RESOLVE 8.0 & 12.0

Installation Instructions
Vinyl Rigid Core WPC

Products Included	Approved Grade Levels	Approved Installation Methods
Vinyl WPC flooring with click, fold and squeeze locking system.	Above Grade. On Grade. Below Grade.	Floating. Indoor Use Only.

CAUTION: ASBESTOS IN EXISTING FLOOR
Titan Supply Group product does not contain asbestos. Existing installed resilient flooring and asphaltic adhesive may contain **asbestos fillers or crystalline silica**. **Do not sand, dry sweep, dry scrape, drill, saw, bead-blast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphaltic "cutback" adhesive or other adhesive.** See "Recommended Work Practices for Removal of Resilient Floor Coverings" (**rfci.com**) for detailed information and instructions on removing all resilient covering structures.

Owner/Installer Responsibility
The owner is advised to be at home during the installation for consultation/direction. The owner and installer should discuss installation and layout to maximize satisfaction. If this is not possible, consultation should be done prior to installation.
The owner/installer assumes all responsibility for product quality of completed installation.
PERFORM PRE-INSTALL INSPECTION. FOR CLAIMS PURPOSES, YOU ARE ALLOWED TO OPEN UP TO 4 BOXES FOR PRODUCT INSPECTION. DO NOT OPEN ALL THE BOXES. OPENING ALL THE BOXES CONSTITUTES YOUR ACCEPTANCE OF THE PRODUCT. INSPECT ALL THE PLANKS IN THESE 4 BOXES CAREFULLY. EXAMINE FLOORING FOR COLOR, FINISH AND QUALITY. IF YOU DISCOVER THAT PRODUCTS ARE DEFECTIVE, OR IF MATERIAL IS QUESTIONABLE, YOU SHOULD CONTACT THE RETAILER. IF YOU ARE SATISFIED, PROCEED WITH INSTALLATION.
Flooring to be installed in one large area should be purchased at the same time. Product purchased at a later time than the first purchase may vary beyond your expectations.
This product is manufactured according to strict quality standards. In the event that defects are discovered in the field, the industry standards permit a defect tolerance not to exceed 5%. Order an additional 5% (10% extra for diagonal installations) for cutting wastage and plank replacement when the floor is in service.
During installation, inspect the planks continuously. Defects that can be seen from a standing position should be cut off or held out. Installing defective planks implies acceptance.
If You Need More Information
To assure the warranty is not inadvertently voided, before proceeding with any activity that is not covered in this manual, please contact our Technical Support Department.

Acclimation and In-service Conditions
Acclimation of the WPC planks is required 48 hours before installation. Acclimation temperature range is 60°F-85°F and relative humidity (RH) of 40%-60%. Storage condition range is 50° - 95°F. However, the flooring must be installed in the same conditions as the in-service conditions, 60°F-85°F. Boxes should remain unopened until the planks are ready to be installed. Store unopened boxes flat and stacked on top of one another and not be allowed to bend. In-service conditions should be maintained during and after the installation. Three season rooms and cottages which are not continuously maintained to have temperature conditions within the range from 55°F (12.8°C) to 95°F (35°C). It is recommended that you record the installation condition below.

Date: _____
Relative Humidity (%):_____
Temperature (°F):_____
Subfloor Type:_____
Subfloor Avg. Moisture Content (%):_____
Temperature adjustment period: _____

Job Site Condition
Prior to installation, the installer must ensure that at the time of installation, the job site conditions including subfloor/substrate, ambient temperature and relative humidity, and all impacting variables will not negatively affect the floor. Titan Supply Group will decline responsibility for damages associated with improper installation or poor site conditions.

Storage and Conditions

Do not store flooring in uncontrolled environmental conditions. For example, garages and exterior patios are not acceptable areas to store flooring. Handle and unload flooring with care and store within the environmentally controlled site in which it is expected to perform. Flooring stored on concrete slab should be elevated at least four inches to allow air circulation under cartons.

Existing Home

Existing home should have a consistent room temperature of 60°F-85°F and relative humidity (RH) of 40%-60%. Continual extreme deviation from this condition will affect the dimensions of flooring.

New Construction or Remodel

All work involving water, such as pouring basement concrete floors, drywall and plasterwork, plumbing, etc. must be completed well in advance of the floor delivery. Ensure that the building is enclosed. Where building codes allow, permanent heating and/or air conditioning systems should be operating at least five days preceding installation to promote proper acclimation and should be maintained during and after installation. If it is not possible for the permanent heating and/or air conditioning system to be operating before, during and after installation, a temporary heating and/or dehumidification system that simulate normal living (occupied) conditions can enable the installation to proceed until the permanent heating and/or air conditioning system is fully operational.

Your job site should have a consistent in-service temperature range is 60°F-85°F and relative humidity (RH) of 40%-60% which should be maintained continuously thereafter.

Basements and Crawl Spaces - A 6 mil polyethylene moisture barrier or vapor retarder is required on ALL concrete substrates.

Concrete slab or ground must be dry. The ground in the crawl spaces must be completely covered using 8 mil black polyethylene. Crawl space clearance between the earth and underside of joists should be no less than 18 inches and the perimeter vent area should be equal to 1.5% of the total square footage of the crawl space or as mandated by code.

Concrete Subfloor Requirements - ***A 6 mil polyethylene moisture barrier or vapor retarder is required on ALL concrete substrates.***

It must have minimum rated strength of 3000 psi.

pH value between 7 to 9.

It must be level to within 1/8" in a 6 ft. radius or 3/16" in a 10 ft. radius; no bumps or low spots. High spots can be removed by grinding; Gaps greater than 5/32" wide or depression deeper than 1/16" should be filled with patching compound formulated for use in floor installation.

It must be clean; no construction debris, soil, mud and any other objects on or adhering to the floor; if necessary, scrape and sweep away before the installation; no protrusions of nails, debris, metals should remain.

New concrete slab must cure for at least 60 days. It must have a minimum 10 mil polyethylene sheet between the ground and the concrete.

It must meet concrete moisture requirement below.

It must be free from moisture related conditions which can damage the installed flooring.

Concrete Moisture - ***A 6 mil polyethylene moisture barrier or vapor retarder is required on ALL concrete substrates.***

All concrete subfloors should be tested for moisture content and the results documented. Visual checks are not reliable. Perform tests at locations around exterior doorways, near walls containing plumbing, near foundation walls and in the center of the room. Minimum sample size is 3 samples per 1000 square feet of area and one test for every additional 1000 square feet thereafter.

Its moisture content should meet one of the following criteria below:

- 5% when tested using Tramex Concrete Moisture Encounter
- Less than 5 pounds per 1000 square feet per 24 hours when using Calcium Chloride test (ASTM F 1869)
- 85% when using Relative Humidity Testing (ASTM F-2170).

Please note: Concrete moisture content may be acceptable the time of the test. These tests do not guarantee a perpetual "dry" concrete slab. The concrete slab moisture content can vary at other times of the year. We are not responsible for moisture related damage to installed flooring.

Wood Subfloor Requirements - ***DO NOT INSTALL a moisture barrier or vapor retarder on wood subfloors***

It must be clean; no presence of construction debris, soil, mud and any other objects on or adhering to the floor; no protrusions of nails, debris, metals should remain. If necessary, scrape and sweep the subfloor before the installation.

It must be structurally sound and stable; no movements or squeaks; no loose panels or loose nails; no signs of ply de-lamination or other damages. Repair all shortcomings before installation.

It must be flat; no visible bumps or low spots; the subfloor should be flat to within 1/8" in 6 feet radius or 3/16" in 10 feet.

It must be dry.

Plywood or Oriented Strand Board (OSB) Specifications

On truss/joist spacing of 16" (406mm) O/C or less, the industry standard for single-panel subflooring is minimum 5/8" (19/32", 15.1 mm) CD Exposure 1 plywood subfloor panels (CD Exposure 1) or 23/32" OSB Exposure 1 subfloor panels, 4' x 8' sheets. Expansion gap between panels should be 1/8" (3 mm). When subfloor panels spacing is inadequate, cut in the required spacing with a circular saw if the panels are not tongued and grooved. Do not cut in expansion space on joined tongue and groove of panels.

Particle Board or Fiber Board

Only for floating installation.

Existing Floors

Ensure the existing floor is stable, sound and flat. Cracks and openings must be filled with fillers suitable for the existing flooring. Acceptable floor coverings include: solid hardwood, linoleum, terrazzo, ceramic tile. **Large grout joints should be leveled so they are flush with the flooring surface.**

Unacceptable floor coverings include: carpet, needle punch felt, edge glued linoleum and "moisture absorbing flooring."

Radiant Heated Subfloor

This product can be installed over radiant heated subfloor with embedded heating elements. Heating system elements must be separated from the flooring by at least ½ inch distance. Heating system should be set at 70° F and run for 48 hours prior to and during the entire installation. The heating system should be run 48 hours after installation, it then can be gradually increased over the course of 24 hours, until normal operating temperature is reached. Floor temperature should not exceed 85° F. Do not make abrupt changes in radiant heating temperatures.

Moisture Barrier and Moisture Retarder

Concrete Subfloor: For floating installation only, ***a 6 mil polyethylene film or other means with equivalent permeability is REQUIRED.***

Wood Subfloor: Not required.

Underlayment

DO NOT install this product over an additional foam underlayment or cushion as this may cause excessive deflection and movement in the floor and damage the locking system. This will void the product's warranty.

Expansion Gap

Maintain an expansion gap of 3/8" around the perimeter of the floor and around vertical objects. ***Undercut all door jambs.***

Do not place permanently mounted structures such as kitchen counter/cabinet/kitchen islands on the installed floor.

Transition Molding/Expansion Joint - ***Install wall trim lightly over the floor surface. Drive fasteners into the wall and NOT into the floor. When installing transitions or moldings, do not interfere with the free movement of the flooring.***

Maximum continuous installation without transition molding is 65 lineal feet. The limit can be extended to 85 lineal feet providing the expansion gap around the perimeter and other vertical obstruction is increased to ½" wide.

Note: Floor areas interrupted by wall openings greater than 5 ft. wide or interrupted by wall sections extending out of the wall, or floor areas which are not rectangular may experience buckling or gapping if there is excessive floor expansion, shrinkage or movements. It is recommended that transition molding to be installed in such areas.

Wet Areas

This product can be installed in kitchens, mud rooms, powder rooms, bathrooms and laundry rooms. To prevent mold or mildew growth, seal the expansion gaps using waterproof silicone sealant. **DO NOT** use sealant that will harden after curing.

Do not install in saunas, swimming pool areas and other similar extremely hot, cold or wet areas.

Tools and Materials

Basics:

Power saw with no-melt plastic cutting blades, utility knife, chalk line, chalk, pencil, T-square, tape measure, spacers, broom, hand saw, or jamb saw, eye protection, work gloves.

It is possible to cut the plank by scoring it with a sharp knife, then snap it in two. Practice this technique before you use it.

Safety and Health Precautions

Power tools can be dangerous. Operate in strict accordance to manufacturer's operating instructions and safety precautions. Unsafe and improper use can cause serious injuries.

Avoid inhalation and exposures to cutting dust by use of mechanical means and by wearing personal protective equipment.

Wear appropriate personal protective equipment (PPE) which include NIOSH or OSHA approve dust masks, safety goggle and work gloves.

Helpful Pointers

General Tips

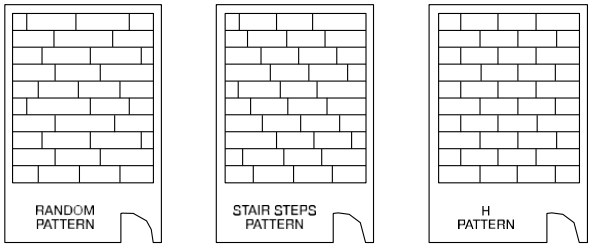
- Make sure your work area is well lit. Good visibility ensures that color is consistent and that visually defective planks are detected and removed.
- Preferred minimum length of the first and last plank is 12". The remainder of the last plank can be used as a starter board on the following rows.
- Using a shorter piece at undercut door jambs will help when fitting flooring in place. Remove upper part of the tongue and use glue when joining ends.

Pre-install Planning

• First, determine how you want the flooring to run. job: Typically for plank products, the flooring runs the length of the room. There may be exceptions since it is a matter of preference.
• To avoid narrow plank widths or short plank lengths near the walls/doors, it is important to do some pre-planning. Using the width of the room, calculate how many full pieces will fit into the area and how much space remains that will need to be covered by partial planks and tiles.
• Lay the first row of planks and tiles along a chalk line and trim to fit the wall allowing 3/8-inch expansion space. If you start the first row with a full width plank, it will be necessary to trim the tongues next to the wall and then place the cut edge next to the wall. Use a utility knife and a straight edge to score the top surface of the plank and then bend it downward to separate. If the starting wall is out of square, it will be necessary to scribe the first row to match the wall, allowing the opposite side of the row to present a true square base for the rest of the floor.
• Use expansion gap spacers to keep the RESOLVE floor a minimum of 3/8 inch away from the walls. You need to maintain a 3/8-inch gap around all vertical obstructions including cabinetry, stone fireplaces, and around doorways. Larger installations require larger expansion space.
• Remove wall base and undercut door jambs. Do not secure individual planks to the subfloor as it is designed to be a floating floor. Do not install cabinets on top of RESOLVE floor. Transition moldings and baseboards cannot be tight
to the floor but must allow the floor to move beneath them. Do not nail or screw transitions or baseboards through floating floor to the subfloor.

Racking Pattern

- There are several options, but the most common one is the random pattern.
- It is important to ensure there is a minimum of **8"-10”** inch joint stagger between the rows.
- Lack of sufficient stagger joint length may compromise the stability of the whole flooring installation.



Expansion gaps around pipes.

- Measure the diameter of the pipes and mark the position on the floorboard. There should be a 3/8 inch expansion gaps between the floor panel and the pipe or other vertical structures.
- Cut out the holes.
- Saw the board widthwise through the holes.

Door frames have to be undercut and should NOT be installed on top of the finished floor.

- Use a floor panel as a guide as to how much to saw.
- Put the floor panel faced down as a guide.
- Saw off the bottom of the door frame to allow the floor panel to slide under it

- In wet areas, seal the perimeter of the flooring.
  Fill the expansion gap with flexible PE foam backer rod, then use 100% silicone caulk to seal the gap. DO NOT use sealant that will harden after cured.

Avoid exposure to direct sunlight for prolonged periods, doing so may result in discoloration. During peak sunlight hours, the use of drapes or blinds is recommended.

Plank/tile Assembly Steps:

Step 1. Making a taping block

Cut a piece of RESOLVE flooring down to about 3 inches by 4 inches leaving the tongue on one side. The side opposite the tongue should be flat as you will be taping this side with a rubber mallet.

Step 2. The First Row

Start by matching the tongue of the short side of a plank with the groove of the short side of another plank. Lock the short end of the plank by inserting the tongue into the groove at an angle and drop it in place. Continue joining the short sides until you have a row of planks and tiles for the length of the room.

Step 3. First Piece of the Second Row

You can often use the leftover piece from the end of the first row to begin the second row. This piece must be at least 8"-10 long. Visually, the installation will look more natural if the starting planks and tiles are a variety of lengths. After installing the first row of planks and tiles, line up the first plank of the second row, so the outside end is even with the outside end of the plank in the first row. Lock the long side of the second-row plank onto the plank on the first row by inserting the tongue of the second plank/tile into the groove on the first plank while holding the plank at a 20-degree angle from the floor. Press the second plank down flat and the tongue will lock firmly into place.

Step 4 Second and Subsequent Planks and tiles in the Second Row

Working firstly with the short sides, align the tongue of the second plank with the groove of the first plank while keeping the long side about a quarter inch away from the first row. Then angle these two pieces up by about 20 degrees. If needed use a taping block to tap the second plank into position three times. First, where the two planks and tiles meet, second across from the joint in the previous row and third at the left side of the plank.

Step 5 Subsequent Rows

Ensure each plank of each subsequent row has at least 10 inches of overlap; that they are fitted brickwork style. This ensures a strong fit. The end joint stagger should be no less than 10”. Inadequate end joint stagger can weaken the floor’s structural integrity, resulting in the disengagement of the plank’s locking profiles.

Step 6 Fitting the Last Row and Doorways

RESOLVE can also be installed with a pull bar or tapping block and rubber mallet or hammer in difficult areas, such as the last row, and when fitting around door trim. Use a pull bar and rubber mallet or hammer to lock the joints together in the last row. Always use a pull bar on the cut edge of the plank/tile. Factory edges can be damaged if the pull bar is used directly against the tongue or groove.

REPAIRS

In the unlikely event that a plank/tile is damaged for whatever reason, the simplest method is to disconnect the planks and tiles carefully (protecting the tongue and groove edges) until the damaged plank can be removed. Then replace the damaged plank with a new one and re-assemble the disconnected planks. This typically works for planks that are close to the two long perimeters of a room. For damaged planks and tiles that are not close to the perimeter, you may have to remove the damaged planks and tiles and insert new pieces without the short and long end grooves.

1. Using a sharp utility knife and a straight edge, cut out the center of the damaged plank by leaving approximately 1 inch strip attached to the adjacent planks and tiles.

2. Carefully cut back from the four corners of the plank to the inside edges. Carefully remove the plank edges from the adjacent planks and tiles making sure the tongues and grooves of the adjacent planks and tiles are not damaged.

3. Using a sharp utility knife, remove the tongue strip on both the long and short ends of the replacement plank. In addition, remove the groove strip of the short end of the replacement plank.

4. Place two-sided carpet tape with one half under the sides of the adjacent planks and tiles where the tongues and the groove of the replacement plank have been removed. Only the top side release paper of the carpet tape should be removed. Leave the bottom side of the release paper in place - NOT taped to the subfloor.

5. Position the replacement plank by engaging the groove of the long side into the tongue of the adjoining plank and pushing down on the other three sides. The carpet tape will hold the replacement plank in place with its adjacent planks and tiles. Use a hand roller to further secure the

Warranty

This flooring product comes with a Titan Supply Group Limited Wear Warranty. The warranty applies to original purchaser of the flooring. It warrants the original purchaser that the finish surface will not wear through for duration of the stated warranty from the date of purchase.

WARRANTY REGISTRATION

UPON RECEIPT OF THIS REGISTRATION FORM AND COPY OF RECEIPT, WE WILL SEND YOU A WRITTEN WARRANTY DOCUMENT. SEND or EMAIL ONE COMPLETED FORM ALONG WITH A COPY OF PROOF OF PURCHASE TO:

TITAN SUPPLY GROUP, INC
WARRANTY REGISTRATION
10340 SW NIMBUS AVE SUITE N-B
PORTLAND, OR 97223

Customer Name	
Customer Address	
City, State, ZIP Code	
Phone/E-mail	
Product Model Number	
Product Description	
Date Purchase	
Retailer Name	
Retailer Address	
City, State, ZIP Code	
Installer	