



QC Thin-Pave™ NI

For Professional Use Only

Product Information Bulletin 14.0107P

QC THIN-PAVE NI is a two-component polymer modified cementitious stampable overlay. When applied in conjunction with color, stains and sealers, QC THIN-PAVE NI can produce a decorative paving finish similar to imprinted concrete. Typically applied at a 1/4 - to 5/8-inch thickness, QC THIN-PAVE NI is for interior and exterior use and can be used for residential, commercial, theme park, municipal and industrial construction. QC THIN-PAVE NI can be utilized in new construction and renovation. QC THIN-PAVE NI has very high compression strength and can be left exposed to traffic; regular maintenance is recommended. The system consists of a wet primer application, pigmented latex modified mortar, QC RELEASE AGENT* and QC SEALERS. When required, QC PATINA STAIN*, QC CEMENTINT* and QC CONCRETE DYE* can be applied. Most imprinting tools can be used with QC THIN-PAVE NI.

Uses and Benefits

- QC THIN-PAVE NI is available in 42 standard colors.
- QC THIN-PAVE NI is easy to install, virtually odorless and environmentally safe. It requires no special training for installation by a crew experienced in the application of materials and is easily handled by a handyman or mason. It sets rapidly, can be applied over damp (not wet) surfaces and can be installed at temperatures as low as 55 °F.
- QC THIN-PAVE NI is a decorative overlay that looks like imprinted concrete and functions as a durable concrete surface.
- QC THIN-PAVE NI is ideal for interior as well as exterior applications.
- QC THIN-PAVE NI can be installed over a rigid waterproof membrane system to provide a composition waterproof decorative floor finish.
- QC THIN-PAVE NI provides a fast track construction option by allowing the delay of decorative flooring installation until after the initial heavy construction is complete. This eliminates the need to invest in protection of the surface and greatly reduces damage from construction-related traffic.
- QC THIN-PAVE NI installs quickly and can be planned for installation at the same time all other floor coverings and finishes are placed in a structure.
- QC THIN-PAVE NI may be applied in thicknesses ranging from a minimum of 1/4-inch thick to a maximum of 5/8-inch thick. The recommended application is 3/8- to 1/2-inch thick.
- QC THIN-PAVE NI Powder is available in white or gray base.
- QC THIN-PAVE NI Tint Packs can be added to integrally color the material before application. Colors are designed to approximate colors found on the QC COLOR HARDENER* color chart. For larger projects, QC THIN-PAVE NI can be pre-colored.

Before Any Application

1. Always produce an actual finished mock up sample for approval prior to installation of each application.
2. QC CONSTRUCTION PRODUCTS utilizes International Concrete Repair Institute (ICRI) Concrete Surface Profile (CSP) standards for specifying finished surface roughness prior to applying QC THIN-PAVE NI. For proper adhesion, the concrete must fall between #4 and #9 in accordance with the ICRI CSP chart. Contact the ICRI at www.ICRI.org or QC CONSTRUCTION PRODUCTS for more information on these surface profiles.
3. Concrete, new or old, must be cleaned of all grease, paint, curing agents or loose concrete patches and droppings. For best results, remove all spalls in concrete, decking materials, paint or other coatings. In particular, be sure to remove all grease, oil, silicone coatings or any other materials on concrete that prevent adhesion.
4. Mechanical shot blasting, grinding or power scarifying achieves sufficient concrete profile.
5. Always check the substrate for contaminants, alkalinity and moisture emissivity. Test and record the surface alkalinity and moisture emissivity. **NOTE:** Although QC THIN-PAVE NI is resistant to water, excessive moisture vapor transmission (MVT) can increase alkalinity at the bond line and promote delamination. Always monitor and record MVT conditions on grade and below grade surfaces. When MVT is not within specified tolerances, contact QC CONSTRUCTION PRODUCTS for assistance. After the surface has been thoroughly cleaned, inspect substrate for proper control joints and expansion joints. All joints must be maintained. Proper maintenance is best achieved by placing a corresponding joint in the QC THIN-PAVE NI material during or after installation, followed by caulking and/or grout installation. Furthermore, inspect substrate for undesirable cracks. Working cracks are anticipated to show through the surface of QC THIN-PAVE NI unless properly treated. Working cracks can be repaired using QC CRACK REPAIR KIT*. If cracks are aggressive (exceeding 1/8-inch), Nobel Crack Isolation System can be applied to minimize crack transfer. Non-working (hairline) cracks require no repair.

NOTE: When applying QC THIN-PAVE NI over rough concrete with deep pop-outs or imprinted concrete, prefill deep depressions with a rough pass to provide for reduced surface variation and material shrinkage. When smooth surfaces are desired, such as might be required under application of vinyl sheet or soft tile, the QC THIN-PAVE NI surface can be lightly sanded using floor machines fitted with an appropriate sanding attachment. This operation is best completed within the first six hours of curing and can commence as soon as the application will support work-related traffic.

Mixing and Application

Correct mixing of QC THIN-PAVE NI is absolutely essential to the proper functioning of the material.

- Open QC THIN-PAVE NI Mix Liquid and pour off about half of the liquid into another clean five-gallon pail. Then, with a flat stick, stir the bottom of the original container to bring up any solid residue that may have formed on the bottom of the pail. Box materials together again.
- Add QC THIN-PAVE TINT PACK into five-gallon pail. Mix for three minutes or until tint is dispersed evenly. **When using tint packs, it may occasionally be necessary to use one gallon plus one pint in order to achieve the desired mix.**
- Measure out one gallon of tinted QC THIN-PAVE NI Liquid. Start mixing the liquid with an electric drill, mounting a “Jiffy” impeller-type mixing blade (or equivalent) while gradually adding one bag of QC THIN-PAVE NI Powder. More than one bag can be mixed at a time in the proper container. Note: Each gallon of QC THIN-PAVE NI Liquid requires one 47-pound bag of QC THIN-PAVE NI Powder.
- Continue to mix the two materials together – never reverse the procedure and attempt to add the liquid into the powder.
- After the material has been mixed free of any obvious lumps, continue to mix for at least two more minutes with the “Jiffy” blade submerged in the mix and held at an angle. These two minutes of final mixing are essential to eliminate dry pockets of unmixed material, which could produce pinholes and white efflorescing in the finished work.
- Apply QC THIN-PAVE NI immediately upon completion of mixing. Working time of material is about 30-60 minutes, depending on temperature and humidity (high temperature and low humidity reduce working time). Mix no more material than can be applied in that time.
- QC THIN-PAVE NI can be mixed in a low speed mortar mixer following the same mixing ratios and sequences. Do not mix less than 60% of the mortar mixers maximum volume capacity. **NOTE:** QC THIN-PAVE NI bonds tenaciously to tools and equipment. Wash equipment quickly and often after each use or place the tools in water for later cleaning.

STEP ONE – LIQUID PRIMER APPLICATION

Dilute QC THIN-PAVE NI Mix Liquid one to one (50%) with clean, cool water to make the primer liquid. Apply primer liquid with a pump-up sprayer, paint roller or brush at 150-250 square feet per gallon. Coverage rates will vary depending on the ambient temperature, humidity and texture of concrete substrate. Work material into the surface with a stiff-bristled brush.

NOTE: QC THIN-PAVE NI must be applied over wet or tacky prime-coat application. Apply a second coat of primer liquid if the first coat rapidly absorbs into the concrete or dries.

STEP TWO – QC THIN-PAVE NI BODY COAT APPLICATION

While the primer remains tacky, apply mixed QC THIN-PAVE NI body coat. Spread the mix using a gauge rake, straightedge screed or a screed box to achieve the desired thickness. Use a trowel attached to a funny trowel handle or fresno to close up the poured material. Strike the material only one or two times. Do not overwork the surface. Imprinting tools will eliminate surface imperfections.

Approximate coverage is as follows:

Stamp	Coverage Rates	Stamp	Coverage Rates
1/4-inch	22 square feet	3/8-inch	16 square feet
1/2-inch	11 square feet	5/8-inch	9 square feet

CAUTIONS: Avoid entrapping air by working the gauge rake using long smooth strokes. Do not beat or agitate the materials when spreading QC THIN-PAVE NI.

STEP THREE – IMPRINTING QC THIN-PAVE NI

1. Allow QC THIN-PAVE NI material to cure for a sufficient period of time. Touching the surface with pointed fingers can test cure. Begin imprinting when fingers can cause an impression without material sticking to them. Surfaces can develop a false pre-cure due to wind-induced hydration. To avoid this condition on windy days, press into the surface to better evaluate the state of curing. Note: Avoid pouring during high-wind conditions.
2. Use caution with QC LIQUID RELEASE*. Premature application can cause blisters to form in the material. Normally, liquid release requires a longer set time for applications than powdered release.
3. Immediately prior to imprinting, apply a liberal film of QC LIQUID RELEASE* or QC LIQUID RELEASE ADVANTAGE* on the selected imprinting tools using a pump-up sprayer. Apply a thin film of QC LIQUID RELEASE* agent to the QC THIN-PAVE NI surface. **CAUTION:** Avoid over-spray onto any pre-primed or open surfaces.
4. When using powdered release, apply QC RELEASE POWDER* following the same procedures when imprinting concrete.

STEP FOUR – STAMPING

1. Using conventional imprinting tools, carefully align and lay the stamps into the material, taking care to position the tools to create the desired effect.
2. Select tools that are designed for QC THIN-PAVE NI applications. Imprinting tools with skinny joint profiles and 45-degree relief edges work best.
3. Imprinting QC THIN-PAVE NI is different than conventional concrete. The smaller aggregates require less aggressive manipulation; therefore, gentle malleting is necessary.
4. When lifting the stamps, gradually pull from both edges to relieve suction between the surface and the tool. Use imprinting tools fitted with handles, floppies or other tools designed for ease in handling.
5. Use specially designed edging tools, chisels, and grout touch-up wheels. These assist in cleaning and defining all edges to achieve a professional finish profile.

6. Refrain from installing QC THIN-PAVE NI in extreme weather conditions. Wind and heat can cause premature hydration, which results in shrinkage cracking. Shrinkage cracks are an aesthetic issue and will not normally result in long-term failure, although proper care should be taken to repair them.

STEP FIVE – DETAIL WORK

1. After installation, use caution tape and barricades to protect the surface from traffic.
2. After the material has cured, detail any imprinting imperfections using grinders, chisels or scraping tools prior to sealing or staining.
3. Honor all joints and use a full depth cut of at least 1-1/2 inches for all expansion or control joints to minimize reflective cracking.
4. Wash the surface and inspect for color consistency and needed repairs. For shrink-crack repair, sift off the heavy silica sand from the QC THIN-PAVE NI Powder and mix the remaining silica-free material with QC THIN-PAVE NI Liquid creating a slurry paste. Use a sponge to squeeze the paste material into the desired areas for repair. Let the paste dry briefly and dust area surrounding the crack with a dry cloth until clean.
5. Use an air blower to remove debris and to dry the surface.

STEP SIX – CURING

It is not recommended to use a membrane curing compound on QC THIN-PAVE NI. Plastic sheeting can be used to cure QC THIN-PAVE NI. If curing with plastic, areas of inconsistent color may occur from areas of high moisture, especially when using liquid release. Under ambient conditions (temperature 70 °F, humidity 50%) QC THIN-PAVE NI will cure in 24 hours. Cooler temperatures and higher humidity will increase the cure time. Do not remove release or seal if the surface is plastic or soft. Light traffic in 24 to 36 hours, full traffic in 48 to 72 hours. See “Technical Data” section in this bulletin for surface strength specifications.

STEP SEVEN – STAINING OR PRE-SEALING

For antiquing, staining and coloration treatments such as QC PATINA STAIN*, QC CEMENT* and QC CONCRETE DYE* (interior use only), follow the appropriate application guidelines in the respective Product Information Bulletin. In general, once desired finish is achieved, material should be left to cure for 24 hours prior to staining. Make sure to select sealers best suited for the application, traffic, use, maintenance and exposure.

STEP EIGHT – CLEAR SEALER

Apply selected sealer by sprayer, brush or roller. Make sure to select sealers best suited for the application, traffic, use, maintenance and exposure. Available sealers include QC SOLVENT SEAL 18*, QC SOLVENT SEAL 27*, QC ULTRA SEAL*, QC SOLVENT SEAL VOC III*, QC CEMSEAL*, QC PERMASEAL*, QC VOC 100 WB* and QC SURPRO (SB* or WB*). Do not seal before the overlay has cured for 24 hours.

Maintenance

- Maintenance will vary depending on a number of factors, including volume and intensity of traffic, ultraviolet light exposure, geographic location and weather conditions.
- All QC THIN-PAVE NI installations should be professionally cleaned and resealed periodically by a qualified floor maintenance contractor in order to maintain a top quality appearance. In general, expect the need for professional maintenance to occur every 12-24 months. Protective maintenance coats of sealer (see recommendations below) shall be applied periodically to ensure the desired level of gloss is maintained.
- Residential applications typically require less cleaning and maintenance than commercial and municipal projects.
- Routine cleaning and maintenance of interior floors shall be done in accordance with job requirements.
- In large interior commercial applications, a qualified floor maintenance contractor is recommended for routine cleaning.
- Exterior QC THIN-PAVE NI surfaces should be resealed annually depending on traffic, especially in freeze-thaw locations.
- Sealers for Interior and Exterior Surfaces – QC ULTRA SEAL*, QC SOLVENT SEAL VOC III*, QC SOLVENT SEAL 18*, QC SOLVENT SEAL 27*, QC PERMASEAL*, QC CEMSEAL* or QC VOC 100 WB* are recommended.
- Sealers for Interior Surfaces – QC PERMASEAL, QC CEMSEAL* or QC VOC 100 WB* are recommended sealers. Use QC SURPRO SB* or WB* (urethane) where added protection is required.
- QC INTERIOR FLOOR FINISH* (gloss) is a recommended maintenance product for interior surfaces.

*PLEASE REFER TO CORRESPONDING PRODUCT INFORMATION BULLETIN FOR TECHNICAL AND APPLICATION DATA.

www.qcconstructionproducts.com

For complete information on all QC products—including product information catalogs, product brochures, color charts, technical specifications, sales aids and more—contact QC CONSTRUCTION PRODUCTS.

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QC CONSTRUCTION PRODUCTS

P.O. Box 599 • Madera, CA 93639
Customer Service 800.453.8213 or 559.673.2467
Fax 559.673.0773

www.qcconstructionproducts.com ■ District sales offices and warehouses nationwide

Limitations

- The substrate temperature should be between 65-80 °F. A warm substrate decreases the material's pot life and can cause mixes to be sticky. A cooler substrate will retard the cure and may cause a blush in some sealers. Never apply QC THIN-PAVE NI to substrates below 55 °F. Never allow QC THIN-PAVE NI Liquid to freeze.
- All concrete curing agents, sealers and hardeners must be removed from the concrete prior to application of the QC primer coat. Preparation using mechanical shot blasting, grinding or power scarifying is recommended.
- When mixing two component polymer resin materials, be sure to use all of the provided resins. The resins are pre-measured to the correct ratios. Scrape all of the hardener from the container into the resin.
- Do not turn mixing vessels upside down to drain on the flooring surface. Unmixed resin from the side may produce soft or uncured spots on the flooring surface.
- Keep the unfinished flooring surface clean.
- Do not track dirt, grease or any other contaminants onto the unfinished flooring surface. Any contaminants could affect the aesthetics of the finished flooring.
- Good ventilation must be provided during application, particularly in confined spaces when using two-component polymer resins (urethane or epoxy classes).
- Always obtain, read and observe the Material Safety Data Sheets (MSDS) before handling materials. Become familiar with the products on paper before you attempt application. Obtain and read the Product Information Bulletin prior to doing work.
- This application is not designed to bridge cracks, working joints, dynamic cracks or expansion joints.

Shelf Life and Storage

Liquid: QC THIN-PAVE NI Liquid has a shelf life of one year. Store indoors. Store and mix at a temperature of 65-80 °F (18-26 °C). Do not allow product to freeze. If QC THIN-PAVE NI Liquid freezes, discard.

Powder: QC THIN-PAVE Powder has a shelf life of 9-12 months.

Coverage Rates

One gallon of QC THIN-PAVE NI Liquid mixed with one 47-pound bag of QC THIN-PAVE NI Powder will yield an approximate coverage of 22 square feet at 1/4-inch thick, to 9 square feet at 5/8-inch thick.

Packaging Sizes

Liquid: QC THIN-PAVE NI Liquid is available in 1- and 5-gallon pails.

Powder: QC THIN-PAVE NI Powder uncolored is available in 47-pound bags of gray or white base; QC THIN-PAVE NI Powder precolored is available in 47-pound bags.

Technical Data

- Compressive Strength.....ASTM C 109 (2" x 2" cubes): 4,219 psi
- Indentation Characteristics.....(Steadily Applied Load) MIL-D-134, Para. 4.7.4.2.1 (2,000 lbs.on 1" steel ram imposed for 30 min.): 2.26%
- AdhesionMIL-D-3134, Para. 4.7.14 (Shear from steel plate after 96 hours): 305 psi
- Compression TestOutdoor 50#/1 gallon mix, 7-day cure: 3,300 psi; 28-day cure: 3,900 psi
Indoor 50#/1 gallon mix, 7-day cure: 2,800 psi; 28-day cure: 3,900 psi
- Water Absorption.....MIL-D-3134: 3.41%
- Tensile Strength.....ASTM C 190: 925 psi
- Flexural StrengthASTM C 580: 2,415 psi
- Impact Resistance(Gardner Impact Tester) No chipping, cracking or delamination and not more than 0.014"

Product Handling

For handling and use, consult the corresponding Material Safety Data Sheets before using product.

Warranty

QC THIN-PAVE NI, a proprietary product, is warranted to meet uniform quality standards within conventional manufacturing tolerances. Since no control is exercised over its use, no warranty or guarantee, expressed or implied, can be made to its use. Seller's and manufacturer's obligation under this warranty is limited to reimbursement of the purchase price of the portion of the product proven to be defective. The user assumes all risks and liability resulting from the use of this product.

QC CONSTRUCTION PRODUCTS available through: