



REMR MATERIAL DATA SHEET CM-PC-1.25
 CONCRETE PATCHING MATERIAL: RENDEROC SD

1. NAME

Renderoc SD

2. MANUFACTURER

Preco Industries, Ltd.
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3. DESCRIPTION

Renderoc SD is a two-component, polymer-modified, cementitious patching compound. It was designed specifically for resurfacing and leveling concrete surfaces where the repair is greater than 1/2-in. thick. It contains nonshrink additives, which allow it to be used at thicknesses to 2 in.

5. MANUFACTURER'S TECHNICAL DATA

Technical data:

<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Compressive strength, psi, 1 day	ASTM C 109	4,000
psi, 28 days		8,000
Flexural strength, psi	ASTM C 348	1,500
Slant shear bond strength, psi	AASHTO T-237	2,650
Water absorption, percent absorbed	ASTM C 140	0.90*

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* Water absorption for conventional mortar is 6 to 8 percent.

without the addition of aggregate. For greater thickness, the addition of aggregate is recommended. Incorporation of the polymer liquid ensures that Renderoc SD will be more water-proof, freeze-thaw resistant, and provide better adhesion than standard portland-cement mortars. Its coefficient of thermal expansion is similar to that of normal concrete, ensuring thermal compatibility.

4. USES

Renderoc SD may be used to resurface and level concrete to 2 in. without aggregate and to 6 in. with aggregate. It can be used to resurface large areas as well as small pockets and cracks. It has high bond and compressive strengths, is self-curing, water-proof, and nonshrink.

<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Water vapor transmission rate, perms	ASTM E 96	4-6 ξ
Water repellency after 35 freeze-thaw cycles	ASTM C 67	No change in water absorption
Freeze-thaw resistance, weight change percent after 50 cycles	NYS DOT 216	1.2 $^{\wedge}$
Expansion, percent after 28 days	ASTM C 157	0.000
Abrasion resistance, percent weight loss	ASTM C 241	2.10 $^{+}$
Impact strength	Inch-Pounds	16 $^{\sim}$

ξ Water vapor transmission rate for conventional mortar is 20 to 30 perms.
 $^{\wedge}$ Conventional mortar has weight loss of 10 to 20 percent.
 $^{+}$ Conventional mortar's abrasion loss is 14 to 16 percent.
 $^{\sim}$ Conventional mortar's impact strength is 4 to 8 in.-lb.

Packaging: A No. 1 kit contains 1 bag (55 lb) of powder and 1 gal liquid. A No. 2 kit contains 5 bags (275 lb) of powder and 5 gal liquid.

Yield: A No. 1 kit yields approximately 0.5 cu ft; a No. 2 kit, 2.5 cu ft.

Setting time: Between 2 and 4 hr.

Coefficient of thermal expansion, per C - 7.3×10^{-6} : Compatible with concrete.

Density: 137 pcf (Density of conventional mortar is 130 pcf).

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface Preparation: Concrete substrate must be structurally sound. Remove loose or unsound concrete.

Clean surfaces entirely of oil, grease, paint, corrosion deposits, dust, laitance, or other surface contaminants. Prepare the surfaces by mechanical scarification, sand-blasting or acid-etching. Remove dust or deposits produced during these procedures with a vacuum-cleaner. Clean corrosion from embedded steel and expose 100 percent of the circumference. Coat the cleaned metal with Preco's LIQUI STEEL epoxy coating prior to application of Renderoc SD.

Mixing: Renderoc SD comes in premeasured kits, containing 55 lb powder and 1 gal liquid. A slow-speed drill or mortar mixer is preferred over hand mixing. Small quantities of polymer liquid can be added or held back to enhance troweling consistency.

Priming: Dampen the surface to be repaired with clean water, but make sure there are no standing puddles.

With a stiff mixture, optimum bonding is obtained by first scrubbing a slurry consisting of two parts powder mixed with one part polymer liquid onto the substrate. The slurry must be wet when the topping is applied.

Application: While the substrate is still damp, apply Renderoc SD by trowel or screed. When the desired stiffness is reached, use a wood or sponge float to create a smooth finish. A broom can be used to create a rough finish. An extra-tight, smooth surface can be achieved by wetting the surface slightly and using a steel trowel. However, this procedure may cause a variation in color. For areas

in excess of 2 in. thick, add 25 percent, or 14 lb, of additional 3/8-in. pea gravel. In areas over 4 in. thick, add 50 percent, or 28 lb, of additional 3/8-in. pea gravel.

Curing: Renderoc SD applications are self-curing. In exposed locations where rapid drying conditions are anticipated or where ambient temperatures are above 85° F, consult Preco for recommendations.

Precautions: Protect from freezing. Do not apply when air or surface temperature is below 45° F. Do not wet cure. Protect from rainfall prior to final set. Clean equipment with water immediately after use.

7. CORPS OF ENGINEERS' EVALUATION APPLICATION

Technical data:

<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Compressive strength, psi	ASTM C 39	
	24 hr	2,880
	3 days	3,470
	7 days	4,260
	28 days	5,500
Modulus of elasticity, psi	ASTM C 469	
	3 days	1.45×10^6
	7 days	2.93×10^6
	28 days	2.22×10^6
Flexural strength, psi	ASTM C 882	
	24 hr	460
	3 days	490
	7 days	500
	28 days	1,020
Bond to concrete, psi	ASTM C 882	
	24 hr	930
	3 days	830
	7 days	1,290
	28 days	2,320

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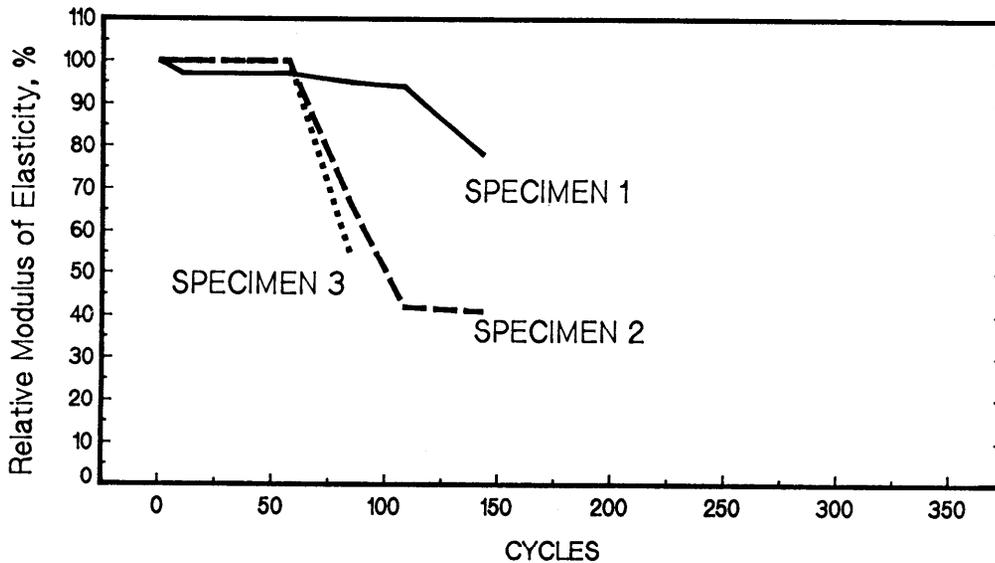
<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Shrinkage, percent	GR-83-10*	
	(unconfined condition) ¹	0.05
	(concrete patch) ²	0.00

* Bureau of Reclamation Technical Report Standard.

¹ An exotherm of 17° F was reported on the shrinkage specimen which had a mixture design of 1 gal of liquid to a 55-lb bag of powder.

² No exotherm was recorded on the shrinkage specimen (4° F rise), with a mixture design of 1 gal of liquid to a 55-lb bag of powder. Room temperature varied more than the 4° F temperature rise.

Rapid Freezing and Thawing ASTM C 666,
Relative Dynamic Modulus of
Elasticity, %



8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of activities involving potentially hazardous and toxic chemical substances. Manufacturer's recommendations to protect occupational health and environmental quality should be carefully followed. Material safety data sheets should be obtained from the manufacturers of such materials.

In cases where the effects of a chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated as potentially hazardous toxic materials.

9. AVAILABILITY AND COSTS

Availability: FOB Plainview, N.Y.

Cost: A No. 1 kit costs \$35.60; a
No. 2 kit, \$104.25.