane. If curing compounds are required, sodium silicate is preferred. Mechanically abrade/remove all incompatible curing compounds from the concrete surface. Please confirm compatibility with your Siplast representative.
- Existing concrete substrates should be cleaned, repaired, and prepared as necessary to install the TeraPROOF STP Liquid Membrane. Refer to the Preparation and Repairs sections noted below.

Concrete Substrate Preparation

The following are requirements for new and existing concrete substrate preparation:

- New, properly designed, installed, and finished structural concrete should only require minimal preparation for the TeraPROOF STP Liquid Membrane.
- Concrete should be prepared in general accordance with ASTM D5295, Standard Guide for Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems.
- Refer to ASTM D4258, Standard Practice for Surface Cleaning Concrete for Coatings.
- Concrete to be free of exposed aggregate, spalls, voids, blow holes, loose materials, laitance, and efflorescence.
- Clean new concrete substrates to remove loose dirt, dust, and debris as necessary to ensure satisfactory adhesion of the TeraPROOF STP Liquid Membrane. Substrates should be sufficiently clean to ensure adequate adhesion of the TeraPROOF STP Liquid Membrane.
- Mechanically abrade/remove all incompatible curing compounds from the concrete surface.
- Remove all existing waterproofing materials and all other foreign materials that interfere with the adhesion of the TeraPROOF STP Liquid Membrane. Use mechanical scarifying, grinding, or shot blasting methods where necessary to remove residual waterproofing and to provide a suitable concrete surface free of incompatible materials. Refer to the Evaluation section noted above.
- For penetrations, mechanically abrade the glossy finishes of metals and hard plastics, where TeraPROOF STP Liquid Membrane is to be applied, then wipe the surface thoroughly with a clean cloth and Siplast Pro Prep cleaner.

Concrete Substrate Repairs

The following are requirements for substrate repairs:

- In all cases where gaps, cracks or voids are identified, notify the design professional, general contractor or other responsible party upon discovery of significant damages and concrete deficiencies that cannot be properly addressed by cleaning and preparation measures indicated above. Ensure corrective action is taken, and repairs are acceptable, before applying TeraPROOF STP Liquid Membrane.
- Refer to ASTM D5295, Standard Guide for Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems, and the referenced concrete repair standards and guidelines.
- Clean and remove dust, debris, and all loose materials from the irregularity areas to be filled or repaired.
- **Small isolated irregularities or gaps that are ⅛ inch (3 mm) deep or less**, such as small spalls, pitting, voids, and holes must be pretreated to provide a uniform surface prior to the application of the TeraPROOF STP Liquid Membrane waterproofing membrane using the following method:
    - Pre-treat concrete irregularities with TeraPROOF STP Liquid Membrane or PS 715. Use a brush, roller, or trowel to work in and bond the waterproofing material to the substrate.
    - Ensure that the required waiting time is observed before covering.
- **Gaps, cracks, or damage greater than ⅛ inch (3 mm) deep** should be reported to the design professional. After approval from the qualified authority for structural soundness, the crack should be treated before application of the subsequent TeraPROOF STP Liquid Membrane waterproofing membrane using one of the following methods:
    - Option 1: **For gaps, cracks, or damage not exceeding ¼ inch**,
        - Apply a minimum wet film thickness of 90 mils (2.3 mm) of TeraPROOF STP Liquid Membrane to the surfaces to be filled, covering a minimum of 3 inches (76 mm) on each side of the damage or the cracks.
        - Use a trowel to work in and bond the waterproofing material to the gap area in the substrate.
        - Trowel the liquid surface smooth and allow the filled area to cure before covering with subsequent coats of membrane.
    - Option 2: **Reinforced Membrane for larger gaps, cracks, or damage**
        - Complete all the steps in Option 1 of this section.
        - Cover a minimum of 3 inches (76 mm) on each side of the damage or the crack by applying a minimum thickness of 30 mils (0.75 mm) of TeraPROOF STP Liquid Membrane to the surface. Install the TeraPROOF Reinforcing Fabric into the product while it is still wet. Apply a second coat of TeraPROOF STP Liquid Membrane 30 mils (0.75 mm) using a brush or a roller, making sure the TeraPROOF Reinforcing Fabric previously applied is sufficiently saturated and free of voids.
        - Ensure that the required waiting time is observed for the repair application before covering with subsequent coats of membrane.
- See Detail 07.1R Membrane Repairs for additional membrane damage and repair information.

Adhesion Evaluation

Where a field adhesive evaluation is required by the project specifications, conduct 180-degree peel tests to examine the adhesion between the TeraPROOF STP Liquid Membrane and prepared substrates using the following method:

- Refer to ASTM C794, Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants. Choose 3 or more test areas that are representative of each substrate. Clean and prepare the substrates as indicated.
- Cut minimum 2 inch (5 cm) wide x 12 inch (30 cm) long strips of Siplast Pro Fleece reinforcing fabric.
- Apply the TeraPROOF STP Liquid Membrane to fully encapsulate an 8 to 9 inch (20 to 23 cm) long section of the 12 inch (30.48) strip of reinforcing fabric, allow a 3 to 4 inch (8 to 10 cm) “dry tail” to remain un-adhered.
- Based on environmental conditions, allow sufficient time for samples to fully cure through, until the material is no longer wet and tacky. See product Drying and Curing Times section.
- Grip the “dry tail” end of the reinforcing fabric and pull 180 degrees, parallel with the surface. Use a handheld scale or a similar scale to measure quantitative results in pounds of resistance where quantitative results are desired.
- For concrete substrates, results should demonstrate strong resistance to peel, with cohesive failure. Most of the TeraPROOF STP Liquid Membrane should remain bonded to the substrate.
- Record results with digital photos for reference.
- Where quantitative measurements of peel resistance are desired, the peel resistance should exceed 2 lbf per lineal inch of sample width (e.g. a 2 inch wide sample should exceed 4 lbf and the sample should not peel away “clean” from the substrate).
- Take photos or videos of the samples and the substrate to record conditions.

VII. Membrane Applications

The following are requirements for TeraPROOF STP Liquid Membrane installations:

- Before applying TeraPROOF STP Liquid Membrane, ensure that the substrate conditions are acceptable.
- Siplast recommends reinforcing flashings at penetrations and transitions before the application of the TeraPROOF STP Liquid Membrane waterproofing membrane. See the applicable TeraPROOF details for additional requirements regarding specific applications.
- When installing TeraPROOF liquid products, it is recommended to install the TeraPROOF SBS membranes and flashings before application of the TeraPROOF liquid systems. Refer to the *Siplast TeraPROOF SBS Products Installer’s Guide* for installation requirements of SBS membrane and flashing membranes that will interface with TeraPROOF liquid products.
- When changing planes at all corners, provide a flashing reinforcement of the corner for at least 4 inches beyond the corner in both directions. The flashing reinforcement consists of a minimum of 60 mils (1.5 mm) base layer of TeraPROOF STP Liquid Membrane with Siplast Pro Fleece set into the wet base layer, and then a second coat of 60 mils (1.5 mm) of liquid membrane, applied while the base layer is still wet. See specific TeraPROOF details.
- TeraPROOF products should be installed in a manner to shed water in a shingle fashion. The membrane should be installed in a sequence that maintains a continuous downward water drainage plane.
- Apply TeraPROOF STP Liquid Membrane as packaged using a brush, trowel, or roller. Apply uniform applications of TeraPROOF STP Liquid Membrane using the appropriate application tools and equipment. Do not dilute or alter, or use for applications other than specified.
- Apply subsequent coats of TeraPROOF STP Liquid Membrane after the initial coating is dry to the touch and within 72 hours of the initial application. See product Drying and Curing Times section.

- TeraPROOF liquid products are not suitable for permanent UV exposure. See the specific commercial product data sheets (CDPS) for UV exposure limits.
- Prior to application, stir material using a paddle mixer and low speed drill, making sure to stir from the bottom to the top of the pail to obtain a homogeneous mixture. Be careful not to create a vortex on the surface that could introduce unwanted air into the material.

Temperatures and Weather Conditions

The following are temperature and weather condition requirements for TeraPROOF STP Liquid Membrane installations:

- Application of TeraPROOF liquid products may proceed when ambient and surface temperatures are adequate (see Drying and Curing Times section) and the substrate is clean, dry, and frost-free.
- Do not apply TeraPROOF STP Liquid Membrane if precipitation is expected within 2 hours of application. After precipitation, allow sufficient time for substrate surfaces to dry before applying TeraPROOF STP Liquid Membrane waterproofing materials.
- TeraPROOF liquid products may be applied to damp surfaces and tolerates rain immediately after application. It is suggested that the membrane material be dry to the touch before being exposed to excessive rain. A surface is considered damp if there is no visible water on the surface and liquid water does not transfer from the surface when touched. Do not apply TeraPROOF STP Liquid Membrane materials to wet surfaces, standing water, dew, frost or ice. As with any coating, application to substrates with high moisture content may lead to blistering of the material.
- Ensure that all materials and substrates remain above the dew point temperature to prevent condensation. The ambient temperature should be well above the dew point temperature, with no dew, fog, or condensation present.
- Monitor ambient, substrate, and material temperatures to ensure that conditions remain satisfactory during application of TeraPROOF STP Liquid Membrane.
- For **Hot and Sunny Conditions:** TeraPROOF STP Liquid Membrane may cure and skin-over quickly. Store materials in cool or shaded areas out of direct sunlight.
- For **Cold Conditions:** TeraPROOF STP Liquid Membrane materials are not subject to freezing; however, materials may become viscous and difficult to apply when cold. When applying TeraPROOF STP Liquid Membrane in cold weather, provide a drum or pail heater bands that is specifically designed to heat containers as needed. During extended periods of cold weather when the substrate is exposed to freezing conditions, the substrate should be heated as necessary to remove ice crystals and frost that may be present.

Vertical Membrane Application

The following requirements apply to vertical TeraPROOF Liquid Membrane installations:

- Where **non-reinforced waterproofing** application is specified, apply a minimum 60 mil (1.5 mm) layer of TeraPROOF STP Liquid Membrane to the prepared substrate.
- Where **fully-reinforced waterproofing** is specified:
    - Apply a minimum 60 mils (1.5 mm) base layer of TeraPROOF STP Liquid Membrane to the prepared substrate.
    - Immediately set Siplast Pro Fleece reinforcement into the wet TeraPROOF STP Liquid Membrane.
    - Ensure the reinforcing fabric is cut to conform to conditions so that the TeraPROOF STP Liquid Membrane is fully reinforced and overlapped at cuts, side-laps, and end-laps. Overlap reinforcing fabric side-laps a minimum of 2 inches (50 mm) and end laps a minimum of 4 inches (100 mm). Apply TeraPROOF STP Liquid Membrane between reinforcing fabric laps.
    - Use a brush, roller, or squeegee to work the TeraPROOF STP Liquid Membrane into the reinforcement as needed to eliminate “dry” reinforcement, voids, air pockets, and wrinkles.

- Apply a minimum 60 mils (1.5 mm) top coat of TeraPROOF STP Liquid Membrane on the reinforcing fabric set in wet membrane below.
- Where substrate conditions are uneven, apply additional TeraPROOF STP Liquid Membrane as needed to ensure the reinforcement is fully encapsulated and covered by TeraPROOF STP Liquid Membrane.

Waterproofing Membrane Tie-ins:

The following requirements apply to transitions with cured TeraPROOF Liquid Membrane installations:

- At the field of waterproofing membrane and flashing tie-ins, where TeraPROOF STP Liquid Membrane materials have cured, apply new TeraPROOF STP Liquid Membrane overlapped onto the cured TeraPROOF STP Liquid Membrane a minimum of 4 inches.
- Where TeraPROOF STP Liquid Membrane has been exposed for an extended period (72 hours or more), or has become dirty, clean the TeraPROOF STP Liquid Membrane surface using a clean cloth and xylene solvent. Apply new TeraPROOF STP Liquid Membrane overlapping 6 inches onto the clean, dry waterproofing membrane surface.

Liquid Flashing Application

The following requirements apply to TeraPROOF Liquid Membrane flashing installations:

- Before applying TeraPROOF STP Liquid Membrane materials, ensure that penetrations and transitions are clean, prepared, secured to prevent movement, and that all gaps and breaks between substrates are properly sealed.
- Before applying TeraPROOF STP Liquid Membrane, pre-cut Siplast Pro Fleece to conform to flashing details. Ensure the TeraPROOF STP Liquid Membrane is fully reinforced and overlapped at finger cuts, side laps and end laps to eliminate skips or breaks in the reinforcement.
- When applying a subsequent layer or overlap of membrane, if TeraPROOF STP Liquid Membrane has become dirty or has been exposed for an extended period of time (72 hours or more), clean the TeraPROOF STP Liquid Membrane surface, making sure to maintain its thickness, with a clean cloth and Siplast Pro Prep cleaner. Overlap the new layer of TeraPROOF STP Liquid Membrane by 6 inches (150 mm) onto the clean and dry waterproofing surface.
- Overlap the TeraPROOF STP Liquid Membrane by a minimum of 4 inches (100 mm) on the flashing details, unless otherwise specified.
- Overlap Pro Fleece side laps by a minimum of 2 inches (50 mm) and end laps by a minimum of 4 inches (100mm). Apply TeraPROOF STP Liquid Membrane between the overlap of the Pro Fleece.
- Extend the TeraPROOF STP Liquid Membrane a minimum of ¼ inch (6 mm) beyond the Pro Fleece.

Horizontal Protected Membrane Application

The following requirements apply to horizontal TeraPROOF Liquid Membrane installations:

- Apply a minimum 60 mils (1.5 mm) base layer of TeraPROOF STP Liquid Membrane to the prepared substrate on the vertical and horizontal surfaces. The vertical terminations extend at least 4 inches (200 mm) vertically above the horizontal surface of the waterproofing membrane.
- Immediately place Siplast Pro Fleece into the still-wet TeraPROOF STP Liquid Membrane.
- Ensure the reinforcing fabric is cut to conform to conditions so that the TeraPROOF STP Liquid Membrane is fully reinforced and overlapped at cuts, side-laps, and end-laps. Overlap reinforcing fabric side-laps a minimum of 2 inches (50 mm) and end laps a minimum of 4 inches (100 mm). Apply TeraPROOF STP Liquid Membrane between reinforcing fabric laps.

- Use a brush, roller, or squeegee to work the TeraPROOF STP Liquid Membrane into the reinforcement as needed to eliminate “dry” reinforcement, voids, air pockets, and wrinkles.
- Ensure that the first layer is dry to the touch before applying the next coat.
- Apply a second coat of 60 mils (1.5 mm) of TeraPROOF STP Liquid Membrane. Work the TeraPROOF STP Liquid Membrane into the Pro Fleece to ensure that the reinforcement is fully encapsulated.
- Where substrate conditions are uneven, apply additional TeraPROOF STP Liquid Membrane as needed to ensure the reinforcement is fully encapsulated and covered by TeraPROOF STP Liquid Membrane.
- Ensure that the TeraPROOF STP Liquid Membrane is fully protected from UV exposure by utilizing an option outlined in the Permanent UV Exposure section for the liquid waterproofing membrane.

Liquid Product Application Dimensions and Coverage

See the applicable Siplast TeraPROOF details for additional requirements regarding specific applications such as: reinforcement methods, and alternate installation options. The following are general application dimensional requirements for each product:

- Siplast TeraPROOF Liquid Membrane
  - The theoretical coverage rates are described in the list below, not including waste. Coverage will vary depending on the application technique and may be reduced over rough and uneven substrates.
    - 25 sf/gallon (at 60 wet mils)
    - 18 sf/gallon (at 90 wet mils)
    - 13 sf/gallon (at 120 wet mils)
    - 8.9 sf/gallon (at 180 wet mils)
    - 7.5 sf/gallon (at 215 wet mils)
    - 24 ln-ft per 20oz sausage tube (at 60 mils wet) troweled 2 inches (50 mm) wide
- Siplast PS-715 NS Elastomeric Sealant
  - Tooled fillet bead extending at least ½ in (12 mm) onto both surfaces.
  - The theoretical consumption rate of a 1/2 in (12 mm) x 1/2 in (12 mm) tooled sealant joint, is approximately 24 ln-ft per 20oz sausage tube, not including waste. Coverage will vary depending on the application technique, the width of joints applied, and may be reduced over rough and uneven substrates.

Drying and Curing Times

Surface & Air Temperatures Substrate and temperature conditions between 20°F (-7°C) and 110°F (43°C) are required for proper curing and drying of material to take place.

- When air or surface temperatures exceed 95°F (35°C), apply the product to the shady side of the structure before daytime air and surface temperatures reach their peak. Keep containers closed and out of direct sunlight when not in use. Do not apply when substrate temperature exceeds 110°F (43°C).
- Product may be applied to frost-free substrates at temperatures below 32°F (0°C). The product will cure more readily when temperatures reach 32°F (0°C) and remain above freezing. During cold weather, keep material stored in a heated environment prior to use.

The durations provided below are determined under normal conditions at 70°F (20°C) at 50% relative humidity (RH). Actual cure time may be slower with lower ambient or surface temperatures and/or lower RH.

- **Dry to Touch**. This is the time required to form a surface that is non-transferable or “skinned over”. This stage of curing is suitable for recoat or subsequent liquid applications.

    - 2 Hours for TeraPROOF liquid products, generally. See the specific commercial product data sheets (CPDS) for product-specific times.
- **Stress Resistant**. This is the time required for the surface to be resistant to minor abrasion. This stage is suitable for subsequent construction to proceed, such as the installation of cladding fasteners, continuous insulation, or cladding.
    - 24 Hours for TeraPROOF liquid products, generally. See the specific CPDS for product-specific times.
- **Full Cure**. This is the time required to develop a full cure for performance testing on a project site, mockups, or in a 3rd party lab facility. Examples of performance tests that require a full cure are: water infiltration testing, air leakage testing, peel adhesion testing, or pull testing. Substrate evaluation peel testing can be performed at 72 hours.
    - 14 Days for TeraPROOF liquid products, generally. See the specific CPDS for product-specific times.

VIII. Protection Course Applications

Prior to the application of an additional protection layer:

- Ensure waterproofing is cured sufficiently (not wet or tacky) for 24 hours or more before applying the protection course over the TeraPROOF STP Liquid Membrane waterproofing.
- Ensure the TeraPROOF STP Liquid Membrane has been thoroughly inspected and all deficiencies corrected before applying the protection course.

Protection Composite Sheet

Where appropriate for project conditions, Siplast TeraPROOF Protection CS1000 can be used as a foundation wall waterproofing membrane protection course, and may be installed in direct contact with the TeraPROOF STP Liquid Membrane or over insulation or other protection course layer, if required by project conditions.

- Cut Siplast TeraPROOF Protection CS1000 to conform to the foundation wall conditions so that the joints are tightly butted together.
- Ensure that the Siplast TeraPROOF Protection CS1000 is installed to cover and protect all TeraPROOF STP Liquid Membrane surfaces. Overlap the protection course with adjacent sheets a minimum of 3 inches (75 mm) to ensure that the TeraPROOF STP Liquid Membrane waterproofing membrane is not exposed.
- Siplast TeraPROOF Protection CS1000 can be fastened at the leading edge or partially adhered to temporarily hold the sheet in place before backfill is applied.
- TeraPROOF Protection CS1000 securing options:
    - Fastened with a termination bar above the waterproofing layer, at the leading edge only, and held in place with backfill material. Do not penetrate the TeraPROOF STP Liquid Membrane with fasteners.
    - Partially adhered using pads of TeraPROOF STP Liquid Membrane or Siplast PS-715 NS Elastomeric Sealant and held in place with backfill material.

Drainage Board

Where appropriate for project conditions, Siplast TeraPROOF 10-11 Drainage Mat can be used as a foundation wall drainage and waterproofing membrane protection course. The drainage mat, may be installed in direct contact with the TeraPROOF STP Liquid Membrane or over insulation or other protection course layer, if required by project conditions.

- Before installing the drainage board, unroll the material and cut it to conform to the foundation wall conditions.

- Place the TeraPROOF 10-11 Drainage Mat on the substrate, ensuring that the filter fabric faces outward. TeraPROOF 10-11 Drainage Mat can be fastened at the leading edge or partially adhered to temporarily hold the drainage boards in place before backfill is applied.
- Ensure that the geotextile overlap is correctly positioned on the adjacent panel and fold any excess fabric at ends under the core
- The drainage mats should not be left exposed for an extended period of time. Exposure time varies depending on the actual site environment and conditions.
- TeraPROOF 10-11 Drainage Mat securing options:
    - Fastened with a termination bar above the waterproofing layer, at the leading edge only, and held in place with backfill material. Do not penetrate the TeraPROOF STP Liquid Membrane with fasteners.
    - Partially adhered using pads of TeraPROOF STP Liquid Membrane or Siplast PS-715 NS Elastomeric Sealant and held in place with backfill material.

Membrane UV Exposure

Siplast TeraPROOF STP Liquid Membrane waterproofing requires protection from continuous exposure to UV. TeraPROOF STP Liquid Membrane must never be exposed to UV rays for more than 90 consecutive days.

Additional Temporary UV Exposure

For temporary (non-permanent) extended exposures to UV are anticipated, apply an additional coat of TeraPROOF STP Liquid Membrane of at least 30 mils (0.8 mm) of Siplast TeraPROOF STP Liquid Membrane to a completed application for a maximum of one additional 90-day period.

Permanent UV Exposure Areas

For application areas where the TeraPROOF STP Liquid Membrane installation will experience permanent UV exposure, the membrane must be covered with an additional layer of material. Using one of the following methods, treat the entire area and at least 4 inches (100mm) beyond any area that will experience UV exposure throughout the year:

- Use **Metal Flashing or other overburden assembly** to cover the TeraPROOF STP Liquid Membrane that will be permanently exposed to the sun or UV using Siplast Paraflex and the following general requirements:
    - Secure metal flashing to extend a minimum of 4 inches (100 mm) above and below exposed TeraPROOF STP Liquid Membrane.
- Use **Siplast Paraflex Liquid membrane** to cover the TeraPROOF STP Liquid Membrane that will be permanently exposed to the sun or UV using Siplast Paraflex and the following general requirements:
    - Apply a first coat of 30 mils (1.5 mm) of Paraflex liquid membrane or TeraPROOF STP Liquid Membrane using a brush or roller. Ensure the membrane extends up the vertical surface a minimum of 4 inches beyond the TeraPROOF STP Liquid Membrane to be protected from UV Exposure.
    - Immediately place the Siplast Pro Fleece reinforcement fabric into the still-wet first coat of liquid membrane. Work the reinforcement fabric into the first coat of liquid membrane to prevent wrinkles. Ensure that the reinforcement fabric is adequately saturated and free of “dry” reinforcement, voids, air pockets, and wrinkles using recommended tools. Cut the reinforcing fabric to conform to conditions so that the Paraflex liquid membrane is fully reinforced and overlapped at cuts, side-laps, and end-laps
    - Apply a second coat of Paraflex liquid membrane 60 mils (1.5 mm) thick over the reinforcement fabric, extending a minimum of 1/4 inch (6 mm) beyond the reinforcement fabric.
    - See the Paraflex liquid membrane installation guide for additional preparation and application instructions.

- **Use SBS modified bitumen flashing cap sheet** to protect TeraPROOF STP Liquid Membrane that will be permanently exposed to the sun or UV using Paraflex and the following general requirements:
    - Unroll the flashing cap sheet and allow it to relax. Once relaxed, cut the Siplast SBS cap sheet to the required working lengths to accommodate the flashing height and the required overlap onto the horizontal surface. Cut the Siplast SBS cap sheet from the end of the roll in order to always install flashings to the selvage edge line.
    - Apply TeraPROOF STP Liquid Membrane to the underside of the prepared SBS cap sheet piece using a ¼ inch notched trowel at a rate of 2.0 to 2.5 gallons per square. Application rates vary based on substrate conditions.
    - Ensure the flashing cap sheet is completely adhered in place, with no bridging, voids, or openings. Roll-in or press-in the flashing cap sheet during installation to ensure they are in full contact with the substrate below.
    - Fasten the top leading edge of the flashing cap sheet using appropriate term bar, fasteners and plates, or pipe clamp as appropriate for the detail. Seal any exposed edge or fastener penetrations watertight using Siplast PS-715 NS Elastomeric Sealant.
    - Where multiple pieces of Siplast SBS cap sheet are required to protect the TeraPROOF STP Liquid Membrane, ensure the detailing is lapped to drain water, sealed at all edges, and laps at least 4 inches (100 mm) at all terminal edges and all horizontal and vertical inside corners and outside corners.
    - See the Siplast SBS Engineered Roofing and Waterproofing Systems Technical Guide for additional preparation and application instructions.

IX. Specific Applications

For specific application information, refer to the TeraPROOF detail and sequence sheets. Product and installation requirements may vary by application and project conditions.

Detail Sequences Drawing List

Below is a list of detail sequence sheets relevant to the TeraPROOF liquid product installations:

00.0 Detail Legend & Drawing List

06.10 Post-Applied Liquid - Application Overview
06.11 Post-Applied Liquid - Foundation
06.12 Post-Applied Liquid - Termination at Grade
06.13 Post-Applied Liquid - Horizontal Amenity Waterproofing
06.14 Post-Applied Liquid - Horizontal Liquid Drain and Penetration
06.15 Post Applied Liquid - Transition to Horizontal Waterproofing

07.10 Pre-Applied SBS - Application Overview
07.1R Pre-Applied SBS - Membrane Repairs
07.11 Pre-Applied SBS - Lap and Heat Welding Diagrams
07.12 Pre-Applied SBS - Corner Reinforcement Fabrication Diagram
07.13 Pre-Applied SBS - Floor and Wall Penetration Flashing
07.14 Pre-Applied SBS - Structural Penetration Flashing
07.15 Pre-Applied SBS - Pile Cap or Grade Beam Transitions
07.16 Pre-Applied SBS - Grade Beam Trench Application
07.17 Pre-Applied SBS - Elevator Pit Application
07.18 Pre-Applied SBS - Tie-Back Cover
07.19 Pre-Applied SBS - Transition to Horizontal Waterproofing
07.20 Pre-Applied SBS - Transition to Post-Applied Liquid