

## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### TechCrete® 2500 Waterproofing System for Concrete

is an award winning, bio-based waterproofing system that employs a sodium silicate waterproofing agent, which is enzymatically modified to chemically bond with concrete. With the introduction of water, the waterproofing agent increases in mass and forms a gel that encapsulates water trying to enter the concrete. This vapor permeable gel fills cracks, pores, and voids in the concrete, creating a long-term barrier to water infiltration. It penetrates into the concrete and reacts with the calcium and water contained in the concrete, to form a calcium silicate gel complex that fills the cracks, pores, and capillaries. This gel creates a sub-surface barrier against the ingress of water and contaminants such as chloride ions.

TechCrete 2500 Waterproofing Agent once reactive within the concrete will **seal existing cracks up to 5/64" (2.0 mm) in width and will seal future cracks, up to 1/64" (0.4 mm)**. In the matrix, the product remains reactive when in contact with water, to provide autogenous repairing properties to future hairline cracks.



#### KEY BENEFITS

- Long-term warranty against water penetration.
- Long-term performance with no re-application or future maintenance required.
- 100% trafficable within 2 hours of being dry and completed,
- Does not change the surface appearance.
- Hot or Cold Asphalt based materials will adhere to the surface of the concrete after application with no loss of adhesion.



#### PRODUCT PROPERTIES

- Colorless, clear to slightly opaque, odorless, soapy feel
- Non-toxic & Biodegradable
- Percent non volatile solids 26.55%
- Specific gravity at 77°F (25°C) : 1.2
- Flash point - no true flash - boils at 214°F (101°C)
- Auto-ignition temperature - N/A Non-explosive
- Viscosity - 14.3 centipoise or 0.1172 Stokes
- Hazardous chemicals - Sodium Silicate (modified)
- pH 11.51



#### SYSTEM COMPONENTS

The following components are part of the TechCrete 2500 Waterproofing System for Concrete and those denoted in **RED** are required and cannot be substituted in the system warranty.

#### WATERPROOFING MATERIALS

- TechCrete 2500 Waterproofing Agent
- TechCrete Admix (new construction only)
- ACR Accelerating Agent
- ACR Crack & Void Treatment
- ACR L43 Crack Filler
- ACR Polyseal Sealant S+
- ACR PolyMembrane Flashing

#### CLEANING MATERIALS

- ACR Concrete & Masonry Cleaner
- ACR Concrete & Masonry Etch
- ACR Emulsifying Cleaner
- ACR Rust Inhibitor

#### REPAIR MATERIALS

- DuraTite Repair Mortar
- DuraTite Concrete Patch & Repair
- DuraTite Foundation
- DuraTite Plug

**NOTE: Products not supplied by Alchemco are specifically excluded from the system warranty. Any issues of compatibility with substituted products is the responsibility of the contractor.**

2500 WATERPROOFING SYSTEM FOR CONCRETE

**PERFORMANCE TIMELINE**

The TechCrete 2500 Waterproofing Agent utilizes a enzyme modified sodium silicate gel-forming technology to stop water penetration. Sodium Silicate is often referred to as “liquid glass” and is a silicon-oxygen polymer containing ionic sodium (Na+) components. Sodium silicate is similar to carbon-based plastics since silicon-oxygen-silicon bonds between each monomer are covalent. The polymer-like nature of the sodium silicate matrix as well as the polar character of oxygen and sodium atoms allows for bonding of water molecules within the polymer matrix. The modified sodium silicate penetrates into and bonds with the concrete to create a barrier to water, stopping the water from within the concrete rather than on the surface. The chemical reaction that creates this barrier is catalytic in nature and **may require 3-5 days to reach full water stopping capabilities**. Full waterproofing should not be expected until complete gel formation has been achieved.



**PERFORMANCE CHARACTERISTICS**

- UL Classified NSF/ANSI 61. Safe for potable (drinking) water.
- Seals cracks up to 5/64” (2.0 mm) on initial application and will seal future cracks up to 1/64” (0.4 mm), except for cold and control joint applications.
- Reduction of chloride diffusion coefficient by 89% to 3.5 (10-12m2/s).
- Increases surface hardness from 6 to 8 on Moh’s scale.
- Allows 84.1% moisture vapor permeability.
- Suitable for tanking applications (positive hydrostatic pressure) - tested to 400 meters (1,312’).



**SPECIAL NOTE**

Alchemco Technical Department will provide at no additional cost a **Pre-Project Survey** on any project considering the use of any TechCrete 2500 System. A technical representative from the company will visit the project site and complete a thorough inspection of the site and provide a report on all aspects of the project, including addressing any problematic areas. The report will include photos of areas to be addressed, detailed description of work that should be done and links to videos on how to complete the work.

It is highly recommended that all contractors and specifiers take advantage of this no cost review of the project site.

**APPLICATION**

**SURFACE CLEANING & PREP**

TechCrete 2500 Waterproofing Agent must be applied to a clean, dry, dust-free concrete surface, at least 14 days after the placement of new concrete. If the concrete is older, existing concrete and needs to be cleaned, then the use one of the following products to clean and prepare the surface.

**NOTE:** All of the ACR cleaning products have been thoroughly tested to ensure that they will not contaminant or cause issues with the application of the waterproofing system. If other products are used to clean or prepare the surface of the concrete Alchemco accepts no responsibility for any issues that may occur with compatibility of cleaning products and the waterproofing system. **The compatibility of any products not supplied by Alchemco are the responsibility of the contractor and not Alchemco.**

NOTE: If high pressure power washing is going to be utilized it is highly recommended that either a Turbo Tip Sprayer or a High Pressure Surface Cleaner be used to improve the cleaning process.

**ACR Concrete Masonry Cleaner** - Use this product to remove dirt and environmental debris. This product is sprayed on the surface and in most cases will require some agitation. Once the dirt and debris has been removed rinse with water. Coverage rate for this product will vary depending surface condition, but when used as directed the coverage rate is approximately 500 square feet per gallon. This product should be used at full strength.





## 2500 WATERPROOFING SYSTEM FOR CONCRETE

**ACR Concrete Masonry Etch** - This product should be used when the surface of the concrete does not allow the proper penetration of the water based products. It is an environmentally and human safe substitute for muriatic acid. Apply by spraying over the entire surface of the masonry. Once the product is no longer reacting with the concrete, it may either be; 1) allowed to dry in place and once dry remove loose material with a broom or vacuum; 2) remove by rinsing with water. Coverage rate for this product will vary depending on the application, but when used as directed the coverage rate is approximately 500 square feet per gallon. This product should be used at full strength.



**ACR Emulsifying Cleaner** - Use this product to remove grease and oil that has penetrated into the concrete. This is a solvent-based product that will break down the oil and grease and allow it rise to the surface. Once used, clean with ACR Concrete Masonry Cleaner and rinse with clean water. Coverage rate for this product will vary depending on the amount of oil and grease that needs to be removed, but when used as directed the coverage rate is approximately 72 square feet per gallon. Do not dilute.

**NOTE:** On some projects it may make more financial sense to utilize shot blasting or grinding to prepare the surface for the application of the system and related products, this is acceptable in lieu of chemical cleaning.

**NOTE:** Any of the system products should only be applied when the ambient temperature is 40°F (+4°C) and rising or 100°F (+38°C) and falling.

### TECHCRETE WATERPROOFING ADMIX NEW CONCRETE APPLICATION - ONLY

1. If the project is a new construction concrete application and an Alchemco TechCrete 30-Year Material and Labor Warranty is to be issued upon completion of the waterproofing system, then the concrete mix must contain TechCrete Admix.
2. During processing at the concrete batch plant or within the truck at the construction site, add 28 ounces (.8 kg) of TechCrete Admix for each cubic yard of concrete. For convenience the product is available in prepackaged water soluble packages. If the admix is applied at the construction site the mixing truck should run no less than 10 minutes, after application of admix, to ensure proper dispersal of the admix within the concrete mix.
3. The TechCrete Certified Applicator is responsible to ensure that the TechCrete Admix has been properly applied to the concrete mixture. This may include the TechCrete Certified Applicator placing a person at the mixing plant to ensure the TechCrete Admix is added and in the correct amount. The TechCrete Certified Applicator will be required to submit documentation.

### PARKING LOT STRIPPING

4. When parking lot striping exists it is important to determine how old the striping may be. If the striping is older than 5-years then there is no need to remove the striping. If the striping is newer than 5-years or is an asphalt based paint then it needs to be removed. The recommended method for removal is either media blasting or grinding.



## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### CRACK PREPARATION

#### CLEANING & CRACK IDENTIFICATION

5. Clean the entire concrete surface, including any vertical surfaces adjoining the concrete surface to be waterproofed. Make sure all dirt and environmental debris has been removed from the surface.
6. **During the cleaning process, while water is being used on the surface, check for cracks that are leaking through the deck. Stationing a person under the deck, with a piece of chalk, to mark where any cracks are leaking is the best method of identifying cracks leaking through the deck.**



7. All cracks and joints should be divided into two (2) groups.
  - 1) Cracks that are no longer moving.
  - 2) Cracks or joints that are considered still moving.
8. **MOVING CRACKS** - These types of cracks will always include control joints and cold joints. Sometimes cracks occur where a control joint should have been placed. If a crack is in question as to whether it is still moving then it is suggested that a Crack Monitor be utilized to check the crack. Moving cracks are all treated the same way no matter the size of the crack.
9. **NON-MOVING CRACKS** - Any cracks that are no longer moving will be reviewed for size. Any cracks that are 5/64" (2.0 mm) or smaller will only be treated by an application of waterproofing materials, which will be reviewed later. Any cracks greater than 5/64" (2.0 mm) or larger will be treated as outlined in the crack preparation and crack treatment sections of this technical data sheet.

**NOTE:** Please review Technical Drawing TC2500-100 and TC2500-200 for details on crack preparation and treatment. Found at the end of this document.

### CRACK PREPARATION

10. **MOVING CRACKS** - All moving cracks require that they be routed or ground out to prepare them for an application of ACR Polyseal Sealant S+. Routing or grinding of cracks should occur prior to the cleaning process.
11. **NON-MOVING CRACK** - Cracks that are consider to be not moving do not require any grinding or routing. These cracks should be clean and free of any debris or dust. The cracks should have no further work done to them until the application of waterproofing is complete.
12. **NOTE:** All cracks both moving and non-moving shall be flood treated with waterproofing material. It is important to protect the side walls of all cracks to ensure moisture does not enter the concrete through the side walls of the cracks.
13. During the washing phase of the project, cracks that have gone all the way through the deck should have been identified by virtue of water leaking through them. These cracks should have been marked so that they could be sealed from the bottom side of the deck using ACR Repair Mortar or ACR L43 Crack filler.
14. The application of ACR Repair Mortar or ACR L43 Crack Filler to the underside of the crack is to keep the waterproofing materials in place so that they can be absorbed into the side walls of the cracks. If one of these products is not utilized prior to the application of the waterproofing, the waterproofing materials will run through the crack and will not penetrate into the sidewalls of the crack.
15. This application will also hold the waterproofing materials in place on less than 5/64" (2.0 mm) cracks and allow the product to properly begin the sealing process. Waterproofing materials must be held in place to give them time to react and become part of the concrete.
16. Apply ACR Mortar Repair or ACR L43 Crack Filler to the bottom side of the crack. Make sure the surface is clean and free of dust and debris, this includes any paint. Mix the product as instructed and apply a coat on the concrete surface. Apply the product so at least a 3" in width with the crack at the center of the 3". Allow the product to setup before proceeding with any waterproofing application.
17. **MOVING CRACKS** - Any cracks that are considered to be moving, which should include control joints and cold joints, must be ground out or routed to provide a clean edge for the application of the sealant.
18. **NOTE:** The application of any sealant to moving cracks should not be done until all steps for the application of the waterproofing have been completed and the surfaces are completely dry to the touch.



2500 WATERPROOFING SYSTEM FOR CONCRETE

**WATERPROOFING APPLICATION**

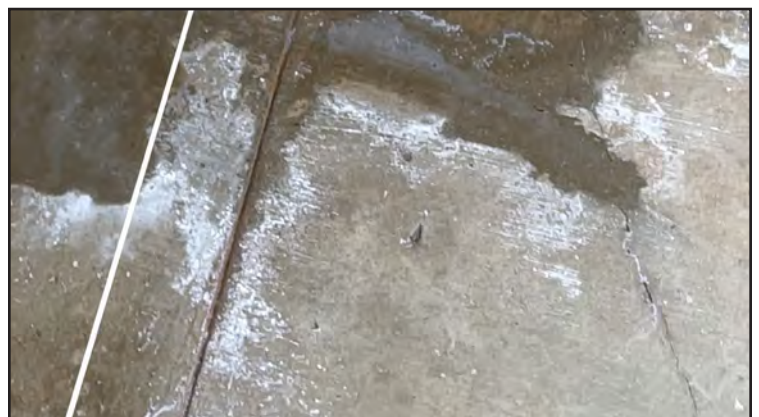
**HORIZONTAL SURFACE**

19. Waterproofing should be applied using a low-pressure pump style sprayer, backpack sprayer or a drum style sprayer. A fan or cone style sprayer tip is best for the application of the product. It is highly recommended that separate spray units be used for the application of the waterproofing agent and the crack & void / accelerating products. **DO NOT MIX THESE PRODUCTS TOGETHER.** Mixing the products will cause damage to the sprayers by plugging the lines and filters.
20. Begin by flooding all cracks of with TechCrete 2500 Waterproofing Agent. **Cracks greater than 5/64" (2.0mm) should be flooded twice. Flood all control joints, cold joints, and cracks that are still moving at least twice.** The purpose of this spraying is to ensure that all cracks have a sufficient amount of waterproofing material within them. In this situation more is always better.



21. Once all cracks have been properly flooded, begin applying TechCrete 2500 Concrete Waterproofing Agent to the entire concrete surface area at a rate of 180 - 200 square feet per gallon. As the application of product is being made, add more material to any cracks. This will ensure that the cracks have as much material as possible.
22. **NOTE: When applying TechCrete 2500 Waterproofing Agent make sure to apply enough product to the surface so as to saturate the concrete, but without causing any puddling.**
23. Once all surfaces have been sprayed, allow product to dry to the touch (if you touch the surface and no wet product comes off on your hand it is considered dry enough). In direct sunlight this process may take as little as 1 hour, in some cases longer. In case the product does not completely dry to the touch within 5 hours, begin the washing application.

24. Once the product has completely dried to the touch begin washing the surface. Washing is to remove any excess material sitting on the surface. Washing should be done with clean, clear water. Washing should continue until there is no "white foaming" occurring, which is evidence of the presence of the material.
25. After washing the surface allow the project to sit overnight. This will allow the concrete to better absorb the waterproofing and begin working.
26. The **next day** begin application of the ACR Accelerating Agent and ACR Crack & Void.
27. Begin by spraying ACR Crack & Void into all cracks flooding them with product. Once all the cracks have been treated with ACR Crack & Void, then begin spraying all concrete surfaces that were treated with waterproofing with ACR Accelerating Agent. Spray ACR Accelerating Agent at the same rate as the waterproofing material.
28. After spraying these two products, allow all surfaces to dry to the touch. This will dry faster than the waterproofing product. Once all surfaces are dry to the touch, beginning washing off excess materials from the surface. Washing should continue until there is no "light white foaming" occurring, which is evidence of the presence of the materials.
29. **IMPORTANT!** If all excess material has not been removed from the surface, once it dries there will be white streaks left on the surface. **These white streaks do not effect the performance of the waterproofing materials, but it can be a aesthetic appearance concern.** If white streaking occurs once all surfaces are dry, power washing (less than 4000 psi) may be required to remove the white streaks.



30. Once all waterproofing and washing has been completed and the concrete surface is dry begin any detail work such as crack sealing, sealant and flashing application.

## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### WATERPROOFING APPLICATION

#### VERTICAL SURFACE

31. When applying TechCrete 2500 Waterproofing Agent to a vertical surface the application should be made using a low-pressure pump style sprayer, backpack sprayer or canister style sprayer. A fan or cone style sprayer tip is best for the application of the product. It is highly recommended that separate spray units be used for the application of the waterproofing agent and the crack & void / accelerating products. **DO NOT MIX THESE PRODUCTS TOGETHER.** Mixing the products will cause damage to the sprayers by plugging the lines and filters.
32. Begin by flooding all vertical cracks of any size with TechCrete 2500 Waterproofing Agent. Spray all control joints, cold joints, and cracks that are still moving. The purpose of this spraying is to ensure that all cracks have a sufficient amount of waterproofing material within them. In this situation more is always better.
33. Once all cracks have been properly flooded, begin applying TechCrete 2500 Concrete Waterproofing Agent to the entire vertical concrete surface by using a wet-on-wet application. Apply an area approximately 6' wide, starting at the top of the vertical surface and moving towards the bottom. Once an application has been made, repeat by starting back at the top of the vertical surface. Apply second application while the first application is still wet. When applying to a vertical surface the application rate will be **approximately 80-90 square feet per gallon.** As the application of product is being made, add more material to any cracks. This will ensure that the cracks have as much material as possible.
34. **NOTE: When applying TechCrete 2500 Waterproofing Agent make sure to apply enough product to the surface so as to saturate the concrete, but without causing any puddling.**
35. Once all vertical surfaces have been sprayed, allow product to dry to the touch (if you touch the surface and no wet product comes off on your hand it is considered dry enough). In direct sunlight this process may take as little as 1 hour, in some cases longer. In case the product does not completely dry to the touch within 5 hours, begin the washing application.
36. Once the product has completely dried to the touch begin washing the surface. Washing is to remove any excess material sitting on the surface. Washing should be done with clean, clear water. Washing should continue until there is no "white foaming" occurring, which is evidence of the presence of the material.

### SURFACE REPAIRS

#### PATCHING SPALLING & MAJOR DAMAGE

37. Major patching or fixing of any spalling to the concrete should be made after the waterproofing of the substrate has been made.
38. Once all steps of the waterproofing have been completed any areas where concrete is missing, has been damaged or has spalled, need to be addressed. It is always desirable to have the underlying concrete waterproofed and protected.
39. Once the waterproofing has been completed, any exposed steel or reinforcement needs to be addressed with an application of ACR Rust Converter and Inhibitor. A liberal coating of ACR Rust Converter & Inhibitor should be applied to all exposed reinforcement or steel, per the written technical data sheets.
40. Once the ACR Rust Converter & Inhibitor as dried patching work may be continued.
41. Using DuraTite Concrete Patch & Repair, thoroughly mix the product per the written instructions. As quickly as possible apply DuraTite Patch & Repair to the surface of the damaged area, bringing the patch level to the surrounding concrete. Make sure to trowel the surface level with the surrounding area and finish as needed.
42. **NOTE:** DuraTite Concrete Patch & Repair should only be applied at a depth of 2" maximum per application. DuraTite Concrete Patch & Repair has a 15 minute pot life and will be trafficable within 2 hours of application.
43. Once DuraTite Concrete Patch & Repair has setup, apply TechCrete 2500 Waterproofing Agent to the surface of the patched area and overlap into the surrounding area by at least 6". Allow the waterproofing product to dry before washing per the previous waterproofing application instruction.
44. Once the repair application and waterproofing have been completed work may continue.





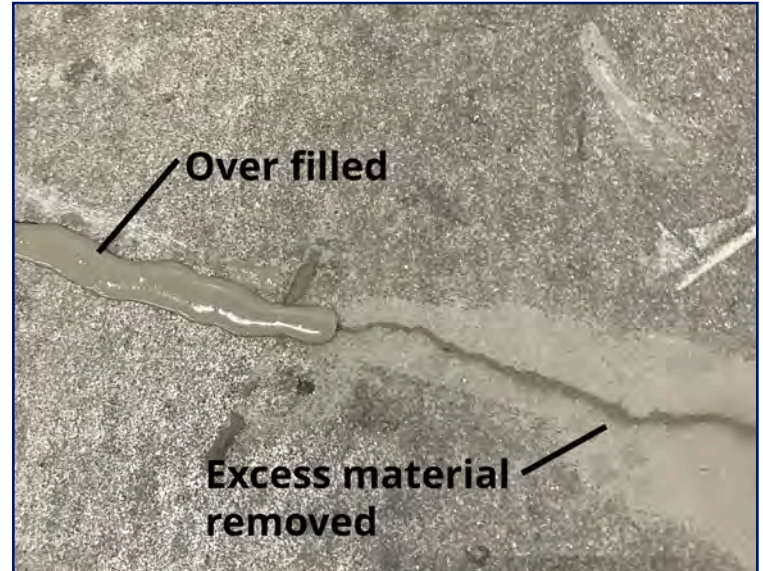
## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### CRACK TREATMENT NON-MOVING CRACKS

45. Once all the waterproofing has been applied, and has been properly washed, begin work on treating the non-moving cracks that are wider than 5/64" (2.0 mm). Cracks narrower than 5/64" (2.0 mm) do not need any further work. TechCrete 2500 Waterproofing agent will stop leaking through these cracks when properly applied.
46. **NOTE: The following application of ACR L43 Crack Filler should not begin until the application of ACR Accelerating Agent has been completed and while the cracks are still wet. ACR L43 Crack Filler requires the surface to be wet when being applied. If the crack becomes dry, then spray with water to ensure the crack is wet during application.**
47. First step in sealing non-moving cracks greater than 5/64" (2.0 mm) is to mix ACR L43 Crack Filler Part A (cementitious powder) with ACR L43 Crack Filler Part B (liquid). Mix these two components as directed for application into most horizontal cracks.
48. **NOTE:** When working on vertical cracks reduce the amount of Part B (liquid) by 1/3-1/2 the total amount in the bottle. This will cause the material to be thicker and easier to apply to the vertical cracks with a trowel or putty knife.
49. Once ACR L43 Crack Filler has been properly mixed, begin applying the product to the non-moving cracks. The best method for the application of ACR L43 Crack Filler is to utilize the grout bags found in each pail of the product. Place the mixed product into the grout bag and begin filling the crack. Properly mixed material will flow out the end of the grout bag without much pressure. Every effort should be made to try and fill the crack from bottom to top with ACR L43 Crack Filler.



50. Over fill the crack as there will be some shrinkage as the product begins to dry. Properly applied product will produce a small amount of mounding. As the material begins to setup this extra material will be removed.
51. Allow ACR L43 Crack Filler to setup for 15 minutes. After 15 minutes and before 30 minutes, begin removing the excess material from the surface. Using a wide putty knife scrape the surface removing excess material. This should leave a flat clean surface to the crack that has been treated with ACR L43 Crack Filler.
52. **NOTE:** During the extra material removal process if any voids are detected stop and place more ACR L43 Crack Filler into void. The crack needs to be completely filled to the same level as the surrounding surface area.
53. After completing the application of ACR L43 Crack Filler, spray apply another application of TechCrete 2500 Waterproofing Agent to the entire surface of the now treated crack. This application will assist with the waterproofing of the crack and begin to speed up the curing of the ACR L43 Crack Filler.
54. Cracks treated with ACR L43 Crack Filler will be ready for heavy traffic after 24 hours of drying and curing time. After 24 hours the area may be put back into service.



**NOTE:** Please review Technical Drawing TC2500-100 and TC2500-200 for details on crack preparation and treatment. Found at the end of this document.

## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### CRACK TREATMENT MOVING CRACK SEALING

55. Cracks that are considered moving, such as control and cold joints, must be treated with an elastomeric sealant in the following manner.
56. Moving cracks require that they be routed or ground to provide a clean square edge to the crack.
57. **NOTE: The following application of ACR Polyseal Sealant S+ should not begin until the application of ACR Accelerating Agent has been completed, washing has occurred and all surfaces are dry.**
58. After the cracks have been cleaned, routed or ground out, and all waterproofing has been completed, then begin placing a strong bead of ACR Polyseal Sealant S+ in the crack or joint. Make sure to apply enough material that once it has been tooled it will be level with the surrounding concrete surface. While the sealant is still pliable, use a caulking knife to smooth the surface and ensure that both edges of the sealant are sealed to the clean edges of the crack.
59. **NOTE: ACR Polyseal Sealant S+ must be applied to a clean dry surface!**
60. Allow ACR Polyseal Sealant S+ to dry and setup for at least 24-36 hours. After the sealant has been allowed to dry and setup, begin applying ACR PolyMembrane Flashing to the control or cold joint. The liquid flashing should be applied at least 30 mils wet thickness and at least 4" either side of the joint.



61. **Control or Cold Joints** - Use the same technique on control joints as noted above, apply a strong bead of ACR Polyseal Sealant to the control joint. If the control joint is wider than 1/2" then place an open cell backer rod into the joint to limit the depth of the caulking. Once the sealant has been placed, screed the sealant using a caulking knife to ensure that the sealant is sealed to the edges of the control joint.
62. Allow ACR Polyseal Sealant S+ to dry and setup for at least **24-36 hours**. After the sealant has been allowed to dry and setup, begin applying ACR PolyMembrane Flashing to the control or cold joint. The liquid flashing should be applied at least 30 mils wet thickness and at least 4" either side of the joint.
63. **Cold Joints / New Construction** - On projects where the concrete has been recently poured and TechCrete Admix was utilized in conjunction with an approved waterstop then there is no need for any further work to be done.
64. **Cold Joints / Existing Construction** - On projects where the concrete is older and some cracking has occurred along the cold joint, then the cold joint needs to be treated in the same manner as any moving crack, by routing or grinding the crack, applying ACR Polyseal Sealant S+ to the crack and then apply ACR PolyMembrane Flashing over the top of the joint using a paint roller. The liquid flashing should be applied at least 30 mils wet thickness and extend 4" to either side of the cold joint. Make sure to allow ACR Polyseal Sealant S+ to dry and setup for at least 24-36 hours.
65. **Expansion Joints** - Expansion joints exist as a function of building movement and as such are not part of the TechCrete Concrete Waterproofing System. It is highly recommended that a good quality expansion joint be utilized.





## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### FLASHING APPLICATION

#### WALL TO DECK FLASHING

66. Any projections, such as pipes, drains, steel supports etc., must be treated in the same manner as cracks and joints that are moving. Make sure projection and surrounding area are clean and free of dust and dirt before proceeding with any detail work.
67. If there is any gap between the project and concrete surrounding the projection, place open cell backer rod around the project to fill the gap.
68. Once backer rod is installed, place a strong bead of ACR Polyseal Sealant S+ around the base of the projection where projection goes through the concrete surface. Using a caulking knife tool the sealant so as to seal both edges of the sealant to the projection and the concrete surface. The sealant should form a 45° angle around the base after it has been tooled. Repeat this process for every projection coming through the concrete surface or any items mounted to the concrete surface.
69. Allow ACR Polyseal Sealant S+ to dry and setup for at least **24-36 hours**. After the sealant has been allowed to dry and setup, begin applying ACR PolyMembrane Flashing to projection and the surrounding deck area. The liquid flashing should be applied at least 30 mils wet thickness and at least 4" out on to the deck and 4" up the side of the projection.
70. Repeat this process for every projection coming through the surface of the concrete deck or walls.

**NOTE:** Please review Technical Drawing TC2500-400 for details on crack preparation and treatment found at the end of this document.



### WALL & COLUMN FLASHING APPLICATION

71. If the project has a perimeter wall or any columns within the project, they must be detailed in the following manner.
72. The corner created where a horizontal concrete surface meets a vertical concrete surface should have been properly waterproofed per the procedures and requirements in this technical data sheet. When the surface is completely dry, an application of ACR Polyseal Sealant should be made to the corner made by the vertical meeting the horizontal.
73. Apply a liberal bead of sealant to the corner and then tool the sealant with a caulking knife to create a 45° cant. The tooling should also seal the edges of the sealant to the vertical surface and the horizontal surface.
- 74. NOTE:** Allow ACR Polyseal Sealant S+ to dry and setup for at least **24-36 hours**.
75. After the sealant has been allowed to dry and setup, begin applying ACR PolyMembrane Flashing to the to the vertical and horizontal surfaces. The liquid flashing should be applied at least 30 mils wet thickness and at least 4" up the vertical surface and 4" out on to the horizontal surface. Repeat this process for every wall or column on the project.
76. If aesthetic appearance is important it is suggested that painters masking tape be used to mask the edges of the liquid flashing application to provide clean edges to the application.
77. ACR PolyMembrane Flashing should be allowed to dry and cure for at **least 24-36 hours** before any pedestrian or vehicular traffic.

**NOTE:** Please review Technical Drawing TC2500-400 for details on crack preparation and treatment found at the end of this document.



## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### SLIP RESISTANCE OPTIONAL DETAILING

Application of slip resistant material is not required, but if slip resistance is needed, then the following products and procedures must be used for a system warranty.

78. In areas where ACR Polymembrane Flashing may be walked or driven upon, slip resistance may be required. In these areas the ACR Ceramic Granules must be applied to increase the slip resistance of the liquid flashing material. **DO NOT USE STANDARD SILICA SAND!**
79. Immediately after the application of the liquid ACR PolyMembrane Flashing, apply ACR Ceramic Granules into the coating. The recommended coverage rate and method as follows.
80. **Pedestrian Walkway Areas** - Apply ACR PolyMembrane Flashing to the surface at a thickness of 30 mils (2.3 gals /100 square feet) then apply the ACR Ceramic Granules at a rate of 40 lbs./100 square feet).
81. **Vehicular Traffic Areas** - Apply ACR PolyMembrane Flashing to the surface at a thickness of 40 mils (3.1 gals /100 square feet) then apply the ACR Ceramic Granules at a rate of 60 lbs/100 square feet).
82. **IMPORTANT:** The ACR Ceramic Granules will settle into the PolyMembrane Flashing. Apply the granules generously and, within a few minutes of application of the liquid flashing, inspect the surface and re-apply as needed to obtain a continuous film of granules.



### LIMITATIONS

TechCrete 2500 Waterproofing Agent is not suitable for sealing cracks in concrete in excess of 5/64" in width, expansion joints or control joints. All cracks greater than 5/64" in width and control joints must be sealed with ACR Polyseal Sealant S+ or an approved equal. Expansion joints must be approved for use within the system.

**NOTE:** Once the application of waterproofing has been completed most coatings and paints will adhere over the top of the waterproofing, that is now part of the concrete, with the exception of the areas where the liquid flashing and sealant, ACR PolyMembrane Flashing and ACR Polyseal Sealant S+, have been applied. These products are silicone based and no paints will adhere to them unless they are silicone based paints.

### TESTING

The NSF/ANSI 61 is a set of national standards that relates to water treatment and establishes stringent requirements for all equipment and products that come in contact with either potable (drinking) water or products that support the production of potable water. TechCrete 2500 Concrete Waterproofing Agent has been UL Certified NSF/ANSI 61.

### TESTING STANDARDS

- ASTM E514 Water penetration
- ASTM C952 Bond Strength
- ASTM C672 Scaling Resistance
- ASHTO T-259 Chloride Ion Penetration
- ASHTO T-260 Chloride Ion Content
- ASTM D1644 Non volatile Content
- NSF 61 Potable Water Certification
- ASTM C1568-08 Wind Uplift Approval
- ASTM C1202 Chloride Ion Resistance
- ASTM C39 Compressive Strength
- TAS 112 Permeability
- ASTM D93 Ignition temp
- ASTM E108 Non combustible Surface
- ASTM C-42 Compressive and Flexure Strength
- ASTM-C-666 Freeze/Thaw
- ASTM D-3960 Zero VOC's
- ASHTO T-38 Moisture Vapor Transmission





## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### AVAILABLE WARRANTIES

The following **Warranties** are available when using **TechCrete 2500 Waterproofing System for Concrete** when applied by a **TechCrete Certified Contractor**. Please note that some warranties have additional fees and limitations.

### WARNINGS



#### DANGER! TOXIC IF SWALLOWED

This product contains Sodium Silicate and may be harmful if swallowed. Wash hands, face and any exposed skin thoroughly after handling. Keep container tightly closed. Do not eat, drink or smoke when using this product.


**IF SWALLOWED: Immediately call a POISON CONTROL CENTER, doctor/physician. Rinse mouth.**

**See Safety Data Sheet for further details regarding safe use of this product. Safety Data Sheets for any Alchemco product may be obtained by contacting Alchemco, 3532 Mayland Court, Henrico, VA 23233. 800-610-2895 or emailing [technical@alchemco.com](mailto:technical@alchemco.com) or calling**

**CHEMTREC 800-424-9300 (US)  
703-741-5970 (International)**

LIMITED LIABILITY WARRANTIES		PRODUCT CODE	MINIMUM FEE	COST PER SQUARE FOOT			
				CERTIFIED CONTRACTOR	CERTIFIED PROFESSIONAL CONTRACTOR	MASTER CERTIFIED CONTRACTOR	MASTER ELITE CERTIFIED CONTRACTOR
<b>30-Year NDL Material &amp; Labor Warranty</b> Concrete System New Construction ONLY		30YRNDLWAR	\$ 1,600	NOT AVAILABLE	\$ .16	\$ .14	\$ .12
<b>20-Year NDL Material &amp; Labor Warranty</b> Concrete System New or existing Construction		20YRNDLWAR	\$ 1,400	NOT AVAILABLE	\$ .14	\$ .12	\$ .10
<b>10-Year NDL Material &amp; Labor Warranty</b> Concrete System New or existing Construction		10YRNDLWAR	\$ 1,200	NOT AVAILABLE	\$ .12	\$ .10	\$ .08
<b>30-Year DL Material &amp; Labor Warranty</b> Concrete System New or existing Construction		30YRDOLWAR	\$ 1,000	\$ .10	\$ .09	\$ .08	\$ .07
<b>20-Year DL Material &amp; Labor Warranty</b> Concrete System New or existing Construction		20YRDOLWAR	\$ 750	\$ .09	\$ .08	\$ .07	\$ .06
<b>10-Year DL Material &amp; Labor Warranty</b> Concrete System New or existing Construction		10YRDOLWAR	\$ 500	\$ .08	\$ .07	\$ .06	\$ .05
<b>30-Year PRO Material &amp; Labor Warranty</b> Concrete System New Construction ONLY		30YRPROWAR	\$ 1,000	\$ .06	\$ .05	\$ .04	\$ .03
<b>10-Year PRO Material &amp; Labor Warranty</b> Brick Masonry System New or existing Construction		10YRPROBWAR	\$ 500	\$ .05	\$ .04	\$ .03	\$ .02
<b>10-Year PRO Material &amp; Labor Warranty</b> CMU Masonry System New or existing Construction		10YRPROCWAR	\$ 500	\$ .05	\$ .04	\$ .03	\$ .02
<b>10-Year PRO Material &amp; Labor Warranty</b> Planter System New or existing Construction INCLUDES OVERBURDEN PROTECTION		10YRPROPWAR	\$ 250 per planter	\$ .15	\$ .13	\$ .11	\$ .09
<b>20-Year PRO Material &amp; Labor Warranty</b> Concrete System New or existing Construction		20YRPROWAR	NO COST Must be a registered certified contractor meeting all installation requirements				
<b>20-Year PRO Material ONLY Warranty</b> Concrete System New or existing Construction		20YRPMOWAR	NO COST Must be a registered certified contractor				
<b>10-Year PRO Material ONLY Warranty</b> Concrete System New or existing Construction		20YRPMOWAR	NO COST Must be a registered certified contractor				
<b>10-Year PRO Material ONLY Warranty</b> TechCrete Waterproofing Admix New Construction		20YRPMOWAR	NO COST Must be a registered certified contractor				

**NDL** = Warranty has no dollar limit and no proration over the life of the warranty.  
**DL** = Warranty is limited to money paid for materials but no proration over the life of the warranty  
**PRO** = Warranty is limited to money paid for materials and is prorated over the life of the warranty.  
 Loses value each year of the warranty

CONCRETE WATERPROOFING & MAINTENANCE PRODUCTS  ALCHEMCO

Alchemco, a division of MBC North America, Inc. | 3532 Mayland Court, Henrico, VA 23233 | 800-610-2895 | [www.alchemco.com](http://www.alchemco.com)  
 © COPYRIGHT 2022. ALL RIGHTS RESERVED. 01/01/2023 Page 1

For additional information or questions about the Alchemco systems, either contact your local Alchemco distributor or Alchemco's Technical Department at [technical@alchemco.com](mailto:technical@alchemco.com) or call 800-610-2895.



DRINKING WATER SYSTEM COMPONENT  
NSF/ANSI/CAN 61 MH63325

#### WARRANTY DISCLAIMER

Because of conditions of use which may be beyond our control, Alchemco shall not be held responsible in any manner for any personal injury or property loss resulting to the buyer or any other person from handling, storage, or use of this material not in accordance with directions. The buyer and/or user assumes all risk and liability resulting from improper handling or usage. There is no warranty expressed or implied of any kind, except as supplied in writing.

## 2500 WATERPROOFING SYSTEM FOR CONCRETE

### RATES OF APPLICATION & PACKAGING SYSTEM COMPONENTS

The following components are required to be used within the TechCrete 2500 Waterproofing System for Concrete to receive any Alchemco Material & Labor Warranty.

- TechCrete 2500 Waterproofing Agent** covers 180 - 200 sq ft (5 sq meters per liter) of surface and 50-100 (15-30 lineal meters) of cracks per gallon. Product is available in the following packaging;
  - 5 gallon pails (20 liters)
  - 55 gallon drums (200 liters)
- TechCrete Waterproofing Admix** requires 28 ounces (0.8 kg) of product per cubic yard of concrete. Product is available in the following packaging;
  - 20 water soluble packs per 5 gallon pail
  - 400 lb - 55 gallon drum (181 kg)
- ACR Accelerating Agent (concentrate)** covers 180 - 200 sq ft (5 sq meters per liter) of surface per gallon. Product is available in the following packaging;
  - 5 gallon pails (18.92 liters) = 55 gallon drum
  - 1/2 gallon jug = 5 gallon pail
- ACR Crack & Void** covers 140-160 lineal feet (42 - 49 lineal meters) of cracks per gallon, depending on width & depth. Product is available in the following packaging;
  - 5 gallon pails (18.92 liters)
  - 55 gallon drums (208.2 liters)
- ACR L43 Crack Filler** kit (bag & bottle) will fill about 20-30 lineal feet of cracks, depending on width and depth. Example: 1/4" crack on a 8" thick deck, 20' long, will use 1 - ACR L43 Crack Filler Kit. Product is available in the following packaging;
  - 5 gallon pails (18.92 liters) 4 kits per pail
- ACR Polyseal Sealant S+** application rates will vary with the width of the crack, approximately 16-18 lineal feet per 20 ounces of product applied. Product is available in the following packaging;
  - 20 oz sausage pack, 12 per box
- ACR PolyMembrane Flashing** application rates will vary, when applying 30 mils dry thickness, it will require 2.3 gallons per 100 square feet. (8.7 liters per 9.3 square meters) or 217 square feet per 5 gallon bucket. Product is available in the following packaging;
  - 5 gallon pails (18.92 liters)

### RATES OF APPLICATION & PACKAGING CLEANING & REPAIR MATERIALS

The following products are not required for use with the TechCrete 2500 Waterproofing Systems BUT Alchemco DOES NOT ACCEPT responsibility for compatibility of any products not supplied by Alchemco.

- ACR Concrete & Masonry Cleaner** will cover 500 sq ft per gallon on moderately dirty concrete. For heavily soiled surfaces decrease coverage to 250 sq ft per gallon. Product is available in the following packaging;
  - 5 gallon pails (20 liters)
- ACR Concrete & Masonry Etch** will cover 500 sq ft per gallon. Older and harder surfaces may require a second application reducing coverage to 250 sq ft per gallon. Product is available in the following packaging;
  - 5 gallon pails (20 liters)
- ACR Emulsifying Cleaner** will cover approximately 72 sq ft per gallon. Repeated applications may be necessary for heavy oil and grease. Product is available in the following packaging;
  - 5 gallon pails (20 liters)
- ACR Rust Inhibitor** will cover approximately 25 sq ft per gallon. Product is available in the following packaging;
  - 1 gallon bottle (4 liters)
  - 5 gallon pails (20 liters)
- DuraTite Repair Mortar** 5-gallon pail (25 kg) will cover approximately 250 sq ft. Product is available in the following packaging;
  - 5 gallon pails (25 kg)
- DuraTite Foundation** there is no accurate method of measuring application rate for this product. Product is available in the following packaging;
  - 5-gallon pail (25 kg)
- DuraTite Concrete Patch & Repair** coverage rate depends on depth of product. Product is available in the following packaging;
  - 5-gallon pail 55 lbs (25 kg)
- DuraTite Plug** is used on a small quantity basis for plugging and stopping continuous water infiltration. Product is available in the following packaging;
  - 3-1/2 gallon bottle (12 kg)

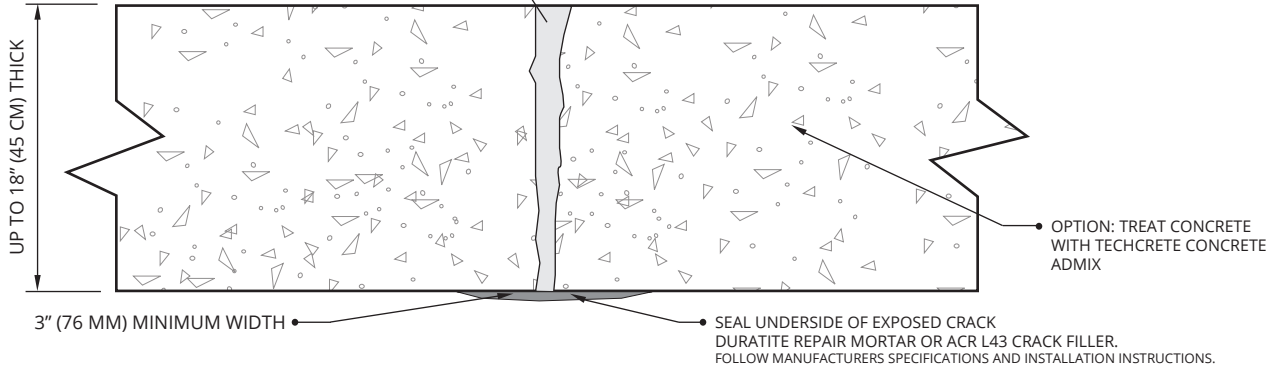
**NOTE: Products not supplied by Alchemco are specifically excluded from the system warranty. Any issues of compatibility with substituted products is the responsibility of the contractor.**



CRACK WIDER THAN 5/64" (2.0 MM) AND IS ALL THE WAY THROUGH THE DECK (AS DETERMINED DURING DECK CLEANING). FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.

**GENERAL NOTES**

1. CONTACT ALCHEMCO TECHNICAL DEPARTMENT TO REQUEST A PRE-PROJECT SURVEY AND/OR REVIEW OF PROJECT PLANS AND SPECIFICATION.

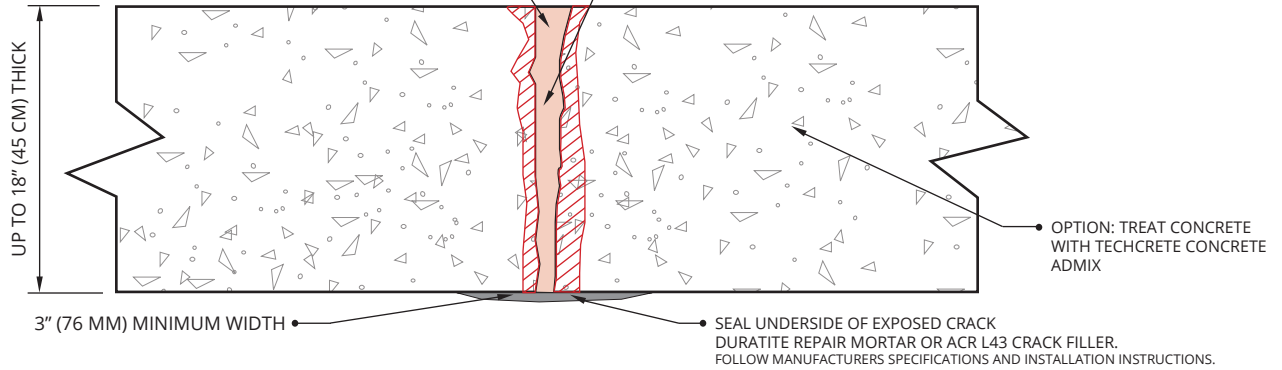


**SECTION: CRACK THROUGH SLAB PREPARATION TC2500 - 101**

NOT TO SCALE

CRACK WIDER THAN 5/64" (2.0 MM) AND IS ALL THE WAY THROUGH THE DECK (AS DETERMINED DURING DECK CLEANING). FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.

FLOOD CRACK WITH TECHCRETE 2500 WATERPROOFING AGENT TO THE POINT OF OVERFLOWING. ALLOW ENOUGH TIME TO PENETRATE INTO THE SIDES OF THE CRACK. FLOOD CRACK AGAIN IF NECESSARY. FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.

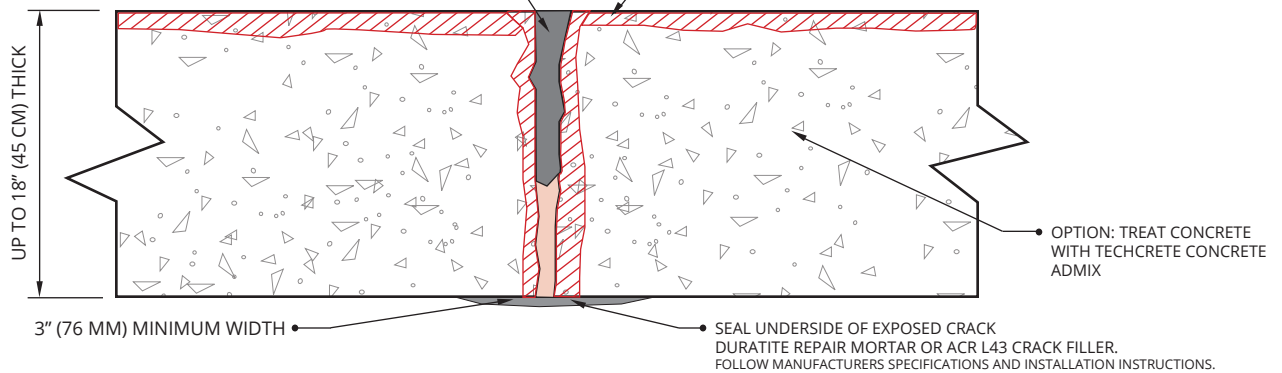


**SECTION: CRACK THROUGH SLAB FLOOD TREATMENT TC2500 - 102**

NOT TO SCALE

APPLY ACR L43 CRACK FILLER TO THE CRACK. FILL CRACK WITH ACR L43 CRACK FILLER WITH AS MUCH MATERIAL AS POSSIBLE. FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.

APPLY TECHCRETE 2500 WATERPROOFING AGENT TO THE SURFACE OF THE DECK (MAKE SURE TO FOLLOW PROPER APPLICATION PROCEDURE). FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.



**SECTION: CRACK THROUGH SLAB CRACK FILLING - 103**

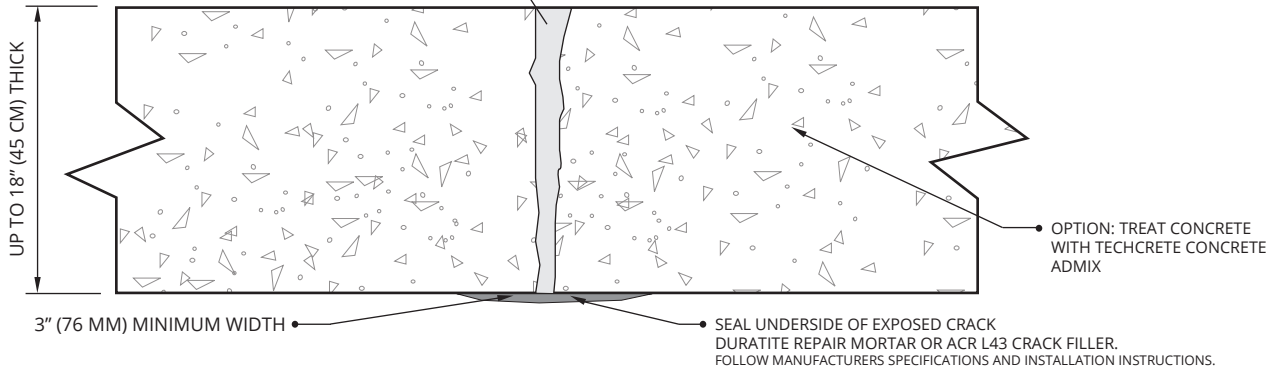
NOT TO SCALE

REVISION NUMBER	1
REVISION DATE	03/27/23
DRAWN BY	K. RUSSELL
DRAWING NUMBER	<b>TC2500 -100</b>

CRACK WIDER THAN 5/64" (2.0 MM) AND IS ALL THE WAY THROUGH THE DECK (AS DETERMINED DURING DECK CLEANING). FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.

**GENERAL NOTES**

1. CONTACT ALCHEMCO TECHNICAL DEPARTMENT TO REQUEST A PRE-PROJECT SURVEY AND/OR REVIEW OF PROJECT PLANS AND SPECIFICATION.

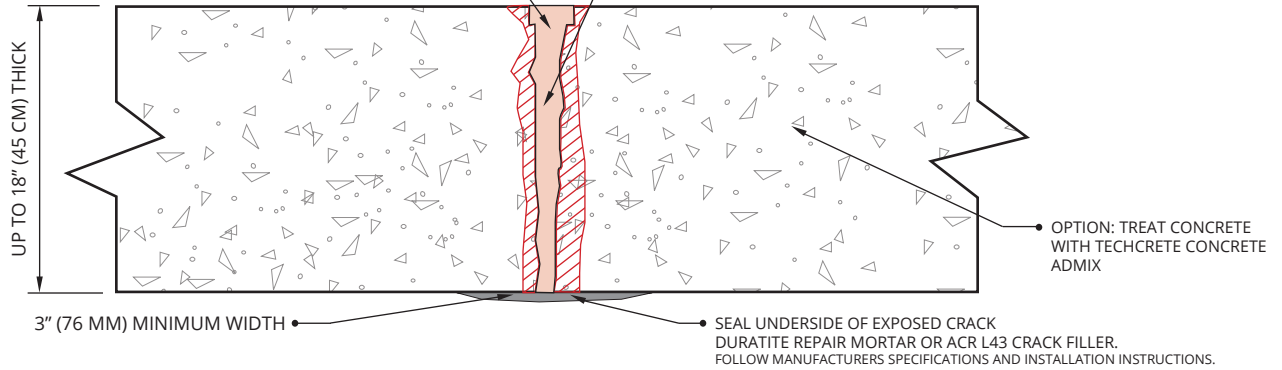


**SECTION: MOVING CRACK THROUGH SLAB PREPARATION TC2500 - 201**

NOT TO SCALE

ROUT OR GRIND THE CRACK TO PROVIDE CLEAN EDGES WITH NO LOSE MATERIAL FOR THE APPLICATION OF ELASTOMERIC SEALANT. FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.

FLOOD CRACK WITH TECHCRETE 2500 WATERPROOFING AGENT TO THE POINT OF OVERFLOWING. ALLOW ENOUGH TIME TO PENETRATE INTO THE SIDES OF THE CRACK. FLOOD CRACK AGAIN IF NECESSARY. FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.



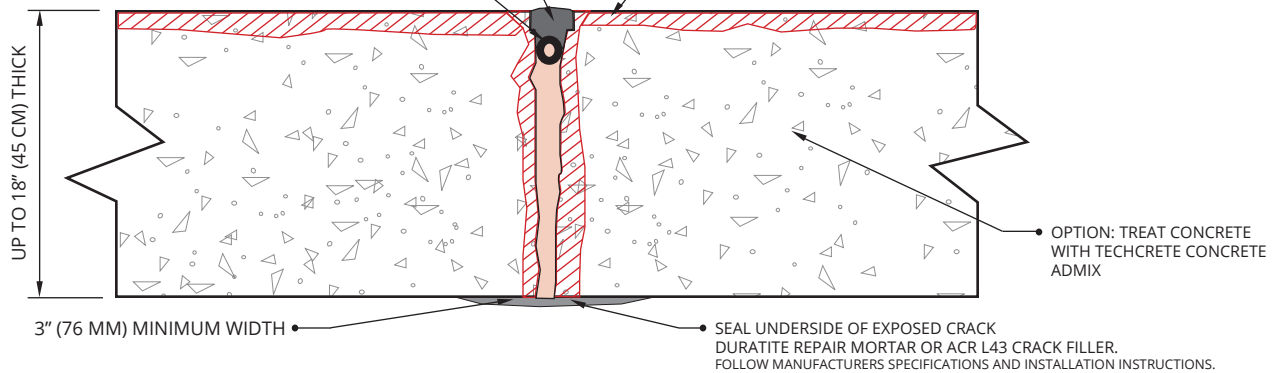
**SECTION: MOVING CRACK THROUGH SLAB GRIND & FLOOD TREATMENT TC2500 - 202**

NOT TO SCALE

APPLY ACR POLYSEAL SEALANT S+ TO THE CRACK. FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.

PLACE OPEN CELL BACKER ROD OR AN APPROVED BOND BREAKER INTO THE CRACK TO LIMIT THE FLOW OF THE SEALANT.

APPLY TECHCRETE 2500 WATERPROOFING AGENT TO THE SURFACE OF THE DECK (MAKE SURE TO FOLLOW PROPER APPLICATION PROCEDURE). FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.



**SECTION: MOVING CRACK THROUGH SLAB CRACK FILLING - 203**

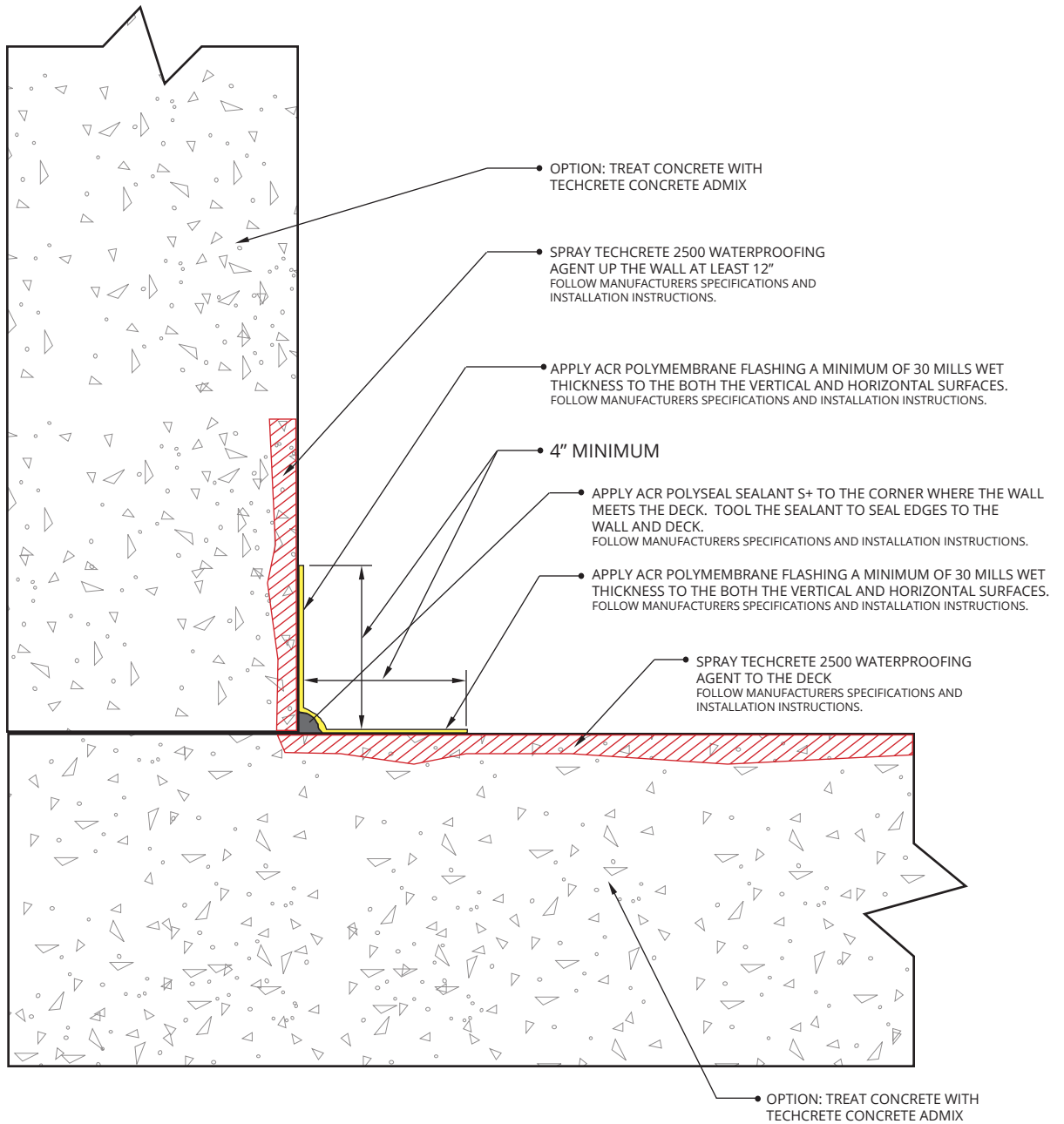
NOT TO SCALE

REVISION NUMBER	1
REVISION DATE	03/27/23
DRAWN BY	K. RUSSELL
DRAWING NUMBER	<b>TC2500 -200</b>



**GENERAL NOTES**

1. CONTACT ALCHEMCO TECHNICAL DEPARTMENT TO REQUEST A PRE-PROJECT SURVEY AND/OR REVIEW OF PROJECT PLANS AND SPECIFICATION.

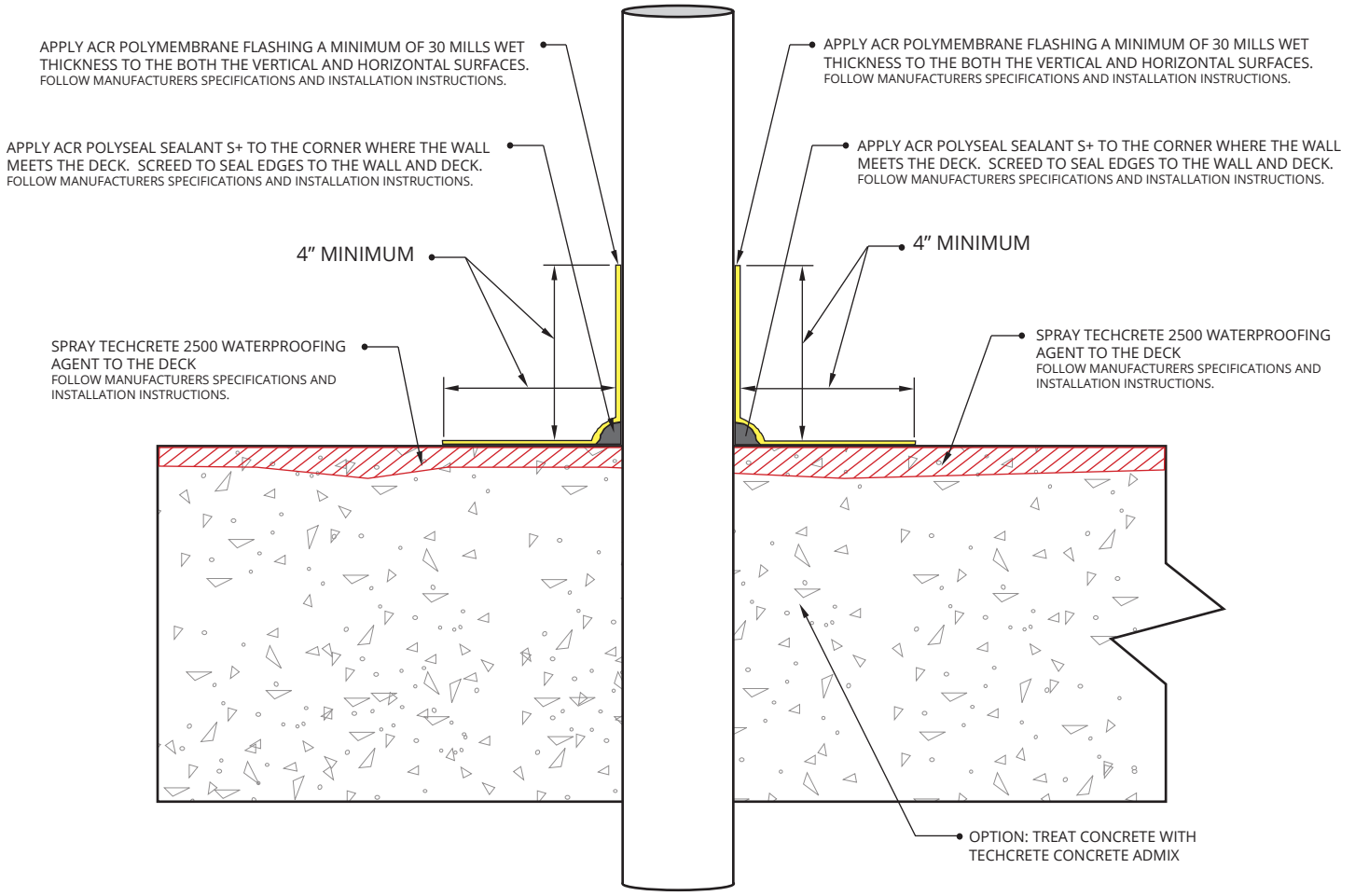


**SECTION: DECK TO WALL DETAIL - 300**  
NOT TO SCALE

REVISION NUMBER	1
REVISION DATE	03/28/23
DRAWN BY	K. RUSSELL
DRAWING NUMBER	<b>TC2500 -300</b>

**GENERAL NOTES**

1. CONTACT ALCHEMCO TECHNICAL DEPARTMENT TO REQUEST A PRE-PROJECT SURVEY AND/OR REVIEW OF PROJECT PLANS AND SPECIFICATION.



**SECTION: PROJECTION THRU DECK DETAIL - 400**  
NOT TO SCALE



Alchemco, a division of MBC North America, Inc.  
3532 Mayland Court, Henrico, VA 23233  
800-610-2895 | www.alchemco.com  
© COPYRIGHT 2023 ALL RIGHTS RESERVED.



CONSTRUCTION DETAILS  
PROJECTION THRU DECK DETAIL  
**TECHCRETE 2500 SYSTEM  
FOR CONCRETE**

REVISION NUMBER	1
REVISION DATE	03/28/23
DRAWN BY	K. RUSSELL
DRAWING NUMBER	<b>TC2500 -300</b>