

FasTrac CE715 PNS

Polymer Joint Nosing Mortar

Description

FasTrac CE715 PNS is a three component, moisture tolerant, multi-purpose, high-strength, semi-flexible, elastomeric repair mortar. The polymer nosing combines a high-quality epoxy resin and curing agent with an engineered blend of graded aggregates for header / joint repairs on bridge decks and similar structures.

Technical Summary

- CE715 PNS is designed for use as a polymer concrete nosing/header system in trafficked expansion and construction joints
- Suitable for joint nosing repairs in concrete / asphalt, or patch repairs in concrete.

Application Summary

- May be used for both new construction and rehabilitation of existing joint systems
- Applied horizontally by hand / trowel
- Designed with good workability to facilitate placement and allow for rapid return to service
- Practical cure time of approximately 2 to 4 hours at 24°C

Typical Applications

- Bridge Deck Joints
- Airport Runway & Taxiway Joints
- Parking Deck Joints
- Header Repairs
- Concrete hardstand repairs

Design Criteria

FasTrac CE715 PNS shall be designed and installed as part of a complete expansion joint system. The polymer nosing provides the structural and impact-resistant header adjacent to the joint gap. The polymer joint nosing is to be used with an approved joint sealant to complete the expansion joint system.

Product Data

Characteristic	Result
Appearance	FasTrac CE715 PNS Component A (Resin): Black FasTrac CE715 PNS Component B (Hardener): Amber FasTrac CE715 PNS Mixed & Cured: Black

Advantages

- Semi-Flexible with excellent resistance to dynamic loading
- High impact and abrasion resistant
- Excellent bond to suitably prepared concrete
- Moisture tolerant during installation
- High resistance to chloride ion penetration
- Chemical resistant
- Good resistance to weathering and UV exposure
- Rapid installation and return to service
- Minimizes edge spalling

Compatible Materials

Substrates: Concrete, steel and asphalt.

System components: Can be used as a standalone repair mortar, or as part of Hychem™ Infrastructure's Polymer Joint Nosing System which includes FasTrac CE715 PNS, and Spectrem 900SL and Spectrem 800.

Applicator Material List

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Samples were prepared and tested in a laboratory at a temperature of 24°C.

FasTrac CE715 PNS Binder (Component A (Resin) & Component B (Hardener)) Properties		
PERFORMANCE CHARACTERISTIC	TEST METHOD	TEST RESULT
Viscosity	ASTM D2393-86	≥ 2,000 cps
Gel Time (60 grams)	ASTM C881	≤ 15 minutes
Tack Free Time	ASTM D1640	≤ 5 hours
Tensile Strength	ASTM D638	13.7 MPa
Tensile Elongation	ASTM D638	≤ 45%
Bond Strength	ASTM C882	2-Day Cure: 13.7 MPa 14-Day Cure: 17.2 MPa
Compressive Modulus	ASTM D695	620 MPa
Compressive Strength	ASTM C579	3-Hour Cure: 10.3 MPa 7-Day Cure: 34.5 MPa

FasTrac CE715 PNS (Mixed) Properties		
PERFORMANCE CHARACTERISTIC	TEST METHOD	TEST RESULT
Compressive Stress	TEX-J-618	27.6 MPa
Tensile Bond Strength	ASTM C1583 / ACI 503R	2.0 MPa
Wet Bond Strength	TEX-J-618	3.1 MPa
Shrinkage on Cure	ASTM D2566	≤ 0.2%
Thermal Compatibility	ASTM C884	Pass
Chloride Ion Permeability	AASHTO T277	1.0 coulombs
Compressive Strength	ASTM C579	3-Hour Cure: 10.3 MPa

Application Data

Property	Property Value
Suitable application methods	Trowel applied
Application temperature	10°C and rising
Mixing ratio	FasTrac CE715 PNS Component A (Resin) 3.78 litres + FasTrac CE715 PNS Component B (Hardener) 3.78 litres + FasTrac CE715 PNS Component C (Aggregate) 2 x 22.7 kg Bags
Typical Cure time (at 24°C)	Approximately 2 to 4 hours

Application Guidelines

The polymer nosing shall be installed to the dimensions and configuration shown on the project drawings. Joint gap dimensions, nosing width and depth, backing rod and joint sealant configuration shall be selected to accommodate the calculated movement of the structure and the anticipated traffic loading. Also refer to the Hychem™ PNS System Technical Data Sheet.

Joint Nosing Width: Depth Guidelines by Application		
	MINIMUM WIDTH	MINIMUM DEPTH
Concrete	100 mm	40 mm
Asphalt	150 mm	150 mm

Where the asphalt depth exceeds 150 mm, the nosing width should be increased to maintain a minimum 1:1 width-to-depth ratio.



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Application Guidelines

SURFACE PREPARATION

Asphalt

Mark out around the areas to be repaired. The perimeter of the repairs shall be kept to simple square or rectangular shapes. Saw cut full depth around the perimeter and completely remove all loose, delaminated and unsound asphalt to expose concrete deck.

Concrete

Concrete surfaces must be mechanically prepared to obtain a clean, sound and rough concrete surfaces with an exposed coarse aggregate profile of 5 or greater in accordance with ICRI Technical Guideline 310.2R. The prepared substrate must be clean, sound, dry and free from all traces of asphalt, oil, grease, surface laitance and any other contaminants. Blow out the prepared area with oil free compressed air to remove any remaining dust & debris.

Steel

Any steel surfaces to be in contact with the FasTrac CE715 PNS are to be sandblasted to an SSPC-SP6 commercial finish to optimize bond development. Prepared surfaces shall be clean, free of oil, grease, rust, loose coatings and any other contaminants.

APPLICATION

Formwork

Install a suitable temporary joint former centrally and full depth within the prepared joint nosing blockout to establish the specified expansion joint width. The joint former shall be securely anchored and sufficiently rigid to maintain the required joint dimensions during placement and compaction of the polymer nosing material, while allowing removal without damaging the cured repair. Suitable joint forming materials include extruded polystyrene foam board, high density closed cell polyethylene foam board.

Mixing

For optimum performance, all components should be conditioned to between 18°C and 30°C prior to use. Pour all Component B (hardener) into pail containing Component A (resin).

Mix thoroughly by hand with a slow speed drill and paddle mixer to avoid air entrapment and continue mixing until streak free (approximately 1 to 2 minutes). While mixing, slowly add Component C (aggregate) and mix only until aggregate is completely wet.

Paddle mixing

Double drill & paddle mixers should be used if mixing 2 bag mixes by hand, alternatively a pan mixer can be used.

Pan mixing

If using a pan mixer, pour mixed liquids into a pan mixer (stationary barrel with moving blades). While mixing, slowly add Component C (aggregate) and mix only until aggregate is completely wet. Do not exceed one-half the maximum capacity of the mortar mixer.

Concrete or cement mixers must not be used for mixing FasTrac CE715 PNS. Mixed material must be placed immediately.

Placement

Pour the mixed material into the prepared repair area ensuring that the material is properly compacted into the substrate. Level, or screed as necessary to finish flush with the top of the substrate being repaired.

Curing

Product is self-curing. Do not add solvents. Protect from freezing temperatures, rain and traffic until minimum strength requirements are achieved. At 24°C the FasTrac CE715 PNS will take approximately 2 to 4 hours to reach practical cure.

Clean Up

All surfaces, tools & equipment may be cleaned with solvents such as IPA, xylol, or MEK prior to the material setting.

Quality Control

The execution of the work shall be carried out in accordance with the project quality plan.

Estimating

Three component kit will yield approximately 28 litres when mixed with 2 x 22.7kg bags of aggregate.

Packaging

FasTrac CE715 PNS Component A (Resin) – 3.78 litre tin

FasTrac CE715 PNS Component B (Hardener) – 3.78 litre tin

FasTrac CE715 PNS Component C (Aggregate) – 2 x 22.7 kg bags

Storage & Shelf Life

The product is to be stored in unopened original packaging for up to 24 months at between 4°C and 35°C in a dry storage place that is protected against exposure.



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Limitations

The project engineer shall determine the suitability of CE715 PNS for the intended application and shall nominate the final joint geometry, nosing dimensions, joint gap, sealant configuration and detailing requirements.

Installation shall be undertaken by suitably experienced personnel in accordance with the CE715 PNS installation instructions and the project-specific joint details. Although CE715 PNS is moisture tolerant, best performance is achieved when the substrate is dry. Do not apply in temperatures less than 10°C. Cure rate, working time and trafficability are temperature dependent. Lower temperatures will extend cure times, while elevated temperatures will reduce working time and accelerate curing. Protect freshly installed material from rain until sufficient cure has been achieved. Do not add solvents or other materials to extend working time or modify the curing characteristics.

Safety

In an emergency, contact 000, the Poisons Information Centre (13 11 26 within Australia) or a doctor for advice. Please refer to the current SDS (Safety Data Sheet) and follow the prescribed safety precautions and handling procedures for the product.

Warranties and Disclaimers

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