



## ***TUFCHEM™ SPRAYABLE EPOXY/TUFCHEM NOVOLAC SPRAYABLE EPOXY INSTALLATION SPECIFICATION***

### **1. SCOPE**

- 1.1 This specification governs the installation of Tufchem Sprayable Epoxy and Tufchem Novolac Sprayable Epoxy Systems as manufactured by ErgonArmor. It shall be used in conjunction with information presented on product data sheets CE-224 TUFCHEM Sprayable Epoxy, CE-274 TUFCHEM Novolac Sprayable, CE-139 PENNTROWEL™ Epoxy Primer, Novocoat™ SC1100 Primer and any associated specifications referenced therein.

### **2. MATERIAL, ENVIRONMENTAL, AND SUBSTRATE CONDITIONS**

- 2.1 The product and substrate temperatures are important. The product storage and construction areas shall be conditioned to achieve and maintain the temperatures outlined below.
- 2.2 At the time of mixing and application, the temperature of the components and substrate should ideally be 70°F (21°C) and in all cases between 50°F (10°C) and 90°F (32°C).
- 2.3 The temperature of the prepared surface shall be at least 5°F (3°C) above the moisture dew point and between 50°F (10°C) and 90°F (32°C) at the time the materials are applied.
- 2.4 An optional Cold Room Hardener is available. Consult ErgonArmor for applications where temperatures will be between 35°F (2°C) and 50°F (10°C).
- 2.5 The work site must be protected from precipitation until the lining has achieved dry-to-touch stage and is not damaged by light traffic.

### **3. SURFACE PREPARATION**

- 3.1 The surface condition of new and/or existing concrete can vary greatly. The surface should be thoroughly inspected to identify the condition and suitability of the surface to accept the lining. An assessment and evaluation of the suitability of the surface should precede quotations, procurement, or mobilization of installation crews.
- 3.2 New concrete shall reach a minimum compressive strength of 3000 psi (20 MPa) and a surface tensile strength of 300 PSI (2.0 MPa) before the Surfacers is applied.
- 3.3 All cavities, stone pockets, honeycombing and bug holes greater than 1/4" (6 mm) depth shall be filled by repairing with appropriate polymer-modified cementitious materials.

**4. SUBSTRATE PREPARATION ON CONCRETE**

- 4.1 A concrete surface to which the Surfacer is to be applied shall be prepared by abrading the concrete and have a resultant surface like a medium grit of sandpaper. The surface shall have a non-glazed appearance. Remove enough material to achieve a sound concrete surface free of laitance, glaze, efflorescence and incompatible concrete curing agents or form release agents.
- 4.2 A single pass troweled finish shall be given to new concrete floors with care being taken to avoid bringing laitance to the surface. New concrete shall be cured in accordance with good practice as outlined in ACI-308 "Recommended Practice for Curing Concrete". Do not use liquid curing compounds as they may impede the bond of the lining system.
- 4.3 Consult SSPC-SP 13/NACE No. 6 for recommended surface preparation procedures.

**5. PRIMER APPLICATION**

- 5.1 PENNTROWEL™ Epoxy Primer or Novocoat SC 1100 are the recommended primers for all concrete surfaces. Primer seals the substrate surface and promotes adhesion. Consult Product Data Sheets for additional details.
- 5.2 Open proportioned cans of Part A Primer Resin and Part B Primer Hardener. Blend thoroughly together in mixing vessel. Use a slow speed electric drill to mix the liquids to avoid whipping air into the mix.
- 5.3 Mix thoroughly for at least one minute minimum and until mix is homogeneous.
- 5.4 Apply mixed primer onto prepared substrate by use of a roller or brush. On damp concrete surfaces the primer can be scrubbed into the surface with a stiff brush. This will emulsify any residual wetness at the concrete surface and penetrate the concrete. The presence of residual moisture will be observed if present as the primer will turn a milky-white color.
- 5.5 Allow primer to dry to touch before proceeding with application of Sprayable Epoxy. Primer must remain clean and dry before proceeding with spraying application.

**6. MIXING TUFCEM SPRAYABLE EPOXY AND TUFCEM NOVOLAC SPRAYABLE EPOXY**

- 6.1 Remove the lid from Part A Resin and pour into a mixing vessel.
- 6.2 Slowly add contents of Part B Hardener into the Part A Resin and mix thoroughly for at least one minute or until mix is homogeneous and of uniform color.
- 6.3 Slowly add proportioned Sprayable Epoxy Filler into mixed Resin/Hardener and mix thoroughly for at least one minute and until there are no visible dry spots in the Filler.
- 6.4 Never add water, Portland cement additives, or other adulterants to the mix.

**7. INSTALLATION OF MIXED SPRAYABLE EPOXY**

- 7.1 Mixed Sprayable Epoxy material shall be transferred into the hopper of a peristaltic pump sprayable epoxy machine. Only contractors trained in the use of this equipment should attempt to use it. The recommended equipment to install Sprayable Epoxy is manufactured by Quickspray Inc. <https://quickspray.com/products/carrousel-pump>.
- 7.2 The guidelines below are meant as suggestions based on our experience and are not necessarily complete. Consult the pump manufacturer for full details and instructions in the use of this specialized equipment.
- 7.3 All machine hoses should be in "like new" condition. Two spare drive hoses should be available on the job site. Hoses with cuts or weak areas that may rupture should be discarded. Hoses must be clean and free of internal obstructions preventing the free flow of material. Check the mechanical equipment to be sure it is operable. Mixing containers must be clean. Dried materials on sides of containers from previous mixes can break loose and clog the spray nozzle. Clean the mixing containers and mixing blade periodically during the application of the material.
- 7.4 Start the spray equipment motor. Pour a gallon of Resin (no hardener) into material hopper. Cycle this resin through the equipment several times by directing the nozzle into the material hopper. After cycling, direct the hose into a clean, empty container to collect the resin. This can be used in subsequent mixes. This lubrication process must be repeated when starting up again after equipment has been cleaned to shut down for breaks and lunch. Hold out several pounds of filler powder from the first mix. This mix, slightly wetter than usual, will be easier to pump and spray to insure that the equipment is operating properly. It will also enable the operator to get a "feel" for the equipment. After one or two "wet" mixes, mix units using all the specified amount of filler.
- 7.5 Apply the TUFCEM Sprayable Epoxy or TUFCEM Novolac Sprayable Epoxy in a continuous side-to-side pattern. Overlap each pass to provide an even build-up of topping to the specified thickness. On vertical surfaces do not attempt to build the usual 1/8" (3.0 mm) specified thickness in a single application. To prevent slump, apply in multiple coats allowing 1/2 hour to 1 hour cure time between coats (depending on temperature).
- 7.6 If the nozzle becomes clogged shut off the pump immediately. Remove the nozzle cap and clean thoroughly. When shutting down for breaks, lunch or quitting time, all equipment, tools, hoses, and nozzles must be thoroughly cleaned. Do not permit material to remain in hopper or hoses.
- 7.7 Spray equipment, hopper and hoses can be cleaned by cycling ethylene glycol through the equipment until all residual material is removed.
- 7.8 The finish using the peristaltic spray equipment will by design result in a roughened texture. Do not try to smooth the surface using rollers or trowels. If a smoother finish is desired, consult ErgonArmor for alternate material recommendations.

## **8. SET TIME OF SPRAYABLE EPOXY**

- 8.1 Sprayable Epoxies will exhibit a work life of 45-60 minutes at 70°F (21°C). The applied lining can support foot traffic in 8-12 hours, and light vehicle traffic in 24 hours. Full cure is 48 hours.

## **9. CLEANUP**

9.1 Clean tools with xylene and rags. Dispose of rags in accordance with good practice and in compliance with local regulations.

**10. SAFETY PRECAUTIONS DISCLAIMER CONTACT INFORMATION**

10.1 Consult current Safety Data Sheets (SDS's) before commencement of work.

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10.3 Please contact ErgonArmor for further information at +1-601-933-3595 or [ErgonArmorCustServ@ergon.com](mailto:ErgonArmorCustServ@ergon.com).

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