



Form #004

ETHOS™ MODULAR INSTALLATION AND FLOOR PREPARATION INSTRUCTIONS

General Notes

These installation instructions are general and are not intended to be applicable for all sub-floor conditions. If you have any questions concerning the proper installation (or use) of any Tandus products, please contact Tandus' Installation Services at 800-241-4902, ext. 2129, 2023, or 2670. All products should be inspected for dye lot, style, color, size, quality and shipping damage prior to installation and should not be installed if any irregularities are observed.

It is solely the responsibility of the installation contractor to insure that the sub-floor is properly prepared prior to installation.

Installer Certification

Tandus requires that all installers be certified prior to performing the installation of modular products on actual jobsites. Contact your local Tandus representative for more information on installer certification.

Site Requirements

Tandus modular products are intended for indoor installations on dry, properly prepared sub-floors. The product is not intended for installation on walls, stairs, ramps, outdoors, or on wet surfaces.

Tandus is not responsible for product failure of any kind if these floor preparation and installation instructions are not adhered to. Only installation materials approved by Tandus should be used. Be certain to read and adhere to the shelf life and freeze-thaw stability information that is printed on the label of the installation materials.

Moisture & pH

Excessive moisture and/or high pH on any sub-floor, especially concrete, can cause product failure. For all Tandus products, the maximum allowable moisture vapor emission rate (MVER) from the sub-floor is 3.0 pounds, as tested according to ASTM F-1869-04 (Std. Test method for measuring Moisture Emission Rate of Concrete). The required pH range is 7.0 to 9.0 as tested according to ASTM F-710-05. The In-Situ/RH (relative humidity) requirement on concrete is not to exceed 75% as tested according to ASTM F-2170-02 (Std. Test method for measuring Relative Humidity in Concrete). Industry standards require 3 MVER or In-Situ RH test be performed on the initial 1,000 square feet of each project. In addition, a minimum of one test per 1,000 square feet of either MVER or RH, in any combination, is required for the balance of the project. **Refer to our Technical Services Bulletin "Moisture and pH Testing of Tandus Products" for specific instructions on test methods, ambient conditions, and other requirements.**

Note that moisture vapor emission testing, relative humidity, and pH testing indicate the moisture level and pH of the concrete sub-floor at the time of installation. These tests do not provide static results and both moisture and pH can increase over time. Tandus is not responsible for product failure as a result of changes to sub floor conditions, including increases in moisture or pH levels, post installation. Experience has shown that more accurate and representative MVER, RH and pH testing results can be achieved when the HVAC system is functioning 24/7 for two weeks prior to installation and the indoor air quality has acclimated to occupancy conditions. In cases where the flooring substrate is light weight concrete, or is a Gypsum based leveling compound used as a topcoat over existing concrete, MVER results are not an accurate means of evaluating the conditions of the flooring substrate; therefore, RH will be the only recognized moisture test method.

pH Testing

Preparing the surface of a concrete slab for pH testing requires the following attention to detail. Make sure the concrete surface is adequately cleaned of any adhesives, primers, curing compounds, surface contaminants, etc. Exercise care not to over clean the surface of the concrete removing the thin layer of carbonation. This can result in higher, non-responsive pH readings. Slightly wet the concrete sub-floor surface with a small amount of distilled water and allow the water to stand for one minute. Apply pH test paper to the wet concrete surface and allow the pH test paper to remain in contact with the wet area for one minute. The pH test paper will change color depending on the pH of the wetted surface and a color scale is provided with the pH test papers for comparison. Note pH test paper commonly supplied in MVER test kits only measures up to a pH of 12 accurately.

Installation of Tandus products on sub-floor conditions that exceed the specifications and limitations provided in this document will void the applicable limited warranties. Tandus does not represent or make any express or implied warranties that Tandus floor covering products will or will not affect, prevent or cure any other moisture or alkalinity-related issues that may arise because of the moisture and alkalinity levels found in the concrete. Tandus expressly disclaims such express or implied representations or warranties.

Temperature & Humidity

The temperature of the interior environment, including the sub floor should be no lower than 65°F and no higher than 90°F at least 72 hours prior to, during and after the tile installation. All Tandus products and installation materials should be stored between 65°F and 90°F for at least 48 hours prior to installation. Relative humidity should be no more than 65%.

Floor Inspection

The sub-floor must be structurally sound and dry prior to installation. Any curing chemicals, sealers, finishers or other chemical treatments used on sub floors must be chemically and physically compatible with the Tandus backing and adhesive systems, or they must be removed or skim coated with a Portland cement based product. Chemically abated floors or the use of chemical adhesive removers prior to the application of Tandus backing and adhesive systems can result in product or installation failures and are not recommended nor warranted. If you have questions concerning the compatibility of specific chemicals with Tandus backing and adhesive systems please contact the Tandus Field Technical Service Department at 800-241-4902 ext 2129, 2023, or 2670.

Floor Debris Cleaning

Clean the sub-floor of all excess concrete spots, solid debris or paint spots using suitable scraping methods. Completely remove all wax, dirt, grease, paints or old adhesives (especially cutback or emulsion). DO NOT use solvents or any other chemical adhesive removers to clean the sub-floor. DO NOT use oil-based or silicone based sweeping compound. Contact Tandus for specific floor preparation guidelines including installation over cutback or information on general purpose adhesive.

Floor Patching and Leveling

All sub-floors should be level. Concrete sub-floors should be troweled smooth and should conform to the standard specifications as recommended by the Portland Cement Association. The floor should be flat to within 1/8" in 10 feet. Cracks, holes and depressions can be filled using Portland Cement/Latex fortified patching material. Do not install over loose tile (VAT, VCT or others loose existing flooring substrates).

Floor Cleaning

Sweep and vacuum the floor after patching and debris removal. Do not use oil, wax, or silicone based sweeping compound. Make sure all perimeter areas are clean. Smooth, nonporous floors should be damp mopped prior to product installation. Priming is not recommended for ethos Modular. In cases where floors are more porous it may be necessary to increase the amount of C-EX adhesive to compensate for absorption.

Where existing, non-asbestos containing cutback adhesive is present, remove the old cutback to the substrate. A licensed asbestos contractor in accordance with state and federal requirements should perform removal of asbestos containing cutback adhesive. After the floor has dried completely, install the ethos modular following the Tandus installation procedures.

Installation

Before starting, determine the lay direction of the modular tile based on building design and installation efficiencies. For example, *monolithic* (all going in same direction), *ashlar* (all going in same direction with end joints staggered by 1/2 tile width), *quarter turned* (every other tile is turned perpendicular to the next), *random* (tiles laid without regard to direction).

1. Typically, a room is divided into 4 equal parts (or quarters). Make the centerline by marking the center point of two opposing, parallel walls (usually this is the longest line). Snap a white chalk line between the two center marks. Snap a second cross line at the mid-point of the centerline, perpendicular line. To ensure that the lines are square with each other, use a 3-4-5-triangle method:
 - From the point of the centerline/cross line intersection, measure out and mark *exactly* 3 (feet, yards, etc.) on the centerline.
 - Then starting at the center point of the cross line/centerline intersection, measure out and mark *exactly* 4 (feet, yards, etc.) on the cross line.
 - Carefully measure the distance from the two points. If it is not exactly 5 (feet, yards, etc.), adjust the cross line angle until the measurement is exact. This procedure is very important.
2. Check the distance from each line to its parallel wall and determine how many tiles will be required. Shift the line as needed (in a parallel direction) to balance the width of the perimeter tiles (tiles against the wall). Whenever possible, perimeter tiles should be half-tile or greater.
3. To prevent from walking on the glue, it is best to apply adhesive to the floor area in one of the quarters formed by the crossed lined. Apply C-EX adhesive per label instructions. Adhesive is ready for installing when it no longer transfers to the finger when touched. Adhesive MUST BE DRY prior to installing ethos Tile. DO NOT apply C-EX adhesive over flat cable. C-EX is the only approved adhesive system for use with ethos modular.
4. Use the directional arrows printed on the back of all tiles to make sure all tiles are installed uniformly.
5. Start laying tiles from the intersection point in the center of the floor and install the first line of tiles along the long centerline. Install the second line of tiles along the cross line. Keep all the tiles exactly on the chalk lines. Fit the tiles next to each other by sliding them into place.
6. **DO NOT FORCE THE TILES TOGETHER. COMPRESSION OF THE TILES MUST BE AVOIDED TO ASSURE THAT THE TILE EDGES DO NOT LIFT OFF THE FLOOR PREVENTING CONTACT WITH THE C-EX ADHESIVE. DO NOT TRAP FACE YARN BETWEEN OR UNDER TILE EDGES.** Roll the tiles firmly onto the floor WITH A 75 TO 100 LB ROLLER when properly positioned. Tiles can be removed from the floor at any time for realignment.
7. Continue to install the tiles in a stair-step or pyramid pattern starting from the intersection point. Check to make sure the tiles are properly aligned at the edges during installation.
8. Options for cutting and placing perimeter tiles:
 - ethos tiles are easy to cut and can be placed whole and freehand trimmed snug to fit the wall or door, etc.
 - *Alternatively:* Perimeter can be trimmed to fit by placing a tile (the fill tile) exactly on top of the last full line of field tile. Ensure that the fill tile is oriented properly by checking the arrow on back. Next, place another full tile (the reference tile) against the wall allowing it to fall on top of the fill tile. Use the edge of the reference tile as a guide to cut the fill tile, being careful not to cut through to the field tile. Install the cut tile with the cut edge along the wall. **Avoid compression of wall and door cuts.** Doorways and other permanent objects can be fitted using this method, by making a pattern or by measuring techniques. Provide transition strips on all exposed tile edges.

Other

For installation over substrates not mentioned here, information on exposed edges, air pockets, repairs, more-detailed installation instructions, and/or other installation information, please contact Tandus' Installation Services at 800/241-4902, ext. 2129, 2023, or 2670.