ProPoly™ CR

Rapid Cure Urethane Hybrid Concrete Repair

TECHNICAL DATA SHEET

DESCRIPTION

ProPoly CR is a two-component, polyurethane hybrid specially designed with a super low viscosity, providing a quick repair of hairline cracks and spalls in concrete. ProPoly CR is ideal for use when minimal downtime is needed, and can be used in temperatures from 0°F to 110°F (-18°C to 43°C).

USE

The ProPoly CR is used for gravity-feed of fine to very fine width horizontal cracks in concrete and masonry. ProPoly CR can also be mixed as a mortar for spall repair.

FEATURES

- Polyurethane hybrid
- Rapid repair of interior/exterior hairline cracks
- Spall repair when mixed with aggregate
- Super low viscosity, for deep penetration
- Highly sensitive to and reactive with moisture
- Application range between 0°F to 110°F (-18 to 43°C)
- Reaches over 4,500 psi (31 MPa) compressive strength in one hour
- Repaired cracks and spalls can be opened to traffic in less than 60 minutes at 77°F (25 °C)

PROPERTIES

See Appendix A for properties

Product is initially dark gray/black when mixed, but will turn gray upon curing

Mix Ratio: 1 to 1

voc

ProPoly CR has a VOC content of <20 g/L . Compliant with all Canadian and U.S. VOC regulations including Federal EPA, OTC, LADCO, SCAQMD & CARB

Packaging

PRODUCT CODE	PACKAGE	SIZE	
		oz/Gallon	ml/Liter
101208	Cartridge	8.6 oz	254 ml
101209	Cartridge	20 oz	591 ml
101210	Jug	2 Gallon	7.6 Liter
101231	Nozzle		

STORAGE

The material should be stored at 40° - 90°F (4° - 32°C). Shelf life of properly stored, unopened containers is 12 months.

Surface Preparation:

Cracks to be bonded must be clean and sound. Remove all dirt, grease, oil, and other foreign material that may prevent a good bond. Use clean, oil free, compressed air to blow out any remaining dust or debris prior to installation.

Mixing

1. Shake the cartridge vigorously for 20 seconds, then stand cartridge upright for at least 1 minute allowing any bubbles to rise to the top.

2. Insert cartridge into the dispenser. Make sure it is properly positioned with the shoulder of the cartridge flush with the front/top bracket of the dispenser. Point upward at about a 45° angle. Remove the plastic cap and plug from the top of the cartridge.

3. Continue to point the upward away from yourself and others while slowly applying pressure to dispenser moving any bubbles and product up through the nozzle until it reaches the tip. Dispense this first full stroke of material into disposable container. The cartridge is now purged and ready for flow restrictor installation.

4. Find the flow control inside the threaded end of the mixing nozzle attached to a tape strip. Insert flow control into the two holes at the top of the cartridge where the product comes out. Make sure it is securely seated in place. Install mixing nozzle onto cartridge. Holding the dispenser straight up, slowly apply pressure to the dispenser moving any bubbles and product up through the nozzle until it reaches the tip. Tilting only slightly, dispense this first full stroke of material into a disposable container.

5. Schedule dispensing to consume an entire cartridge at one time with no interruption of flow to prevent material from hardening in mixing nozzle. If problems arise during dispensing product, replace the nozzle; the product may have begun to cure in the nozzle which will affect the mix ratio. Never transfer a used nozzle to a new cartridge. Repeat the cartridge balancing steps listed above after replacing the nozzle.

MIX INSTRUCTIONS FOR BULK PACKAGING (Neat)

Thoroughly stir each component separately before mixing them together. Mix only the amount of material that can be used before the working time expires. Proportions parts into a clean container using 1:1 mix ratio of 1 Part A to 1 Part B by volume.

Mix thoroughly with a low speed drill (400 – 600 rpm) with a mix paddle attachment (i.e. Jiffy Mixer). Carefully scrape the sides and the bottom of the container while mixing. Keep the paddle below the surface of the material

MIX INSTRUCTIONS FOR BULK PACKAGING (Extended)

Thoroughly stir each component separately before mixing them together. Mix only the amount of material that can be used before the working time expires. Proportion parts into a clean container using 1:1 mix ratio of 1 Part A to 1 Part B by volume. The ratio of sand to liquid should be between 1 to 3 parts of sand to 1 part by volume of total liquid product.
In a clean mixing container add Part A and sand. While mixing, carefully scrape the sides and the bottom of the containers. Mix thoroughly with drill and mixing paddle at low rpm for a minimum of 2 minutes or until material is free of streaks and lumps.

Quickly add Part B to Part A sand mixture in container. Thoroughly mix material until free of streaks for a maximum of 1 minute and apply to repair area immediately.

Placement:
GRAVITY FEED CRACK REPAIR FOR HORIZONTAL APPLICATIONS

ProPoly CR is formulated for fine to medium cracks. 0.0025 in. to 0.125 in. (0.06 mm to 3.2 mm). For best results, cut a groove to open up the crack using an abrasive or diamond blade to a width of 1/8 in. (3.2 mm) and minimum depth of 3/8 in. (9.5 mm). Use wire brush to abrade and then blow out the crack to remove all dust, dirt, grease, wax, oil or any other contaminants. Pour ProPoly CR into the crack and its self-leveling ability will fill the entire area. Repeat application if necessary to completely fill crack.

SPALL REPAIR APPLICATIONS

To form a repair mortar for spall repair, ProPoly CR should be mixed with kiln-dried medium grade (approximately 60 mesh) silica sand to form a repair mortar. For best results have all equipment and materials prepared prior to mixing. The ratio of sand to mixed adhesive should be between 1 and 3 parts of sand to 1 part of mixed product. Premeasure the sand needed based on the volume of mixed ProPoly CR. When using bulk product for spall repair, use the “Bulk (Extended)” instructions. Using the 2 gallon kit, QUICKLY, but thoroughly, mix only the amount needed for the repair (1 Part A with 1 Part B volume) with Jiffy mixing paddle (or similar) and drill motor at low speed for 20 seconds maximum.

When using cartridge product for spall repair, dispense the desired amount of liquid from cartridge into mixing container while Parts A & B are mixing, swiftly add the premeasured sand. Make sure all sand is saturated or wetted out and there are no “clumps” on bottom of bucket. Rapidly scrape bottom and sides of pail to assure good mix. Use clean containers when mixing multiple batches. When mixing ProPoly CR at 75°F (24°C), it must be placed within 5 minutes. In warmer temperatures, place product in less than 5 minutes. Rapidly pour and trowel (do not over trowel due to fast cure of product). Only mix the quantity that can be mixed/placed within 5 minutes (1 gallon at a time maximum). Repairs should be from a minimum 1/2 in. (13 mm) up to a maximum 3 in. (76 mm) per lift to avoid cracking from high heat exothermic reaction.

Note: Reaction with trace amounts of moisture may cause ProPoly CR to expand, create a foam and could raise the product as it cures above the substrate’s surface that may require shaving with a stiff metal scraper, floor knife or grinding flush with a flap wheel.

Cure Time

Base Material Temperature °F (°C)	Working Time	Full Cure Time
0°F (-18°C)	11 min	24 hr
30°F (-1°C)	11 min	4 hr
75°F (24°C)	2 min	1 hr
110°F (43°C)	1 min	1 hr

CLEAN UP
Clean tools and equipment before the ProPoly CR sets with a solvent or cleaner such as xylene or Citrus Clean J48. Cured product can only be removed mechanically.

LIMITATIONS

FOR PROFESSIONAL USE ONLY

NOT intended for repairing cracks subject to movement.
May discolor with UV exposure, can be painted or coated once cured.
The ProPoly CR is highly sensitive to and reactive with moisture, therefore the cementitious substrate must be completely dry prior to application.
Cartridge preparation and balancing instructions must be followed closely.
Minimum age of concrete must be 21-28 days from date of placement depending on curing and drying conditions.
Additional care should be taken when injecting into cracks below grade and/or below 32°F (0°C).
Do not repair cracks, with ProPoly CR, wider than ¼ in. (6.4 mm) without contacting Dayton Superior.
Do not thin with any solvents.

PRECAUTIONS

READ SDS PRIOR TO USING PRODUCT

- Use with adequate ventilation
- Wear protective clothing, gloves and eye protection (goggles, safety glasses and/or face shield)
- Keep out of the reach of children
- Do not take internally
- In case of ingestion, seek medical help immediately
- May cause skin irritation upon contact, especially prolonged or repeated. If skin contact occurs, wash immediately with soap and water and seek medical help as needed.
- If eye contact occurs, flush immediately with clean water and seek medical help as needed
- Dispose of waste material in accordance with federal, state and local requirements

MANUFACTURER

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WARRANTY

Dayton Superior Corporation ("Dayton") warrants for 12 months from the date of manufacture or for the duration of the published product shelf life, whichever is less, that at the time of shipment by Dayton, the product is free of manufacturing defects and conforms to Dayton's product properties in force on the date of acceptance by Dayton of the order. Dayton shall only be liable under this warranty if the product has been applied, used, and stored in accordance with Dayton's instructions, especially surface preparation and installation, in force on the date of acceptance by Dayton of the order. The purchaser must examine the product when received and promptly notify Dayton in writing of any non-conformity before the product is used and no later than 30 days after such non-conformity is first discovered. If Dayton, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty. Only a Dayton officer is authorized to modify this warranty. The information in this data sheet supersedes all other sales information received by the customer during the sales process. THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.

Dayton shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if Dayton could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.

Appendix A

TABLE 1: ProPoly CR Performance to ASTM C881-15[1,2,3]

Property		Cure Time	ASTM Standard	Units	Sample Conditioning Temperature
					75°F (24°C)
Gel Time – 60 Gram Mass 77°F (25°C)		----	C881	Min	2
Gel Time – 60 Gram Mass 30°F (-1°C)					7
Mixed Viscosity[2]				cP	60
Tack-Free Time[3]			D2377	min	<10
Compressive Strength	Neat	1 hr	D695	psi (MPa)	4,629 (31.9)
		24 hr		psi (MPa)	5,102 (35.2)
	Extended[4]	1 hr		psi (MPa)	4,052 (27.9)
		24 hr		psi (MPa)	6,162 (42.5)
Tensile Strength		7 day	D638	psi (MPa)	3,485 (24.0)
Tensile Elongation				%	18
Bond Strength		2 day	C882	psi (MPa)	1,894 (13.1)
Shore D Hardness[3]		1 day	D2240	----	70
Die C Tear[3]		----	D624	PLI	243

1. Results based on testing conducted on a representative lot(s) of product. Average results will vary according to the tolerances of the given property.
2. Mixed viscosity measured at 30 seconds.
3. Property not referenced in ASTM C881 and may vary with temperature and thickness.
4. ASTM C778 (20-30) sand, 2:1 mix ratio (sand:mixed epoxy)..