KÄHRS ZERO SHEET / ZERO & GREEN

NOTICE: These products were previously known under the brand name “Upofloor” and are now sold under the “Kährs” brand name in the Kährs Commercial Flooring division. The products themselves have remained the same.

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 SHEET FLOORING. IF YOU ARE NOT A PROFESSIONAL INSTALLER, DO NOT ATTEMPT TO INSTALL THE FLOOR.

Kährs Zero Sheet and Kährs Zero & Green are PVC-free Contract Sheet Flooring is designed for public premises. Zero floorings are 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 is equipped with excellent chemical, stain, and bacteria resistance that withstands the toughest use. It is ideal for heavy traffic and load areas including healthcare facilities, schools, offices, department stores, day care centers, and retirement homes.

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 sheet 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 Zero sheet 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 sheet is packaged in rolls which must be stored on ends with steps taken to protect and secure the rolls from falling. Stored rolls must be protected from forklift and other traffic that can damage the rolls. Handling rolls of Kährs Zero sheets can be heavy and bulky. Always use proper material handling equipment when moving these products. When handling rolls, always use proper lifting techniques and never lift more than you can safely handle. Ensure that the rolls 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 sheet before installation. Avoid delays during the installation by simply exercising care when handling and transporting the packaged rolls.

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 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 sheet installation to not only climatize the environment but sufficiently acclimate the subfloor. The jobsite should be maintained close steady range of 5^{o}F at a minimum temperature of 65^{o}F and should not exceed 80^{o}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^{o}F to 85^{o}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 Kährs Zero 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 sheet flooring.

Do not install Kährs Zero sheet flooring over expansion joints. Cut the 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 sheet 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 Sheet 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.

Removal of Existing Resilient Floor Coverings
WARNING: Do not sand, dry-sweep, dry-scrape, drill, saw, bead blast or mechanically chip or pulverize existing resilient flooring, backing, felt lining or asphaltic "cutback" adhesives. These products may contain either asbestos fibers or crystalline silica. Avoid creating dust. Inhalation of such dust containing asbestos fibers or crystalline silica may cause cancer and respiratory tract diseases. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the product is a non-asbestos containing material, you must assume it contains asbestos. Regulations may require that the material be tested to determine asbestos content. A brochure from the Resilient Floor Covering Institute entitled *Recommended Work Practices for Removal of Resilient Floor Coverings* provides a defined set of instructions for removing all resilient floor covering types

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.

Mold and Mildew

Prior to removing an existing resilient floor following the RFCI Recommended Work Practices for Removal of Resilient Floor Coverings (unless state or local law requires other measures) or installing a new floor, if there are visible indications of mold or mildew or the presence of a strong musty odor in the area where resilient flooring is to be removed or installed, the source of the problem should be identified and corrected before proceeding with the flooring work. In virtually all situations, if there isa mold issue, there is or has been an excessive moisture issue. Visible signs of mold or mildew (such as discoloration) can

indicate the presence of mold or mildew on the subfloor, on the underlayment, on the back of the flooring, and sometimes even on the floor surface.

If mold or mildew is discovered during the removal or installation of resilient flooring, all flooring work should stop until the mold/mildew problem (and any related moisture problem) has been addressed. 5 Before installing the new resilient flooring, make sure the underlayment and/or subfloor is allowed to thoroughly dry and that any residual effect of excessive moisture, mold, or structural damage has been corrected. To deal with mold and mildew issues, you should refer to the U.S. Environmental Protection

Agency (EPA) guidelines that address mold and mildew. Depending on the mold or mildew condition present, those remediation options range from cleanup measures using gloves and biocide to hiring a professional mold and mildew remediation contractor to address the condition. Remediation measures may require structural repairs such as replacing the underlayment and/or subfloor contaminated with mold and mildew as a result of prolonged exposure to moisture.

The EPA mold guidelines are contained in two publications **"A Brief Guide to Mold, Moisture and Your Home"** (EPA 402-K-02-003) and **"Mold Remediation in Schools and Commercial Buildings"** (EPA 402-K01-001). Appendix B of the "Mold Remediation in Schools and Commercial Buildings" publication describes potential health effects from exposure to mold, such as allergic and asthma reactions and irritation to eyes, skin, nose, and throat. These publications can be located on EPA's website at www.epa.gov/iaq/molds

Specialty Subfloors

Specialty subfloors that may be suitable for the installation of Kährs flooring 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 Sheet flooring must be installed over concrete subfloors conforming to ASTM F710 for concrete and other monolithic floors.

IMPORTANT NOTE: Remodel Installations

During health care and other critical heavy use remodel installations Kährs Upofloor PVC-free flooring products may be selected as the new commercial flooring.

These environments could have PVC and other floor coverings in place requiring removal. When these existing products were installed, solvent containing adhesives with other then acrylic base formulations were very commonly used. These adhesives often contained alcohol, mineral spirit, and even phthalate components to facilitate bonding to the back of the PVC flooring product.

Another commonly encountered adhesive residue is styrene butadiene rubber (SBR) used for broadloom and modular carpet, VCT and even linoleum. This adhesive formulation contained an oil residue again to aid in material bonding.

While many underlayment providers mention that scraping off these non-water-soluble adhesive residues to a thin, firm, film is adequate for a skim float encapsulating of the existing film. The thin layer of skim float is not an adequate barrier to prevent migration of residual solvents or oils that can have a

detrimental effect on PVC and phthalate free flooring. The sandwich of a possible bond breaking old adhesive coat under a very thin skim of patching material can and will present problems under heavy dynamic load situations under any resilient flooring material.

Neither do these thin layers offer an adequate blotter layer for the wet / tacky installation systems required for Kährs Upofloor and other PVC-Free flooring products.

When impossible to fully remove adhesive residue is encountered, they must be addressed through the use of fully encapsulating high bond strength systems which include an 1/8" thick minimum cement-based topcoat placement.

ADHESIVES

Important Notice: 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 5900 TRANSITIONAL

Kährs 5900 Transitional is an acrylic-based adhesive formulated with high bond strength and shear resistance. It offers excellent initial tack that transitions to a firmer bond and has very low odor for installations in health care facilities, schools, and offices. It is made with a broad-spectrum antimicrobial to improve mold and fungal resistance.

Site Preparation: Suitable substrates include above, on or below grade concrete (within moisture and alkalinity specifications), APA underlayment grade plywood and radiant heated floors (85ºF and below). All substrates must be flat, clean, smooth, and dry, free of waxes, existing adhesives, dirt or dust, grease, oil, solvents, paint, curing compounds or sealers. Do not use on chemically cleaned substrates or over treated plywood substrates.

The installation site must be acclimated with HVAC in operation. The floor and room temperature, as well as flooring materials and adhesive, must be maintained at 65°- 85° F, and the humidity between 40% - 65% for 48 hours prior to, during, and after the testing and installation.

Moisture Limits: Moisture Limits: 85% Relative Humidity as measured per the latest version of ASTM F2170, pH of 8.0 - 10.0. Impedance meter readings should not exceed 4%. All substrate preparation and testing procedures must conform to appropriate ASTM guidelines and comply with the specific floor-covering specifications.

NOTE On concrete floor porosity: substrate should have some porosity, allowing for installation into semi-wet adhesive. Perform a water droplet test to ensure absorbency. Porous concrete will absorb the droplet within 1 minute. Non-porous concrete will absorb the droplet in times greater than 3 minutes.

Kährs Upofloor Zero Sheet should not be directly installed on subfloors considered impervious to adhesive moisture absorption. This includes existing resilient flooring, epoxy underlayments, and similar materials.

Porous substrates: Flooring may be placed into adhesive after 15 - 30 minutes open time (flash-off) over a porous substrate. Loss of adhesion can result if the flooring is not installed within the working time of the adhesive; not more than 40 min depending on temperature and humidity. Roll the installation in both

directions with a 100 lb. 3-section roller immediately after flooring is placed and positioned, ensuring complete contact with the adhesive and transfer to the back of the flooring material.

Non-porous substrates: Zero sheet should only be installed over substrates with some porosity. Flooring may be placed into adhesive after 20 - 40 minutes open time (flash-off) over a non-porous substrate. Loss of adhesion can result if the flooring is not installed within the working time of the adhesive; not more than 45 min depending on temperature and humidity. Roll the installation in both directions with a 100 lb. 3-section roller immediately after flooring is placed and positioned, ensuring complete contact with the adhesive and transfer to the back of the flooring material.

Application: Zero sheet should only be installed over substrates with some porosity. Flooring may be placed into adhesive 6 after 15-30 minutes open time (flash-off) over a porous substrate, while the trowel ridges are still semi-wet, opaque, and transfer to the finger when touched. Loss of adhesion can result if the flooring is not installed within the working time of the adhesive. Roll the installation in both directions with a 100
lb. 3-section roller immediately after the flooring is placed and positioned, ensuring complete contact with the adhesive and transfer to the back of the flooring material.

Working Time: Up to 1 hour depending on temperature, humidity, and substrate type.

Trowel Size: 1/16" x 1/32" x 1/32" U-Notch (Coverage = 220 - 260 square feet per gallon) or 1/16" x 1/16" x 1/16" V-Notch (Coverage = 150 - 200 square feet per gallon).

Traffic: Restrict foot traffic, furniture placement, and rolling loads for 24 hours after installation. Additional time may be necessary if the installation is over a non-porous substrate. Allow at least five days following the installation before conducting wet cleaning procedures or initial maintenance.

Clean Up: Use a clean wet cloth to clean up adhesive while still wet; dried adhesive may require the use of an appropriate solvent.

Shelf Life: 1 year from manufacturing date in unopened, properly stored container. Avoid excessive heat or cold. Protect from freezing.

INSTALLATION PROCEDURES - GENERAL RECOMMENDATIONS

1. Preplanning should enable the layout to be done economically, minimizing waste.

2. Kährs Zero sheet flooring requires that **"ALL"** seams be heat welded, regardless of their location in the installation including the flat seams on the floor, vertical seams on the wall as they transition through the coved areas, including all inside and outside corners. When heat welding is executed correctly it creates a flooring installation that is ideal for health care environment. Again, there is no chemical welding with Kährs Zero sheet. **"ALL"** seams must be heat welded.

3. Before cutting Kährs Zero sheet flooring for an area larger than one roll, make sure that the rolls intended for the installation are from the same manufacturing batch, the rolls are installed in numerical sequential order, the cuts are installed in the order they are cut from each roll and are installed with the directional arrow (found on the back of the Kährs Zero sheet flooring) pointing in the same direction for each cut. Avoid cross seams if possible.

4. Always avoid quarter turning to avoid shade matching (laid at right angles to each other).

5. Plan the layout of seams so they fall at least 6” from wood underlayment joints, seams in existing resilient flooring and/or saw cuts in concrete. DO NOT INSTALL over expansion joints.

6. Once the layout has been determined, you should make rough cuts of the Kährs Zero sheet flooring material so they may become conditioned to environment’s temperature and humidity. This step allows the material to “relax” and makes it easier to handle, fit and install.

7. When making rough cuts, make sure to add at least one inch on each end of the cut to allow excess material for accurate fitting and accommodating “out of square” wall.

FITTING PRACTICES

1. Recommended fitting procedures for Kährs Zero sheet flooring include free hand knifing, pattern scribing and direct scribing.

2. Complex, tight, and precise installations may require the use of pattern scribing techniques.

3. Often, the installation may not require the concise fit that pattern scribing provides but may utilize in areas where an accurate fit is imperative, a direct scribe method for that specific area only.

4. Finally, installers will utilize an employee free hand knifing when the installation provides elements that allow a “close” fit. Most flooring installations typically have a restrictive molding at the perimeter of the room such as cover base or shoe molding.

5. Occasionally installers will find that utilizing all three methods is the most efficient approach to a quality installation.

INSTALLATION PROCEDURES

1. Always, sweep or vacuum the space to receive flooring before positioning and fitting the sheets of flooring. Then position the first sheet in the room and employee the chosen technique/techniques to fit so that the material lies flat on the floor. Before fitting, position your roller, water bucket, adhesive bucket, or sandbags on the sheet of Kährs Zero to avoid any movement of the sheet while fitting.

2. Using a straightedge and utility knife with a new straight razor blade (remove oily film from blade before using to avoid contamination of the seam) or an edge trimmer cutting approximately 1/2” from the factory edge. This step is necessary to remove potential edge-curl created by compression from the rolls being stored on end on edges that will be seamed. If using a utility knife, always cut with the fall off on the same side as the cutting hand and holding the knife at a 90° angle to the subfloor to ensure a square cut.

3. Using a sharp pencil, carefully draw a pencil line on the subfloor the length of the trimmed factory edge that has been cut for a seam. Position the point of the pencil at the base or bottom of the Kährs Zero sheet’s trimmed factory edge that has been cut for a seam to avoid any contamination of the seam’s edge from the pencil lead. This pencil mark serves several purposes during the course of installation. a. It is an accurate boundary for adhesive when it becomes necessary to thoroughly adhere the flooring completely to the edge b. It provides an easy-to-use guideline when positioning the sheet into the adhesive assuring that it is placed exactly in the same location before folding back to spread adhesive.

4. Cut the second sheet to allow for at least 1-inch additional material on each end for trimming. Overlap sheet #2 onto sheet # 1 (sheet one has been fitted and factory edge trimmed for seam) at least 1” for cutting the seam. Again, utilize any weights on the job site to hold sheet #2 firmly in position while fitting.

5. Then repeat steps 2-3 to complete the process for sheet 2.

6. After the material has been fit, it will be necessary to tube or lap back half of the fitted sheets to expose the subfloor for adhesive application. When folding the material back use caution. Do this step in a fashion to avoid sharp kinks and/or creases using a wide radius at the fold. Any kinks or creases could permanently damage the flooring and/or could create visible distortion on the installed flooring's surface.

7. Again, sweep, vacuum or damp mop the area to receive the adhesive and use a horsehair broom or duster to remove any dust, debris and/or dirt from the flooring's back while folded back.

8. Starting at the flooring's fold (make sure the adhesive line at the fold is straight, often the installer may follow the line created by the shadow of the fold) begin spreading the selected adhesive using the appropriate trowel notch and work towards the end wall opposite the fold and covering the pencil line where the two sheets overlap and up to the pencil line of the trimmed factory edge of the second sheet. Spread the adhesive over 100%of the exposed, designated area with no skips, misses, voids, or puddles.

9. Maintain uniform coverage of the adhesive by keeping the trowel notches clean (a water bucket to soak trowels between spreads is an easy, efficient technique to maintain clean notches) and always hold the trowel as close to a 90° angle to the subfloor for an ideal trowel ridge (holding the trowel with your thumb on the rib of the trowel prevents lowering of the angle of the trowel that can radically reduce the correct amount of adhesive spread).

10. Reference the adhesive application instructions for proper open time determined by the subfloor's porosity and atmospheric conditions (if not sure, porosity can be determined by dropping water on the subfloor, if dry within five minutes it is considered porous). Once the recommended open time has been provided, carefully roll the first sheet forward into the adhesive, using the pencil line as a guide at the seam line while pushing the fold into the adhesive to avoid trapping unwanted air under the flooring. DO NOT drop or flop the material into the adhesive to avoid air under the flooring. Follow the same procedure for the second sheet. Starting at the center of each sheet, begin working toward the edges with your roller. Roll the flooring in two directions with 75-100 lbs. 3-section roller immediately after the flooring is placed and positioned, ensuring complete contact with the adhesive. Make sure when rolling that you stay at least two inches away from the overlap at the seam and from the glue line at the fold.

11. Starting at the flooring's fold (make sure the adhesive line at the fold is straight, often the installer may follow the line created by the shadow of the fold) begin spreading the adhesive using the appropriate trowel notch and work towards the end wall opposite the fold and covering the pencil line where the two sheets overlap and up to the pencil line of the trimmed factory edge of the second sheet. Spread the adhesive over 100%of the exposed, designated area with no skips, misses, voids, or puddles.

12. Maintain uniform coverage of the adhesive by keeping the trowel notches clean (a water bucket to soak trowels between spreads is an easy, efficient technique to maintain clean notches) and always hold the trowel as close to a 90° angle to the subfloor for an ideal trowel ridge (holding the trowel with your thumb on the rib of the trowel prevents lowering of the angle of the trowel that can radically reduce the correct amount of adhesive spread).

13. Reference the adhesive application instructions for proper open time determined by the subfloor's porosity and atmospheric conditions (if not sure, porosity can be determined by dropping water on the subfloor, if dry within five minutes it is considered porous). Kährs Zero should be installed into "semi-wet" adhesive, with transfer to finger when touched. Once the recommended open time has been provided, carefully roll the first sheet forward into the adhesive, using the pencil line as a guide at the seam line

while pushing the fold into the adhesive to avoid trapping unwanted air under the flooring. DO NOT drop or flop the material 9 Photo 6 into the adhesive to avoid air under the flooring. Follow the same procedure for the second sheet. Starting at the center of each sheet, begin working toward the edges with your roller.

Roll the flooring in two directions with 75-100 lbs. 3-section roller immediately after the flooring is placed and positioned, ensuring complete contact with the adhesive. Make sure when rolling that you stay at least two inches away from the overlap at the seam and from the glue line at the fold.

SEAM CUTTING PROCESS

1a. To assure accuracy, adjust your under scribers or recess-scribers before actually cutting the seam. Cut a slit in scrap of the flooring, then insert the button into the slit so that it rests against the bottom edge of the slit. Keep the button tight against the slit while adjusting the needle precisely to the edge of the slit above the button and tighten. This procedure will produce a net fit without fullness but should be tested to confirm an accurate setting.

1b. If you choose to leave a slight gap (1/64”) to make guiding the router easier, then the needle should be set 1/64” beyond the slit’s edge to provide a uniform 1/64” gap for the auto grooving machine.

2. The underscribers or recess-scribing tool’s button on the bottom of the tool should rest against the straight edged sheet under the overlap of the second sheet. The button should ride on the edge of the first sheet guiding the needle so that a light scratch or score mark is left on the top of the second sheet’s overlap. Keep the tool perpendicular to the seam to maintain an accurate fit.

3. Cut the seam using a utility knife (straight or hook blade). Cut the seam by following the scribe mark Your fall off should be to your right if you are right-handed and to your left if you are lefthanded.

4. Once you have completed the scribing and cutting of the seam, roll the seam area with a steel hand seam roller. Roll diagonally across the seam six inches on both sides. This technique minimizes the risk of pushing adhesive into the seam and contaminating. Once you have scribed, cut and hand rolled the seam, then roll the entire area again in two directions with 75- 100 lbs. 3-section roller.

5. Thoroughly clean the seam area making sure to remove any surface adhesive with a damp rag or rag dampened with paint thinner or mineral spirits.

6. Follow the procedures for the remaining pieces until the job is finished. Make sure that you adhere any flooring that has been net fit within two hours of fitting, while adhesive is still fresh. Restrict traffic on installed flooring for a minimum of 24 hours after installation.

7. Depending on the adhesive and application method used, rolling load traffic may need to be avoided for up to 72 hours to ensure curing of the adhesive.

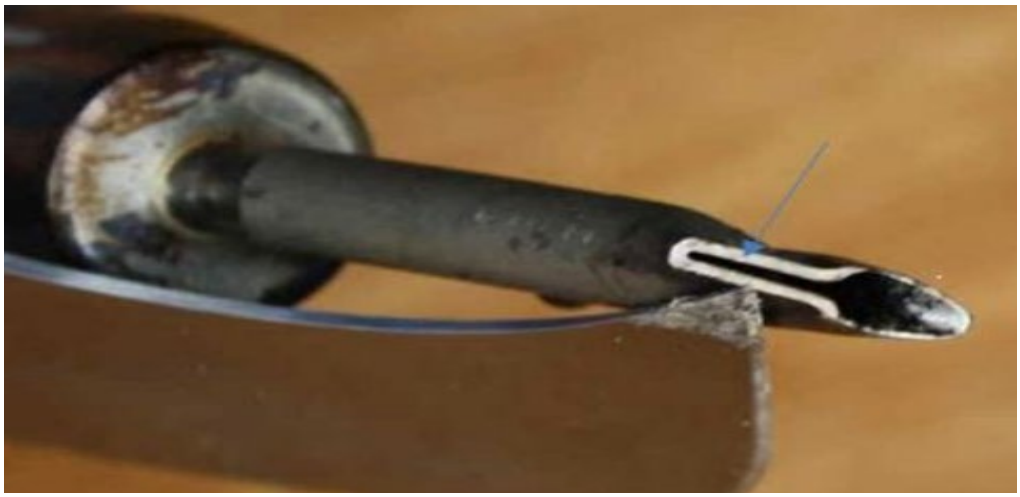
STEP BY STEP INSTRUCTIONS FOR HEAT WELDING

1. Ignoring the simple steps above for seam cutting will result in a welded seam that is prone to split, gapping and in some cases, could result in a complete loss of the rod over time at the 10 welded seam. Critical to a successful welded seam is having material of equal proportions on the sides and underneath of the weld when the welding groove is centered over the seam and cut approximately 2/3 of the product’s overall thickness from the top, either by hand or a power groover.

Important Note: Do not attempt to butt factory edges for welded seams. Doing so will no yield a uniform, consistent net seam.

2. Allow the flooring and seams to cure a minimum of 24 hours before grooving and welding. Do not pre-groove your seams until you are ready to weld to avoid any contamination from dirt and debris so that the fusion of the weld will be optimized. The Kährs welding rod is4.0mm, therefore the groove for the rod should be centered on the seam and the depth of the groove should be approximately 2/3 of the product's thickness, allowing for equal material on both sides and bottom of the groove for best results. Grooving should be done with a 3.5mm hand groover or blade for the power groover centered on the seam.

3. The speed nozzle for welding should be large enough so that the rod can easily be fed through the nozzle's tip during the welding process. Note the photo below that shows how the throat of the speed nozzle is narrow. The purpose of the nozzle is to uniformly heat both the welding rod and the groove to a pre- determined temperature so that the physical "melting of the rod to the flooring" is uniform, consistent, without damage and without interruption.



4. Once you have grooved the seam and confirmed your nozzle is correct, then you should set you welding gun or auto-welder at a temperature that will accommodate the speed at which the installer will weld while heating both the flooring and rod at a temperature that provides 100% fusion but avoids irreparable damage, scorching or burning during the process. Again, take a close look at the narrow throat shown on the speed nozzle in the photo above. The narrow throat keeps the crux of the heat focused inside the groove, minimizing the risk of the extreme heat washing out on the flooring and changing the gloss or texture of the flooring at the seam. Once you believe you have determined the ideal setting on your welding gun or auto-welder, then it must be tested on scrap material to confirm 100% fusion without scorching, burning and/or distortion.

A very subtle distortion at the base of the rod at the juncture of flooring is often referred to as a "wash," signals that the speed, temperature and the speed nozzle's angle to the groove is precise for 100% fusion. Prior to welding, your tool should be turned on to the pre-determined weld setting for about 10 minutes to allow time for not only the gun, but the nozzle to warm up. 11 Also important, some welding guns may have a different setting for the blower which can add an additional element to the process of welding calibration. In addition, when completed, the heating element on your tool should be turned off while your fan blows for about 10 minutes to cool the tool down.

5. Once your welding is complete. Allow to cool for approximately 15 minutes, then using a spatula knife with a trim plate, you may remove the excess material.

6. Finally, after at least one hour trim the remaining material with the spatula knife at a slight angle to the flooring, trimming the rod flush and smooth with the floor's surface.

7. The last step to complete the welding process is to "glaze the trimmed rod" by running the hot nozzle over the trimmed welding rod fusing it's surface. So that its trimmed surface will be impervious to dirt and will perform equally with the Kährs sheet product.

WARNING: DO NOT LEAVE HEAVY OBJECTS SUCH AS THE ROLLER, ADHESIVE BUCKET, CARTS, TOOLBOXES, CARTS OR DOLLIES WITH SMALL CASTERS OR WHEELS ON THE FINISHED FLOORAFTER INSTALLATION.

FLASH COVING

1. Kährs Zero Sheet Flooring can be integrally self or flash coved at the juncture of any vertical surface such as the wall, a cabinet toe kick or column. Flash coving is the procedure by which the flooring in the field is continued up the vertical surface without a seam, physical break, or butt joint. Typically, the flooring material will continue up the vertical surface approximately 4- 6" in most cases. Coving eliminates the juncture at the floor/vertical surface, creating a soft radius that point providing easy maintenance in commercial environments.

2. When coving, it is necessary to address the juncture with a cove fillet strip that is either plastic or wood. When fastening the cove fillet, you may employ a variety of approaches including but not limited to pin nailing, contact adhesive, double-faced tape and/or a combination of any or all of the methods. The key is to make sure that the fillet is secure and conforms to both the vertical surface and floor and leaves no voids behind or below the cove fillet. The fillet strip should be a minimum of 1 1/8" radius.

Transitioning to door casings may require a field modification of the cove stick so that the radius gradually becomes smaller at the point of contact to eliminate any open voids at the end of the coving when it meets the door casing. All inside and outside corners must be mitered precisely so that the flooring contours perfectly at the corners. Often the width of a utility blade may be left at the outside corner miter so that it will serve as a guide when mitering the Kährs Zero Sheet for a precise fit at that intersection.

3. You will also need either a vinyl or aluminum cove cap to finish the top edge of the flooring on the vertical surface. The cap must be firmly attached at the desired height using any one or a combination of methods for securing utilized to secure the cove fillet above. Outside corners should be notched and formed to avoid sharp edges or corner susceptible to damage.

4. When coving, best results can always be achieved by pattern scribing. Inside corners must be cut net with no fullness to avoid unwanted puckers and bubbles, but just is important will be to avoid any gaps where the material meets above the cove stick in the corner of the vertical surface. Outside corners must be filled using a "boot" plug or a "butterfly" plug.

5. You may also utilize preformed inside/outside metal corners if preferred.

6. When coving is complete, allow at least 24 hours before grooving and welding the inside and outside corners unless tape was utilized to bond the Kährs Zero Sheet flooring on the vertical surface.

POST INSTALLATION PROTECTION

1. Protect the newly installed Kährs Zero Sheet from foot traffic for 24 hours. Prohibit heavy traffic and rolling loads on the sheet 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 Sheet 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 Sheet 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 SHEET 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. 13

11. Rinse using a clean mop and clean water. Change rinse water often to avoid leaving a dirty residue.

12. Wet vacuum, fan dry or simple allow it to dry naturally without any traffic.

PRODUCT SIZE AND PACKAGING INFORMATION
Thickness: 0.08” (2.0mm)
Roll Width: 4’ 9” (1.45m)
Roll Length: 82.02’(25m)
Roll Weight: 0.64 lbs./ft²

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