



# Nitobond PCA\*

Thixotropic epoxy resin precast concrete adhesive

## Uses

Nitobond PCA is used for bonding prefabricated concrete bridge segments to provide a structural and water resistant joint. Nitobond PCA is also suitable as a gap filling paste and grouting of starter bars, holding down bolts etc, particularly useful where a paste type consistency material is required.

## Advantages

- Available in three grades to meet a wide range of application temperatures
- Cures at low temperature giving high physical properties
- Can be applied to dry or damp surfaces
- Easy to apply, non slump product
- Easy to mix, colour coded for mixing control

## Standards compliance

Complies with the requirements of AASHTO M235-91 Type VI, Grade 3, Class F / ASTM C881-90

## Description

A two component solvent free epoxy resin system consisting of a white resin base, black hardener and graded filler which when mixed together produces an easily worked paste supplied in pre-measured quantities for easy on site mixing.

Nitobond PCA has been specially formulated to meet the requirements for bonding prefabricated concrete bridge segments.

Three grades of product are available to facilitate assembly of segments under a wide range of temperatures.

**Nitobond PCA 5-20:** For use where temperatures range from 5°C to 20°C.

**Nitobond PCA 15-30:** For use where temperatures range from 15°C to 30°C.

**Nitobond PCA 25-40:** For use where temperatures range from 25°C to 40°C.

## Technical Support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

## Properties

<b>Specific Gravity (Mixed)</b>	: 1.65
<b>Volume solids</b>	: 100%
<b>Consistency</b>	: Soft, non sag paste

### Pot life (minutes)

<b>Nitobond PCA 5-20</b>	55 @ 5°C	25 @ 20°C
<b>Nitobond PCA 15-30</b>	60 @ 15°C	30 @ 30°C
<b>Nitobond PCA 25-40</b>	90 @ 25°C	30 @ 40°C

### Contact time (minutes)

<b>Nitobond PCA 5-20</b>	240 @ 5°C	120 @ 20°C
<b>Nitobond PCA 15-30</b>	240 @ 15°C	120 @ 30°C
<b>Nitobond PCA 25-40</b>	200 @ 25°C	100 @ 40°C

### Compressive strength (N/mm<sup>2</sup>)

	@ 24 hours	@ 48 hours
<b>Nitobond PCA 5-20</b>	35.0 @ 5°C	65.0 @ 5°C
<b>Nitobond PCA 15-30</b>	73.5 @ 15°C	79.0 @ 15°C
<b>Nitobond PCA 25-40</b>	70.0 @ 25°C	77.5 @ 25°C

**Note:** Strength gain rate of Nitobond PCA depends upon the grade, and temperature at which it is cured. Quoted strengths were determined at the lower temperature limit for the particular grade.

## Compressive strength

Compressive strengths will be considerably higher when Nitobond PCA is cured at any temperature above the lower temperature limit. Strengths in the order of 70.0 MPa to 80.0 MPa are easily achieved when Nitobond PCA is cured at the upper temperature limit for a particular grade.

## Tensile bending/Bonding strengths

Concrete beams soaked in water for 24 hours and surface dried were bonded end to end and tested for flexural strength. Nitobond PCA was allowed to cure for 24 hours at the lower temperature limit of each grade. Flexural strengths in excess of 5 MPa were obtained. All three grades exhibited concrete failure, not bond failure.

## Application instructions

### Preparation

It is essential that Nitobond PCA is applied to sound, clean surfaces in order that maximum bond strength is achieved. Concrete should be free from standing water and all contamination such as release agent, oil or grease, laitence and other deleterious substance. Grit blasting or mechanical scabbling is the preferred method of surface preparation.

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## Mixing

Add the total contents of the black curing agent to the white resin and mix thoroughly with a slow speed (300 to 500 rpm) drill fitted with a Fosroc recommended mixing paddle. Mixing should continue until a mixture of even grey colour, free from streaks is obtained.

Add the filler component whilst continuing to mix, until completely dispersed into the resin.

Ensure the sides and bottom of the mixing container are free from unmixed product. Thorough mixing should be achieved within 5 minutes.

## Application

Mixed adhesive may be applied by spatula, serrated trowel or other alternative suitable application method. The mixed epoxy must be used within its specified pot life with all surfaces brought together within the recommended contact time.

**Note:** Mixed Nitobond PCA will heat up and cure very rapidly if left for any length of time in the mixing container, particularly at the upper temperature range. Nitobond PCA should be used immediately after mixing. Pot life of Nitobond PCA can be prolonged by spreading the mixed adhesive into a thin layer (less than 20 mm). This will allow exotherm to be dissipated.

## Cleaning

All tools and equipment should be cleaned immediately after use with Fosroc Solvent 102. Hardened adhesive can only be removed mechanically.

## Estimating

### Supply

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<b>Nitobond PCA</b>	:	4 & 12 litre packs
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### Coverage

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<b>Nitobond PCA</b>	:	1 m <sup>2</sup> /litre @ 1 mm thickness
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## Storage

Nitobond PCA has a shelf life of 12 months if kept in a dry shaded store in the original, unopened packs below 35°C.

## Precautions

### Health and safety

Nitobond PCA should not come into contact with skin and eyes and should not be swallowed. Ensure adequate ventilation and avoid inhalation of vapours. Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye protection.

The use of barrier creams provides additional skin protection. In case of contact with skin, rinse immediately with plenty of clean water, then cleanse with soap and water.

Do not use solvent. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately. – Do not induce vomiting.

### Fire

Nitobond PCA is non-flammable

Fosroc Solvent 102 is flammable. Ensure adequate ventilation. Do not smoke or use it near a naked flame.

\* Denotes the trademark of Fosroc International Ltd.



### Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Service.

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