



# KÄHRS ZERO TILE

## STORAGE, HANDLING, PREPARATION, INSTALLATION, POST INSTALLATION PROTECTION INSTRUCTIONS AND GUIDELINES

### INTRODUCTION

CAUTION: THESE INSTRUCTIONS ARE CREATED TO PROVIDE PROFESSIONAL INSTALLERS THE PREFERRED METHODS OF INSTALLATION FOR INSTALLING KÄHRS ZERO TILE FLOORING. IF YOU ARE NOT A PROFESSIONAL INSTALLER, DO NOT ATTEMPT TO INSTALL THE FLOOR.

Kährs Zero Tile is a PVC-free/plasticizer-free tile made for public premises. Zero Tile is made of Enomer®, a flooring material developed by Kährs that provides excellent performance characteristics. It is manufactured from a mix of pure thermoplastic polymers and natural minerals, and features a compact ionomer reinforced wearing surface. Enomer® products are easy to maintain and come equipped with excellent stain and scratch resistance. Zero Tile is specifically designed to meet the durability needs of the healthcare and education sectors but is also suitable for offices and other business premises.

As with all flooring, the long-term performance and ease of maintenance is dependent on compulsory items necessary to extend the floor's life and keep it looking good. Walk off mats at entry ways, proper floor protectors on all furniture, tables and chairs including the correct casters when applicable and furniture moving aids utilized during the moving of heavy items are all key components for peak and long-term performance of Zero Tile.

### STORAGE, HANDLING AND TRANSPORTING OF MATERIALS

Kährs Zero Tile requires care during storage and handling as do all floor covering products, their adhesives and all the ancillary items for floor preparation. It is critical to store the tile in a dry, temperature-controlled interior environment. The temperature range should be no lower than 65° F and no greater than 80° F and the relative humidity should be controlled and maintained between 30-70% RH.

Kährs Zero Tile is packaged in cartons which must be kept squarely positioned on the pallet to prevent distortion of the contents and to be fully supported during storage. Stored cartons must be protected from forklift and other traffic that can damage carton corners. Check specific product instructions to determine maximum carton stacking on pallets, but NEVER double-stack pallets of Kährs Zero Tile.

Handling cartons of Kährs Zero Tile can be heavy and bulky. Always use proper material handling equipment when moving these products. When handling cartons, always use proper lifting techniques and never lift more than you can safely handle. Ensure that products and pallets are fully supported during transportation. Even distribution of the secured material is compulsory in your truck or van to avoid load shifting or movement. Rough handling can damage Kährs Zero Tile before installation. Avoid delays during the installation by simply

exercising care when handling and transporting these products.

## **PRE-INSTALLATION PRECAUTIONS AND CHECKLIST**

Before starting the project, take a few moments and check the flooring materials to ensure that you have the correct pattern, style and color. In addition to checking the flooring materials, make sure the correct adhesive and amount of adhesive required to complete the installation has been ordered.

Most critical prior to commencement of the installation, confirm the correct amount of material with sequential production or run numbers to avoid any deviation in gloss, color, design or pattern. **Kährs will not pay labor charges on claims filed for materials installed with obvious visible defects.** If, during installation, you discover visible defects, stop the installation immediately and contact your sales representative for instructions as how to proceed.

Every job is unique in its expectations and requirements. Prior to commencement of work, be certain of job specific requirements for layout, sequence, seam location/orientation, jobsite limitations, etc. and expectations for completion before starting the job.

## **JOBSITE CONDITIONS**

The environment and the condition of the subfloor play a key role in assuring a successful flooring product installation. If the environment is not climate-controlled or the subfloor is not structurally sound, the chances for a successful flooring installation have radically reduced.

Temperature and humidity play a vital role in a successful installation. Do not install Kährs Zero Tile flooring in any environment that does not or cannot be climate controlled. The permanent HVAC should be operational and should be running continuously three weeks prior to the Kährs Zero Tile flooring installation to not only climatize the environment but sufficiently acclimate the subfloor. The jobsite should be maintained steady at a minimum temperature of 65°F and should not exceed 80°F for a minimum of 72 hours prior to installation, during installation and at least 72 hours after installation, along with the material, adhesives, patch and other temperature/humidity ancillary items or materials.

The range for relative humidity should be between 25% and 65% relative humidity during this time as well.

Even after installation make sure temperature will stays between 60°F to 85°F and the interior environment continues to be a climate-controlled space. Failure to control the interior environment can adversely affect the performance of the flooring along with its adhesives. If subfloor is heated make sure that temperature is steady and temperature changes are smooth, slow and small.

The structural integrity of the jobsite's subfloor is a critical component of the long-term performance of the Zero Tile flooring. The type and method of subfloor construction, grade level, subfloor system and its composition can impact the installation of the Kährs Zero Tile flooring.

Often, local building codes establish minimum requirements and may result in insufficient rigidity, flatness or smoothness.

Structural subfloor systems are comprised of either concrete (or cement-like materials) or wood. The subfloor systems described in these installation guidelines are provided to give flooring installers accurate information to make solid decisions regarding a subfloor system they may encounter on various jobsites. For comprehensive, detailed information regarding each of these systems, contact

The American Concrete Institute or The American Plywood Association.

Other critical details captured when visiting the job site, allows for field measurements, making sure all the other trades have completed their work and are no longer occupying the space and finally making sure that lighting is operating so that both the preparation of the subfloor and flooring installation can both be done in a well-lit area.

**Most important, commencement of the flooring installation means acceptance of the existing subfloor and site conditions on behalf of the flooring contractor.**

## **SUBFLOOR RECOMMENDATIONS & PREPARATION**

### **Concrete Subfloors**

Concrete subfloors must be constructed in accordance with the American Concrete Institute (ACI) 302, 1R-95 Guide for Concrete and Slab Construction. The concrete subfloors must have minimum compressive strength of 2000 psi, a minimum dry density of 115 lb./ cubic foot, minimum concrete mix water/cement ration of less than 0.45 and must be finished and cured according to ACI. Kährs Zero Tile flooring must be installed over concrete subfloors conforming to ASTM F710 for concrete and other monolithic floors.

Concrete subfloors MUST be dry, clean, smooth, flat (no more than 3/16" in 10' or must not exceed 1/32" in span of 12") and structurally sound and free of contaminants such as grease, oils, paint and/or old adhesive. Surface contaminants should be considered any substance that would prohibit or interfere with the bond of the Kährs Zero Tile flooring to the concrete subfloor, such as paints, solvents, oils, existing adhesives and/or curing or parting compounds. Surface contaminants must be mechanically removed, NEVER use chemicals or solvents to remove concrete subfloor surface contaminants.

In addition, surface defects or deficiencies must be corrected before installing flooring product. Low spots, cracks, holes and other irregularities can be patched using a high-quality latex Portland cement patching compound engineered and warranted by the patch manufacturer for this purpose by following their written instructions for mixing and application. Any sanding or grinding that generates dust must be removed using a HEPA vacuum to ensure a dust free subfloor before patching or leveling and installing the Kährs Zero Tile flooring.

Do not install Kährs Zero Tile over expansion joints. Cut the Kährs Zero Tile flooring neatly and uniformly to each side of the joint and carefully fill with an elastomeric polyurethane joint filler or cover the joint with an expansion joint plate cover. Other types of concrete joints such as construction control and/or saw cuts can be filled, smoothed and leveled using an appropriate patching/levelling compound.

**Important Notice Regarding Silicates:** Due to their known bond-breaking properties, Kährs adhesives cannot be applied directly over substrates that have been treated with any type of curing compound that contains silicate material, either entrained or topically applied.

### **Moisture and pH Testing**

Moisture tests should be conducted on all concrete substrates, regardless of age or grade level. Concrete slabs should not exceed **85% RH** as tested in accordance with the latest version of ASTM F2170 (Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in-situ Probes). Moisture vapor emissions from concrete subfloors must not exceed 5 lbs per 1000 s/f using the Calcium Chloride Test Method (ASTM F1869). A pH test should be conducted on all concrete subfloors. The pH level of the subfloor surface shall not be higher than specified for adhesive used. If any one of the limits of the aforementioned tests is exceeded, **do not install Kährs Zero Tile flooring.**

**ALL OF THE TESTING “MUST” BE FORMALLY DOCUMENTED AT THE TIME OF TESTING JUST PRIOR TO INSTALLATION FOR FUTURE REFERENCE IN THE EVENT CONDITIONS CHANGE AND YOU HAVE A FAILURE. THIS STEP IS FOR “YOUR” PROTECTION, DO NOT IGNORE!**

Vapor Reduction Systems can be a viable option when encountering concrete subfloors that have documented excessive vapor emissions, especially when the concrete is 3-6 months old or older. Final determination of a Vapor Reduction Systems' suitability and its warranties in regard to its performance and and/or any damage that may be caused to the Kährs Zero Tile flooring and their adhesives due to deficiencies in the Vapor Reduction System are the responsibility of the Vapor Reduction System manufacturer and the flooring installer.

### **Wood Subfloors**

All wood subfloor systems should be suspended at least 18" above the ground with adequate cross-ventilation. Always cover the ground surface of the crawl space with a suitable vapor barrier. All wood subfloors must be structurally sound, dry and must comply with local building codes. Wood subfloors should be double-layer construction with a minimum total thickness of 1" and must be solidly fastened to appropriately space floor joists. This subfloor should be covered with a minimum ¼" thick APA Underlayment Grade Plywood or other underlayment panel approved and warranted beneath resilient flooring. Follow the panel manufacturer's instructions for panel layout, fastener type, fastener length, fastener spacing and approved panel patching protocol.

### **Existing Resilient Floor Coverings**

DO NOT install KÄHRS products over existing resilient floor coverings. KÄHRS recommends that existing floor coverings be properly removed in order to provide the best possible substrate for the installation of our products.

**Important Notice:** Various federal, state and local government agencies have regulations governing the removal of in-place asbestos-containing material. If you contemplate the removal of a resilient floor covering material that contains, or is presumed to contain asbestos, you must review and comply with all applicable regulations.

### **Specialty Subfloors**

Specialty subfloors that may be suitable for the installation of Kährs Zero Tile include properly prepared ceramic/porcelain tiles, cement based Terrazzo, poured (seamless) floors and metal floors. Always follow your patch/leveling compound manufacturer for guidelines on preparing these substrates to accept Kährs Zero Tile flooring.

Concrete subfloors must be constructed in accordance with the American Concrete Institute (ACI) 302, 1R-95 Guide for Concrete and Slab Construction. The concrete subfloors must have minimum compressive strength of 3500 psi, a minimum dry density of 115 lb./ cubic foot, minimum concrete mix water/cement ration of less than 0.45 and must be finished and cured according to ACI. Kährs Zero Tile flooring must be installed over concrete subfloors conforming to ASTM F710 for concrete and other monolithic floors.

## **ADHESIVES**

**Important Notice:** Kährs Zero Tile MUST only be installed using an adhesive approved by Kährs. The use of adhesives not supplied or approved by Kährs will require the completion of our Alternative Adhesive Waiver, which states that Kährs will not be held responsible for any issues caused by the use of an alternative adhesive, and that the responsibility for warranties and/or performance guarantees for the alternative adhesive will rest solely with the manufacturer and/or supplier of that adhesive.

## **KÄHRS HSA ADHESIVE**

Kährs HSA is a superior, hard-set, high-performance adhesive that is specifically formulated for installation of Kährs LT Xpression and Kährs Zero Tile. It is also suitable for Kährs Zero, Kährs Quartz, and vinyl planks and tiles. Kährs HSA performs well under rolling loads; resists indentation; and develops a strong, durable, moisture-resistant, and alkali-resistant bond. Its low volatile organic content makes it ideal for use in occupied buildings.

### **Where to use**

- Interior institutional (hospitals, schools, universities, libraries, and government buildings).
- Interior commercial (office buildings, hotel rooms/hallways and restaurant dining areas).
- Interior residential (rental apartments, condominiums, and homes).

### **Limitations**

- For interior installations only.
- For use on porous substrates only. Do not use to install over nonporous surfaces.
- Do not install over any substrates containing asbestos.
- Do not apply over any adhesive residues including cutback adhesive.
- Do not install in areas with known hydrostatic moisture, osmotic blistering, or alkali silica reaction conditions.
- Do not use when the substrate temperature is below 65°F (18°C) or above 80°F (26°C), or when the ambient relative humidity is less than 25% or greater than 65%. Ambient room temperature should remain between 65°F and 85°F (18°C and 29°C).
- Do not install when the relative humidity (RH) of the concrete slab exceeds 85% (ASTM F2170).
- Do not install when the moisture vapor emission rate (MVER) exceeds 5 lbs. per 1,000 sq. ft. (6.8 kg per 92.9 m<sup>2</sup>) per 24 hours, when using the anhydrous calcium chloride test (ASTM F1869).
- Do not install if the pH of the substrate exceeds 12.0.
- Do not install unless the surface temperature of the substrate is at least 10°F (5°C) above the dew point.

### **Suitable Substrates**

- Fully cured concrete at least 28 days old and installed according to ASTM F-710 (see "Limitations" section)
- Properly prepared cement terrazzo
- Exterior rated cement-based self-leveling underlayments and patching compounds (per manufacturer recommendations)
- Properly prepared and primed gypsum underlayments that meet the requirements for compressive strength according to ASTM F 2419

### **Surface Preparation**

- All substrates must be structurally sound, dry, solid, and stable.
- Substrate should be clean and free of dust, dirt, oil, grease, paint, curing agents, concrete sealers, loosely bonded toppings, loose particles, old adhesive residues, and any other substance or condition that may prevent or reduce adhesion. If the surface contains these substances, they must be mechanically removed. Do not use chemical means.
- All surfaces must be level to 3/16" in a 10-foot span (4.8 mm in a 3.0-m span), even, flat and smooth. Fill all holes or cracks using a high moisture rated cement-based self-leveling underlayment or patching compound.
- Subfloor should be porous, allowing for installation into semi-wet adhesive. Perform a water droplet test to ensure absorbency.
- Substrate should be clean and free of dust, dirt, oil, grease, paint, curing agents, concrete sealers, loosely bonded toppings, loose particles, old adhesive residues, and any other substance or condition that may prevent or reduce adhesion. If the surface contains these substances, they must be mechanically removed.

Do not use chemical means.

- Note: Choose all appropriate safety equipment before use. Refer to Safety Data Sheet (SDS) for more information.

### **Application**

- Recommended trowel size is 1/16" x 1/16" x 1/16" V-notch (680-ACT). See below for coverage.
- Spread the adhesive evenly over the subfloor, keeping the trowel at a 45-degree angle.
- Determine the flash and working time (see "Application Properties" section). Only apply as much adhesive as can be installed within the working time. Protect the open adhesive from dust and debris, which will inhibit proper bond and decrease tack.
- Periodically confirm the adhesive transfer to the backing by lifting the flooring material.
- Once the flooring is installed, roll flooring with the 100 lb. roller across the width and length of the flooring surface. 11

### **Cleanup**

- Promptly clean any adhesive smudges from the flooring material's surface with water while the adhesive is still fresh/wet.
- Clean tools with water while the adhesive is still fresh/ wet. Clean with mineral spirits once dried.
- PROTECTION
- Protect the finished installation from light traffic for at least 24 hours and from heavy traffic for at least 72 hours.
- Climate control conditions must be monitored and kept within recommended limits to ensure the overall performance and long-term success of the installation.

#### TYPICAL APPLICATION PROPERTIES AT 73°F (23°C) AND 50% RELATIVE HUMIDITY

- Flash Time 10 to 20 minutes (Semi-wet, with some transfer to finger when touched)
- Working Time Approximately 30 minutes.

## **KÄHRS ZERO TILE INSTALLATION PROCEDURES**

### **Layout**

- The layout of large commercial installations of Kährs Zero Tile flooring (large open areas, hallways, etc.), may require the use of a transit, laser or other tools with minimal deviation when striking accurate guidelines.
- Preplanning should enable the layout to be done economically; minimizing waste.
- Installations in long hallways with adjoining rooms should be carefully planned so that one half the tile width or equal tiles are positioned on opposing sides and in doorways with as wide of a cut as possible that allows for a balanced installation.
- Tile size sometimes may have to be altered in the doorways of adjoining rooms to avoid small cuts at the walls in the adjoining rooms or doorways.
- Often, in smaller rooms, the perimeter is highly visible. Care should be taken to attempt uniform cuts on opposing walls. Try to make the cuts on all four walls equal and as large as possible for best results when installing the Kährs Zero Tile.

### **Installation**

1. Before installing Kährs Zero Tile flooring, verify that all the cartons are clearly marked with the same batch/run numbers to avoid any problems during installation.
2. Utilizing the instructions for accurate Kährs Zero Tile flooring layout, follow the lines created for installation

using a stair-stepped, pyramid configuration so that the tiles are installed systematically using the cradle for tile alignment created by the stair-step configuration from row to row. This technique not only simplifies placement of each tile, but enhances accuracy immensely without the burden of extra time.

3. Each Zero Tile has an arrow imprinted on the back showing direction during the manufacturing process. Lay tiles with arrows pointing in the same direction.

4. Tiles should fit net at all edges and align squarely at each corner or juncture of four tiles. If runoff occurs due to uneven subfloor surfaces or undulation, extra care & time must be devoted during installation to manipulate each tile for the best fit. Failure to prep the subfloor/subfloor so that it conforms to ASTM F710 for concrete and other monolithic floors will not only increase your installation time, but will challenge your installation skills. Failure to manage the installation so that it appears to be net and square may also jeopardize the finished project. Again, this issue is not considered a warranty or product defect.

5. Scribe tiles to walls, door jambs, columns, cabinets, floor outlets and other stationary vertical surfaces to produce clean, tight junctures between the tile and the structure, obstacle or stationary vertical surface.

6. Tiles should be centered under doors where the tile meets dissimilar floor finishes.

7. Continue Kährs Zero Tile flooring under any movable partitions, stationary furniture or open cabinets without any disruption to the tile pattern's installation.

8. As the tile flooring is installed, roll in both directions with a minimum 100# three section roller. At the room perimeter, room edges or under toe kicks use a three-section hand roller or under toe kicks a metal seam roller works best. This step is necessary to flatten the trowel ridges so they create a uniform membrane of adhesive for optimum bond and eliminating the risk of trowel ridges telegraphing through the finished floor.

9. Immediately install all reducer/transition strips at unprotected or exposed edges that could be easily damaged where the flooring stops. If for any reason the reducers or transition strips are not available to install, use sacrificial tile remnants or scrapes at the exposed edges by temporarily taping in position to avoid aggravating damage that may require a tile replacement to finish the job.

12. Traditional utility knife blades are recommended for scoring and snapping straight cuts of the Kährs Zero Tile flooring. Traditional utility knife blades or tile cutters may be used.

#### **WARNING:**

DO NOT LEAVE HEAVY OBJECTS SUCH AS THE ROLLER, ADHESIVE BUCKET, CARTS, TOOL BOXES, CARTS OR DOLLIES WITH SMALL CASTERS OR WHEELS ON THE FINISHED FLOOR AFTER INSTALLATION.

#### **POST INSTALLATION PROTECTION**

1. Protect the newly installed Kährs Zero Tile from foot traffic for 24 hours. Prohibit heavy traffic and rolling loads on the flooring for a minimum of 72 hours after installation.
2. Confirm or equip all furniture, appliances, carts and any other moveable equipment with soft, wide, non-staining casters or floor protectors with a minimum wheel width of 1" to protect hard surface flooring from the effects of rolling and static loads.
3. Always use runways made from at least 1/4" plywood or 1/4" Masonite™ to protect flooring from damage that may occur when moving heavy objects directly over the flooring. You may also use furniture moving aids or specialty equipment designed specifically for the use of moving large objects without damage to the floor. AIRSLED® would be an example of that type of equipment.

4. If the project is still under construction the floor should be protected from other trades during construction. Be cautious with protective coverings over installed floors that might stain, yellow or stick to the flooring.
5. To avoid large chards, stones, construction debris or heavy soil, shields can be taped to each other, **but never tape anything directly to floor covering**. Also, if large plywood formats are to be used on the paper, again tape its edges to the paper to avoid an accumulation of dirt or debris under the plywood's edge. Heavy traffic could embed the debris into the flooring's surface causing permanent damage.
6. Avoid flooding or washing the newly installed Zero Tile flooring until the adhesive has fully cured-approximately 5-7 days, or longer depending on room temperature and the temperature of the underfloor. Stripping is not required nor is it recommended for initial cleaning.
7. Please note that the initial cleaning of an installed Kährs Zero Tile flooring is essential before occupancy. Failure to clean thoroughly and properly at this time will make routine maintenance more difficult. (PLEASE REFER TO THE KÄHRS MAINTENCE GUIDE FOR DETAILED INSTRUCTIONS ABOUT CLEANING AND MAINTAINING KÄHRS ZERO TILE FLOORING)
8. Sweep or vacuum thoroughly to remove all dust, dirt, loose grit, soil and debris.
9. If the flooring was subjected to excess dirt, soil and heavy traffic before the initial maintenance, use a neutral cleaner mixed according to label instructions with clean potable water. DO NOT USE ABRASIVE CLEANERS.
10. Use a standard scrubbing machine or an automatic scrubber equipped with the proper color of pad for the soiling to be cleaned. Test to make sure the pad selected does not damage the floor's surface.
11. Rinse using a clean mop and clean water. Change rinse water often to avoid leaving a dirty residue.
12. Tile flooring is not watertight because of the unseamed seams. Avoid excessive amount of water and take care of proper drying after using water. Floor shall not be left to dry naturally.



**PRODUCT SIZE AND PACKAGING INFORMATION**

Tile Size: 20" x 20" (500mm x 500mm)

Thickness: 0.08" (2mm)

Weight: 0.70 lbs/ft<sup>2</sup> (3400 g/m<sup>2</sup>)

Area per Package: (20 Tiles) 53.8 ft<sup>2</sup> (5 m<sup>2</sup>)

**Kährs International**

**317 Northlake Boulevard, Suite 1016**

**Altamonte Springs, FL 32701**

**1-800-800-5247**

**[www.kahrs.com/en-us/](http://www.kahrs.com/en-us/)**