



REMR MATERIAL DATA SHEET CM-PC-1.4

CONCRETE PATCHING MATERIAL: DECO-REZ TPM 711

1. NAME

Deco-Rez Topping and Patching
Mortars 711

2. MANUFACTURER

General Polymers Corporation
9461 Le Saint Drive
Fairfield, OH 45014

3. DESCRIPTION

Deco-Rez TPM 711 is a specially formulated, self-leveling co-polymer mortar designed for repair and patching of portland-cement slabs and building members with little, if any, troweling. This fast-setting, free-flowing material will move easily into hard-to-reach places where conventional methods of finishing are not feasible. Once in place, the material will develop extremely high early strengths--suitable for foot traffic in 3 to 4 hr--with final compressive strengths as high as 6,000 psi.

4. USES & LIMITATIONS

Uses: Typical applications for TPM 711 are as a structural repair mortar for industrial plants, bridges, tunnels, sidewalks, driveways, repairing structures, and ramps. Because of its exceptional wear-resistant properties, up to 6 times greater than conventional concrete, it is ideal for use in areas subjected to abnormal wear and heavy traffic. It is resistant to oils, grease, mild acids, alkali, and aliphatic hydrocarbons

(such as gasoline). It has excellent adhesion and superior bond strength. It is resistant to cycles of freezing and thawing and to deicing salt. Its thermal expansion coefficients are comparable to those of concrete. It is self-leveling, requiring little or no tooling, and comes in convenient packaging that is easy to use and is labor saving.

Limitations: Deco-Rez TPM 711 is not recommended for applications less than 1/4 to 3/8 in. thick. For repairs greater than 1-1/2 in. deep, 38 to 42 lb (up to 3.5 gal) of 3/8-in. aggregate should be added to each unit during mixing.

The substrate must be clean and sound. TPM 711 can and should be applied over damp surfaces. It should not be applied when the temperature is below 45° F or when it is expected to fall below 40° F within 48 hr. Solvent-based curing compounds should not be used with TPM 711.

5. MANUFACTURER'S TECHNICAL DATA

Packaging: TPM 711 is packaged in convenient, premeasured quantities for ease of mixing and handling. The kit contains 1 gal of polymer and 61 lb of selected powders, wetting agents, and aggregates. The packaging eliminates the need for onsite batching, which alleviates blending errors and ensures constant composition. A total package will yield approximately 0.5 cu ft.

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Physical properties:

Weight per gallon - Co-polymer	- 8.4 lb
Cured color	- Cement gray
Shelf life: Polymer	- 1 year in original container
Dry blend	- 6 months in original package

Conditions for storage: Polymer should be stored at temperatures between 65° and 80° F and must be kept from freezing. Dry blend should be stored between 65° and 80° F. It must be kept dry.

<u>Performance Properties</u>	<u>Results</u>
Compressive strength, psi	
7 days air cured	5,300
28 days air cured	6,200
Bond strength, to wet cement after aging	
28 days, min, psi	300
Flexural strength,	
28 days, psi	1,700
Wear resistance	5-6 times better than concrete

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface preparation: TPM 711 can be applied to clean concrete and cementitious masonry surfaces. All oil, dirt, paint, adhesives, loose material, and waxes must be removed. Areas to be repaired should be no less than 1/4 in. in depth.

The surface should be prepared by mechanical means to provide a surface profile of 1/16 in. or more. The surface should be damp but not wet with standing water during the application of the TPM 711. With proper surface preparation, no priming is required.

Mixing and application: TPM may be mixed manually or mechanically. The material may be mixed manually in a mortar box or wheelbarrow. Mechanical mixing should be done in a conventional mortar mixer or with a drill and paddle in a suitable vessel. The first step in mixing is to pour approximately four-fifths of the liquid component into the mixing vessel. While the mixer is rotating, the entire package of dry blend should be added. Mixing should continue until the mixture is uniform. The remaining liquid may be added to provide a more fluid consistency. Mixing should require no more than 3 min. If manual mixing requires more than 3 min, smaller quantities should be mixed. Care should be taken to keep the ratio of liquid to dry blend constant. If less than a full unit is prepared, the dry blend should be premixed before it is added.

To prepare mortar for an area greater than 1-1/2 in. deep, all liquid and dry blend should be mixed first. While the mixture is rotating, the coarse aggregate should be added gradually to achieve the desired slump. The amount of aggregate should not exceed 42 lb.

The surface to be repaired should be damp but free of standing water. A scratch coat of mortar should be forced into the surface to fill all voids and pores. The repair procedure is to begin at the edge and work to the center. The remaining amount of material necessary to repair the area should be dumped, consolidated, and screeded.

Once the material has set to the desired stiffness, the surface can be smoothed with a steel trowel. Sprinkling water on the surface during the troweling will result in an extremely smooth finish. A rough surface can be achieved by use of a broom or a burlap bag dragged over the surface.

Curing is generally not required, but under conditions of high heat, low humidity, or strong wind, special curing procedures may be necessary to prevent the surface's drying too rapidly. If any of these conditions exist, the surface can be kept damp by misting it with water, covering it with wet burlap, or using a solvent-free curing compound. If rain is imminent,

the newly repaired areas should be covered. If freezing occurs, the patch should be protected with insulating material.

Tools and equipment must be cleaned with water immediately after use. Hardened material has to be mechanically moved.

7. CORPS OF ENGINEERS' EVALUATION

Technical data:

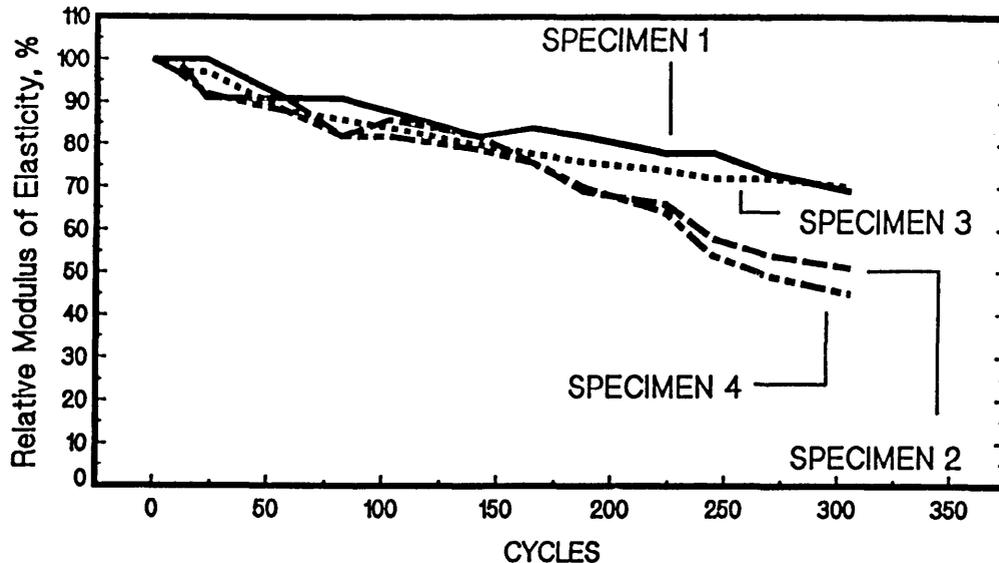
<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Compressive strength, psi	ASTM C 39	
	24 hr	2,570
	3 days	5,300
	7 days	7,240
	28 days	7,800
Modulus of elasticity, psi	ASTM C 469	
	1 day	1.24×10^6
	3 days	1.55×10^6
	7 days	2.93×10^6
	28 days	2.73×10^6
Flexural strength, psi	ASTM C 78	
	24 hr	510
	3 days	870
	7 days	1,100
	28 days	1,430
Bond to concrete, psi	ASTM C 882	
	24 hr	930
	3 days	2,070
	7 days	2,340
	28 days	2,960
Shrinkage, percent	GR-83-10*	
	(Unconfined Condition)**	0.061
	(Concrete Patch)†	0.006

* Bureau of Reclamation Technical Report Standard.

** An exotherm of 10° F was reported on the shrinkage specimen using a mixture proportion of 61 lb of material, 35 lb of aggregate, and 1 gal of polymer.

† An exotherm of 4° F was reported on this specimen using the same mixture proportion as above.

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 concrete patching 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. TECHNICAL SERVICES

Complete problem-solution or custom-system information for project requirements can be obtained by calling 513-874-5980.

9. AVAILABILITY & COST

Availability: Deco-Rez TPM 711 is normally marketed throughout the United States.

Cost: Cost information is available on request.