Rev 04/2021

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 a cold 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. TritoFlex™ 1K S or 2K Rubber waterproofing membrane shall be monolithically applied to the field and flashing areas at specified rates. TritoFlex™ 1K B is used as a patching and flashing reinforcement compound as needed to the system after it has cured. Drainage mat and a protection layer is recommended for appropriate applications and is supplied by a variety of Manufacturers. For exposed surfaces, such as walls, TritoCryl 1K/2K acrylic elastomeric topcoat is applied over the TritoFlex waterproofing membrane.

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 waterproofing warranty.

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

F. Spray Equipment: The TritoFlex 2K liquid waterproofing membrane and TritoCryl 2K topcoat 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 sealers or primers, waterproofing membrane, flashings, protection course, drainage mat, and insulation (if specified by the Designer).

C. Contractor shall complete installation of TritoFlex membrane within two (2) days after cleaning the existing substrate. After installation of any TritoFlex 2K material, a rinsing of the surface to remove dry accelerator is required, no earlier than 6 hours after TritoFlex 2K 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, 10, or 15 years, as requested.

Duration	Covers*	TritoFlex Thickness
5 Years	Material & Labor Costs	65 wet/40 dry mil
10 Years	Material & Labor Costs	97 wet/60 dry mil
15 Years	Material & Labor Costs	130 wet/80 dry mil

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.

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 – TritoFlex 2K or 1K S

TritoFlex 2K Rubber – Two-Component Spray Applied Synthetic Rubber, manufactured by Triton Inc.

TritoFlex 1K S – One-Component Spray Applied Synthetic Rubber, manufactured by Triton Inc.

Spray-applied liquid waterproofing manufactured by Triton Inc.™ and applied by a manufacturer certified installer. The liquid TritoFlex product is water-based and solvent-free, which transforms into a seamless rubberized waterproofing membrane as it is spray-applied to the substrate. The TritoFlex 2K product is catalyzed by an accelerator component to achieve any thickness in a single coat and immediate rain resistance.

Both products are spray-applied to achieve a minimum monolithic membrane thickness of 60 dry mils (1.5 mm) and possess physical properties of no less than the values listed below:

Property	Test Method	Value
Solid Content	Vacuum cure	62%
Flame Exposure	ASTM E108	Class A, Self-Extinguishing
Water Vapor Permeability	ASTM E96	0.1 Perms
Elongation	ASTM D412	1100% or greater
Tensile Strength	ASTM D412	500 psi or greater
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)
Hydrostatic Pressure Resistance	ASTM D5385	Pass @ 100 psi

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

i. TritoFlex 1K B Rubber – Brush-applied, water-based, solvent-free, single-component waterproofing membrane manufactured by Triton Inc. Product is used for touch-up patching and reinforcing of flashing areas in the TritoFlex 2K membrane.

C. Catalyst (Accelerator)

i. 2K ACCELERATOR: Specialty non-toxic, food-grade Calcium Chloride (CaCl) and water mixture used as the catalyst component in conjunction with spraying the TritoFlex 2K Rubber and TritoCryl 2K Top Coat, allowing for the rapid build-up of the membrane to any thickness desired in one coat. The dry CaCl mixture is supplied by Triton, Inc. and the applicator mixes with water per the manufacturers' requirements on the job site. Alternate catalysts are in no way allowed, as they will cause damage to the final product.

D. Reflective/Protective Topcoat

i. TritoCryl 2K: Highly reflective, instant-setting, water-based acrylic elastomeric topcoat manufactured by Triton Inc. It is spray-applied to the substrate using specialized equipment manufacturer by Triton Inc. Available in white only.

ii. TritoCryl 1K: Highly reflective, water-based acrylic elastomeric topcoat. Spray-applied, brush-applied, or roller-applied using approved equipment and methods. Manufactured by Triton Inc. and provided in white, gray, or tan. Custom colors available upon request.

E. Reinforcement Fabric

i. PolyFab: High-strength polyster fabric, used to reinforce high-stress and high-movement areas, brick large cracks, and reinforce high-stress joints. Embedded within the TritoFlex 1K S or B product with conventional 3-course methods. Supplied by Triton Inc.

2.3. Products Supplied by Others

A. 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.

B. 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.

C. Topping Slab

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

D. Concrete Sealer

i. A concrete sealer may be specified to reduce potential vapor drive from moisture or chemicals in existing concrete substrates. Please contact Manufacturer's representatives for further guidance.

E. Protection Course

i. A multi-ply, semi-rigid core composed of reinforced asphalt mats, manufactured in accordance with ASTM D6506. Protects the waterproofing membrane from penetration by sharp aggregate, jobsite foot traffic, and aggregate shock.

2.4. Equipment Supplied by Manufacturer

A. Spray machine and testing gauges/meters

i. Triton High Production Spray Machine: two-component spray rig consisting of spray gun, hoses, pumps, and cart, specifically manufactured and supplied by Triton, Inc.

ii. TritoFlex 2K mil gauge for testing wet mil thickness while spraying liquid membrane.

ii. Standard paint wet mil gauge for testing thickness of TritoFlex 1K S, TritoFlex 1K B, and TritoCryl 1K

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. Existing concrete surfaces may be sealed with an approved concrete sealer in order to minimize the potential of vapor drive from existing moisture, chemicals, or release agents in concrete substrates. Please check with Triton Inc. for further guidance.

F. Protect all adjacent surfaces from overspray at all times. Taping off surfaces with painter plastic to prevent overspray onto surfaces and to establish clean straight edge termination lines on the new liquid membrane flashings is required. Use care when masking air intakes and HVAC units so as not to block all ventilation and potentially damage the unit.

G. Existing, aged substrates shall be cleaned by pressure washing or air blasted if pressure washing cause interior leakage. Clean surfaces a condition conducive to positive adhesion of the TritoFlex membrane, per manufacturer's requirements prior to application of the liquid-applied system. Unapproved curing compounds, form release agents, petroleum distillates, animal fats, and other contaminates shall not come into contact with approved substrate after cleaning. Contractor shall complete installation of TritoFlex membrane within two (2) days after cleaning of substrate.

3.5. Installation of Waterproofing Membrane

A. General:

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

ii. Regardless of primary membrane product being utilized, TritoFlex 1K or 2K, first spray-apply a seal coat of TritoFlex 1K S at 10 wet mils over all concrete surfaces. Allow to dry.

iii. If applying TritoFlex 2K as the primary membrane, spray TritoFlex 2K 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 60 mils dry on all surfaces, depending on warranty requirements.

iv. If applying TritoFlex 1K S as the primary membrane, spray apply TritoFlex 1K S with approved airless spray equipment in at least two (2) coats.

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. Prior to installation of the primary waterproofing membrane layer, reinforce high-stress joints, cracks over 1/8", 90-degree angle changes, and penetrations with polyester fabric and TritoFlex 1K B. First apply a base layer of TritoFlex 1K B and then embed 4" or 6" polyester fabric into the wet coating and use a brush to smooth out wrinkles and saturate the fabric with the TritoFlex 1K B. Apply more product on top of the fabric to fully saturate, but not create any pooling. Please consult with Manufacturer or Designer for details on where reinforcement is required.

ii. For TritoFlex 2K: Spray-apply one continuous layer of TritoFlex 2K waterproofing membrane, covering all areas of the field and flashings to achieve a cured dry mil membrane thickness of 60 dry mils minimum, depending on warranty requirements.

iii. For TritoFlex 1K S: Spray-apply multiple coats of TritoFlex 1K S using approved spray equipment to achieve minimum mil thickness specified. For 60 dry mils, after the initial 10 wet mil seal coat, apply two coats of 50 wet mils. Average re-coat time with normal conditions is 4-6 hours.

ii. Perform wet mil thickness tests (with a manufacturer supplied mil gauge) at regular intervals while spraying to ensure the minimum wet mil thickness specified is met. Immediately re-spray spots checked with gauge to fill in voids.

iii. If necessary, spray-paint or chalk a grid across the substrate 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 60 mils dry, the typical gauge shall be 800 sq. ft. per drum. For 80 dry mils, it 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.

vi. After the TritoFlex membrane has fully dried, apply TritoFlex 1K B by brush 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 60 mil minimum dry thickness.

vii. If TritoFlex 2K was applied, after the membrane is fully cured, rinse the dried accelerator from the surface of the membrane with a water hose or pressure washer. 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.

viii. Any exposed walls or flashings may be coated with TritoCryl 1K/2K acrylic top coat 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. Alternate topcoats may be approved by the Manufacturer.

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 TritoFlex 2K, TritoFlex 1K S, or TritoFlex 1K B.

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 –