NOVALIS®

INSTALLATION INSTRUCTIONS FOR NOVALIS FULL COMMERCIAL VINYL TILES and PLANKS

1. PRODUCT HANDLING AND SITE CONDITIONS

1.1 Store cartons of tile flat with cartons stacked one on top of the other. Do not store on end or allow cartons to bend during storage or transportation.

1.2 Acclimate product to job site conditions by delivering all materials (including adhesive and maintenance products) to the job site at least 2 days (48 hours) before installing. Store at of 60° to 80° Fahrenheit for 48 hours before installing.

1.3 The space where flooring is to be installed shall be fully enclosed and the permanent HVAC system shall be operational prior to installing. The temperature shall be between 60° and 80° Fahrenheit for 48 hours before installing, while installing and for 48 hours after installing the floor coverings. The temperature shall be maintained at a minimum of 50° Fahrenheit thereafter.

1.4 To prevent damage to the newly installed flooring, the installation of flooring products shall begin after all other trades have completed their work. Keep traffic off of floor for 12 hours before installation of flooring begins.

1.5To prevent adhesion problems, Floors to receive resilient flooring shall be permanently dry, clean, smooth, and structurally sound. They shall be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, curing, sealing, hardening, or parting compounds, alkaline salts, excessive carbonation or laitance, mold, mildew, and other foreign materials that might prevent adhesive bond.[1]

2. SUBSTRATE PREPARATION AND TESTING

2.1 Concrete slab construction: Concrete moisture problems are a major cause of floor covering failures. Refer to industry standards for specifications related to concrete mix design, curing methods and drying times to prevent such problems.

2.1.1 On grade or below grade slabs: ACI 302 (American Concrete Institute) and ASTM specify the use of a vapor retarder directly beneath concrete slabs in contact with the ground. *Every concrete floor slab on- or below-grade to receive resilient flooring should have a moisture retarder (often improperly called a vapor barrier) installed directly below the slab.*[1]

2.1.2 Above Grade Slabs: It is often assumed that above grade slabs (also known as suspended slabs) are less prone to moisture problems than slabs on or below grade. However, these slabs may take much longer to dry. *Floors containing lightweight aggregate or excess water,and those which are allowed to dry from only one side, such as concrete on metal deck construction, may need a much longer drying time and should not be covered with resilient flooring unless the moisture vapor emission rate meets the manufacturer's installation specifications*[1]*.*

2.1.3 Curing and drying: *New concrete slabs shall be properly cured and dried before installation of resilient flooring. Drying time, before slabs are ready for moisture testing, will vary depending on atmospheric conditions and mix design*[1]. The use of membrane forming curing compounds may slow the drying process and can also hinder adhesive bond. If curing compounds are used they shall be removed as soon as possible after the initial cure of the concrete is complete so that the concrete can begin to dry. The cover cure method is an alternative that can speed the drying process.

2.2 Concrete testing:

2.2.1 To detect concrete moisture problems before installing flooring, moisture testing is mandatory. ***All concrete slabs shall be tested for moisture regardless of age or grade level*** [1]. Tests shall be conducted using ASTM test method F 1869 (Calcium Chloride Test.) If Moisture Vapor Emission Rate (MVER) exceeds 3.5 lb/1000 sq. feet/24 hours the floor covering shall not be installed until the concrete is sufficiently dry or until corrective measures are taken.

2.2.2 When conducting calcium chloride test it is imperative to follow the exact methodology of ASTM F 1869, especially with regard to building conditions, number of tests, cleaning the slab and waiting 24 hours after cleaning before placing the test kits.

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[1] ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

2.2.2.1 Temperature: *Testing shall only be done when the test site is at the same temperature and humidity expected during normal use. If this is not possible then the temperature should be 65-85 degrees Fahrenheit and 45%-55% relative humidity* [2].

2.2.2.2 Number of Tests: *Three test locations for areas up to 1000 square feet…one additional test for each 1000 square feet or fraction thereof* [2].

2.2.2.3 Cleaning the floor: *The actual test area shall be clean and free of all foreign substances. All residual adhesives, curing compounds, sealers, paints, floor coverings, etc shall be removed* [2].

2.2.2.4 Waiting: *Expose a minimum area of 20 in. x 20 in. to [these] conditions for a minimum period of 24 hours prior to starting each test* [2].

2.3 Preparing concrete slabs:

2.3.1 Concrete slabs shall be clean and smooth prior to installing floor coverings.
Concrete floors to receive resilient flooring shall be free of sealers, coatings, finishes, dirt, film-forming curing compounds, or other substances which may affect the rate of moisture dissipation from the concrete or the adhesion of resilient flooring to the concrete[1].

2.3.2 Concrete floors shall be smooth to prevent irregularities, roughness, or other defects from telegraphing through the new resilient flooring. *The surface of concrete floors shall be flat to within the equivalent of 3/16" in 10 feet*[1]. Smooth or level floors using a high quality patching or leveling compound that is recommended for commercial use. *Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities shall be filled or smoothed with latex patching or underlayment compound recommended by the resilient flooring manufacturer for filling or smoothing, or both. Patching or underlayment compound shall be moisture-, mildew-, and alkali-resistant, and, for commercial installations, shall provide a minimum of 3000 psi compressive strength*[1]. If the surface of the concrete is overly porous, soft, or dusty, it is not suitable for installation of resilient floor coverings. It may be necessary to mechanically remove the top layer of concrete in such cases and/or these surfaces may need to be primed and covered with a cement based underlayment compound

Follow patching or leveling compound manufacturer's instructions for preparation of the concrete surface, priming if necessary, mixing (especially the ratio of powder to liquid), thickness of application and drying time for floor covering installation.

2.3.3 Expansion joints: Joints such as expansion joints, isolation joints, or other moving joints in concrete shall not be filled with patching compound or covered with resilient flooring.[1]

2.4 Wood subfloors:

2.4.1 *A combination of a wood subfloor and panel underlayment shall be of double layer construction. Total thickness shall be a minimum of one inch* [i3].

2.4.2. There shall be least 18 inches of well-ventilated air space beneath all wood subfloors. Crawl spaces shall be insulated and protected by a vapor barrier.

2.4.3 Do not install Novalis or other resilient flooring products over the following:

- "Sleeper" system floors
- Plywood floors that have been installed directly over a concrete slab.
- Lauan, which is unsuitable of the possibility of problems such as delamination, indentation, loss of bond, and adhesion failures.
- OSB (oriented strand board), Particle board or chip board
- CCA (pressure treated) plywood, oil treated or otherwise coated wood
- CDX or other plywood with knots
- Underlayment made of pine or other soft woods
- Masonite™ or other hardboard underlayment
- Hardwood flooring
- Textured or cushioned resilient flooring
- Paint, wax, oil, grease, residual adhesive, mold, mildew, and other foreign materials that might prevent adhesive bond

[2] ASTM F 1869, Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

[3] ASTM F 1482 Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring

- Other uneven or unstable substrates.

2.4.4 Unacceptable substrates shall be covered using a 1/4-inch or thicker panel underlayment recommended commercial use. Consult underlayment manufacturer for recommended uses, warranty, joint spacing, nailing or stapling pattern and seam treatment for underlayment panels. Suggested underlayments include Artic Birch (also known as Baltic Birch) A/C grade plywood with one side finished or other underlayment grade plywood. Do not use lauan.

2.5 Existing resilient flooring

2.5.1 Criteria for installing over existing resilient floors:

The existing floor shall be:

- A single layer only. Do not install over multiple layers.
- Non-cushioned.
- Thoroughly stripped of all wax, floor finish dirt and other contaminants that may affect adhesive bond.
- Firmly bonded to the substrate.
- Flat and smooth with no curling edges or loose seams.
- Dry. All concrete floors shall be tested for moisture regardless of age or grade level. Do not assume that an existing floor is free of moisture related issues. Conduct testing per section 2.2.

2.5.2 Risks of installing over an existing resilient floor:

- Telegraphing ("show through") of irregularities in the existing floor (dents, gouges, curling edges, loose seams, etc).
- The new Novalis floor may not perform as well over an existing resilient floor as it would over a wood or concrete substrate, especially with regard to indentation resistance
- Do not install over existing resilient flooring if the new floor will be subjected to heavy point loads or rolling traffic.

2.6 Other substrates

2.6.1 Epoxy terrazzo, rubber, cork, and asphalt tiles are *not* acceptable substrates and shall be removed or covered with an approved underlayment.

2.6.2 Cement terrazzo or metal may be suitable. Check the patching/leveling compound manufacturer for guidelines on preparing these substrates.

2.7 Old Adhesive

2.7.1 Adhesive residue shall be properly prepared prior to the installing flooring. Water based adhesive residue and epoxies shall be completely removed prior to installing flooring. Such residues include but are not limited to carpet, vinyl flooring, and/or wood flooring adhesives. Black cutback adhesive residue shall be scraped to remove trowel ridges and puddles of adhesive so that only a thin transparent layer remains. This layer shall then be covered with a cementitious patching or leveling compound that is recommended by the manufacturer for this purpose.

2.7.2 *Adhesive Removers — There are a number of commercial adhesive removers that will properly remove adhesive residue from a subfloor; however, there are concerns that these products may adversely effect the new adhesive and new floor covering. The Resilient Floor Covering Institute's (RFCI's) recommended work practices for removal of existing resilient floor coverings…should be consulted for a defined set of instructions which should be followed if existing adhesives must be removed.*[1] If chemical adhesive removers are used, any damage (including, but not limited to: adhesive failure, indentation, bubbling, delaminating, etc.) is the responsibility of the company using the adhesive remover, and is not covered by the Novalis warranty.

3. INSTALLING NOVALIS TILE AND PLANK

3.1 Layout and fitting

3.1.1 When using more than one carton, make sure that the cartons are all the same dye lot. Different lots may have a variation in color, texture or gloss so they should not be mixed in the same room.

3.1.2 Novalis square tile products are designed to simulate real stone and tile floors and can be installed in a variety of patterns including a grid ("point to point"), ashlar ("brick") diagonal, and so on. Tile products shall be laid all in the same direction. Do not quarter turn. Novalis plank simulates wood planks, and can be installed in the same pattern as a wood plank floor in a random pattern, staggered design, diagonally, or other designs.

3.1.3 Lay out the job and snap lines as you would for any other floor tile installation. Dry lay a section of floor to be sure pattern is centered in the room, and to be sure the pattern is agreeable to the customer before spreading adhesive. Border cuts should not be less than six inches for square tile products. Planks should not be cut less than 9 inches long, or less than half the width of the plank. Avoid small pieces in border areas, and adjust the lines as needed to achieve the proper pattern.
3.1.4 Novalis products can be cut using a tile cutter or a utility knife. Keep knife blades sharp for easy, accurate, safe cuts. Fit tiles using the same methods as other floor tiles (overlap, pattern scribe, wall scribe, freehand). Avoid heating tiles when cutting. If it is necessary to heat tiles, heat very slightly from the back.

3.2 Adhesive selection

Adhesive shall be an approved manufacturer adhesive for luxury vinyl tile & plank and adhesive manufacturer's instructions shall be consulted for proper mixing, trowel notch size, open time, working time, rolling the installed tile and curing time.

** Disclaimer: Novalis will not be responsible for any loss of bond; contact the adhesive manufacturer if this problem exists.

4. AFTER INSTALLATION

4.1 Be sure tile is set:

Before leaving the job site make sure all tiles are flat with tight edges. Re-roll the floor or weigh down loose tiles if necessary to assure that the tile is firmly set into the adhesive. Once the adhesive dries it is not possible to re- activate the adhesive

4.2 Clean adhesive residue:

Remove any adhesive from the surface of the tile while wet using a clean white towel moistened with water. Dried adhesive can be removed using a clean white cloth moistened with water or denatured alcohol. Do not pour water or denatured alcohol directly on the floor. If working with Epoxy or Polyurethane adhesive, clean adhesive while still wet according to adhesive manufacturer's instructions. Do not allow to dry on the surface of the floor as it cannot be removed.

4.3 Adhesive curing time:

It is important to allow the adhesive to set before the floor is exposed to foot traffic or point loads. Failure to do so can lead to shifting tiles, adhesive oozing or permanent indentations. Do not allow foot traffic on the newly installed floor for 12 to 24 hours. Do not allow rolling traffic furniture or fixtures on the floor for 24-48 hours.

4.4 Protecting the floor:

It is recommended to install floor coverings after all other finishing operations have been completed. However, if there will be construction traffic on the newly installed floor wait 24 hours and then cover the floor with brown Kraft paper and protective boards if necessary.

4.5 Initial maintenance:

Before turning the space over to the owner, initial maintenance shall be conducted by professional resilient floor maintenance technicians with experience in Solid Vinyl Floor Tile, using maintenance products that are designed to be used on Solid Vinyl Floor Tile. Wait 5 days after installation is completed and thoroughly clean the floor using a general purpose cleaner and a buffing machine or auto scrubber with a green or blue pad. DO NOT USE BLACK OR BROWN PADS! Rinse thoroughly and allow to dry.

a) After initial cleaning is completed the flooring is ready for use. Normal cleaning and slow speed buffing is recommended to extend the life of your new flooring.

b) Where a floor finish is requested apply 3 coats of high quality acrylic floor finish according to label instructions. Be sure to allow the proper drying time between coats