Grout 12,000
Technical Data Sheet

Rev: 04-2018

Product Description

Grout 12,000 provides a system for the rehabilitation of corrugated metal culverts by rebuilding the invert to original dimensions prior to the application of Storm Seal®. Grout 12,000 is a high strength, self-consolidating Type I/II portland cement based product blended with pozzolans, masonry sand, and performance enhancing admixtures used to form a structural fill. Grout 12,000 is specifically formulated for stormwater applications and culverts 24" in diameter or larger.

Performance Specifications

Compressive Strength: (ASTM C109)
>6,000 psi 24 Hours
>12,000 psi 28 Days

Tensile Strength: (ASTM C496)
>1,200 psi 28 Days

Flexural Strength: (ASTM C293)
>1,800 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)
140 ± 5 lb/ft^3

Packaging:
65 lb bag / 40 bags per pallet

Yield per Bag:
0.55 ft^3 / 13.2 ft^2 @ ½" thick

Typical Structures

Grout 12,000 provides repairs to the inverts of corrugated metal culverts.

Equipment

Approved application equipment includes the SprayMate® 35C, SprayMate® 35D, and MiniMate II. 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.

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 material is flowable. Keep material agitated until time of placement as material may stiffen over time. 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 damp without running water prior to application.

Place discharge end of hose at one end of culvert and place material into invert bottom or void until material is level with the bottom of culvert. Repeat this process until entire invert is repaired. Ensure invert is smooth and will not obstruct Storm Seal® application equipment. In steep elevations, it may be necessary to use a stiff mix in place of a flowable mix.

Where the invert is scoured or washed out more than 2 inches in depth, gravel or other suitable large aggregate may be placed in the invert up to 2 inches from the bottom of culvert. Material may then be placed over this gravel fill as described above.

A minimum hold time of one hour shall be strictly observed before applying Storm Seal®. 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 Storm Seal® will not occur within 15 minutes after final application. Shade the structure in hot and arid climates during application. Keep the applied material damp for up to the first 72 hours if the humidity level is below 70% until Storm Seal® is applied. 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 - four (4) hours; stream flow – eight (8) 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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