Storm Seal®

Technical Data Sheet

Rev: 06-2020

Product Description

Storm Seal® provides a system for the rehabilitation of corrugated metal, concrete, or masonry culverts, storm drains, and catch basins to stop inflow, infiltration, exfiltration, and restore structural integrity. Storm Seal® is a high building Type I/II portland cement based product blended with pozzolans, masonry sand, alkaline-resistant fiberglass reinforcement, and performance enhancing admixtures used to form a structural monolithic liner covering all interior substrate surfaces. Storm Seal® is specifically formulated for stormwater applications and culverts 24" in diameter or larger.

Performance Specifications

Compressive Strength: (ASTM C109)
>9,000 psi 28 Days

Tensile Strength: (ASTM C496)
>800 psi 28 Days

Flexural Strength: (ASTM C293)
>1,200 psi 28 Days

Bond Strength: (ASTM C882)
>2,000 psi 28 Days

Freeze/Thaw Resistance: (ASTM C666)
Pass, No Damage 300 Cycles

Drying Shrinkage: (ASTM C596)
0% 28 Days @ 90% RH

Wet Unit Weight: (ASTM C138)
134 ± 5 lb/ft^3

Packaging:
60 lb bag / 40 bags per pallet

Yield per Bag:
0.58 ft^3 / 14.0 ft^2 @ ½" thick

Typical Structures

Storm Seal® provides repairs to a variety of corrugated metal, concrete, and masonry stormwater structures including:

Culverts Storm Drains
Catch Basins Manholes

Equipment

Approved application equipment includes the SprayMate® 35C, SprayMate® 35D, MiniMate II, and Strong-Seal® spincasting equipment. If using other equipment, please contact The Strong Company, Inc.

Surface Preparation

Dam, divert, or bypass flow if present. Remove all loose debris and foreign matter by jetting with a high pressure water spray. For larger debris, removal by hand or by heavy equipment may be required. Remove loose and protruding brick, mortar, concrete or metal. Fill any large voids and joints with a rapid-setting patching product per manufacturer's recommendations.

Stop active leaks using an instant-setting, specially formulated product per manufacturer's recommendations. Some leaks may require weep holes to localize the infiltration during the application. After application, the weep holes shall be plugged with the instant-setting product prior to final pass.

When severe infiltration exists, pressure grouting may be required. Follow manufacturer's recommendations when pressure grouting.

Make any bench, invert, or floor repairs at this time using a high strength, self-consolidating cementitious grout per manufacturer's recommendations.

Mixing

Use 1.2 to 1.5 gallons of water per bag of product. Add the required amount of water to the mixer first, followed by product. Mix until consistency allows for application of up to one inch thick without material "sagging" on a vertical surface. Use the minimum amount of water to achieve desired consistency. Follow all other manufacturer's recommendations.

Discharge mixed material into hopper and prepare another batch in such a manner as to allow continuous application without interruption until complete.

Application

Confirm substrate is clean and free of all foreign material and is damp without noticeable free water droplets or running water prior to application.

For hand spraying: Apply material up to one (1) inch thick in one or more passes starting from the top or crown; however, minimum total thickness shall not be less than 1 inch. Trowel the surface to a relatively smooth finish being careful not to over trowel.

For spincasting: Align spincaster with center of pipe and withdraw spincaster at such a rate that a maximum of a ½ inch of material is applied per pass; however, minimum total thickness shall not be less than 1 inch.

A minimum hold time of two hours shall be strictly observed before applying additional passes for overhead applications. Follow manufacturer's recommendations when more than 24 hours have elapsed between applications.

Curing

Take care to minimize exposure of applied material to sunlight and air movement. When feasible, cover the structure if application of additional passes is to be longer than 15 minutes. Shade the structure in hot and arid climates during application. Keep the applied material damp for the first 72 hours if the humidity level is below 70%. An ASTM C309 curing compound may be used in lieu of keeping material damp.

Hold times for the final application are as follows: storm run-off – 4-6 hours; stream flow – 8-10 hours

Weather

Do not apply if ambient temperature is below 40°F. Do not apply to frozen surfaces or if substrate is expected to freeze within 24 hours after application. Keep the material temperature at time of application below 90°F. Do not allow water temperature to exceed 80°F. Chill with ice if necessary.

Acceptance

Cast four 2 inch cube specimens each day or for every pallet of material used, whichever occurs first. Properly package, label, and return specimens to the manufacturer for testing in accordance with the owner's or manufacturer's directions for compressive strength per ASTM C109.

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