

# VERTICAL PATCH

One or two component, portland cement based, vertical and overhead repair mortar.

## HOW IT WORKS

As a single component repair mortar, Vertical Patch is mixed directly with water only. As a two component repair mortar, Vertical Patch is mixed with Acryl-Binder (sold separately). The component version chosen allows Vertical Patch to be tailored to meet specific needs and/or project requirements.

## APPLICATIONS

- ◆ Use to repair most vertical or overhead spalls, honeycombs, cavities, voids or other damage to poured-in-place, precast or tilt-up concrete.
- ◆ Use to repair overhead and vertical concrete beams, joists and columns in poured-in-place and precast parking garages.

## ADVANTAGES

- ◆ Designed for high build structural and non-structural repair of vertical and overhead concrete surfaces.
- ◆ Thixotropic viscosity permits high build in vertical and overhead patching without the need for forming.
- ◆ Resistant to freeze-thaw related scaling.
- ◆ Resistant to water absorption and the damaging effects of deicing salts.
- ◆ Excellent adhesion to concrete and masonry.
- ◆ Can be extended up to 35% by weight with pea gravel for patches greater than 3 inches (76 mm) in depth.

## ▲ PRECAUTIONS ▲

- ◆ Do not use for patches less than 1/2 inch (13 mm) in depth. For horizontal or vertical repairs less than 1/2 inch (13 mm) in depth, use Feather Patch. Refer to specific product data for application details.
- ◆ Maximum unextended thickness is 3 inches (76 mm).
- ◆ Do not add plasticizers, accelerators, retarders or additional cement.
- ◆ Do not apply product directly over dynamic cracks, control joints, expansion joints or isolation joints.
- ◆ Do not apply if air or substrate temperatures are, or are expected to be, below 40° F (4° C) or above 85° F (29° C) within 48 hours of application.
- ◆ Do not retemper with water.

## USE INSTRUCTIONS

- ◆ Request current product literature, labels and material safety data sheets from manufacturer and read thoroughly before product use.
- ◆ Site environmental conditions, substrate conditions and construction have a major effect on product selection, application methods, procedures and rates, appearance and performance. Product literature provides general information applicable to some conditions. However, an adequate site test application by the purchaser or installer in advance of field scale use is mandatory (irrespective of any other verbal or written representations) to verify that product and quantities purchased can be satisfactorily applied and will achieve desired appearance and performance under intended use conditions.
- ◆ Prepare the area to be repaired in accordance with ICRI guidelines by square cutting all perimeter edges.
- ◆ Remove all unsound concrete, grease, oil, dirt, laitance and other foreign contamination from the surface to be repaired.
- ◆ Remove all corrosion of embedded reinforcing steel and verify adequate clearance and coverage.
- ◆ Before placing Vertical Patch, thoroughly saturate concrete bonding area with water. Remove excess water and allow concrete bonding surface to dry slightly before Vertical Patch is placed.
- ◆ Apply a slurry primer to the area to be patched by mixing, by volume, 2 parts Vertical Patch to 1 part Acryl-Binder to yield a consistency similar to pancake batter. Apply slurry primer with a brush and allow to dry slightly before placing Vertical Patch. Do not apply over dried slurry primer. Remove dried slurry primer with a wire brush and reprime. Working time of slurry primer is approximately 15 minutes. Do not use after working time expires.
- ◆ Pre-wet mixing containers and drain excess water prior to mixing initial batch.
- ◆ Add the appropriate amount of clean mixing water or Acryl-Binder (see technical data) to mixer and slowly add Vertical Patch while continuously mixing. Mix for 2-3 minutes or until a uniform consistency is achieved. A single arm, rotating type 5 gallon pail mixer is recommended for mixing Vertical Patch. Due to the non-sag consistency, conventional mixers will not perform satisfactorily.
- ◆ Firmly place Vertical Patch into the cavity to be filled to ensure uniform contact with slurry primer and reinforcing steel.



- ◆ Place Vertical Patch slightly higher than surrounding concrete. After initial set, the excess can be shaved off with a steel trowel.
- ◆ Delay finishing until Vertical Patch begins to set.
- ◆ Working time is approximately 10 minutes at 70° F (21° C). Initial set occurs 5-10 minutes after working time expires.
- ◆ Timing of Vertical Patch placement after mixing is important to achieve maximum build. Maximum build occurs about 5 minutes after mixing.
- ◆ Minimum thickness for Vertical Patch is 1/2 inch (13 mm).
- ◆ Vertical Patch can be placed in layers. Maximum unextended thickness is 3 inches (76 mm). Allow each layer to achieve initial set before next layer is applied.
- ◆ Lifts greater than 3 inches (76 mm) must be extended with 35% by weight (18 lbs. maximum per bag) of clean, saturated surface dry (SSD), 3/8 inch (10 mm) pea gravel to dissipate the heat of hydration. Do not add additional water when extending with pea gravel.
- ◆ Cure repair mortar with wet burlap or ASTM C309 approved curing compound.
- ◆ Follow recommendations from ACI-305 for hot weather concreting and ACI-306 for cold weather concreting.

## WATER REQUIREMENT

Performance	Water	Acryl-Binder
Maximum vertical, overhead build	None	1.6 qts. (1.5 L)
Maximum tensile flexural strength	None	1.6 qts. (1.5 L)
Maximum compression	1.6 qts. (1.5 L)	None
Best overall performance	0.8 qts. (0.7 L)	0.8 qts. (0.7 L)

\* Liquid quantities in US quarts per 20 lb. (9.1 kg) pail.

Note: Jobsite conditions may affect actual quantities of water or Acryl Binder needed. Above mixing water recommendations are intended only as a guide.

## MIXED YIELD

Mixed Bag	23.3 lbs (10.6 kg)	0.17 ft. <sup>3</sup> (4.8 L)
-----------	--------------------	-------------------------------

## TECHNICAL DATA

Test Method	Parameter	Test Results
ASTM C109	<b>Compressive Strength</b>	<b>Temp. 70° F (21° C)</b>
	3 Hours	2,500 psi (17.2 MPa)
	7 Days	5,600 psi (38.6MPa)
ASTM C882	28 Days	7,000 psi (48.3MPa)
	<b>Slant Shear Bond Strength</b>	
	7 Days	1,300 psi (9.0MPa)

## PACKAGING

Packaged in 20 lb. (9.1 kg) resealable, plastic pails.

## SHELF LIFE

Shelf life is one year. Use before the "USE BY" date stated on product packaging.

## HANDLING/STORAGE

Read Material Safety Data Sheet (MSDS) prior to using. Contains cement and silica sand. Use proper safety equipment (gloves, goggles or glasses and dust masks). Store in a cool, dry area.

## AVAILABILITY & TECHNICAL SERVICES

In addition to corporate offices in Omaha, Nebraska, NOX-CRETE Products Group maintains regional offices and distribution centers in principal markets throughout the world. For source or technical information, call 800-669-2738 or 402-341-2080.

## LIMITED WARRANTY

### NOTICE-READ CAREFULLY

#### CONDITIONS OF SALE

NOX-CRETE offers this product for sale subject to, and Buyer and all users are deemed to have accepted, the following conditions of sale and limited warranty which may only be varied by written agreement of a duly authorized corporate officer of NOX-CRETE. No other representative of or for NOX-CRETE is authorized to grant any warranty or to waive limitation of liability set forth below.

#### WARRANTY LIMITATION

NOX-CRETE warrants this product to be free of manufacturing defects. If the product when purchased was defective and was within use period indicated on container or carton, when used, NOX-CRETE will replace the defective product with new product without charge to the purchaser.

NOX-CRETE makes NO OTHER WARRANTY, either express or implied, concerning this product. There is NO WARRANTY OF MERCHANTABILITY. In no case shall NOX-CRETE be liable for special, indirect or consequential damages resulting from the use or handling of the product and no claim of any kind shall be greater in amount than the purchase price of the product in respect of which damages are claimed.

#### INHERENT RISKS

NOX-CRETE MAKES NO WARRANTY WITH RESPECT TO THE PERFORMANCE OF THE PRODUCT AFTER IT IS APPLIED BY THE PURCHASER, AND PURCHASER ASSUMES ALL RISKS ASSOCIATED WITH THE USE OR APPLICATION OF THE PRODUCT.