3M

Concrete Protector & Restorer

CP&R 5742LO Low Mod

Product Data

1. Product Description

3M CP&R 5742LO is a two part, fast cure, very low viscosity, solvent free, low VOC[1], 100% solids product for protecting and restoring concrete.

Basic Use: CP&R 5742LO helps protect horizontal concrete against destructive chloride ion intrusion, other chemical attack and concrete deterioration problems such as cracking, spalling and freeze/thaw damage.

CP&R 5742LO is a low modulus, flexible product. It can accommodate some movement and is, therefore, ideal for surface application, crack filling and patching. It is intended for use on horizontal old and new concrete below, on or above grade.

By simple topical application, CP&R 5742LO fills and seals large cracks and micro cracks and penetrates into sound concrete, forming a protective layer that helps prolong concrete life.

Composition and Material: CP&R 5742LO is a modified high molecular weight methacrylate initiated by liquid organic peroxide.

Limitations: Structural Rehabilitation — concrete design and structural strength requirements should be analyzed by a qualified, licensed structural engineer.

Crack Filling — do not use 5742LO as an expansion joint filler.

Concrete Mixture and Curing — admixtures, form release agents and curing methods may adversely affect CP&R penetration and/or adhesion. Water curing process is preferred. New concrete must be fully cured (minimum 21 days).

Surface Types — do not use on asphalt surfaces or overlays, wood, metal or non-cement based substrates.

Surface Appearance & Skid Resistance — treated surface has appearance similar to wet concrete but may appear mottled (blotchy) due to differential absorption rate and may reduce skid resistance. See ***Methods*** for options to enhance surface appearance and skid resistance.

Temperature — apply between 50°F (10°C) and 110°F (43°C).

Ventilation — when using 5742LO in enclosed spaces, adequate dilution ventilation is required during application and for a period of time following application. Proper respiratory protection must be used during application if adequate ventilation is not available. Seal doors, windows, air intakes, elevators and other openings that may allow vapors to migrate into occupied spaces.

Moisture Vapor Transmission — 5742LO will reduce moisture vapor transmission, depending on coverage rate.

Solvents — solvents inhibit curing.

Storage — store Initiator (Part B) in a sprinkler protected area, away from Part A area.

Sizes: 1 U.S. gal. (3,78 litre) kits and 5 U.S. gal. (18,9 litre) kits.

Technical Data: See Table 1 and 2.

2. Installation

Cure Times — The following factors affect cure times (see Table 2). Interior applications are especially affected by these factors and may take 2 to 4 times longer to surface cure. Cure times are based on 100 sq. ft./gal. (2,4 sq. m/litre) coverage. Application on high density, smooth, slick trowel finished concrete surfaces result in thinner coverage, such as 150 sq. ft./gal. (3,6 sq. m/ litre) or greater, and will increase cure time. Sunlight will reduce cure times (up to 1/2). Cure times are based on constant temperature during curing. Rising or lowering temperatures during curing must be considered. Cure and time variability increases as application surface temperature decreases. Cure times cannot be used as specification limits.

Preparatory Work: Surface must be free from standing water and 3 days dry before CP&R application to obtain optimum adhesion. Clean substrate by sandblast, shot blast (3M Roto peen) or water blast as needed.

Table 1 — Typical Physical Properties of CP&R 5742LO

Property	Standards and Conditions	Part A Results
Color	Visual	Colorless to light amber
Viscosity	Brookfield RVT w/UL adapter at 100 rpm @ 72°F (22°C)	5 to 10 cps
Specific Gravity	ASTM D 1298 at 60°F (15°C)	0.95
Weight	+/- 0.4 lbs./gal. (0,05 kg/litre)	7.92 lbs./gal. (0,99 kg/litre)
Flash Point	ASTM D 93 Pensky-Martins Closed Cup	Greater than 200°F (93°C)
Vapor Pressure	ASTM 2879 at 68°F (20°C)	Less than 1 mm Hg
VOC Rating[1]	Calculated weight loss	Less than 50 grams/liter as mixed combined
Solution Stability/ Shelf Life	16 hrs. exposure at 204°F (96°C) without gelling	6 months @ 90°F (32°C) in original unopened container

1. Complies with California SCAQMD rule 1113 that has a limit of 340 grams/liter for these products.

Air blast or vacuum water and dirt from cracks. Seal accessible cracks from the underside to prevent CP&R from leaking through.

Pour Part B into Part A. Mix thoroughly for one minute. Do not dilute. Apply immediately.

Methods: 1. Apply test patch of 3M CP&R (approximately 100 sq. ft./gal., 2,4 sq. m/litre) to determine required coverage for specific conditions. Badly cracked or porous concrete will require more CP&R and may require a second application. Dense concrete will require less CP&R.

2. Repairs — For cracks greater than 1/8 (3 mm) wide, spall repairs and joint repairs, brush CP&R onto face of area to be repaired. Spalls, large cracks and joints are most often repaired using a mixture of one part CP&R and two parts silica sand (30-40 mesh). This mixture is troweled into the repair area and struck flush with adjacent surface. For construction and control joint repairs, new joints are sawcut and filled with sealant. For expansion joint nosing repairs, forming may be required to maintain joint movement capabilities.

3. Surface Application for Fine/ Micro Crack Repair and Surface Protection — CP&R can be surface applied by low pressure spray equipment, gravity type flow device or can be poured onto the concrete and spread using a paint roller, broom, or squeegee.

Spread pool of CP&R evenly over surface (including repairs), but allow to pond over visible cracks for one minute, then spread evenly over surface. Allow CP&R to penetrate. See Table 2 Gel Time. CP&R may be applied in one or more coats.

4. For Enhanced Skid Resistance and Appearance — Either sandblast cured surface or broadcast dry 30-40 mesh silica sand (less than 0.5% moisture content) at a rate of 1 to 2 lbs./sq. yard (0,5 to 1,0 kg/sq. m) onto the surface before bulk cure time.

Allow to final cure (tack free) before permitting traffic onto surface. Sweep or vacuum excess aggregate.

More detailed information is available in separate Application Guides.

5. Cleaning — Clean uncured CP&R using 5% soap in water or paint thinner or mineral spirits unless restricted by local regulations. Cured CP&R is difficult to remove.

Product Safety Information: Refer to container labels and Material Safety Data Sheets available from manufacturer for health, safety and environmental information. If necessary, contact the 3M corporate emergency telephone number, (800) 364-3577 or (651) 737-6501.

Table 2 — Typical Performance Properties of CP&R 5742LO

Property	Standards and Conditions	Mixed System Results	
Pot Life, Mixed[1]	72°F (22°C) in 5 gal. (18,9 litre) pail	30 minutes	
Gel Time[1]	72°F (22°C)	2 to 4 hours (penetration time)	
Tack Free Time[1]	72°F (22°C) constant temperature	8 to 10 hours (surface or final cure)	
Water and Chloride Repellency	NCHRP 244 Criteria •% Reduction, Salt Water Weight Gain •% Reduction, Chloride Ion Content •Southern Exposure, % Reduction, Chloride Ion Intrusion •Water Vapor Transmission Rate	 •96% •96% •98% •Greater than 100%	
Crack Healing (filling)	50°F (10°C) to 100°F (37°C)	+90% 8 mil (0,2 mm) crack minimum	
Slant Shear Bond Strength with Deflection Values	ASTM C 881 modified 7 days aging at 70°F (21°C), conditioned and tested at: •70°F (21°C) psi (MPa) •Deflection, inches (mm) •0°F (-17°C) psi (MPa) •Deflection, inches (mm)	**Crack Size** **10 mil (0,25 mm)** •320 (2,2) •0.59 (14) •565 (3,8) •0.45 (11)	 **45 mil (1,1 mm)** 290 (1,9) 0.43 (10) 470 (3,2) 0.58 (14)
Flexural Strength (Beam Test) with Deflection Values	CALTRANS 551 7 days aging at 70°F (21°C), conditioned and tested at: •70°F (21°C) psi (MPa) •Deflection, inches (mm) •0°F (-17°C) psi (MPa) •Deflection, inches (mm)	**Crack Size** **10 mil (0,25 mm)** •500 (3,4) •0.131 (3,3) •605 (4,1) •0.15 (3,8)	 **45 mil (1,1 mm)** 420 (2,8) 0.202 (0,5) 590 (4) 0.291 (7,3)
Tensile Strength/Elongation	ASTM D 638 14 day accelerated aging	300 psi (2 MPa)/Greater than 100%	
Modulus of Elasticity (Young's Modulus) neat	ASTM D 638 •7 day aging tested at 72°F (22°C) •14 day accelerated aging at 131°F (55°C) tested at 72°F (22°C)	 •900 psi (6,2 MPa) •1450 psi (9,9 MPa)	

1. Several factors affect cure times. See Installation, Cure Times for more information. Each 20°F (10°C) higher shortens time by half. Each 20°F (10°C) lower doubles time.

3. Availability

CP&R products are available in the United States. Contact manufacturer for availability in other locations. In-place cost may vary due to regional and other considerations.

4. Warranty

Our recommendations for use of the product are based upon tests believed to be reliable. Since field conditions vary widely, the user must determine the suitability of the product for the particular use and specific method(s) of application.

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective or, at seller's or manufacturer's option, to refund the purchase price. EXCEPT FOR SUCH OBLIGATION OF REPLACEMENT OR REFUND, NEITHER SELLER NOR MANUFACTURER SHALL BE LIABLE FOR LOSS OR DAMAGE, DIRECT, INCIDENTAL OR CONSEQUENTIAL, REGARDLESS OF THE LEGAL THEORY ASSERTED, INCLUDING, BUT NOT LIMITED TO, NEGLIGENCE AND/OR STRICT LIABILITY.

The foregoing statement may not be altered except by an agreement signed by officers of seller and manufacturer.

5. Maintenance

None required.

6. Technical Services

Call your 3M representative for assistance.

3M

Specified Construction Products Department

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