



REMR MATERIAL DATA SHEET CM-PC-1.24  
 CONCRETE PATCHING MATERIAL: RENDEROC HB

## 1. NAME

Renderoc HB  
 (formerly Renderoc)

fail. Renderoc HB's low density provides for hi-build applications. Its coefficient of thermal expansion is similar to that of normal concrete, thus ensuring thermal compatibility.

## 2. MANUFACTURER

Preco Industries, Ltd.  
 Fifty-five Skyline Drive  
 Plainview, New York 11803  
 Telephone: 516-935-9100

## 4. USES

Renderoc HB may be used to repair concrete, block, brick and masonry structures. It may be used to resurface large areas as well as small pockets and cracks. It is nonshrink, self-curing, and waterproof. It develops high bond strength, high structural strength, is resistant to freezing and thawing, and can be used at thicknesses to 6 in. on verticals and 2 in. on overhead areas in one application.

## 3. DESCRIPTION

Renderoc HB is a two-component, polymer-modified, cementitious patching compound. It was designed specifically for vertical and overhead repairs where normal mortars often

## 5. MANUFACTURER'S TECHNICAL DATA

Technical data:

<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Compressive strength, psi 28 days	ASTM C 109	6,000
Flexural strength, psi	ASTM C 348	1,000
Slant shear bond strength, psi	AASHTO T 237	2,000
Water absorption, percent absorbed	ASTM C 140	1-2*

(Continued)

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

<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Water vapor transmission rate, perms	ASTM E 96	4-6#
Water permeability, ml/m/sec @ 2 hr	ISAT, BS1881	0.06 <sup>^</sup>
Water repellency after 35 freeze-thaw cycles	ASTM C 67	No change in water absorption
Freeze-thaw resistance, weight change percent @ 50 cycles	NYS DOT 216	0.9 <sup>+</sup>

# Water vapor transmission rate for conventional mortar is 20 to 30 perms.  
<sup>^</sup> This value is 1/10 of conventional mortar.  
<sup>+</sup> Conventional mortar has weight loss of 10 to 20 percent.

Packaging: The No. 1 kit contains 1 bag (45 lb) powder and 1 gal liquid and covers 0.55 cu ft. The No. 2 kit contains 5 bags (225 lb) powder and 5 gal liquid and covers 2.75 cu ft.

Setting time: 2 to 4 hr.

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

Density: Approximately 103 pcf (Density of conventional mortar is 130 pcf).

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface preparation: Concrete substrate must be structurally sound. Remove any loose or unsound concrete. Clean the surfaces entirely of oil, grease, paint, corrosion deposits, dust, laitance, or other surface contaminants. Clean corrosion from any embedded steel and expose 100 percent of the circumference. Coat the cleaned metal with Preco's Liqui Steel epoxy coating prior to applying the Renderoc HB slurry coat.

Mixing: Renderoc HB is supplied in premeasured kits (45 lb powder and 1 gal liquid). Since the waterproofing additives in Renderoc HB powder induce a degree of water resistance during mixing, it is advisable to add the powder to the liquid. A slow speed drill and paddle is preferred over hand mixing.

Priming: All surfaces should be primed with a slurry applied with a stiff mason's brush. The slurry consists of 2 parts by volume of powder mixed into 1 part by volume of liquid. When substrate temperatures are in excess of 80° F or where the substrate is highly absorbent, dampen the area prior to applying the slurry.

Application: While the slurry is still damp, apply the Renderoc HB with a trowel. The maximum thickness of any one layer of Renderoc HB depends on its consistency, location, and the profile of the substrate to which it is applied. Typically, a vertical layer in excess of 3 in. is easily achieved, while overhead applications may only sustain 1-1/2 to 2 in. in any one unsupported application. For deep overhead repairs, it is good practice to provide mechanical anchors, studs,

etc. Small quantities of polymer liquid may be added or held back to enhance trowelling consistency.

temperatures are above 85° F, contact Preco for recommendations.

Curing: Renderoc HB applications are self-curing. However, in exposed locations where rapid drying conditions are anticipated or where ambient

Precautions: Protect from freezing. Do not apply the product 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

Technical data:

<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Compressive strength, psi	ASTM C 39	
	24 hr	1,040
	3 days	2,860
	7 days	3,790
	28 days	4,960
Modulus of elasticity, psi	ASTM C 469	
	3 days	$1.59 \times 10^6$
	7 days	$1.58 \times 10^6$
	28 days	$1.69 \times 10^6$
Flexural strength, psi	ASTM C 882	
	3 days	370
	7 days	420
	28 days	795
Bond to concrete, psi	ASTM C 882	
	24 hr	290
	3 days	800
	7 days	1,250
	28 days	2,050
Shrinkage, percent	GR-83-10*	
	(unconfined condition) <sup>1</sup>	0.00
	(concrete patch) <sup>2</sup>	-0.004 <sup>3</sup>

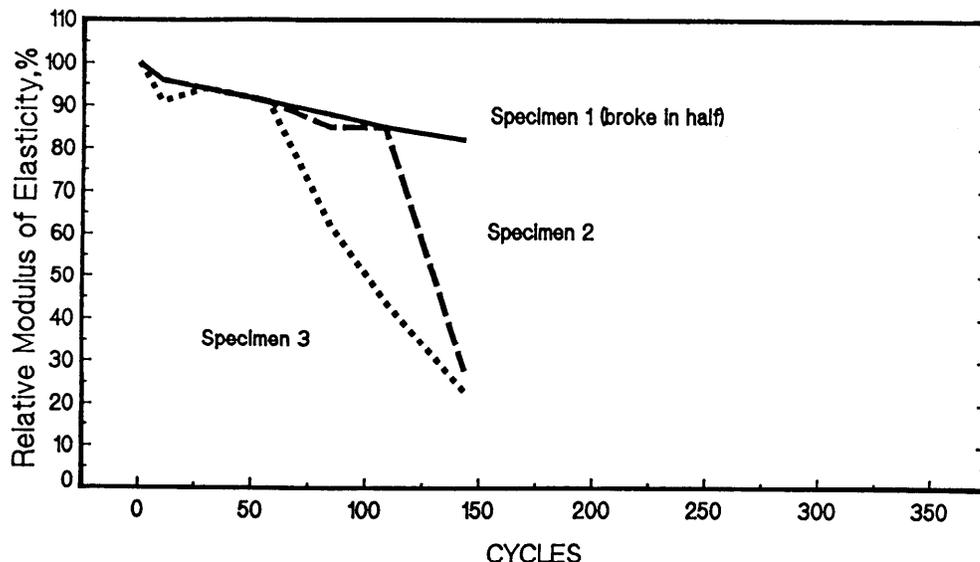
\* Bureau of Reclamation Technical Report Standard.

<sup>1</sup> An exotherm of 4° F was reported on the shrinkage specimen which had a mixture design of 1 gal of polymer and 45 lb of material.

<sup>2</sup> An exotherm of 8° F was reported on this specimen with the same mixture design as above.

<sup>3</sup> Specimen had shrinkage until set or first 7 hr of 0.008%. Then it expanded 0.012 percent over its initial length.

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, \$129.00.