

Green Umbrella PCR Full Specification

1.0 GENERAL

The following is a typical specification for Green Umbrella™ PCR™ concrete repair. Each project will have special conditions and these should be identified and addressed in addition to this specification.

2.0 QUALITY ASSURANCE

- 2.1 PCR™ may only be applied by a certified applicator. For a list of certified applicators or to schedule on-site training call Green Umbrella at: 844-200-7336.
- 2.2 A pre-installation conference may include: the contractor, PCR™ applicator, engineer, owner representative and the Manufacturer's representative.

3.0 INSPECTION

Prior to commencement of work, a thorough inspection of the area to be repaired should be carried out to determine or confirm the following:

- 3.1 The age and condition of the concrete to be repaired. [In the case of new concrete it is preferable to wait 28 days before applying PCR™. Applying PCR™ prior to 28 days may result in an inferior bond and subsequent failure.]
- 3.2 The absence of any surface coatings, sealers or other potential contaminants.
- 3.3 The presence of large irregularities such as cracks, voids, spalling and large gaps.
- 3.4 The absence of frost in the substrate.
- 3.5 Consideration must be given to ambient air temperature as well as the temperature of the substrate to be repaired.

4.0 SITE PREPARATION

- 4.1 PCR™ should only be installed on a clean, dry and structurally sound surface free of loose or foreign material, oil, grease and any other materials that would impede the proper bonding of PCR™.
- 4.2 Power washing the area to be repaired is an effective way of removing any loose material and light surface coatings. High pressure water blast will generally eliminate any delaminated surfaces.
- 4.3 If surface coatings, oil or grease stains exist, removal may be achieved using sandblasting, grinding or jack hammering depending on the severity. Wire brushes are excellent for light surface coatings.

- 4.4 Allow slab to dry until completely free of moisture. Using a torch or burner is effective to dry substrate. Remove frost from the substrate using a tiger torch or weed burner.
- 4.6 Preparation of large resurfacing areas should be profiled to CSP #4 or #5.
- 4.7 Where there are irregularities in the substrate such as cracks, voids, and uneven surfaces it is imperative to re-build these areas prior to doing a final skim coat.
- 4.8 If rusted re-bar exists, rust must be removed. Sand blasting or wire brushing may be employed depending on the severity. It is recommended that a rust inhibitor ® be applied to re-bar prior to re-building the damaged structure.
- 4.9 For best results install PCR™ in temperatures from 50-70 degrees F (10-21 C). When installing in temperatures above or below the recommended range follow Manufacturers instructions. See Section 7.0 - Cold Weather or 8.0 - Warm Weather Installation.

5.0 PRODUCT MIXTURE

Never mix PCR with water. Mixer, tools and substrate should all be clean and dry prior to installation. PCR™ comes in a 1 gallon container of liquid activator (Part TWO) accompanied by a 50lb. bag of dry mix (Part ONE). PCR™ mixes easily. Do not over mix. Once the liquid and dry mix meet, the curing process begins. Mix time should never exceed 1 minute, move quickly to introduce PCR from mixing container and on to the substrate immediately.

- 5.1 Introduce Activator (Part TWO) liquid into a clean, dry mixing bucket. Always introduce some liquid into mixing pail first to prevent dry mix at the bottom.
- 5.2 Add Dry Mix (Part ONE) and blend at a low rpm.
- 5.3 For small projects use a drill at low rpm and paddle. Large projects may require a concrete mixer. Mix swiftly and thoroughly.
- 5.4 If needed: Introduce High Temperature Retarder and any colorant. **DO NOT** introduce Low Temperature Accelerator. Low Temp Accelerator must be added once mix is at desired consistency and immediately before application, as it accelerates the cure.
- 5.5 PCR™ has a variable slump and may be mixed wet or dry as desired by the applicator and field circumstances. For drier mixes use of $\frac{3}{4}$ gallon of Activator may be used per bag of Dry Mix. For wetter mixes a maximum of 1 $\frac{1}{4}$ gallons of activator may be used per bag of Dry Mix.
- 5.6 When volume of PCR™ mix is larger it will be hotter and subsequently cure up more rapidly.

NEVER USE WATER WITH PCR™

6.0 PRODUCT MIXTURE WITH AGGREGATE

DO NOT USE LIMESTONE. The use of aggregate will reduce the thermal yield and will facilitate improved finish-ability. Aggregate is recommended for repair depths of 3/4" or greater. The volume of aggregate to PCR™ Dry Mix should not exceed 40% (20 lbs of aggregate per bag of Dry Mix). Aggregate size may vary but should not exceed 3/8", for skim coats 1/16" aggregate has proven effective.

- 6.1 Aggregate may be introduced to the mix simultaneously with the Dry Mix.
- 6.2 Mix thoroughly. Aggregate should thoroughly wet with the activator.

7.0 PRODUCT MIXTURE IN COLD WEATHER

When substrate and ambient air temperatures are below 50° F the use of the Low Temperature Accelerator is mandatory. Always introduce Accelerator last to the mix. Always do a test area to ensure the proper amount of Accelerator is being used.

- 7.1 After mixing Part TWO, Part ONE and any aggregate, introduce the Low Temperature Accelerator and mix quickly.
- 7.2 Do not use more than (4) scoops of Low Temperature Accelerator per complete bag of Part B.

8.0 PRODUCT MIXTURE IN WARMER WEATHER

When substrate and ambient air temperatures are above 70° F the use of the High Temperature Retarder is mandatory. Always introduce Retarder with the aggregate to the mix. Always do a test area to ensure the proper amount of Retarder is being used. If PCR™ appears to bubble during the cure it is likely too hot, this is an indication to use the High Temperature Retarder.

- 8.1 After mixing Part TWO, Part ONE and any aggregate, introduce the High Temperature Retarder and mix quickly.
- 8.2 Never use more than (3) scoops of High Temperature Retarder.

9.0 PRODUCT APPLICATION

PCR™ applies similar to concrete however PCR™ is slightly more sticky primarily due to the cure rate.

- 9.1 Ensure all mixing containers and tools are clean and dry.
- 9.2 Introduce PCR™ to substrate and trowel to desired finish.
- 9.3 If applying PCR™ along two slabs it is important to replace the expansion joint to its' original width and depth. PCR™ expands and contracts at the same rate as concrete.

10.0 PRODUCT CURE

- 10.1 PCR™ cures rapidly and can be walked on after 45 minutes and driven on within 60 to 90 minutes depending on the thickness of pour and temperature. If opening to service is crucial the cure can be accelerated with Low Temperature Accelerator.
- 10.2 PCR™ will go down a brown color but will cure up to a concrete color.
- 10.3 Sunlight and rain will accelerate the PCR™ to change to a concrete color.
- 10.4 If the PCR™ cures up in an uneven color pattern, wait 60 days, then power wash and this will normally give an even color.
- 10.5 PCR™ gives off an ammonia-like smell during cure. The odor may occur shortly after application and may linger until fully cured in 28 days. It is not noticed in an outdoor application or in well ventilated areas.
- 10.6 PCR™ is a non porous product - waterproof and resistant to gas, oils, salt and UV radiation.

11.0 CLEAN UP

- 11.1 During Application: If your trowel becomes sticky when finishing PCR™, rinse the tool off with water and dry thoroughly before returning to use. It is very important to dry any equipment cleaned with water thoroughly before using again.
- 11.2 Final Clean-up: Immediately after final use, clean all tools with water. It is important not to allow PCR™ to harden on your tools and equipment. It will become impossible to remove.

12.0 COATING PCR™

- 12.1 PCR™ can be coated with sealant products such as acrylics, urethanes, epoxies, etc.
- 12.2 Coatings may be applied after a minimum of two weeks has passed after installation, to allow for off gassing. Contact Green Umbrella for compatible coatings.

13.0 PRODUCT STORAGE

ON JOB SITE - DO NOT KEEP DRY MIX OR LIQUID ACTIVATOR IN DIRECT SUNLIGHT.

- 13.1 The 50lb. bag of dry mix has a substantial shelf life if stored in a dry environment and out of direct sunlight.

- 13.2 The liquid activator has a shelf life of approximately one year and should be kept out of direct sunlight. In sealed unopened container
- 13.3 It is recommended that material be rotated regularly to reduce outdated stock.