

# Rigid-Rock RR 1591

## APPLIED POLYMER SOLUTIONS, LLC

### PRODUCT PROFILE

**GENERIC DESCRIPTION** WATERBASED CEMENT URETHANE MORTAR PATCH KIT/RESURFACER - a three component trowelable urethane mortar that has outstanding wear performance and can withstand higher heat exposures than typical unmodified urethanes. The product has good thermal shock capabilities and is a good choice for hot wash down areas.

**RECOMMENDED USAGE** Resurfacing areas where a durable shock resistant surface is needed.

**COLORS** Gray and Red,

### CHARACTERISTICS/FINISHES

**SURFACE** Slight texture / Rough Finish

**PRIMERS** Self Priming for patching or overlay.

**TOPCOATS/FINISHES** RR 3000 Series Water-Based and Low VOC Epoxies  
RR 4000 Series 100% Solids High Performance Epoxies  
RR 4200 Series 100% Solids Quick Cure Epoxies  
RR 3300 Series High Performance Urethanes  
RR 4400 Series Novolac Epoxies

### TECHNICAL SPECIFICATIONS

**SOLIDS BY WEIGHT** 97% (liquids mixed w/ aggregates)

**THICKNESS** 1/4" to 3/8"

**VOLATILE ORGANICS** Negligible

**MIX RATIO** Part A: 3.75 lbs / Part B: 4.4 lbs / 42 lbs of aggregate blend

**APPLICATION TEMP** 45°F - 85°F (7°C - 29°C)

**CURE SCHEDULE**

Cure State	70°F (21°C)
Pot Life	15-20 minutes
Light Traffic/Recoat	12 hours
Full Cure/Heavy Traffic	24-48 hours

**STORAGE TEMP** 65°F - 85°F (18°C - 30°C) in a dry area. Avoid excessive heat and freezing.

**SHELF LIFE** 6 months for liquids in unopened containers/ 3 months for aggregate unopened.

**PACKAGING** All kits are premeasured, ready for blending and application

Size	Cubic Feet	Coverage @ 1/4"	Coverage @ 3/8"
50 lb. kit	.45 cu. ft.	18 sq. ft.	12 sq. ft.

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### TECHNICAL SPECIFICATIONS (CONTINUED)

<b>COMPRESSIVE STRENGTH</b>	8,600 psi
<b>FLEXURAL STRENGTH</b>	3,400 psi
<b>TENSILE STRENGTH</b>	1,000 psi
<b>BOND STRENGTH</b>	400 psi (concrete failure)
<b>IMPACT RESISTANCE</b>	160 in. lbs
<b>ABRASION RESISTANCE</b>	5 mg loss
<b>HARDNESS</b>	Shore D=80-90
<b>HEAT RESISTANCE</b>	300F dry heat exposure
<b>VISCOSITY</b>	Trowelable
<b>DOT Classification</b>	Not Regulated

#### CHEMICAL RESISTANCE TESTING

Spot testing per ASTM D1308 for Mustard, Ketchup, Lactic acid, vinegar, and lemon juice were performed and no physical damage to the exposed surface was observed. In 24 hour immersion testing, the following results were observed..

<u>CHEMICAL EXPOSURE</u>	<u>PERFORMANCE</u>
10% acetic acid	passed
30% nitric	passed
Sodium Hydroxide 50%	passed
Sulfuric Acid 30%	passed
Xylene	passed

#### HOT OIL TESTING

Hot cooking oil at 220°C was placed on a sample in a pool on the surface and allowed to cool to room temperature. No surface damage was apparent and adhesion of the sample was unaffected.

#### THERMAL SHOCK RESISTANCE

After a seven day cure, samples were held at 5°C for 15 hours and then immediately exposed to 100°C water. This cycle was repeated four times. The samples were then held at 5°C for 15 hours and then immediately exposed to steam for 5 minutes. After the thermal cycle and steam exposure, the surfaces were examined for cracks or damage and the bond strength was tested. The bond test before and after the thermal and steam exposure was greater than 400 psi and there was no damage to the exposed surface observed.

### SURFACE PREPARATION

- SURFACE** All dirt, oil, dust, foreign contaminants and laitance must be removed to assure a trouble free bond to the substrate.
- MOISTURE** Allow concrete to cure for 28 to 45 days. Verify dryness by testing for moisture with a "plastic film" test; this can be done at room temperature by placing a 4' x 4' plastic sheet on the substrate and taping down the edges. If after 24 hours, the substrate is still dry below the plastic sheet, then the substrate is dry enough to start coating. Should moisture be present, perform Moisture Vapor Emission Rate testing using Anhydrous Calcium Chloride (ASTM F1869). Moisture content should not be in excess of 3 lbs. per 1,000 sq. ft. for coatings (5 lbs. for resurfacers) in a 24 hour period.
- CONCRETE** Aggressively shot-blast or mechanically prepare the substrate to properly profile the substrate and remove hardeners, curing compounds, sealers, laitance and other contaminants. All edges and around columns or beams should be mechanically scarified. All termination points should not be feather edged, but should be saw cut with the termination ending at the sawcut.
- FILLING & PATCHING** Voids, cavities, nail and bug holes should be filled with a recommended epoxy filler. All large cracks should be V cut and filled with an appropriate semi-rigid epoxy crack filler.
- JOINTS** All expansion joints should be filled with an appropriate joint filler. When overlaying an expansion joint, a single saw cut through the epoxy overlay will prevent random fracturing.

### APPLICATION

- MIXING** This product is packaged with a gallon container of part A (not full) and a ½ gallon container of part B (not full) with an aggregate component consisting of one bag. Standard packages are in pre-measured kits and should be mixed as supplied in the kit. We highly recommend that the kits not be broken down. Add the part B component to an oversized mixing container first, followed by the part A component. After the two liquid parts are combined thoroughly and streak free, add in the provided aggregate and mix well with slow speed mixing equipment such as a jiffy mixer until the material is thoroughly mixed and uniform in color. After mixing, transfer the mixed material to another pail (the transfer pail) and again remix. The material in the transfer pail is now ready to be applied on the prepared substrate. Remix occasionally to prevent settling of aggregate. Improper mixing may result in product failure.

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### APPLICATION (CONTINUED)

- THICKNESS** Have the floor as dry as possible without any puddles of water present. If there is excess water on the substrate, take up excess with a suitable vacuum until a near dry condition exists. Then, after the material is thoroughly mixed, pour the material onto the substrate. Either use a trowel to push out and level the material evenly or spread with a gauge rake followed by a hand trowel. Immediately after the product is applied, broadcast with aggregate to rejection.. Remove excess aggregate after the material has cured. Surfaces not broadcasted could have an uneven texture. Maintain temperatures and relative humidity within the recommended ranges during the application and curing process. Do not apply to cracked or unsound concrete. Do not feather edge.
- RECOAT/TOPCOAT** Except for the aggregate broadcast, topcoats are not recommended. In some areas, a suitable high build novolac coating can be used, depending on specific requirements. If Topcoated, the high heat resistance would be diminished.
- CLEAN UP** Uncured product can be cleaned up with soap & water, citrus based cleaners, alcohol or other solvents such as Xylene.

*\*Restrict the use of the floor to light traffic and non-harsh chemicals until the coating is fully cured (see technical data under full cure). It is best to let the floor remain dry for the full cure cycle.*

### LIMITATIONS

- FLOOR CLEANING** Caution! Some cleaners may affect the color of the floor installed. Test each cleaner in a small area, utilizing your cleaning technique. If no ill effects are noted, you can continue to clean with the product and process tested.
- \*Color stability may be affected by environmental conditions such as high humidity or chemical exposure.
  - \* Product is not UV color stable and may discolor if exposed to lighting such as sodium vapor lights.
  - \* Colors may vary from batch to batch due to variations in the silica filler.
  - \* Mortar colors are not from our standard color chart.
  - \* Substrate temperature must be 5 degrees F above dew point.
  - \* For chemical exposure areas, we recommend a suitable topcoat to reduce porosity and chemical migration.
  - \* Test data based on neat resin.

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