SECTION 07-14-01
TRITOFLEX – WATERPROOFING MEMBRANE SPECIFICATIONS

FOR INSTALLATION ON CONCRETE SLABS PRIOR TO OVERBURDEN

This specification works as a guideline and may be modified, as necessary, by the "Designer of Record "to fulfill the needs of the individual project. Any changes or improvements to the content of this specification should be made only with the written consent of the "Designer of Record."

PART ONE - GENERAL

1.1.1. Description

A. Furnish and install an instant-setting, fluid-applied waterproofing system complete, in place, as shown on the drawings, specified herein, or needed for a complete and proper watertight and warrantable installation. TRITO*flex*™ waterproofing membrane shall be monolithically applied in one spray coat to the field and flashing areas at specified rates. TRITO*trowel*™ is used as a patching and flashing reinforcement compound as needed to the system after it has cured. *PolyFab* is a polyester reinforcement fabric used during TRITO*flex* installation to reinforce 90 degree angles and/or joints. Drainage mat and a protection layer is recommended for some applications and is supplied by a variety of Manufacturers.

1.2. Quality Assurance

A. Standards: Comply with standards specified in this section and as listed in the General Requirements.

B. Qualifications of Manufacturer: The core products used in the waterproofing work and included in this section shall be manufactured directly by the manufacturer and not through a third party mixing company or private label. Quality control measures include testing and retaining samples of every product batch by the manufacturer.

C. Qualifications of Installers: The Contractor and his personnel shall be currently approved by the manufacturer and only those spray techs that have been certified through the manufacturers' training program are to spray apply the waterproofing membrane.

D. Project Inspections: Make all required notifications and secure all required inspections by the Manufacturer of the approved materials to facilitate issuance of the specified below-grade waterproofing warranty.

E. Manufacturer's Pre-Review: The manufacturer shall review and approve the substrate that is to be coated with the TRITO*flex* system with respect to the appropriateness of the substrate for use of their system on this project.

F. Spray Equipment: The TRITO*flex* liquid waterproofing membrane may only be applied with spray equipment specifically manufactured and supplied by Triton Inc.

1.3. Submittals

A. Product Data: Prior to project starting, submit:

i. Complete material list of all items proposed to be furnished and installed under this section along with product data sheets for each.

ii. Manufacturer's pre-review comments and other data required to demonstrate compliance with specified requirements.

iii. Manufacturer's warranty application form including plan to protect the system from subsequent construction activities after project completion.

1.4. Product Handling

A. Delivery and Storage:

i. Deliver all packaged materials to the job site in their original, unopened containers with all labels intact and legible at the time of the inspection.

ii. Store all materials in an approved manner and protected from freezing or extreme heat. Storage temperature to be maintained above 50 degrees Fahrenheit.

iii. Protect materials during handling and application to prevent damage or contamination.

B. Protection: Use all necessary means to protect the materials in this section before, during, and after installation, and to protect the work and materials of all other trades.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of and at no additional cost to the Owner.

1.5. Scheduling

A. Work is to be performed on a daily basis with appropriate scheduling of product applications to prevent contamination of the surfaces between applications. Products shall be installed only if temperatures do not dip below freezing for 72 hours after applying, and daytime temperature reaches 50 degrees Fahrenheit or higher.

B. Final completion of work shall be defined as the installation of all specified sealer or primer, waterproofing membrane, flashings, protection course, drainage mat, and insulation (if specified by the Designer).

C. Contractor shall complete installation of TRITO*flex* membrane within two (2) days after cleaning the existing substrate. After installation of the membrane, a light rinsing of the surface to remove dry accelerator is required, no earlier than 6 hours after TRITO*flex* installation.

1.6. Warranty

A. As part of the work of this section, pay all required fees, secure all required inspections, and complete all items necessary to secure and deliver to the Owner a manufacturer's warranty of 5 years or 10 years as requested.

PART TWO - PRODUCTS

2.1. General

A. Minimum product requirements have been listed. All of these components must be used and bid. Products not supplied by the manufacturer are to be purchased from a manufacturer approved source.

2.2. Products Supplied by Warranty Manufacturer

A. Waterproofing Membrane – Two-Component Spray Applied Rubber (TRITO*flex*)

Spray-applied instant-setting liquid waterproofing manufactured by Triton Inc.™ and applied by a manufacturer certified installer. The liquid TRITO*flex* product is water based and solvent free which transforms into a seamless rubberized roof membrane as it is spray-applied to the substrate and catalyzed by an accelerator component. The liquid is spray-applied in a single coat to achieve a minimum monolithic membrane thickness of 80 dry mils and possess physical properties of no less than the values listed below:

Property	Test Method	Value
Solid Content	Vacuum cure	65%
Flame Exposure	ASTM E108	Class A, Self-Extinguishing
Water Vapor Permeability	ASTM E96	.26 perms; .182 grains
Elongation	ASTM D412	1900% or greater
Hydrostatic Pressure	BS EN 12390-8	Pass – No penetration
Impact Resistance	ASTM D3746	Pass
Dynamic Puncture Resistance	ASTM D5635	2.80 J/mm or greater
Adhesion to Concrete	ASTM D903	42 lbf
UV Exposure (Xenon)	ASTM G155	No effect
VOC Content	--	None
Wind, Fire, Hail, Foot Traffic, UV	FM 4470	Pass (1-990, Class A, Severe Hail)
Potable Water Contact	SANS 241	Safe

B. Patching and Flashing Membrane – Single-Component Brush Applied Rubber

i. TRITO*trowel* – Brush applied waterproofing membrane manufactured by Triton Inc. that is water-based and solvent free. Product is used for touch-up patching and reinforcing of flashing areas in the TRITO*flex* membrane.

C. Catalyst (Accelerator)

i. ACCELERATOR: Specialty salt water mixture used as the catalyst component in conjunction with the TRITO*flex* product that allows for the rapid build-up of the membrane to any thickness in one coat. The dry salt mixture is supplied by Triton, Inc. and the applicator mixes with water per the manufacturers' requirements on the job site.

D. PolyFab

i. Polyester fabric reinforcement supplied by Triton Inc. in rolls of 4" or 6" width. To be used during TRITO*flex* membrane installation to reinforce joints and 90 degree transitions.

2.3. Products Supplied by Others

A. Concrete Sealers and Primers (*if required by Designer or recommended by Manufacturer*)

i. Water-based concrete sealer. Contact Manufacturer for list of approved products and suppliers.

B. Root Barrier, Drainage Mat, and Protection Course

i. For green and garden roof applications, root barrier, drainage mat, and filter fleece are required on top of the waterproofing membrane. Contact Manufacturer for list of approved products and suppliers.

C. Insulation and Adhesives

i. Polyisocyanurate insulation or EPS (extruded polystyrene) insulation is recommended for any inverted roof applications. The insulation should be adhered to the waterproofing membrane using low-rise foam adhesive, unless the insulation will be weighed down by overburden.

D. Topping Slab

i. For split-slab waterproofing projects, a concrete or cementitious topping slab will be poured in place directly on top of the waterproofing membrane, unless a protective layer is required by the Designer or Manufacturer for the specific project.

2.4. Equipment Supplied by Manufacturer

A. Spray machine and testing gauges/meters

i. TRITON two- component spray rig consisting of spray gun, hoses, pumps, and cart, specifically manufactured and supplied by Triton, Inc.

ii. TRITO*flex* mil gauge for testing wet mil thickness while spraying liquid membrane.

PART THREE - EXECUTION

3.1. Description

A. The latest manufacturer application techniques are to be followed along with the following requirements. These specific minimum requirements must be included in the bid and are not to be altered.

3.2. Inspection

A. Examine the areas and conditions under which work in this section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until such conditions have been corrected.

3.3. Surface Conditions

A. Surfaces scheduled to receive waterproofing are to be sound, clean, dry and free of any dust, grease, oil, laitance, and other contaminants.

B. Substrate is to be free of sharp projections and free of loose components.

3.4. Installation – Preparation of Substrate

A. Perform all related work as required by the Manufacturer necessary for the installation of the specified membrane system.

B. Evaluate the level of moisture in the substrate to determine that moisture levels are acceptable for application of the specified waterproofing system. Concrete substrates shall have a maximum moisture content of 6% and a maximum internal relative humidity of 75%. Verify the substrate is visibly dry and free of moisture. Capillary moisture is tested by plastic sheet method ASTM D4263.

C. Remove all dirt, debris, and loose materials from the surface of the substrate.

D. Substrate surface may be primed or sealed with a Manufacturer approved material in order to minimize the potential of vapor drive from existing moisture, chemicals, or release agents in concrete substrates. This determination should be made during the Pre-Project Approval process with the Designer and Manufacturer.

3.5. Installation of Waterproofing Membrane

A. General:

i. Stir materials prior to application in accordance with manufacturer's instructions.

ii. Spray two-component TRITO*flex* instant-setting system as a continuous, monolithic and seamless membrane of uniform thickness, beginning at the lowest point and terminating at the highest point. Final membrane thickness after full cure must be minimum 80 mils dry.

iii. When a spot repair is required during application, re-spray defect area within 15 minutes of initial spray application so entire membrane cures monolithically.

B. Horizontal and Vertical Application:

i. Spray-apply one continuous layer of TRITO*flex* two-component waterproofing membrane, covering all areas of the field and flashings to achieve a cured dry mil membrane thickness of 80 mils depending on warranty requirements.

ii. Perform wet mil thickness tests (with a manufacturer supplied mil gauge) at regular intervals while spraying to assure a minimum of 130 wet mils for 80 dry mils. Immediately re-spray spots checked with gauge to fill in voids.

iii. If necessary, chalk-line or spray-paint a grid across the roof prior to application to gauge product use per drum within a particular section of the substrate. One drum of material per section of grid based on the manufacturers' application rates should be used as a gauge. To achieve 80 mils dry, the typical gauge shall be 600 sq ft per drum. This application rate will vary on surface conditions.

iv. Refer to manufacturer's recommendations and details for proper membrane terminations.

v. Install the PolyFab reinforcing fabric in all large joints and 90-degree transitions. This is accomplished by first spraying a wet base layer of TRITO*flex* with no Accelerator. Embed the fabric into this wet layer and remove all wrinkles. Ensure the fabric is fully saturated with wet material. If not, spray more material with no Accelerator. Immediately spray the two-component TRITO*flex* membrane with Accelerator to the proper thickness and with proper technique over the PolyFab.

vi. After the TRITO*flex* membrane has turned black with no brown areas, apply TRITO*trowel* by brush, hand, or trowel to any visible voids, thin spots, imperfections, gaps, or ridges in the membrane. It should also be applied to any penetrations or transitions at a 80 mil dry thickness.

vii. After all materials are fully cured, rinse the dried accelerator from the surface of the membrane with a water hose. This may also serve as a water test for horizontal areas. Do NOT allow standing or ponding water to remain on the membrane until it is fully cured. Full cure may also be determined with a moisture meter.

viii. Any exposed walls or flashings may be coated with TRITO*therm* ceramic and acrylic coating manufactured and supplied by Triton Inc. This material is typically applied in two coats, 15 wet mil

each, to a final 20 mil dry thickness. Coverage rate is 2 gallons per 100 sf to obtain 20 dry mils.

3.6. Protection Plan Implementation

A. Install and maintain a protection system as required under Submittals, such that subsequent construction activities cause no damage to the installed waterproofing membrane. Monitor the installation of drainage mat, protection layers, and overburden to assure no damage is caused. If damage results, patch according to Manufacturer's requirements with either TRITO*flex* or TRITO*trowel.*

3.7. Field Quality Control

A. Use of specialized equipment such as a mil gauge supplied by the manufacturer to check the liquid membrane thickness during application and a good quality digital camera to provide photos to manufacturer of installation is required.

B. Contractor to provide photographs of areas to receive liquid membrane before start of work, during surface preparation, during spray application, and at completion of work for warranty acceptance.

3.8. Clean-Up

A. All debris shall be removed from the premises promptly and the construction area left clean daily.

B. All overspray of products must be cleaned from surfaces not scheduled to receive waterproofing.

C. Contractor is responsible to assure that their Subcontractors have also properly removed and disposed of all debris relating to their contract.

- END OF SECTION –

TRITOflex™
INSTANT-SET LIQUID RUBBER

COLD FLUID APPLIED WATERPROOFING SECTION 071400

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