NuVISTA Tile
Rubber Surfacing
Installation / Maintenance Guidelines

NuVISTA Tile Installation

The following pages are guidelines only... please read this manual thoroughly before installing DINOFLEX Rubber Surfacing products.

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SECTION I
MATERIAL STORAGE & HANDLING

General packaging information
All DINOFLEX products are packaged on wooden pallets, covered with a plastic hood, and secured by steel strapping.

On receipt of merchandise:

A) The product in front of you has gone through several quality assurance checks. However, we recommend that you double-check that your order is correct, that no damage occurred during transport, and for any other possible shortcomings. For your own protection, ensure that defective product is identified prior to the start of the installation. Please note that we are not responsible for any installation costs that occur as a result of defective product being installed.

B) If adhesives were exposed to freezing temperatures, place indoors and bring to room temperature before using. Read technical data sheets and material safety data sheets for adhesive. Check adhesive cans for damage that may have occurred during transit.

C) Storage: Store tiles in a dry and clean area. Temperature and humidity changes will cause the rubber to expand or contract.

D) Installation after short term storage: At least 24 hours before starting the installation lay out all tiles on the sub-surface to allow them to acclimate. A tile laid in the morning hours at 32°F (0°C) would be a different size than a tile laid at 68°F (20°C) later in the day. Acclimation is complete when the products have reached their specified dimensions. Refer to the Weights and Measures chart at the back of these guidelines. Short term storage should be considered as two weeks or less.

E) Installation after prolonged storage: During prolonged storage, the tiles in the lower portion of the stack will compress to a greater degree than those in the upper portion. This will show as thickness variations in the products taken from the top of the pallet as compared to those on the bottom. Product dimensions (length and width) may also be affected. A longer acclimation time will be required for product that has had a longer storage time. Exactly how long is very difficult to predict but can take upwards of 48 – 72 hours. The product should be taken off the pallet and distributed throughout the installation area. Acclimation is complete when the products have reached their specified dimensions; check length, width, and thickness periodically until the right dimensions have been reached (see the Weights & Measures chart at the back of these guidelines). **Do not install** the tiles if they are not square and the appropriate thickness has not been reached.

Keep tiles clear of tools and construction materials during acclimation to prevent uneven discoloration.

F) It is important to keep a clean working surface at all times. Protect tiles from dust and dirt.

G) Keep DINOFLEX rubber surfacing dry prior to installation. Moisture will cause adhesion problems.

H) Petroleum distillants (e.g. solvents) as well as liquid animal fats may cause the surface bonding to fail. Test results for other harmful chemicals and compounds are available on request.

SECTION II
TOOLS & ACCESSORIES

A) Tools and safety equipment required:

- DINOFLEX Installation Guidelines
- Safety glasses
- Heavy duty utility knife - Suggested product: CH Hanson Speed Rocker SS, 3 position, fixed blade knife (www.chhanson.com)
- Band saw, jigsaw or reciprocating saw (Suggested blade size – approx. 12-14 teeth/inch or rubber cutting blade)
- Mallet
- Measuring tape
- Transit level and Straight edge
- Caulking gun
- Chalk snap-line
- Heavy duty white chalk sharpened to wedge for marking cuts
- Trowel
  - For fine finish concrete surface 1/8" (3.2mm) V-notch
  - For rough finish concrete 1/8" (3.2mm) Square-notch
  - Disposable plastic spatula for spot gluing
- Carpenter's square
- Perimeter border if required (e.g. 2"x4" treated lumber)
- GeoTextile Landscape Fabric if required (woven type only)
- Duct tape for landscape fabric only

B) Interlocking tubes

The interlocking tubes are made from black polyethylene. Each tile requires four (4) interlocking tubes which are included in every order at no charge.

Interlocking Tube

C) Half tiles

Half Tiles were designed so that full tiles can be installed in a staggered layout. Tiles may also be cut on site.

D) Adhesive

DINOFLEX recommended adhesive:

1) Chemrex Urethane 941 (V.O.C. compliant)
- One component polyurethane adhesive
- 2 gallon pail: 26 lbs (12 kg)
- approximate coverage: 150 sq.ft. (14 m^2) per pail

2) Chemrex Urethane 941 (V.O.C. compliant)
- One component polyurethane adhesive
- 5 gallon pail: 57 lbs (26 kg)
- approximate coverage: 375 sq.ft. (35 m^2) per pail

3) Chemrex Urethane 948 (V.O.C. compliant)
- One component polyurethane adhesive
- 313 ml gun grade: 2 lbs (10 oz tube)
- approximate coverage:
  - 1/8" (3mm) bead = 90 lineal feet
  - 5/16" (8mm) bead = 11 lineal feet

As per BASF Technical Support:
It is not uncommon for a moisture cured urethane product, such as Chemrex CX941, to develop a slight skin on the top surface of the product. The slight skinning can be the result of product getting older, or in the case of newer product, perhaps a poor seal in the lid. Regardless, the product is still good; simply trim the skin and discard. In the case of older product, a thicker skin may have developed, and the viscosity of the overall product may have thickened, also making the application a bit more difficult, but in most cases will still perform.

For detailed information and product use, refer to BASF Product Data Guide, included with adhesive.

E) Finishing kits

The Finishing Kit consists of 4kg rubber granules and 800g polyurethane binder. It is convenient to have on site at the end of the project to make installations look professional and clean. Use the finishing kit to fill in cuts around posts or other obstacles at the end of a project to give a clean finished look.

SECTION III

BEFORE STARTING THE INSTALLATION

The sub-surface must be smooth, clean, and dry.

A) During storage, rubber tiles must be kept dry and adhesive must be stored above 50°F (10°C) in a dry, heated space.

B) Check the ambient temperature:

- Temperature range for adhesive use: between 50°F (10°C) and 104°F (40°C).
- If indoors, in-floor radiant heat should be shut off.
- In all situations, working at the extreme ends of the temperature range will affect curing times, viscosity and pot life of adhesive, possibly resulting in adhesion problems. **For detailed information and product use, refer to BASF Product Data Guide, included with adhesive.**

C) Refer to Section I, D regarding acclimation. Tiles may contract during cooler evenings. For installations taking longer than one day, tightening up of gaps that may have occurred overnight should be done prior to resuming installation. Kick or tap tiles with mallet towards starting position to ensure gaps are removed.
Also note that if large areas are to be installed that will receive direct sunlight, care must be taken to ensure that proper gaps at perimeter are allowed for expansion. It is NOT recommended that tiles be installed if ambient temperature is above 90°F (32°C), as this will result in gaps as the tiles cool.

SECTION IV

PREPARATION OF THE SUB-SURFACE

Dinoflex **NuVISTA** Tiles may be installed over a solid sub-surface such as concrete or asphalt, or over a compacted granular sub-base. In all cases, proper drainage must be provided due to the porous nature of the tiles. This can be achieved by either a well-defined gradient of the surface or well-placed drainage pipe in lower spots.

A) Concrete sub-surfaces
New concrete sub-floors must be thoroughly cured and free from hydrostatic pressure before rubber tiles are installed (a minimum of 28 days after pour). Consult adhesive specifications for allowable moisture tolerance.
If existing concrete is too rough, it can be leveled by sanding or applying a cement based leveling compound (patch), allowing a curing time as recommended by the patch manufacturer. Follow manufacturer's installation guidelines. A pre-manufactured sheet drainage product, such as Enkadrain® by Colbond, can be used as an alternate method of leveling rough or uneven concrete.

B) Asphalt sub-surfaces
This type of surface must be level and free of grease, oil, and other contaminants. Surface should be pressure washed to remove all loose materials and be thoroughly dry before commencing the installation. New asphalt must be cured for a minimum of 14 days. To ensure good adhesion and minimize expansion issues, install a woven Geotextile slip sheet over the asphalt surface.

C) Compacted granular surface
Compacted granular surfaces are defined as dirt or gravel base. Excavate the area to the depth of the thickness plus a minimum of 4". Level and compact the area with a medium to coarse crushed gravel (3/4" minus gravel range). Moisten and compact with a flat plate vibratory compactor to 95% proctor. Depending on the irregularity of the resulting surface, use up to ¼" granular fines to make a smoother surface. A small amount of concrete may have to be added to the fines. Moisten and compact again.

Apply landscape fabric over top of compacted, level sub-surface. Adhere to perimeter containment.

Please be aware that even after proper compacting, over time this type of installation may be susceptible to ground settling.

Heaving or settling of soft ground sub-surface as a result of freeze/thaw is the sole responsibility of the installer and/or owner.

D) Rooftop applications over roofing membrane

Dinoflex tiles are compatible with most EPDM roofing membranes and do not require the installation of a protective intermediate cover in most cases. Please check with your membrane manufacturer for compatibility and warranty confirmation. If necessary, a woven geo-textile slip sheet may be placed between membrane and tiles. (Secure to perimeter borders, being careful not to damage membrane)
Some PVC membranes may not be compatible for use with rubber tiles.

Clear membrane of all loose dirt and debris.

The tiles can be loose-laid and interlocked over the membrane which offers optimum membrane protection without limiting accessibility to the membrane. The interlocking tiles can be removed to access the roof surface for maintenance and repair.

To provide extra drainage when required, site engineer may recommend the addition of a drainage layer. Products such as, or similar to, Enkadrain® by Colbond are suggested (www.colbond-usa.com)

For all rooftop applications, check with an accredited structural engineer to ensure the rubber tiles meet(s) your **roof load and wind lift requirements** for this project. (Refer to the Weights & Measures chart at the back of these Guidelines).

A QUALIFIED INSTALLER OR ROOFING CONTRACTOR IS RECOMMENDED FOR ROOFTOP INSTALLATIONS.

SECTION V

INSTALLATION OF RUBBER TILES

Sub-surface must be flat and clean. Rough spots will prevent tiles from laying flat.

LAYOUT

It may be to your advantage to insert four (4) interlocking pegs into each tile prior to removing from the pallet. Be sure to leave enough tiles without pegs to do your first row of tiles.

Dinoflex tiles may have minor color variation from tile to tile. This is a normal trait of products manufactured from recycled rubber. This color variation in no way affects the quality of the tile and can be minimized by placing these tiles in less visible areas.

Make sure the sub-surface is properly prepared. Determine the area for best layout. For irregular site configurations, a good starting point is often the center. Other installations are best started in the corner along a straight edge.

INTERLOCKING METHOD

(No adhesive required)

A) Installing Along Straight Edge

Place the first tile at your designated starting point, either against a wall or existing border. Align first row of tiles along a straight edge. Make sure that all interlocking holes are facing toward unfinished area. (Do not put any pegs in first row of tiles.)

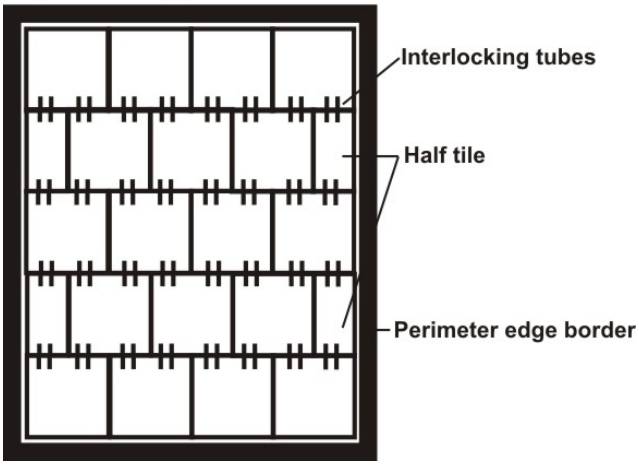
Start second row with a “half tile”, which is simply a full tile cut in half. As you are installing each tile, tilt slightly to ease pegs into existing tile. Tap with mallet to ensure tight fit. Continue installation in a staggered method. Repeat first and second row until installation is completed.

If installing a new perimeter edge border, it is best if you only install two edges (i.e. L shape). This will reduce movement of the tiles while inserting the interlocking tubes.

After tiles are laid, install the last two remaining perimeter borders, making sure they are as tight as possible against the tiles. A mallet is helpful in this process.

The unique interlocking system allows the tiles to be securely fastened to one another.

Figure A - Staggered Installation



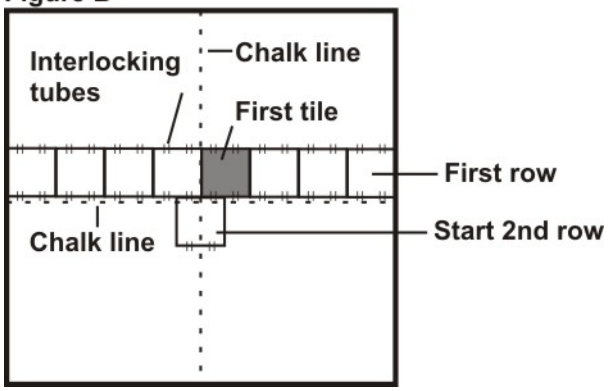
The correct installation of DINOFLEX Rubber Tiles is a staggered pattern to ensure proper alignment, a tighter fit, and reduction of vandalism.

B) Installing Irregular Site Configurations
As reference for installation, measure the designated area and snap chalk lines both length & width at the center of the installation area. These reference lines will serve as a guide for laying the first row of tiles.

Place the first tile at a 90° right angle aligned with the perpendicular center of the chalk lines. Align first row of tiles along this chalk line making sure the interlocking holes are facing toward unfinished areas. Secure this first row of tiles by either spot gluing to sub-surface or creating a temporary border along one edge to hold the tiles in place.

Start second row at center of chalk line lining up with middle of tile above (see diagram below). Continue installation in a staggered method.

Figure B



Refer to Section VI – Measuring & Cutting for cutting irregular shapes.

GLUE DOWN METHOD

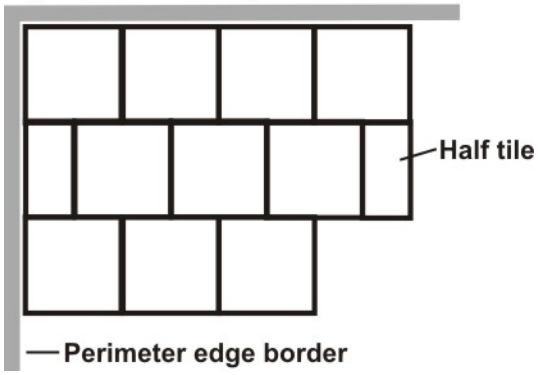
A) Installing Along Straight Edge
Glue the first row of tiles along straight edge. Start second row with a “half tile”, which is simply a full tile cut in half. Continue installation in a staggered method.

Repeat first and second row until installation is completed.

Important: Interlocking tubes should still be used with glue down installation for correct alignment of tiles.

If installing a new perimeter edge border, it is best if you only install two edges (i.e. L shape). See diagram below.
This will reduce movement of the tiles while installing. After tiles are laid, install the last two remaining perimeter borders, making sure they are as tight as possible against the tiles. A mallet is helpful in this process.

Figure C - Installing within new border

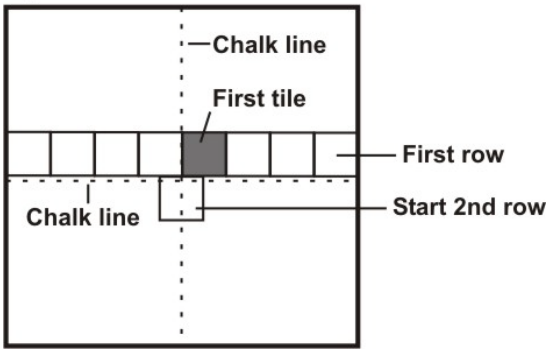


The correct installation of DINOFLEX Rubber Tiles is a staggered pattern to ensure proper alignment, a tighter fit, and reduction of vandalism.

B) Installing Irregular Site Configurations
As reference for installation, measure the designated area and snap chalk lines both length & width at the center of the installation area. These reference lines will serve as a guide for laying the first row of tiles.

Place the first tile at a 90º right angle aligned with the perpendicular center of the chalk lines. Align first row of tiles along this chalk line and adhere to sub-surface.
Start second row at center of chalk line lining up with middle of tile above (see diagram below). Continue installation in a staggered method.

Figure D



INSTALLING ON LANDSCAPE FABRIC OVER COMPACTED GRANULAR BASE

Ensure the ground sub-surface is level and compacted. Install landscape fabric over top of compacted level sub-surface. Provide a minimum of 12" overlap at all joints. Secure overlap with duct tape or equivalent.

Secure landscape fabric to the perimeter border with adhesive, rust proof nails or staples.

SECTION VI
MEASURING & CUTTING

Lay tile on a flat surface, hold the metal straight edge on the cut line, and cut with sharp utility knife, see section II "Tools & Accessories". Keep scoring the cut until separated. Change or snap off blades frequently to ensure clean cuts. For odd angles, circular patterns, and to cut around posts, a cardboard template is suggested. If a large amount of cutting is required, installers may consider using a jigsaw or reciprocating saw. If so, suggested blade is 12-14 teeth per inch, or a rubber cutting blade. Depending on thickness and length of cut, inserting a small wedge into start of cut will help to minimize any binding on the blade.

Make sure that you measure carefully so that the tile will fit properly and does not leave gaps, resulting in the installation being out of alignment.

SECTION VII
ADHESIVE
A) General

- Please read BASF Product Data Guide thoroughly before starting with the installation.
- Moisture is the single greatest cause of bonding failure.
- Higher temperatures and humidity cause the adhesive to cure faster.
- Use safety glasses, rubber boots, and rubber gloves when applying adhesive.
- For first aid and safety instructions refer to BASF Product Data Guide.

B) Applying Adhesive

Wear gloves at all times when applying adhesive. Do not allow adhesive to cure on your hands.

All substrates must be structurally sound, smooth, clean, dry, and free from dust, loose material, grease, oil, wax, sealers, curing agents, and other foreign materials. Apply adhesive with appropriate size trowel when spreading on sub-surface. Adhesive may also be applied directly to back of tile using a plastic spatula. (See Section II – Tools and Accessories) Be sure to apply to all points that will contact sub-surface.

When applying adhesive, glue must be spread evenly on sub-surface or on back of each tile to avoid differences in tile height. Allow 48 hours setting time. Avoid heavy traffic during curing time.

DO NOT GET ADHESIVE ON THE SURFACE OF THE TILES AS IT IS VIRTUALLY IMPOSSIBLE TO REMOVE.

Using mineral spirits or similar products to remove adhesive residue may alter the surface appearance of the tiles. If you choose to use this type of product to remove adhesive, test product for color fastness first using a small amount of mineral spirits applied with a clean, dry cloth. Do not scrub! Any damage to the tiles as a result of adhesive removal is solely the responsibility of the installer.

C) Clean Up Adhesive

Excess adhesive on sub surface or tools should be cleaned immediately as per adhesive manufacturer's instructions. Cured adhesive bonds tightly and is very difficult to remove. **Do not use solvents** on tile surface as they cause deterioration of the bonding compound between the rubber granules.

SECTION VIII

FINISHING KITS – FILLING IN CUTS

After all tiles are in place and secured, spaces around vents, post holes, or structure mounts can be filled. A black, single component, polyurethane caulking can be used for small repairs (e.g. ¼" voids). For voids exceeding ¼" in diameter, the **DINOFLEX Finishing Kit** should be used.

Contents of Finishing Kit:

- 1 can (800g) polyurethane binder 107
- 1 bag (4kg) rubber granules (color to match tiles)
- 1 MSDS for polyurethane binder

A) Mixing

Do not mix the ingredients until installation of tiles is completed. Read MSDS before starting.

If only part of the kit is needed, use this guide:
5 parts by weight of granules to 1 part by weight of binder, e.g. 5 ounces granules to 1 ounce binder.

Take full amount of rubber granules and pour into clean plastic pail, gradually pour binder into mixture, stir while pouring.
The curing time for this product is approximately 20 to 40 minutes depending on ambient temperature and humidity. Mix only what will be used in this time frame. Higher ambient temperatures and humidity will result in a faster curing rate. Do not start installation if weather forecast calls for rain or temperatures below 60ºF (15ºC)

B) Clean up

Use a solvent to clean tools. Clean up any polyurethane immediately using a clean, dry cloth, as it will leave visible traces on tile surface if allowed to cure. Do all mixing away from tile surface to protect tiles from damage.

SECTION IX

GENERAL CLEANING & MAINTENANCE

ROUTINE MAINTENANCE EXTENDS LIFE AND ENHANCES APPEARANCE.

A) The tiles are coated with water-based mold release residue, a natural result of the manufacturing process. This will initially cause slight discoloration and slipperiness. For fast removal, apply a solution of neutral cleaner (e.g. Simple Green) and agitate with brush or mop, then rinse with water. Exposure to sun and rain will naturally remove this residue, but the process may take up to four weeks, depending on local weather conditions.

B) Sweeping and hosing off the surface are the most common methods of keeping the tiles clean. If surface is excessively dirty, apply a solution of neutral cleaner and water and agitate with a brush. Then rinse with garden hose. **Do not use a pressure washer to clean tiles. Do not use solvents of any kind.**

C) Indoor Maintenance

All food and drink should be restricted from indoor applications. Regular dry vacuuming is recommended with occasional damp mopping with very little water. In areas subject to food and drink spillage, the tiles should be cleaned as follows:
Use a wet-vac immediately to remove as much liquid as possible. Scrub the tiles with a soft brush and mild detergent, and then rinse with minimal water. Excess water should be drained into floor drains, or use the wet-vac to clean any liquids that have drained through the tiles. To prevent odor, bacteria growth, etc. all excess liquids must be removed. If necessary, tiles may be removed and cleaned thoroughly. Be sure that tiles are completely dry and free of foreign material before re-installing.

DINOFLEX does not assume any responsibility for damages caused by chemical additives.

SECTION X
WEIGHTS & MEASURES

GENERAL PACKAGING INFORMATION
All DINOFLEX products are packaged on wooden pallets, covered with a plastic hood, and secured by steel strapping.

Product Information – NuVISTA Rubber Tiles:
Thickness tolerance of ± 2.0 mm

24" x 24" = 4 ft² per tile (*61 cm x 61 cm = 0.37 m² per tile*)

Thickness:	Tiles per pallet:	Weight per tile:	Pallet:
1¾" *(44mm)*	88	23 lbs *(10.4 kg)*	48" x 48"
2½" *(64mm)*	80	29 lbs *(13.2 kg)*	*(1.2m x 1.2m)*

Weights and measures may change without notice. All measurements are nominal and subject to variation.

DISCLAIMER
The installation guidelines in this manual represent typical installation work procedures. Every site is different and DINOFLEX does not claim to have covered all possible circumstances.
DINOFLEX Group Limited Partnership does not warrant installation work and specifically disclaims liability for any direct or indirect personal injury, property damage, and other costs or losses resulting from installations or applications by third parties. Please, see the DINOFLEX Limited Warranty for the particulars of warranty coverage relating to DINOFLEX's products