



REMR MATERIAL DATA SHEET CM-SE-1.67

CONCRETE SEALER: CP&R 5740 HIGH MOD

1. NAME

CP&R 5740 High Mod

2. MANUFACTURER

3M Company
 3M Center Building 225-4S-08
 St. Paul, MN 55144-1000
 Telephone: (612) 733-1140

3. DESCRIPTION

CP&R 5740 High Mod is a high molecular weight methacrylate (HMWM) which is used to fill and seal cracks in concrete by topical treatment. It will also serve as a surface sealer for concrete.

4. APPLICABLE SPECIFICATIONS

There are no applicable specifications for this type of material.

5. USES

CP&R 5740 High Mod can be used as a surface sealer for concrete to prevent the intrusion of salts and other chemicals into the concrete. The material is also used to fill cracks in concrete by topical application (gravity feed). It is an effective solution to sealing cracked concrete found on bridge decks, airfield pavement, industrial floors, parking ramps, and other structures.

6. MANUFACTURER'S TECHNICAL DATA

CP&R 5740 High Mod is packaged in 1, and 5 gal containers. The material is a two-component system composed of a HMWM monomer (component A) and an initiator (component B). Each component must be stored in a separate area. Shelf life is limited by storage conditions. They should be stored in tightly closed containers, indoors, below 90 °F, in a shaded, well-ventilated area. Shelf life is reduced by high storage temperatures.

<u>Properties</u>	<u>Test Method</u>	<u>Test Results</u>
Viscosity	Brookfield RVT	10-20 cps
Specific gravity	ASTM D 1928	1.025 g/cm
Flash point	ASTM D 93	221 °F
VOC rating	1.5 hr @ 130 °F	50. g/l
Gel time (bulk cure), 72 °F		1-2 hr
Tack free time, 72 °F		6-8 hr
Reduction in water absorption	NCHRP 244	95%

<u>Properties</u>	<u>Test Method</u>	<u>Test Results</u>
Scaling resistance to deicing chemicals	ASTM 672	0 rating
Tensile strength	ASTM 638	890 psi
Tensile strength (polymer + aggregate)	ASTM 190	1300 psi
Elongation	ASTM 638	3%
Compressive strength (polymer + aggregate)	ASTM C 109	8640 psi
Bond strength	ASTM C 882	1500 psi
Modulus of elasticity		50,500 psi
Coefficient of expansion		15.5×10^{-6} in./in./°F

7. MANUFACTURER'S GUIDANCE FOR APPLICATION

Do not mix more than 5 gal (18.9 l) at one time for manual application.

The manufacturer's recommendations for surface preparation, mixing, and application are given below:

Special equipment and skilled labor are not needed for application of this material. It can be applied by low-pressure equipment, gravity-type flow device or poured onto the concrete and spread using a paint roller, broom, or squeegee.

Surface Preparation: Allow surface to dry 3 days minimum. Surface must be free from standing water. Clean substrate removing dust, laitance, grease, oils, curing compounds, waxes, foreign particles, coatings, and other surface contaminants by sandblasting or shot blast. Air blast or vacuum water and dirt from cracks. For cracks greater than 1/8-in (3 mm) wide fill with a dry sand before applying the material. Seal accessible cracks from the underside such as application on bridge decks or parking ramps to prevent the material from leaking through. Sand can be poured into small spalled areas before the material is applied for making repairs.

The manufacturer recommends a test patch to determine the rate of application. One should start with an application rate of 100 ft²/gal (11.6 m²/l). Badly cracked or porous concrete will require more material and may require a second application; dense concrete with few cracks will require less material.

Mixing and Application: When mixing the material, pour initiator Part B (orange label) into pail containing the monomer Part A (white label). Mix thoroughly for 1 min. Apply mixed material within 15 min.

Spread material evenly over surface but allow to pond over visible cracks for 1 min. Allow 30 to 60 min at 72 °F (higher temperatures may cause faster cure) for material to penetrate into cracks and surface. For skid resistance, mechanically broadcast dry 8-20 sand or equivalent at a rate of 2 lb/yd². Allow the material to be tack free before permitting traffic onto the surface. Remove excess aggregate by sweeping or vacuuming.

8. CORPS OF ENGINEERS' EVALUATION

<u>Properties</u>	<u>Test Method</u>	<u>Test Results</u>
Viscosity, 23 °C	ASTM D 2393	26 cps
Gel time, 23 °C, 200 g mass	ASTM C 881	100 min
Bond strength	ASTM C 882	2,230 psi
Flash point	ASTM D 93	>200 °F
Reduction in water absorption*	NCHRP 244	93%
Ability to fill narrow cracks**		Excellent

* Four-inch concrete cubes were coated with the material at an application rate of 125 ft²/gal. The coated concrete cubes along with uncoated concrete cubes were then soaked under water for 3 days.

** The material was spread on the top side of 3-in.-thick concrete prisms that contained narrow cracks (<0.01 in.). After 10 min, the excess was removed from the top side, and the specimen was allowed to cure for at least 3 days. The specimens were then cut into sections and the cracks examined to determine if they were filled.

9. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of sealant 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 AND COSTS

CP&R 5400 High Mod is manufactured in the United States and is available through 3M Company or one of their dealers. For information on ordering the material, call (612) 733-1140. The material sells for \$44 per gallon F.O.B. St. Paul, MN.