

INSTALLATION INSTRUCTIONS FOR GERFLOR HOMOGENEOUS VINYL SHEETGOODS

This document refers to the following products:

Product	Width	Ft.	Installation direction	Seams treatment
Mipolam Symbioz	2 Meter	Approximately 6' 6"	Same	¹ Heat Welded
Mipolam Accord 300	2 Meter	Approximately 6' 6"	Same	Heat Welded
Mipolam Elegance 290	2 Meter	Approximately 6' 6"	Same	Heat Welded

Note: This document refers to the following standards:

ACI 302.1R Guide for Concrete Floor and Slab Construction.

ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials

ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

ASTM F1869-09 Standard Test Method for Measuring Moisture Evaporation Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

ASTM F2170-09 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes.

ASTM F1516 Standard Practice for Sealing Seams of Resilient Flooring by the Heat Weld Method.

1. STORAGE AND HANDLING

Store rolls on clean, flat, and solid surfaces in a controlled environment. Do not store outside. Place 6'6" (2 m.) wide rolls in an upright position. Do not lay flat or stack rolls on top of each other. Handle all materials carefully and safely.

2. SUBFLOOR PREPARATION

The General Contractor will supply a smooth, flat concrete finish ready to receive the new resilient sheet flooring in accordance with ACI 302.1R Guide for Concrete Floor and Slab Construction and ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.

The concrete subfloor will be cured for a minimum of at least thirty (30) days.

The slab will have a tolerance of 3/16" (4.5mm) in a 10' (3.05 m) radius.

Prepare substrate as per ASTM F710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring".

The concrete floor temperature will have to be maintained at a minimum of 65°F (18°C) for 48 hours prior, during, and 48 hours after the installation.

2.1 Moisture testing is required and should be performed as follows:

The concrete slab, new or old, should be tested for moisture rates by a recognized engineering firm.

- ✓ "Standard Test Method for Measuring Moisture Evaporation Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"

¹ Symbioz requires Bio-based weld rod only. PVC rod will not properly fuse to Symbioz.

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- ✓ and/or “Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes”.

Acrylic: Gerfix TPS		2-part Reactive: Mapei G-19 or G21	
ASTM F1869-09	8 LB/1000 sq ft/24 hrs (2.26 kg/92.9 m ² /24 hrs)	ASTM F1869-09	5LB/1000 sq ft/24 hrs (2.26 kg/92.9 m ² /24 hrs)
ASTM F2170-09	85% RH	ASTM F2170-09	80% RH

1. Before proceeding with any work, inspect the subfloor surface and report in writing to the Project Manager and the General Contractor any visible defects on the surface such as cracks, bumps, rough areas or variations in evenness.
2. Check the subfloor for grease, oil, paint, marker, spills, dust or any contamination that may adversely affect the adhesion of the flooring. Clean the subfloor according to the existing conditions.
3. Prohibit circulation of other trades in the installation area.
4. Sanding of the subfloor will be mandatory in many cases; especially in areas where the subfloor has been contaminated with foreign products. It may be necessary to scarify or bead-blast concrete surface to remove existing adhesives, paint, curing agents, concrete sealers or other surface applied materials.
5. The General Contractor shall patch and repair all cracks, voids and other imperfections of concrete with high strength Portland cement based patching compounds such as Mapei Ultraplan, Ardex K-15, Ardex Feather Finish, Mapei Planipatch or equal, approved by the manufacturer. **Do not use gypsum based patching materials.**
6. After completion of sanding, patching and leveling, vacuum or sweep entire surface of concrete to remove loose dust and dirt before starting the installation of material.
7. For installation where a **Gypsum Concrete** has been poured, contact Gerflor Technical Services.

2.2 SUBFLOORS WITH RADIANT HEATING SYSTEMS

Gerflor floorings can be installed over subfloors with radiant heating systems.

WARNING: NEVER COVER THE FLOORING WITH RUGS, MATS, RUNNERS, ETC. THESE WILL AFFECT THE HEAT TRANSFER OF THE RADIANT SYSTEM AND COULD DAMAGE THE FLOORING.

Perform moisture testing throughout the drying period of the concrete slab per the conditions stated in ASTM F1869-09, ASTM F2170-09 standards and substrate conditions will meet ASTM F710 standard.

Moisture tests for Subfloors with Radiant Heating Systems shall not exceed 3 lbs/1000 sq. ft./24 hrs per ASTM F1869-09 and 75% RH per ASTM F2170-09.

To ensure proper installation and enable proper adhesion, respect the following conditions:

1. In all cases, it is necessary to respect the curing time of the concrete slab.
2. At all times, the maximum temperature will not exceed 85°F (30°C).
3. To install on a subfloor with a radiant heating system, the system has to be turned off 48 hours before, during and 72 hours after the installation. Always verify that the room temperature is not less than 65°F (18°C) during that period of time.
4. The heating system should be turned on gradually 72 hours after the installation.
5. Turning on the heat gradually will allow the substrate and the flooring to adapt to the temperature change together.
 - A sudden temperature change could result in adhesion problems.

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3. INSTALLATION INSTRUCTIONS

3.1 FLOORING INSPECTION

Inspect all materials 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. Material that may have minor edge damage or distortion should be trimmed and removed prior to installation of the sheets.

A contractor that installs material with visible defects or damage without prior consent of Gerflor deems the product acceptable for installation and therefore accepts full responsibility for said material.

3.2 DRY LAY OF SHEETGOODS

1. Installation temperature shall be at least 65°F (18°C) maintained for 48 hours prior to during and 48 hours after installation.
2. Mark the center starting line.
3. Unroll the first length of material along this chalk line and then work progressively outward, leaving a 1/4" (4mm) gap between the sheets to allow the material to relax for at least 16-24 hours.
4. 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. Before applying the adhesive, bring the loose sheets close together leaving a gap of 1/32" (1mm).
6. The 1/32" (1 mm) gap is the space needed for the electric groover. This gap has to be constant in width.

3.3 ACRYLIC ADHESIVE INSTALLATION METHOD

Gerfix TPS Acrylic Adhesive as supplied by Gerflor

- Follow the guidelines indicated on the pail of adhesive.
 1. Recommended trowel size:
 - For Porous Substrates - 1/16" x 1/16" x 1/16" (1.6 mm x 1.6 mm x 1.6 mm) square notch covering 125 - 185 sq. ft. per US gallon (3.06 - 4.53 m² per liter).
 - For Nonporous Substrates – 1/32" x 1/16" x 1/32" (0.8 mm x 1.6 mm x 0.8 mm) 'U' notch, covering 185 - 245 sq. ft. per US gallon (4.53 - 6.0 m² per liter).
 2. Lay flooring back to apply adhesive: Roll back or fold back methods described below.
 - Roll back: To reduce the risk of bubbles, the roll back method is the most recommended. By keeping the roll tight and maintaining a constant pressure while unrolling into the adhesive, the risk for bubbles will be minimal. With the roll back method, do not pre-cut material as if to be the final trim. Leave material 2"-3" (5-7 cm) longer for trimming after placement.
 - Fold back: Care must be taken to not flap flooring back to prevent trapping excess air.

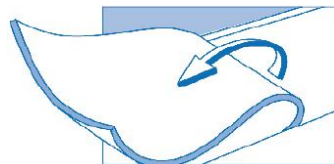


Note: Fold back and roll back methods are preferred to the fold lengthwise method (as used for rolls of carpet). However, some areas will dictate the fold lengthwise method.

Roll back method



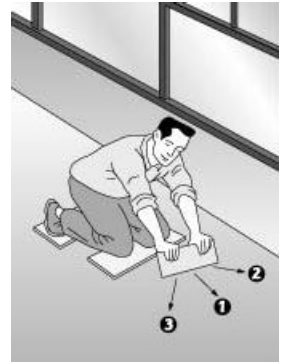
Fold back method



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3. Starting from the center line and working outward, fold back the sheets (width) halfway and apply the adhesive to the subfloor.
4. To ensure uniform adhesion of the entire surface, only spread a workable amount of adhesive at one time.
5. Maintain a uniform spread rate. Replace trowel (or trowel blade) with every pail used.
6. SMOOTH ADHESIVE RIDGES WITH A PAINT ROLLER
 - 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.**
7. Once the adhesive is applied, fold back or roll back the flooring into the still wet adhesive for 4"-6" (10-15 cm). This will ease the foldback or roll back of the second half and it will help avoid an overlap of the glue line. **Should this method not followed, the glue line mark will telegraph through the flooring.**
8. **The use of walking boards is advised to protect from adhesive displacement during installation.**
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 installations. Insufficient open time for acrylic adhesive will cause bubbling. A too long open time will result in poor adhesive transfer.
10. While installing, always work to have complete sheets glued at the end of the day.

Note: Use a 14" to 16" cork board or a piece of 2" x 4" wrapped with carpet to remove air bubbles.



11. Once flooring is placed into the adhesive, immediately roll thoroughly with a 3 sectional 100-lbs (45 kg) steel roller in both directions. Move roller slowly to expel trapped air and assure complete adhesive transfer to the flooring.
12. Continue laying sheets by keeping the edges spaced 1/32" (1 mm), trimming each side with a straight edge or scribing. The goal is to produce a uniformly 1/32" (1 mm) spaced seam for welding.
13. During the installation, always double check the flooring for bubbles with the lights on and off.

WARNING: Avoid adhesive displacement by prohibiting traffic for a period of 48 hours and 72 hours for rolling loads.

3.4 POLYURETHANE ADHESIVE METHOD (To use in areas with heavy rolling loads exceeding 175-lbs)

Use only a Gerflor recommended adhesive.

Respect the guidelines indicated on the pail of adhesive.

- Installers must be familiar with the use of polyurethane adhesives.
- Mix polyurethane adhesive part A and part B as recommended by the adhesive manufacturer.

Recommended trowel size is 1/32" x 1/16" x 1/32" (0.8 mm x 1.6 mm x 0.8 mm) 'U' notch, covering 185 - 245 sq. ft. per US gallon (4.53 - 6.0 m² per liter).

1. Lay flooring back to apply adhesive: Roll back or fold back methods described below.
 - Roll back: To reduce the risk of bubbles, the roll back method is the most recommended. By keeping the roll tight and maintaining a constant pressure while unrolling into the adhesive, the risk for bubbles will be minimal. With the roll back method, do not pre-cut material as if to be the final trim. Leave material 2"-3" (5-7 cm) longer for trimming after placement.
 - Fold back: Care must be taken to not flap flooring back to prevent trapping excess air.

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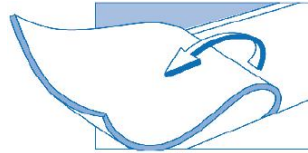
- Starting from the center line and working outward, fold the sheets back halfway and apply the adhesive to the subfloor.

Note: Fold back and roll back methods are preferred to the fold lengthwise method. Some areas will dictate the fold lengthwise method.

Rollback method



Fold back method



- To ensure uniform adhesion of the entire surface, only spread a workable amount of adhesive at one time.
- Maintain a uniform spread rate. Replace trowel (or trowel blade) with every pail used.
- There is no 'open time' with this type of adhesive, therefore once the adhesive is applied, immediately install the flooring into the wet adhesive.
- While installing, always work to have complete sheets glued at the end of the day.
- To reduce the risk of bubbles, the roll back method is the most recommended.
- By keeping the roll tight and maintaining a constant pressure while unrolling into the adhesive, the risk for bubbles will be minimal.
- The fold back method is acceptable, but care must be taken to not flap it back too quickly.

Note: ON KNEELING/WALKING BOARDS Use a 14" to 16" (35-40cm) cork board or a piece of 2" x 4" (10cm x 20cm) wrapped with carpet to remove air bubbles.

- Once flooring is placed into the adhesive, immediately roll thoroughly with a 3 sectional 100-lbs (45 kg) steel roller in both directions.
- Continue laying sheets by keeping the edges spaced 1/32" (1 mm), trimming each side with a straight edge or scribing. The goal is to produce a uniformly 1/32" (1 mm) spaced seam for welding.
- During the installation, always double check the flooring for bubbles with portable or fixed lighting.



WARNING:

- Avoid adhesive displacement by prohibiting traffic for a period of 48 hours and 72 hours for rolling loads.
- The use of walking boards is mandatory to protect from adhesive displacement during and after installation.

4. HEAT WELDING

Refer to ASTM F1516 "Standard Practice for Sealing Seams of Resilient Flooring by the Heat Weld Method".

4.1 ROUTING

Rout 2/3 of the total thickness of the homogeneous flooring.

- Groove only 16-24 hours after the installation.
- Use an electric routing machine for major installation such as Leister, JANSER or equal, approved by manufacturer.



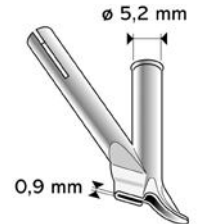
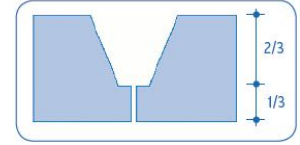
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- The use of a straight edge and hand groover, with care, will provide good results for smaller installations. Maintain a uniform width and depth of groove for a uniform welded seam.

4.2 MANUAL WELD

Note: Always practice on a scrap piece of material first to assure proper temperature and speed. This should be done every day there is welding to do on the job site. Doing so will prevent failures.

- This must be done with a heat welding gun with variable temperature control and a speed weld nozzle by Leister or equal, approved by manufacturer.
- Nozzle size is 5mm as the Leister Speed Tip #105433 model.
- Keep tip perpendicular to the flooring to ensure a uniform weld.
- Always keep the tip clean.



Ref : JANSER 224 800 007
LEISTER 27.21/105.433

4.3 WELD WITH WELDING ROBOT (REQUIRED ON LARGE PROJECT)

- Do not let the robot operate without surveillance..
- Verify not to loose power with electrical cords that are too long.
- Regularly verify the weld.
 - The ambient temperature, open windows and doors and other electrical equipment plugged in the same electrical outlet may influence proper welding temperature.

Notes: For both installation types, do not heat weld resilient flooring for a minimum of 24 hours after the material has been placed into the adhesive.

- For heat welding with the Leister Robot, the Leister tip 115342 is recommended.



Leister Robot 138493
Welding tip 115342

5. TRIMMING WELDED ROD

Note: Trimming is done once the welding rod and material have completely cooled.

- Trimming must be done in two passes.
- Use trimming tools sharpened in the middle only, such as the Mozart trimmer.
- This type of trimmer will not damage the flooring when used properly.
- The first trim has to be done with the thickness guide.
- The second trim has to be done with the trimmer only.
- Always verify the trimmed weld to ensure that the welding rod is bonded properly and is flush with the top wear layer.

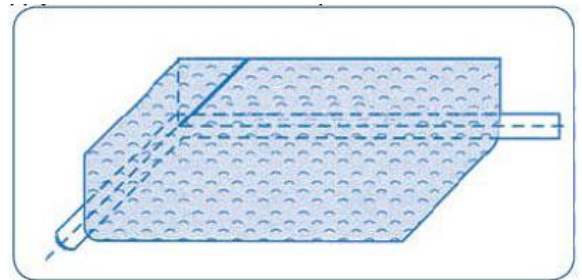
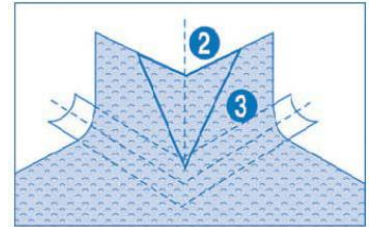
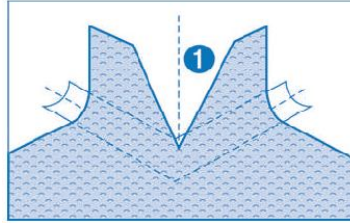


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6. FLASH COVING

Note: for better results while flash coving, the walls finish has to be properly done down to the ground. There should not be any voids at the bottom of the wall.

1. Metal capping is preferred to vinyl cap.
2. Miter all corners cleanly.
3. Outside corners should be cut and shaped from a solid piece of aluminum cap.
4. Affix cove stick to the floor and wall.
5. The flooring material can be either pattern scribed or cut in by hand.
6. Outside corners are formed using the "butterfly" method.
7. Inside corners are typically cut at a 45° angle on the wall.
8. Corners and straight walls are adhered with a good quality acrylic adhesive or a good quality solvent free contact cement.
9. On dusty walls, it will often be necessary to apply two coats.
10. Coat wall entirely and overlap past the cove stick and onto the substrate approximately 1"-2" (2-5 cm).
11. While installing the outside corners, it may be necessary to heat in order to shape the material.



7. ONCE THE INSTALLATION IS COMPLETED

1. Do a visual inspection of the project.
2. Verify every welded seam.
3. Repair every imperfection before leaving the project.
4. Make sure that every vertical obstacle such as doorframes is well trimmed and sealed with a silicone sealer or an equivalent product.

Please refer to Gerflor website, www.gerflorusa.com.