



REMR MATERIAL DATA SHEET CM-PC-1,18
 CONCRETE PATCHING MATERIAL: RESIST-
 A-CHEM 5073

1. NAME

Resist-A-Chem 5073

A steel fibre reinforced, iron-filled epoxy resin for maximum impact and wear resistance.

2. MANUFACTURER

Resist-A-Chem, Inc.
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 Pleasant Hill Rd
 Carrollton, Georgia 30117
 Telephone: 404-834-3491

3. DESCRIPTION

Resist-A-Chem 5073 Iron Plate is a three-component system consisting of a low viscosity epoxy resin, hardener, and a filler. The filler consists of metallic and silane-treated inorganic particles and metal fibres for reinforcing.

4. USES & LIMITATIONS

Uses: Resist-A-Chem is used as a topping for remedial maintenance and as a new installation over concrete surfaces subject to heavy wear and/or impact. Typical installations are loading areas and areas subjected to heavily loaded steel-wheeled cart traffic. It may be used in stilling basins, tunnels, and other hydraulic structures to resist abrasion, and/or mild cavitation.

Limitations: Do not use Resist-A-Chem 5073 where chemical attack of iron or epoxy resin can be expected.

5. MANUFACTURER'S TECHNICAL DATA

Property	Test Method	Value
Elongation (RAC #70)	ASTM D 638	5%
Flexural modulus (RAC #70)		201,000 psi
Compressive strength	ASTM D 695	11,000 psi
Tensile strength	ASTM D 638	3,000 psi

Service temperature: 150°F continuous.

Shelf life: Minimum of 12 months

Storage temperature: Between 40 and 100°F

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface preparation: Concrete surfaces should be structurally sound and free of all contaminants.

Smooth surfaces should be abrasive-blast cleaned, acid etched and rinsed, or water-blast cleaned.

The surface may be wet or dry, with dry preferred; remove standing water.

See Resist-A-Chem Bulletin 100, "Surface Preparation" for full preparation details.

Priming: A primer is strongly recommended. Use either RAC 1020 Primer/Bonding Agent, or reduce RAC #70 Epoxy System with RAC Thinner #2 (1.0 gal RAC #70 to 3 pt RAC Thinner #2) and use as a primer. Do not "puddle" primer. Allow tack to develop (RAC 1020, 4 to 6 hr; RAC #70, 3 to 4 hr @ 75) before applying RAC 5073.

Mixing: Do not mix until the surface has been properly prepared and primed. Mixing is easier if #70, Parts A and B, are between 70 and 90°F at the time of mixing.

The proper mixing ratio is 3 volumes of A to 1 volume of B. Mix the entire contents of the two cans (1.0 gal) for 3 min. Continue mixing while adding the 2 bags of RAC 8008 (90 lb) until a uniform "wet" mixture develops, an additional 2 to 3 min.

RAC 5073 is a very "heavy" mixture; use a powered mortar mixer or a similar type.

Application: Apply mixed material within 45 min of mixing at 75°F and 30 min at 90°F. Do not apply at a substrate temperature below 40°F.

Apply with a trowel a minimum of 1/2 in. for maximum toughness and impact resistance. Apply at thicknesses to 6 in. if necessary, but do not featheredge.

Vertical applications are difficult due to weight of filler.

Use sound engineering practices to ensure stress relief around intrusions such as columns, etc. Place expansion joints at existing construction joints.

Apply seal coat of #70 if a smooth surface is desired.

Clean-up: Clean up immediately with RAC Thinner #2 or proprietary epoxy thinners. If clean up is with other than RAC Thinner #2, keep thinner away from all sources of ignition.

Cure: At 70°F, RAC 5073 is sufficiently cured for foot traffic after 8 hr. For extreme impact and/or wear conditions, allow a full 5 days cure at 70°F. At 50°F these times are doubled; at 90°F cure will be twice as fast as at 70°F.

Safe handling information: Resist-A-Chem 5073 contains epoxy resin, polyamine adduct curing agent, steel fibres, chemically treated iron and microcrystalline silica. Wear a dust mask, gloves, goggles and clothing that covers the body when handling RAC 5073.

The steel fibres present are of very small diameter and resemble short needles; exercise extreme caution when handling or testing the cured surface.

Cured Resist-A-Chem 5073 is not toxic.

Refer to Material Safety Data Sheet for further details.

Resist-A-Chem 5073 is intended for use by professionals only. Keep away from children and persons not trained in using the product and not aware of the potential hazards.

Warranty: Resist-A-Chem, Inc. ("RAC") takes responsibility for furnishing quality products and providing specifications and recommendations for their proper installation.

All products sold by RAC are sold "As Is," and RAC hereby disclaims all other express or implied representations or warranties, including, but

not limited to, any implied warranties of merchantability or fitness for a particular purpose. RAC shall have no liability to the purchaser or any other person for any property damage, bodily injury, death or other liability or loss arising from any possession or use of RAC's products, or the reliance on any of the information contained herein, whether arising from contract, tort or otherwise, including, without limitation, any claim for lost profits or other consequential or incidental damages. Under no circumstances shall RAC be liable for any damages or otherwise in excess of the purchase price paid to RAC for its products.

The information herein is provided only as an aid to the purchaser. Thus, Resist-A-Chem, Inc., does not guarantee the accuracy of the information, and assumes no liability for reliance thereon.

7. CORPS OF ENGINEERS' EVALUATION

Mixture design data:

<u>Materials</u>	<u>Amount</u>
Powder Filler	6,232 grams
Resin Part A	497 grams
Hardener Part B	167 grams

Technical data:

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Compressive strength	ASTM C 39	9,900 psi
Slant shear bond strength (wet surface)	ASTM C 882	2,700 psi
(dry surface)		>3,500 psi
Thermal compatibility	ASTM C 884	passed
Linear thermal coefficient of expansion	USBR Laboratory Procedure No. 4910	13.1×10^{-6} millionths per °F

Cavitation resistance Corps of Engineer Equipment (120 ft/sec) See Figure 1

8. CORPS OF ENGINEERS' GUIDANCE FOR APPLICATION

Use ACI and manufacturer's recommendation for surface preparation of concrete. Manufacturer's application procedures are recommended for use of Resist-A-Chem 5073 Iron Plate.

9. 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.

10. AVAILABILITY & COST

Availability: The material is available from manufacturer.

Cost: A kit of Resist-A-Chem 5073, consisting of 0.75 gal resin, 0.25 gal hardener, and two 45-lb bags of iron-filled filler, is \$110.50 FOB.

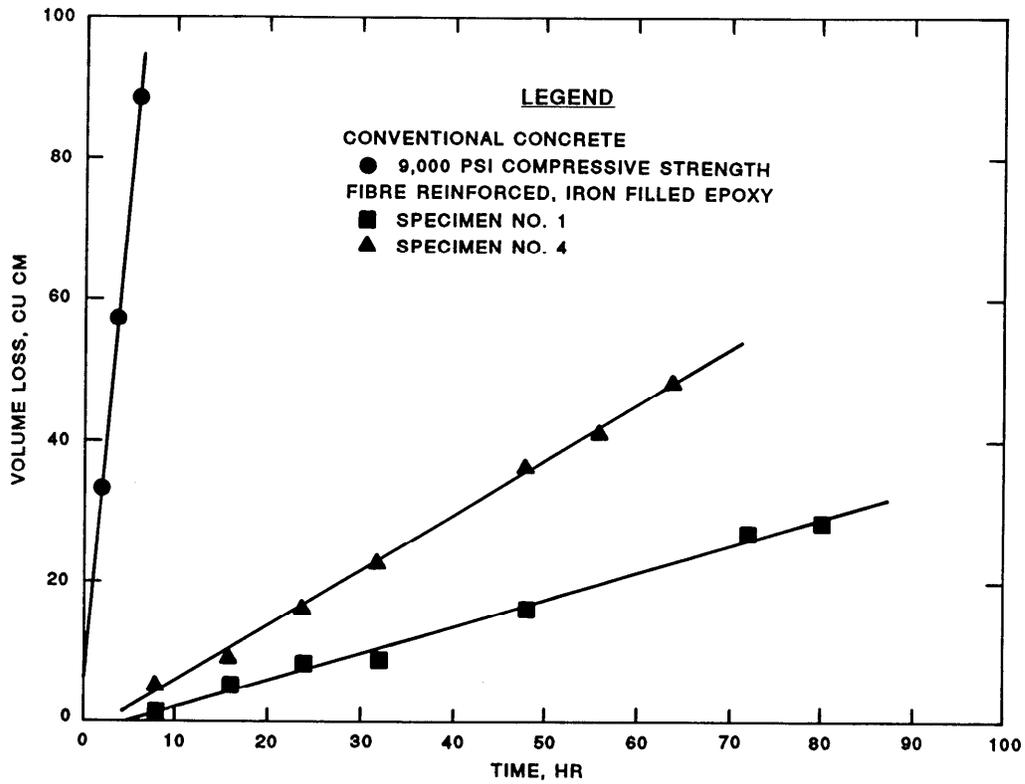


Figure 1. Cavitation test results