



Installation Instructions for TD2 Floor - Graboplast

RESILIENT SHEET FLOORING

Evolution, EconoSafe, DiamondTECH, SafeDecor, Silver Knight

PART I: BEFORE BEGINNING INSTALLATION

1.1 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in manufacturer's original, unopened containers with labels indicating brand names, colors and patterns, and quality designations legible and intact.
- B. Store and protect materials in a clean, dry enclosed space and protect from the weather and from extremes of heat and cold in accordance with manufacturer's recommendations. TD2 rolls should be stored vertically. Protect adhesives from freezing. Store adhesive, flooring, and accessories in the space where they will be installed for at least 72 hours prior to installation.
- C. Check the flooring material and be sure that they are the correct TD2 product color and quantity.

1.2 ENVIRONMENTAL CONDITIONS

- A. Maintain minimum temperature in the spaces to receive the flooring and accessories of 70°F (21°C) and maximum temperature of 85°F (29°C) for at least 72 hours before and during installation and for one week after installation, including all weekend hours using permanent HVAC system. Permanent heat must be used. Space heaters are not acceptable. Subsequently, maintain minimum temperature of 70°F (21°C) and a maximum temperature of 85°F (29°C) in areas where work is completed.
- B. Perform moisture tests in accordance with ASTM test methods F-1869 Calcium Chloride Test and/or ASTM F-2170 in situ Relative Humidity Test. Three calcium chloride or relative humidity tests are required for the first 1,000 square feet of installation and one additional test for each 1,000 square feet thereafter. When measured in accordance with F-1869, the moisture emission rate should not exceed 5 pounds every 1,000 square feet per 24 hours. The acceptable test result when using test method F- 2170 should not exceed eighty five percent (85% rh) AND pH readings should not exceed 9.0. All test results must be documented and retained. In the event of a product claim, all claims must have written test results submitted. Any claim that does not have written documentation of the above tests being performed and submitted per below will be disallowed.
- C. The subfloor should be vacuumed, debris free, flat and dry immediately prior to beginning installation.

D. A well-lighted interior is needed so the installer can properly prepare the substrate and install the floor.

E. The flooring material sheets must be unrolled and laid out flat for a period of 24-48 hours prior to installation to allow the material to completely relax. Adhesive must also be acclimated to the job site for 72 hours prior to installation.

F. Install resilient flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during installation. No foot traffic for 24 hours after installation and no heavy fixtures or rolling loads for 72 hours after installation.

G. Do not install flooring over concrete slabs until they have been cured and are sufficiently dry to achieve bond with adhesive as determined by the adhesive manufacturer's recommended bond and moisture test. Concrete must be free of curing compounds, adhesives, paint or any foreign substance which would interfere with a good firm bond and have compressive strength of 3,500 psi or greater.

H. Subfloor must be dry.

I. Floor covering should not be installed over expansion joints. Expansion joint covers compatible with floor covering should be used.

J. Do not install floor covering over existing VCT or VAT without using approved underlayment to hide tile seams.

K. Inspect substrate for any contamination, such as oil drippings, cutback adhesives, etc. Encapsulate contamination with an encapsulator before progressing with the installation of the floor covering. The use of solvent-based adhesive removers is NOT recommended. Mapei's Plani Patch Plus and Ardex 15 are acceptable coverings. Self-leveling underlayment's can have very high moisture contents and require longer curing times, some up to 10 days. Check with a moisture meter before starting installation.

PART II: EXECUTION

2.1 INSPECTION

A. Inspect subfloor surfaces prior to installation to determine that they are dry, clean, smooth, flat, free from cracks, holes, ridges, debris and other defects that might prevent adhesion bond or impair appearance and durability of the flooring material.

B. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

C. Perform bond and moisture tests on all concrete subfloors, regardless of age, to determine if surfaces are sufficiently cured and dry as well as to ascertain presence of curing compound. Do not use curing compounds on concrete subfloors.

D. Submit written moisture and concrete pH tests to Architect and General Contractor prior to beginning the installation of the flooring product.

E. Perform bond test at the rate of one per 50 square feet.

F. Do not allow resilient sheet flooring work to proceed until subfloor surfaces are satisfactory. Indicate adverse conditions of any type prior to beginning the installation in writing to Architect, General Contractor, and Flooring Distributor. Do not proceed with installation until adverse conditions are resolved.

2.2 PREPARATION-CONCRETE AND WOOD SUBSTRATES

A. Smooth concrete surfaces. Sand or grind subfloors to remove mortar, paint, and other surface irregularities. Fill low spots, control or construction joints, and other defects. Where leveling is required, apply a Portland cementitious latex fortified underlayment, per manufacturer's recommendations. Apply compound in strict accordance with manufacturer's printed instructions. Do not force dry with heat guns or fans. Remove all debris, sand, and other materials by vacuuming. Failure to remove any debris may result in lack of adhesion and/or telegraphing.

B. Wood floors should be double layer construction minimum 1" total thickness with at least 18 inches of well ventilated air space beneath. Insulate all crawl spaces and protect with a vapor barrier. Do not install over sleeper floors or plywood floors that have been installed directly over a concrete slab. The top layer of a wood substrate must be completely free of knots or other voids in its surface. Unacceptable surfaces include, but are not limited to, plywood with knots, underlayment's made of pine or other soft woods, particle board, Masonite or other hardboard underlayment, hardwood flooring, textured or cushioned flooring, or other uneven or unstable substrates. Cover unacceptable surfaces using a ¼ "or thicker panel underlayment that is designed for the use intended. Follow the manufacturers' written instructions for spacing, nailing, and seam treatment for underlayment panels.

2.3 INSTALLING OVER EXISTING RESILIENT FLOOR COVERINGS

A. To assure that your customer will receive a smooth, flat, indentation resistant TD2 Floor, TD2 flooring should be installed directly over a clean, properly prepared concrete substrate. However, in some cases it may be preferable to leave the existing resilient floor covering in place and go directly over the top (fully bonded single flooring layer only) with the new floor. The performance of the finished floor is directly dependent on the condition and continued bond of the existing resilient flooring. Any irregularities in the existing flooring (such as bumps, depressions, or tile joints) will show through or telegraph, to the new floor. This is especially true for sheet vinyl installations.

B. Guidelines for installation over existing resilient flooring:

a. TD2 products can be successfully installed over most clean, dry, securely bonded properly prepared, non-cushioned single-layer resilient flooring. Do not install over more than one layer. Do not install over an existing resilient floor where the TD2 finished floor will be subjected to heavy rolling loads or static loads such as hospital beds, heavy furniture or fixtures

b. TD2 floors need to be installed over as smooth a substrate as possible. Smooth the existing floor using a latex patching or underlayment compound (also known as "embossing leveler") to fill in any depressions or other imperfections in the existing floor.

c. Make sure the product is recommended as an embossing leveler. Follow the manufacturer's instructions, particularly the proper ratio of powder to liquid and the proper drying time. Do not force dry with heat gun or fans.

d. TechDesign adhesive takes longer to set up when installed over an existing floor.

2.4 GENERAL INSTALLATION PROCEDURES

A. Install sheet flooring and accessories in strict accordance with these written instructions. Install flooring wall to wall before installation of floor set cabinets, casework, furniture, equipment, movable partitions, etc. Extend resilient sheet flooring into toe spaces, door reveals, and into closets and similar openings.

B. Scribe, cut and fit or flash cove to permanent fixtures, walls, pipes, built-in furniture and cabinets, outlets and permanent columns, and partitions. Floor shall be tight to door bucks.

C. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-staining marking device.

D. Tightly cement resilient sheet to sub base without open cracks, voids, raising and puckering at seams, telegraphing of adhesive spreader marks, or other surface imperfections. Roll with a 100-pound roller in the field areas. Hand roll resilient sheet flooring at perimeter and the seams to assure adhesion.

E. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Any use of other adhesives other than a TD2 approved adhesive makes all claims invalid.

F. Lay flooring to provide a minimum of seams. Avoid cross seams, strips, and filler pieces. Match edges for color and pattern matching.

G. Each roll is assigned a production number. Install each roll in sequence beginning with the lowest number to the highest number.

2.5 RESILIENT SHEET FLOORING INSTALLATION PROCEDURES

A. Roll out resilient sheet flooring material with top surface up. Allow material to relax for twenty four (24) hours to forty eight (48) hours.

B. Trim off all damaged ends.

C. Straight edge and under scribe all side and end seams.

D. Fold back sheet half-way. Do not crimp sheet flooring when folding. Spread adhesive with manufacturer's recommended type notched trowel. The trowel acts as a critical measuring and application device that applies the correct amount of adhesive. IF YOU DO NOT HAVE THE CORRECT TROWEL DO NOT SPREAD ADHESIVE. Periodically check trowel for wear and replace worn trowels on average every 1,000 square feet. TD2 Floors does not recommend re-notching trowels by hand. Over porous substrates use 1/16" x 1/32" x 1/32" U-notched – spread rate approximately 300 sq. ft. per

gallon. Over non-porous substrates use 1/16"x1/32"x5/64" U-notched – spread rate approximately 350 sq. ft. per gallon.

E. Unfold sheet into adhesive, allowing for a pattern match.

F. Roll sheet with 100 pound roller. Hand roll all seams.

G. Seam welding methods. Tech Design uses a 4.00 mm welding rod.

1. Heat weld all seams, waiting at least 24 hours after installation to begin.

a. Route material to accept heat weld roll

b. Melt matching welding thread into grooves using heat weld gun.

c. Use guide plate on spatula knife when trimming the weld rod the first time. Wait a minimum of one hour before doing final trim.

d. Each roll is assigned a production number. Install each roll in sequence beginning with the lowest number to the highest number.

2. Where it is not possible to heat weld seams, chemical weld all seams using TD2 commercial seam welding. TD2 Floors highly recommends the heat welding method.

2.6 FLASH COVING

Concrete

If concrete walls are not equipped with a wood ground strip of suitable height for nailing the cap strip and other metal parts, install them with contact adhesive. The concrete should run all the way down to the floor line. It should be smooth, even, free from imperfections that might show through, and thoroughly dry.

Plaster or Wallboard

If walls are sound, rigid, and not springy, the metal cap strip may be nailed to the studs. If the walls are springy or the studs are spaced too far apart, insert a wood ground strip at least 1" wide and thick enough to be flush with the surface of the plaster or wallboard. The top of the wood ground strip should be 1/8" below the top of the cap strip.

The plaster or wallboard below the wood ground strip should extend all the way to the floor line. It should be smooth, even, free from imperfections that might show through, and thoroughly dry.

If the plaster or wallboard does not extend to the floor, extend it with patching plaster or with a suitable wallboard so that it is flush with the face of the wall. Fill all openings between the wood ground strip and wallboard or plaster with patching plaster. Finish smooth and level and allow to thoroughly dry before flash coving the material. **NOTE: If you are using end stops and metal corners, install them before the cap strip.**

1. Cap Strip

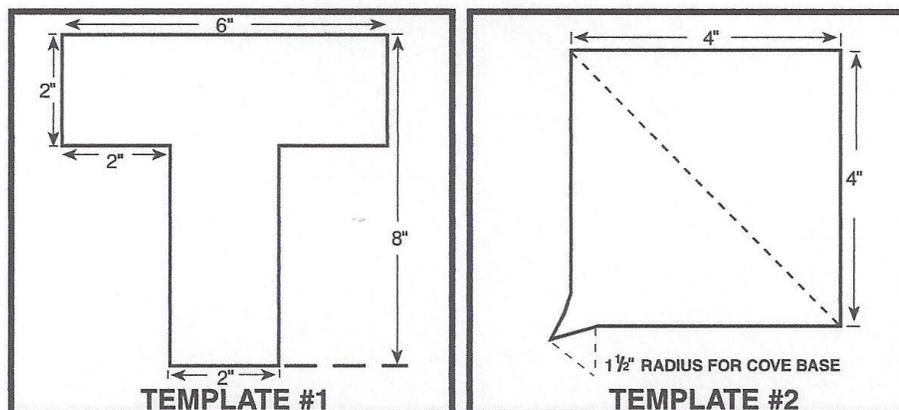
Nail the cap strip to the wall with flathead nails long enough to penetrate into the studs and drive through the middle of the nail slots. The cap strip can also be cemented to the wall with a contact adhesive. The top of the cap strip would be flush with the tops of the corner pieces and end stops if they are used. Otherwise, in each corner, measure the height the material is to be flashed and strike chalk lines between these points for the top of the cap strip. If metal corners are not used, miter the cap strip using a miter box and hacksaw.

— Flash Coving

2. Cove Stick

Cove sticks are made of wood, plastic, or wax. On concrete floors, adhere the cove stick to the wall and floor. Most latex adhesives will work. The cove stick can also be adhered over wood floors or nailed. Sink the nail heads flush so they will not show through the finished installation. Cut corners with a miter box and saw.

3. Material



After the floor preparation is finished and the cap strip and cove stick are installed, you are ready to fit the material. To install a one-piece cove installation without seams, cut in scribing felt or paper to the edges of the cove stick. Butt the edges of the felt pieces together and secure them to the floor. Cut template #1 from scrap material using the measurements as shown. Template sizes may vary according to the height the material is being flash coved. To make template #2, first draw a 4" square on a scrap piece of material. Draw a diagonal line from one corner of the square to approximately 1" beyond the opposite corner. To mark the point on this template, set your dividers using the same radius as the cove stick and swing arcs touching the edge of the squared piece and the diagonal center line. This point will be left on the template and will be used to mark the inside corners. Place template #1 in the inside corner and under the cap strip. With the template pressed firmly into the cove stick, trace around the part of the template which is on the felt paper. The desired fit is a net fit. Fitting the materials too tightly may create buckling on the wall. Repeat this process for the other side of the inside corner and all other inside corners. When marking the inside corners, make an allowance for one piece of material fitting against the other by inserting a scrap piece between the wall and the template. Make the allowance on

the side of the inside corner that will go into place last. With template #1, mark several places along each wall to record the height of the cap strip. Scribe door trims with the dividers and mark the side of the trim with template #1. For outside corners, mark the cap strip on both sides of the corner. Allow a 1/2" to 3/4" overhang on the side opposite the one where the fill piece will be fit for the corner. The fill piece would usually go on the side of the corner that is least noticeable. Along the wall at which the fill piece is to be fit, straightedge a line on the felt paper 1/2" to 3/4" from the wall and parallel to the wall. Draw a line onto the felt extending the 45° angle of the outside corner miter of the cove stick. Mark all lines on the scribing felt. Make crosslines at the seams of the felt to help align the pieces later. Lay out the material to be installed in a larger area and place the felt pattern over it. Be sure any pattern in the material is squared to the room. Connect all the marks with a straightedge, showing where the material will fit under the cap strip. Transfer any door trims or other areas marked with the dividers. At outside corners, mark the piece to extend beyond the corner with a pencil. Using a straightedge, extend the line of the 45° angle approximately 3" onto the vinyl.

On the vinyl, draw a stop cut line parallel to the 45° line and on the side of the 45° line where the fill piece will eventually be installed. The stop cut line should be 1/2" to 3/4" from the 45° line and approximately 3" long. Position the inside edges of a framing square on the vinyl slightly beyond the straightedged line and approximately 3/4" beyond the template location created. Cut on the inside edge of the square from the 45° line to the corner of the square. Continue the cut along the other arm of the square until reaching the intersecting line representing the coved area of the adjoining wall. Hold the knife straight. It is important that these two cuts are square. The fill piece will be squared to butt into this area.

Place template #1 on the lines made on the felt and trace around the part of the template that was in the inside corner. Repeat the process for the other side of the corner.

Lay template #2 on the two lines and draw around it with a pencil. This will mark the inside corner. Do this for all inside corners and other areas marked with template #1.

Complete the outside corner procedure by cutting along the stop cut line from the first cut made and along the lines created by template positioning. Retain the "L"-shaped piece removed to use as a template when making the fill piece later. After all lines have been transferred from the scribing felt, you are ready to cut out the material. Make a small safety cut at the base of the inside corner to prevent tearing. Tape any areas of stress where tears might occur and prepare the room to place the material in it. Spread the adhesive on the floor, over the cove stick and up the wall before the material is placed in the room. Use a brush or roller to spread the adhesive on the walls. After the adhesive is spread, place the material in the room. On most flash coving jobs, you will need at least two people to get the material into place. The material should be locked in at a few key places just inside the door before walking on it. You can sometimes use furring strips or slats under the material as a slip sheet to keep the material out of the adhesive until it is in place. Start tucking in the inside corners, lap the second side over the first, and push the corner into place.

After the flooring is completely seated, start tucking the material under the cap strip. Start in the center of a wall and work to each end, using a heat gun to make the material more pliable and to prevent breakage. Place the side with the allowance against the other piece at the inside corner last. Push the

corners into place and roll the material on the wall with a hand roller. Roll the entire floor with a 100-lb. roller.

MITERED OUTSIDE CORNER

When installing Commercial Felt-Backed and Commercial Vinyl-Backed products, there are advantages to using the mitered outside corner. The mitered outside corner **must** be used when installing Linoleum, POSSIBILITIES Petit Point, and Connection CORLON. To finish the outside corner, mark the section extending beyond the corner with a recess scribe set for an outside scribe. Place a piece of scrap against the wall for the knob of the scribe to ride against. This will make an allowance for the fill piece to miter to the one being marked. Scribe the vertical section to the top of the cove stick.

Take the #1 template and position it along the 45° line on the vinyl, then curve the end up the radius of the cove stick until it joins the bottom of the scribe line just completed. Draw a line along the template. Holding a knife at a 45° angle to the corner, cut down from the top of the scribe line and follow the line just created down the miter of the cove stick and stop the cut at the bottom of the cove stick. Remove the scrap but do not cut the section that is flat on the floor. This will be double-cut when the fill piece is in place. To create the fill piece, use the “L”-shaped template saved earlier. Place it on a piece of extra vinyl. If you are using patterned material, pick up the pattern match from the “L” template. Position the inside corner of a framing square against the “L” template. Mark the length of the fill piece 1-1/2” longer than the pointed end of the template. Mark the height of the fill piece by moving the template along the arm of the square. Remove the template and, being sure not to allow the square to move, cut along the inside edges of the square. Complete the cuts along the marks identifying the top and length of the fill piece. Warm the fill piece and put it in place. Use the recess scribe set for an outside scribe, and scribe the vertical section from the top of the cove stick. Position the #1 template along the 45° line on the vinyl and curve the end up the radius of the cove stick until it joins the bottom of the scribe line just completed. Draw a line along the template. Holding a knife at a 45° angle to the corner, cut down from the top of the scribe line and follow the line just created down the miter of the cove stick. Stop the cut at the bottom of the cove stick. Remove the scrap, but do not cut the section that is flat on the floor. Remove the fill piece and spread adhesive on the wall and floor. Warm the fill piece, put it into place and roll thoroughly. Position a straightedge on the 45° angle line on the vinyl and double-cut through the vinyl from the bottom on the cove stick to the edge of the fill piece.

Remove both pieces of scrap and make sure enough adhesive is under the seam to hold it in place. With the vinyl surface of a scrap piece of material, you can burnish the miter on the wall and around the cove stick cut. You can also use fine sandpaper on the outside corners to remove burrs caused by the recess scribe. The finished area should look like.

V-PLUG OUTSIDE CORNER WITH POINT

When installing lighter materials such as rotovinyl, there are advantages to using the V-Plug outside corner. Install the cap strip and cove stick as described under Mitered Outside Corners. Cut the scribing felt into the room close to the cove stick. The cove stick at the outside corner is slightly rounded at the point and flattened on the miter.

Mark inside corners on the felt paper using the templates. Mark outside corners on the felt paper and transfer to the material. Make a dot on the miter of the cove stick at the outside corner midway between the top and bottom of the cove stick. Lay template #1 with the top right corner aligned with this dot on the cove stick and trace around it. This will be used to relocate the dot on the cove stick when the felt pattern is transferred to the material. Mark the cap strip, inside corners, fixtures, and moldings on the felt paper. Lay out the material and place the felt over it, making sure any pattern on the material will be squared in the room. Transfer all corners, cap strip marks, and any other lines from the felt paper to the material. Use template #2 to mark the inside corners. Connect the lines representing the cap strip. At the outside corner area, draw in the lines that represent the cap strip. Do not score or cut this section. Lay template #1 on the felt paper to relocate the dot on the cove stick. This will locate the point halfway up the outside corner of the cove stick miter. Using a straightedge, cut from this point to the point where the cap strips intersect at the outside corner. Match one side of the V-Plug by placing a scrap piece of material under the side of the plug and align the pattern. Draw a line along this side and along the edge that will fit under the cap strip. If the material does not have a pattern match, you can draw these two lines on a scrap piece of material at any location. Save this piece of material to make the V-Plug. After all lines and marks have been transferred from the pattern, cut out the material, make safety cuts, and tape as necessary.

Spread adhesive and place material in the room as discussed under Mitered Outside Corners. The straight edge that was made now opens to form a "V" on the outside corner. Fill this section with the V-Plug.

Take a strip of scrap material and use template #2 to cut a 45° angle at each end. Using a square, draw a line for the cap strip to include both sides of the corner. Using the strip of scrap material, measure from the side that is to match to the outside corner. Transfer this measurement to the material saved for the V-Plug outside corner.

Draw a perpendicular line from the cap strip line at this point. Using the other end of the measuring strip, measure from the corner to the other side of the "V." From this point, draw a line to the point where the other side of the "V" intersects the perpendicular line. Use template #2 to mark the point of the V-Plug.

Cut out the plug and center a line on the back. Fold the material on this line and use a utility knife to skive away some of the backing. This will allow the plug to conform to the corner. Spread adhesive on the area and put the plug in place. Rub the seam edges together. Apply seam treatments as recommended. The finished area should look like.

V-PLUG OUTSIDE CORNER WITHOUT POINT

When using the V-Plug outside corner without point, the most efficient method is to install the corner first and fit the field material to the corner. This will allow for all of the corners to be cut and fit at the same time. Install the cap strip and cove stick as described under Mitered Outside Corner.

First draw a straight line on a piece of scrap and place a mark the same distance from the line as the distance from the floor to the cap molding. Place the corner of a framing square on the mark and balance points A and B on the line.

Cut out plug and cut 1/2" off the point.

This will bring the bottom of the outside corner halfway up the cove stick when installed.

Skive the backing at the outside corner and install the plug using the proper adhesive. Warm the material with a heat gun to make it more pliable and prevent breakage.

Knife in scribing felt, keeping it within 1/8" of the edges of the plug. Use a divider setting of approximately 1/4" to scribe the corner. Cut out the pattern and fit the field to the plug using the proper adhesive.

2.7 FINISHING AND CLEANING

A. Perform the following initial cleaning operations 24 hours after completion of resilient flooring.

1. Sweep or vacuum floor thoroughly to remove any loose dirt, dust and other foreign materials.
2. Scrub floor surface using a buffing machine with a 450 or less RPM maximum speed along with a solution of lukewarm water and mild cleaner. After scrubbing is complete, wet-vac surface with heavy duty commercial wet vacuum. Rinse floor thoroughly with clean lukewarm water and again wet-vac surface to remove all excess water. Use of a minimal amount of water during cleaning/rinsing is recommended.
3. Do not scrub floor with steel wool pads, wire brushes, aggressive floor cleaners, or cleansers. These products can cause severe scratching and damage to the floor surface.

2.7 PROTECTION

A. Protect resilient sheet flooring against damage during construction period to comply with resilient sheet flooring manufacturer's directions. Keep furniture off the floor for 24 hours. Do not allow rolling carts to be used on the floor for at least 72 hours.