



# INSTALLATION INSTRUCTIONS

## DLW LINOLEUM

These instructions are specifically written for the installation of the following products:

Product	Width Ft.	Thickness	Installation direction	Seam treatment
DLW Linoleum	Approximately 6' 6"	2.5 mm	Same	Net Fit or Heat Weld
Gerfix 313 Adhesive				
Gerfix 196 Adhesive				
Welding Rod				Linoleum Weld Rod

**Important Note:** Before installing, refer to Gerflor Installation Handbook for acclimation, job site conditions, subfloor prep, and other general installation recommendations.

### 1. GENERAL INFORMATION

- 1.1. Gerflor linoleum products are formulated to withstand high moisture conditions. To perform as designed, the concrete must be properly prepared to create a contaminate free and porous substrate.
- 1.2. Gerflor linoleum products are not designed to withstand hydrostatic or osmotic pressure.
- 1.3. *The guidelines offered within this document are not intended to be all inclusive. Only qualified, professional flooring technicians experienced in the field of resilient flooring should proceed with this installation system.*
- 1.4. It is recommended to mechanically prepare the concrete via grinding or bead blasting the surface to achieve a CSP 1+, clean and porous substrate.
- 1.5. Moisture and pH testing must be performed in accordance with ASTM F710-17.
- 1.6. Adhesive bond tests are recommended to ensure adequate bonding to the substrate.
- 1.7. Do not install material that has visible defects or damage. A contractor that installs material that has visible defects or damage assumes responsibility for that material.
- 1.8. Store rolls of Gerflor DLW Linoleum on clean, flat, and solid surfaces in a controlled environment. Place rolls in an upright position. Do not stack rolls on top of each other. **Leave rolls in wrapper to preserve freshness. Any unused or partial rolls should be re wrapped for long term storage.**

### 2. FLOORING INSPECTION


- 2.1. While unwrapping the rolls, keep the identification tag of each roll and unroll the same direction.
- 2.2. Unroll flooring following the roll sequence numbers.
- 2.3. Inspect all the flooring carefully to verify that correct colors, lot number, patterns, quality, and quantities have been shipped as ordered. Do not install, cut, or fit any material that has visible defects. Linoleum should be from the same batch. If material is ordered from more than one batch, the job layout should be reflecting the use of multiple batches and ensure that different batches are not installed side by side.
- 2.4. **Linoleum Rolls must be installed within a 20-roll number span side by side. Any rolls laid next to each other greater than 20 roll numbers apart can have noticeable shading variations.**

**NOTE:** Linoleum, by nature, has a yellow cast that occurs naturally from the production process. This is NOT a defect and will dissipate when exposed to light. Natural sunlight will dissipate the yellow cast faster than artificial light. Under natural sunlight this process typically occurs within 4 hours, under artificial light is will take longer.

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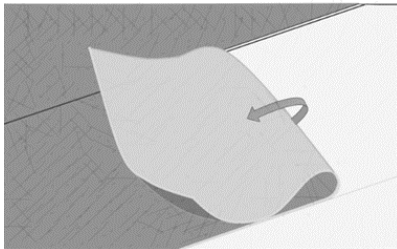
#### 3. INSTALLING WITH GERFIX 313 LINOLEUM ADHESIVE

- 3.1. Always refer to the **Gerfix 313 Adhesive Technical Data Sheet**.
- 3.2. Recommended trowel size is 1/16" x 1/16" x 1/16" square notched, covering from 100 to 125 sq. ft. per US gallon. 
- 3.3. To ensure uniform adhesion of the entire surface, apply a workable amount of adhesive at one time.
- 3.4. Maintain a uniform spread rate. Replace trowel (or trowel blade) with every pail used.
- 3.5. "Open time & Working time" of the adhesive is dependent upon porosity of the substrate, temperature, and humidity. It is important that the installers familiarize themselves with the adhesive before starting the installations.

<b>Application Characteristics over Porous Substrates</b>		
	<b>Open Time*</b>	<b>Working Time**</b>
Gerflor DLW Linoleum	No Open Time	Up to 45 minutes

\* **Open Time:** is the waiting time required before installing flooring.

\*\* **Working time:** is the window of time for the adhesive to accept flooring.

- 3.6. Maintain a uniform spread rate. Replace trowel (or trowel blade) with every pail used.
- 3.7. When installing, always work to have complete sheets glued at the end of the day.
- 3.8. Once flooring is placed into the adhesive, immediately roll thoroughly with a 3 section 100-lbs roller in both directions.
- 3.9. Always roll seams, at the walls, and under toe kicks with a hand roller to ensure 100% transfer of adhesive. 
- 3.10. Avoid adhesive displacement by prohibiting light traffic for a period of 24 hours and 72 hours for rolling loads.


#### 4. INSTALLING USING GERFIX 196 HYBRID MULTI-PURPOSE ADHESIVE

- **GERFIX 196 IS CHEMICALLY REACTIVE. ONCE MIXED, THE POT LIFE IN THE BUCKET IS 2 HOURS; AFTER SUCH TIME, DISCARD ANY REMAINING ADHESIVE**
- Trowel the adhesive onto the substrate using a 1/16" x 1/16" x 1/16" square notched trowel. Coverage of 200 –250 sq. ft. per Pail.
- It is imperative to use the proper trowel as well as maintaining the proper notch size over the course of the entire floor.
- Prepare concrete per ASTM F-710. Concrete should be mechanically prepared to a CSP 1+ to ensure a porous and contaminate free substrate.
- Inadequate application of adhesive will void the warranty.
- Use mineral spirits to remove wet or dry adhesive.

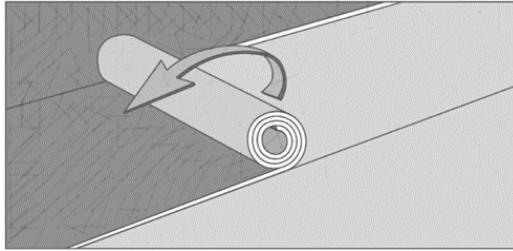
- 4.1. Always refer to the **Gerfix 196 Adhesive Technical Data Sheet**.
- 4.2. Follow the guidelines indicated on the Technical Data Sheet.

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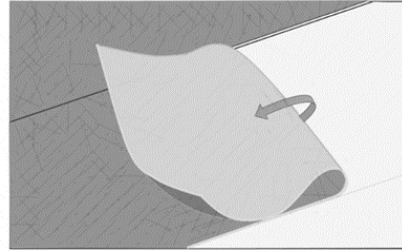
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- 4.3. Recommended trowel size is 1/16" x 1/16" x 1/16", covering from 200 to 250 sq. ft. per US gallon. 
- 4.4. Mix 2-part acrylic adhesive part A and part B for 2 to 3 minutes and is a consistent color.
- 4.5. Starting from the center line and working outward, fold back or roll back the sheets (width) halfway and apply the adhesive to the subfloor.

**Roll back method**



**Fold back method**



- 4.6. To ensure uniform adhesion of the entire surface, apply a workable amount of adhesive at one time.
- 4.7. Maintain a uniform spread rate. Replace trowel (or trowel blade) with every pail used.
- 4.8. Immediately after troweling the adhesive onto the concrete use a medium napped paint roller saturated with adhesive to flatten out visible trowel marks and even out the adhesive. A double arm roller frame is recommended to ensure an even coat of adhesive.
- 4.9. "Open time" of the adhesive is dependent upon porosity of the substrate, temperature, and humidity. It is important that the installers familiarize themselves with the adhesive before starting the installation. Insufficient open time for this adhesive will cause bubbling. Exceeding proper open time will result in poor adhesion.

<b><i>Application Characteristics over Porous Substrates (Non-Porous – see note below)</i></b>		
	<b><i>Open Time*</i></b>	<b><i>Working Time**</i></b>
Gerflor DLW Linoleum	No time open	Up to 45 minutes

\* **Open Time:** is the wait time required before installing flooring into the adhesive.

\*\* **Working time:** is the "window" of time for the adhesive to accept flooring.

\*\*\* **Tacky:** When the adhesive starts to become translucent and there is light transfer to the fingers when slightly touched

**NOTE: For Non-Porous substrates such as metal, existing floorings, etc., allow the adhesive to transition from the wet stage to a tacky-dry stage (no transfer to fingers, when lightly touched) then immediately install the flooring and roll with a 100lb. roller.**

- 4.10. Maintain a uniform spread rate. Replace trowel (or trowel blade) with every pail used.
- 4.11. When installing, always work to have complete sheets glued at the end of the day.
- 4.12. To reduce the risk of bubbles, the roll back method is the most recommended method of installation.
- 4.13. By keeping the roll tight and maintaining constant pressure while unrolling into the adhesive, the risk for bubbles will be minimal.

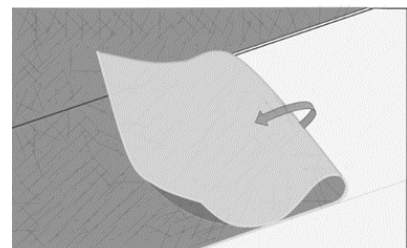
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- 4.14. The fold back method is acceptable, but care must be taken to not unfold it back too quickly.
- 4.15. Once flooring is placed into the adhesive, immediately roll thoroughly with a 3 section 100-lbs steel roller in both directions.
- 4.16. Always roll seams, at the walls, and under toe kicks with a hand roller to ensure 100% transfer of adhesive.
- 4.17. Care must be taken to avoid flopping the sheets into the adhesive as this may cause air to become entrapped
- 4.18. Keep on installing sheets by keeping the edges spaced 1/32", trimming each side with a straight edge or scribing. The goal is to produce a uniform 1/32" spaced seam for welding.
- 4.19. Using a 100-lbs sectional steel roller, roll the flooring in the width first and then the length to ensure adhesive transfer and to evacuate all air that can lead to bubbles. Optimally there should be an individual tasked solely with this responsibility
- 4.20. Continually check the flooring for bubbles. To verify there are no bubbles, look down and across the flooring from both a standing and prone position with the lights on and off. The use of a light source at floor level can be helpful in finding any air pockets or bubbles.
- 4.21. Heat welding can proceed after **24 hours from time of installation**
- 4.22. **No heavy foot traffic for 6-12 hours after installation, no heavy rolling loads for 24 hours and no heavy point loads for 72 hours.**
- 4.23. Use mineral spirits to remove fresh or dried adhesive from the surface of the flooring
- 4.24. Following the above steps is of the utmost importance for a successful installation that will resist high moisture levels and be serviceable over the life of the floor

## 5. DRY LAY AND INSTALLING THE SHEETS OF LINOLEUM

**Note:** Gerflor linoleum will shrink in the length and expand in the width when installed into wet adhesive. The amount of shrinkage and expansion will vary from one job to the next primarily because of porosity of the substrate. A less porous substrate will allow for more shrinkage and expansion to occur. Installation techniques to minimize this includes back rolling, tubing the material when adhering, and leaving the ends of longer sheets not adhered before final fitting and gluing.

- 5.1. Back massage the ends of the fitted sheets before and at the time of installing into the adhesive to remove any tension while the adhesive sets.
- 5.2. Seaming should be kept to a minimum and avoid cross seams as much as possible. Place seams in areas exposed to the least amount of traffic.
- 5.3. Factory edges of Linoleum must be trimmed before seaming.
- 5.4. Fit one sheet at a time and always trim the factory edges.
- 5.5. The edge that will be seamed should be trimmed approximately ½ inch by using a straight edge, utility knife, and hook blade or using the Wolf edge trimmer. Align the straight edge and lightly score with the utility knife, then finish cutting with the hook blade leaving a slight undercut.
- 5.6. Once the first sheet is fit, mark with a pencil both edges of the sheet.
- 5.7. Fold back the sheet, glue down using the pencil marks as a spread line, roll the sheet in both directions, and flat trowel off any excess adhesive from the edges.



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- 5.8. Using a 100-lbs sectional steel roller, roll the flooring in the width first and then the length to ensure adhesive transfer and to evacuate all air that can lead to bubbles. Optimally there should be an individual tasked solely with this responsibility.
- 5.9. Always roll seams, at the walls, and under toe kicks with a hand roller to ensure 100% transfer of adhesive.
- 5.10. Adhesive transfer must be **100% wet transfer** into the jute backing. Trowel ridge marks should not be visible on the back of the linoleum or on the subfloor. If the adhesive skins over or dries it must be scraped up and new adhesive applied.
- 5.11. Once rolled, the linoleum must remain in contact with the subfloor until the adhesive is completely dry.
- 5.12. For pieces 20 ft or longer, it is advised to not trim the ends before gluing down the sheet to allow for shrinkage:
- 5.13. Glue down the sheet leaving 5' to 6' unglued at both ends to allow for final trimming.
- 5.14. Once the center part of the sheet is glued, allow 15 to 30 minutes (Depending on the porosity of the substrate) for the shrinkage to occur within the length of the adhered section of the sheet
- 5.15. Fit the ends of the sheet to the wall and glue down following the same process as the center part.
- 5.16. Back massage the ends of the fitted sheets before and at the time of installing into the adhesive to remove tension and weight if necessary while the adhesive sets.
- 5.17. Rolling the linoleum face in before fitting and adhering will minimize shrinkage.
- 5.18. **Do not allow rolling or point loads for 72 hrs. after adhesive application.**

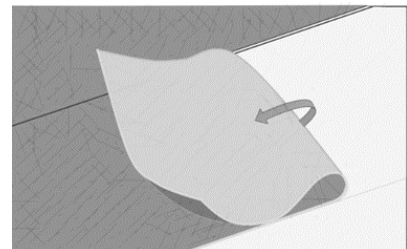
## 6. DRY LAY AND INSTALLING THE SECOND AND SUBSEQUENT SHEETS OF LINOLEUM

**NOTES:** Unroll flooring following the roll sequence numbers and in the same direction.

**Always install linoleum one sheet at a time to allow for expansion. Failure to do so could result in peaking side seams.**

**Seams can be net fit without the need for heat welding. In some cases, heat welding will be specified or better suited to the application. Seam cutting and preparation will be the same for either.**

- 6.1. Cut the length of the second sheet off the roll, adding an extra 3" to 6" for trimming.
- 6.2. Position the second sheet adjacent to the first sheet, overlapping the first sheet approximately 1/2" - 3/4" at the seam. Prepare the opposite edge for seaming in the same manner as for the first sheet.
- 6.3. Mark the subfloor with a pencil down the length of the edge of the second sheet.
- 6.4. Fold back the sheet, glue down and roll the sheet.
- 6.5. Roll with a 100-lbs sectional roller in both directions and verify proper transfer of adhesive.
- 6.6. Always roll seams, at the walls, and under toe kicks with a hand roller to ensure 100% transfer of adhesive.
- 6.7. Under-scribe the seam net with no gaps or fullness. A properly cut seam in linoleum should not be tight, if cut too tight the seam will peak and possibly bubble.



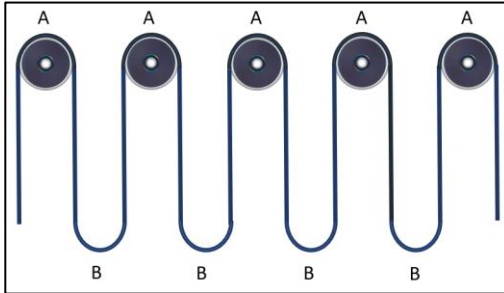
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- 6.8. Cut the material along the scribe line scoring lightly first with a utility blade and then using a hooked blade knife, holding it at an angle to slightly undercut the material.
- 6.9. Roll the seam with a steel hand roller, making sure that the flooring material is placed into wet adhesive.
- 6.10. Clean-up fresh adhesive residue immediately with a clean white cloth.
- 6.11. Repeat the same procedures for each sheet, completing one sheet at a time until the job is completed.
- 6.12. In many cases it will be necessary to weight down end seams, and/or wall cuts until the adhesive has cured.

## 7. HEAD SEAMS

- 7.1. When head seams must be made, follow the steps below to account for any shrinkage that may occur in the length:
  - 7.1.1. Straight edge and slightly undercut the end of the first sheet.
  - 7.1.2. Mark a pencil line at the end of the first sheet. Spread the adhesive to the line and lay in the material. (Wipe off any excess adhesive with a flat trowel if necessary)
  - 7.1.3. Roll the material in all directions with a 100-lbs. sectional roller.
  - 7.1.4. Always roll seams, at the walls, and under toe kicks with a hand roller to ensure 100% transfer of adhesive.
  - 7.1.5. Overlap the second sheet at the cross seam approximately 1”.
  - 7.1.6. Adhere and roll the second sheet as describe above, except for the last 18”.
  - 7.1.7. Allow shrinkage time before working on the head seam.
  - 7.1.8. Spread the adhesive for the last 18”, place the material into wet adhesive, under scribe the seam to a net fit and roll in all directions with a 100 lb. roller and add weight if necessary.

## 8. DRYING ROOM STOVE BAR MARKS

- 8.1. Stove bar marks are not a material defect. If a problem occurs, it is directly related to improper installation techniques.
- 8.2. When DLW linoleum products are in the curing process during manufacturing, the material is suspended in large loops in the drying chamber. The top of each loop known as a pole mark, is cut off and recycled. The bottom of each loop is called a “stove bar mark” and will appear in the center of each roll.The diagram shows five vertical loops of material, each representing a roll. The top of each loop is labeled 'A' and the bottom is labeled 'B'. The loops are connected at the top and bottom, forming a continuous line of material that has been suspended in a drying chamber.
- 8.3. When installing material with a stove bar mark, simply spread the adhesive with the flat side of the trowel in the stove bar mark area on the backside of the sheet and spread the adhesive on the floor following standard recommendations.
- 8.4. Place the material directly into the wet adhesive. Be sure that when placing the stove bar mark into the wet adhesive to massage the material down and push any fullness out.
- 8.5. Roll the material in all directions, starting across the width of the material.
- 8.6. Be sure the stove bar mark is rolled first to avoid trapping the tension in the material.

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- 8.7. Additional rolling is required during adhesive setup to ensure that the material is flat and fully adhered.
- 8.8. Weight if necessary while adhesive cures.

#### 9. HEAT WELDING DLW LINOLEUM

**NOTE:** The purpose of this document is to guide the installers, owners and contractors through proper heat welded seam procedure. There are other type of equipment and tools on the market; some of them are excellent and other will fail to perform as expected. The tools we refer to, are known to perform well. It is to the installer to ensure that he has the right tools to perform the work as required.

**NOTE:** DLW Linoleum weld rod is designed with a unique two-color swirl. The outer appearance of the rod is one solid color but when welded and trimmed, this unique attribute becomes apparent. This two-color mixture helps minimize the visibility of the welded seam compared to solid color weld rods.

**Note:** Seams must edge trimmed, underscribed, and net fit (Flush with no fullness)

**Note:** Take a hook bill or sharp 5 in 1 tool and insert into seam. Pull through the full length of the seam and open it slightly so the grooving equipment can track properly.

#### 10. GROOVING DLW LINOLEUM

- 10.1. Always use 3.5 mm. U shaped grooving tools
- 10.2. Always groove down to the jute backing.
- 10.3. Use a hand groover to finish at the walls.
- 10.4. Slightly warming the linoleum will help when hand grooving.
- 10.5. The following groovers are recommended

**Turbo Linoleum groover**



**Leister Electric Groover**



- 10.6. The depth of the groove **Must** be down to the jute backing.



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**10.7. The width of the groove must be 3.5 mm. wide**

**10.8.** Set the depth of the groover on scrap material first before deploying the unit on the finished floor. Adjustments to the groover should be performed daily and always on scrap material.

**10.9.** When grooving, it is highly recommended that the installer practice on scrap material until they are comfortable with the use of the selected groover.



## **11. MANUAL WELDING**

**11.1.** Verification of welder temperature and speed must be performed daily. Confirm temperature and speed by practicing on scrap material first before deploying the welder to the finished floor. Doing so will prevent failures.

**11.2.** Grooving and welding may proceed after the adhesive has been permitted to cure a minimum of 16 hours.

**11.3.** Use a heat welding gun with variable temperature control and a speed weld nozzle by Leister or equal.

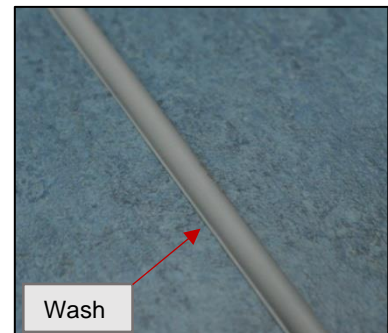
**11.4.** Turbo Precision Nozzle # 22-3 or Leister Nozzle 105433 (5mm) is also highly recommended for proper welding.

**11.5.** The use of a non-recommended tip may jeopardize proper welding and could damage the flooring. Always remember to keep the nozzle tip clean and free of debris.

**11.6.** Optimum temperature for heat welding linoleum is 350° C

**11.7.** Linoleum weld rod will slide in the groove when starting out. To eliminate this, keep feeding the rod into the nozzle for the first few inches.

Keep the nozzle parallel to the floor and control the speed until a second bead forms on both sides of the weld rod. This is the “wash” and is the only way to confirm the weld rod is completely melting into the groove for proper fusion.



**11.1.0.** Using a trim plate, make the first pass while the welding rod is still warm. If the rod cools down too much the force of pushing the knife through it can cause it to pop out.

**11.1.10** Check weld for any skips or voids. If needed, cut a V notch on both sides of the void and re-weld, then make first pass again on the repaired section

**11.1.11** Allow the weld rod to completely cool before making final pass. Failure to do so can result in damage to the linoleum.

**11.1.12** Small irregularities or repairs can be made with a heated smoothing tool.

## **12 AUTOMATIC WELDERS**



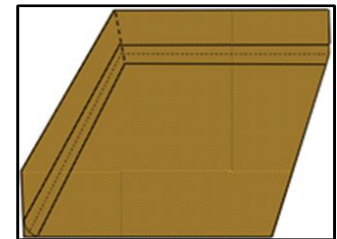
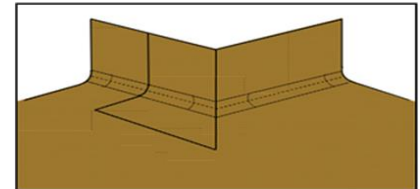
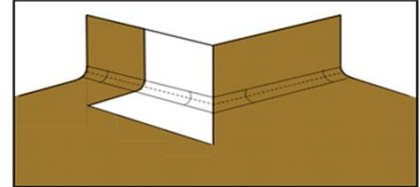
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- 12.1 Automatic welders are highly recommended particularly on large projects
- 12.2 Verification of welder temperature and speed must be performed daily. Confirm temperature and speed by practicing on scrap material first before deploying the welder to the finished floor. Doing so will prevent failures.



### 13. FLASHCOVING DLW LINOLEUM

- 13.1. Always use a quality scribing paper designed for pattern scribing.
- 13.2. Lay scribe paper down, secure with tape, and cut approximately ½ inch short of all obstacles. Cut windows in paper and create set marks on floor to orientate pattern later when transcribing and installing
- 13.3. Use dividers and other marking tools and scribe marks onto paper of all surfaces such as corners, under cap metal, doorways, etc.
- 13.4. Scribe and prepare outside corners for boot method only.
- 13.5. Once complete, lay pattern onto linoleum, orientate, and secure with tape.
- 13.6. Transfer set marks and reverse scribe all other marks from paper to linoleum with original marking tools.
- 13.7. Score with utility knife and then final cut with hook blade linoleum to all marks necessary
- 13.8. Prepare boot outside corners and save for later.
- 13.9. Spread adhesive on floors and walls then lay linoleum in aligning on set marks originally established.
- 13.10. Tuck linoleum into cap metal and set material properly at inside corners, doorways, etc.
- 13.11. Roll floor with 100 lb. roller and walls, toe kicks, or any other area that could not be reached with steel hand roller.
- 13.12. Underscribe seams and roll afterwards with steel hand roller.
- 13.13. Install outside corner pieces. Use corner scribe tool to either create proper gap for welding, or a net fit corner mitered and flush.
- 13.14. Check installation for any bubbles, fullness, or gaps and fix accordingly.



### 14. ONCE THE INSTALLATION IS COMPLETED

- 14.1. Perform a visual inspection of the project.
- 14.2. Verify every welded seam.
- 14.3. Repair every imperfection before leaving the project.
- 14.4. Make sure that every vertical obstacle such as doorframes are well trimmed and sealed with an acrylic, silicone, or equivalent sealant product.



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- 14.5. To maximize the aesthetic appearance and serviceability of the newly installed flooring, provide your customer with a copy of the **Gerflor Maintenance Instructions**.