KAUFMAN

PRODUCT INFORMATION

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SureShot WR

Description

SureShot WR is a high performance, single-component, dry mix shotcrete product. SureShot WR is specifically designed for the repair of concrete above or below grade in horizontal, vertical and overhead applications. SureShot WR is a unique blend of portland cements, specially proportioned aggregates, polypropylene fibers, microsilica, and a migrating corrosion inhibiting agent to provide a long lasting concrete repair and protection of steel reinforcement. Furthermore, Sureshot WR includes an integral water repellency ingredient, which will significantly reduce the potential for water intrusion into the shotcrete and therefore provides proven protection from corrosion of embedded reinforcing steel. Superior strength, low dust and rebound, excellent adhesion, and a non-sag formulation make SureShot WR ideal for use even in enclosed areas.

Laboratory Physical Properties @75°F

Compressive Strength (ASTM C-109)	1 day	2,000 psi.
	7 days	3,700 psi.
	14 days	5,200 psi.
	28 days	5,900 psi.
Flexural Strength (ASTM C-78)	1 day	400 psi.
	7 days	650 psi.
	28 days	725 psi.
Residual Strength (ASTM C-1399	28 days	45 psi.
Bond Strength (ASTM C-882)	7 days	1,200 psi.
	28 days	2,200 psi.
Water Absorption (Rilem Test Method Number 11.4)	180 mins.	.05 ml
Cylinder Water Absorption @ 24 hrs. (ANSI 118.7)		Less Than 1%

Field Test Results

Water/Bag	approx. 2/3 gl./50 lb. bag	
Absorption	7.5%	
Rebound	2%	
Rapid Chloride Permeability (ASTM C-1202)	<500 Coulombs Very Low Rating	
Compressive Strength (ASTM C-42)	1 day	3,200 psi.
	7 days	6,800 psi.
	14 days	10,100 psi.
	28 days	10,800 psi.
Flexural Strength (ASTM C-78)	7 days	900 psi.
	28 days	1100 psi.

Uses

SureShot WR is ideal for use in parking garages, bridges, tunnels, mines, underground utility structures, dams, piers, marine structures, and beams. SureShot WR may be used vertically, horizontally, or overhead and will produce limited rebound and dust, due to the uniquely proportioned aggregates, which will make application easier for the nozzelman.

Test Properties

It is difficult to duplicate field performance of SureShot WR in the laboratory due to the unique application methods involved. However, laboratory data is still relevant, especially when comparing different formulations from different manufacturers. The performance data provided is only an example of what is possible with SureShot WR. In the field, the real performance is dictated by an experience and proper techniques of the nozzleman.

SureShot WR complies with the requirements of ASTM C-1480, Type FA (Fine Aggregate), Grade GU (General Utility), SR (Sulfate Resistant), and LP (Low Permeability).

Packaging/Yield

50# bag (.45 ft^3) @ ½" will yield 9 ft^2
3,000 # bag (27 ft^3) @ ½" will yield 540 ft^2

Directions

Surface Preparation

Clean surface to remove all foreign matter including curing compound and form release agents. Remove all unsound concrete including spalled, cracked, or loose and deteriorated concrete through approved methods such as water blasting. Kaufman Products recommends a Concrete Surface Profile of 6 as per International Concrete Repair Institute specifications, which may be achieved through the use of water blasting, sand blasting, or shot blasting. Steel reinforcement must be thoroughly prepared through mechanical means to remove traces of corrosion. If corrosion has occurred due to the presence of chloride, then the steel must be high-pressure water blasted with potable water after mechanical cleaning. It is recommended to also use either SurePoxy HM EPL or SurePoxy HM 12 as a bonding agent and corrosion protection system.

Mixing

SureShot WR is designed for easy mixing and application by dry process shotcrete machinery. This type of equipment is able to apply SureShot WR very effectively in vertical, overhead and horizontal applications, while maintaining the correct water-cement ratio and the proper amount of compaction of the mortar. Do not ever add plasticizers, accelerators, retarders, or any other ingredients besides potable water unless advised by Kaufman Products in writing.

Application

Kaufman Products always recommends a job mock-up be performed to assist the nozzleman in determining the correct amount of water and air needed to properly apply SureShot WR. The SureShot should be applied perpendicular to the surface to minimize rebound, to assist in creating a smooth surface, and to properly encase the rebar. To determine the correct velocity of the material, consider that it is sufficient if the SureShot flattens out upon contact with the surface and the rebars are properly encased. Once the SureShot has taken an initial set of approximately 10 minutes the material may be smoothed out and a second lift may be applied after 2-4 hours depending upon mix consistency, temperatures (both ambient and mix), humidity, and wind conditions. In addition, we recommend strict adherence to all American Concrete Institute guidelines including the following:

ACI 506R	Guide to Shotcrete
ACI 506.2	Specifications for Shotcrete
	ACI 506.1R Committee Report on Fiber Reinforced Shotcrete
ACI CP-60	Craftsman Workbook for ACI Certification of Shotcrete Nozzleman
ACI CP-60	Craftsman Workbook for ACI Certification of Shotcrete Nozzleman

Finishing

The natural finish directly from the gun is acceptable, however if that is too rough then special finishes may be applied. Approximately 5-10 minutes after initial set, excess material may be sliced off with a sharp-edged cutting screed. The surface may then be finished with a broom for a rough texture, with a wood float for a granular texture, or with a steel trowel for a smooth finish.

Curing

We recommend using one of our quality curing & sealing compound that meets all aspects of ASTM C-309, Types 1 or 2, Class B. These products are Thinfilm 420 (Type 1, Class B), and Thinfilm 450 (Type 2, Class B).

Precautions

The minimum ambient and surface temperature is 40°F and rising at the time of placement. As always, lower temperatures will produce a slower set time, and higher temperatures will produce a shorter set time. In hot water, use chilled water for mixing. Do not use solvent-borne curing compounds, only water based products such as Thinfilm may be used. Avoid contact with aluminum to prevent adverse chemical reactions that will result in failure of SureShot WR. The SurePoxy HM Series may be used to coat aluminum surfaces to prevent this occurrence. A minimum depth of 1/3" is required for large areas, and ¼" may be tolerated in local areas. A maximum depth in one layer for large areas is 2", however it is possible in local applications to place in depths up to 6-9". Consult your KPI representative. *Read Safety Data Sheet before using*.

Technical Information

Test results were achieved under laboratory conditions. Statistical variations will occur based upon mixing methods, temperature & humidity, test methodology, site conditions, curing conditions, application methods, and equipment.