

INSTALLATION INSTRUCTIONS FOR RECREATION PRODUCTS

This document refers to the following products:

Product	Width	Thickness	Installation direction	Seam treatment
Recreation 30	Approximately 6' 6"	3mm	Reverse	Welded
Recreation 45	Approximately 4' 11"	4.5mm	Same	Welded
Recreation 60	Approximately 4' 11"	6mm	Same	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 F710-11 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- ASTM F1869-16 Standard Test Method for Measuring Moisture Evaporation Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- ASTM F2170-16 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes.
- ASTM F1516-13 Standard Practice for Sealing Seams of Resilient Flooring by the Heat Weld Method.
- ASTM F1482-15 Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
- ASTM F2419-11 Standard Practice for Installation of Thick Poured Gypsum Concrete Underlayments and Preparation of the Surface to Receive Resilient Flooring
- ASTM F2678-16 Standard Practice for Preparing Panel Underlayments, Thick Poured Gypsum Concrete Underlayments, Thick Poured Lightweight Cellular Concrete Underlayments, and Concrete Subfloors with Underlayment Patching Compound
- ASTM F2873-13 Standard Practice for the Installation of Self-Leveling Underlayment and the Preparation of Surface to Receive Resilient Flooring
- ASTM F3010-13 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings
- Recommended Work Practices for Removal of Resilient Floor Coverings of Resilient Floor Covering Institute (RFCI).

1.1 STORAGE AND HANDLING

For safety reasons, the rolls are transported and delivered laid down on pallets. Once you receive the rolls, immediately store the rolls on clean, flat, and solid surfaces in a controlled environment. Do not store outdoor. Place 6'6" rolls in an upright position and secure the rolls to ensure a safe working environment. Do not stack rolls on top of each other. Handle all materials carefully and safely. Should the material be stored for a long period, inspect the skids for any damages and make sure that the rolls are well positioned in an upright position. Displaced material on a skid or a broken skid will damage the flooring. Be aware and act responsibly.

1.2. ACCLIMATION

Under normal condition, the rolls must acclimate for 24 hours prior to the installation. In some cases, where the flooring may have a long period in colder conditions, more time will be required for acclimation.

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" in a 10' radius.
- Prepare substrate as per ASTM F710-11 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring".
- The concrete floor temperature must be maintained at a minimum of 65°F for 48 hours prior, during, and 48 hours after the installation.
- **The concrete slab, new or old, must be tested for moisture. We recommend having the tests performed by a recognized independent engineering firm. The ICRI website (International Concrete Repair Institute) has a list of certified technicians for the USA: <http://www.icri.org/Certification/Find-CCSMTTs.asp>**
- The moisture tests must be performed as per ASTM F1869-16 "Standard Test Method for Measuring Moisture Evaporation Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" and/or ASTM F2170-16 "Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes".
- **Substrate moisture levels shall not exceed:**

	Concrete slab with an effective moisture vapor barrier	Concrete slab with radiant heating system
Gerfix Spray Adhesive	pH 6 to 11 / 8-lbs / 95% RH	pH 6 to 11 / 8-lbs / 95% RH
Gerfix TPS+ Adhesive	pH 6 to 11 / 8-lbs / 90% RH	pH 6 to 11 / 5-lbs / 80% RH
Gerflor T-111 P.U. Adhesive	pH 6 to 11 / 8-lbs / 85% RH	pH 6 to 11 / 3-lbs / 75% RH

- Prohibit circulation of other trades in the installation area.
- 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.
- 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 per the existing conditions.
- 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, concrete sealers or other surface applied materials.
- **Curing compounds** of any types must be completely removed by means of sanding, scarification or bead-blasting. Self-dissipative curing compounds must be removed using the same methods.
- The General Contractor shall patch and repair all cracks, voids and other imperfections of concrete with GerPatch patching compound. **Do not use gypsum based patching materials.**
- 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.

2.1. GYPSUM BASE SUBSTRATE

- Prohibit circulation of other trades in the installation area.
- The General Contractor shall patch and repair all cracks, voids and other imperfections of the gypsum base subfloor with high strength gypsum base patching compounds compatible with the gypsum base product.
- After completion of patching and leveling, vacuum or sweep entire surface of the gypsum base subfloor to remove loose dust and dirt.
- Apply Mapei Primer L per Mapei's instructions.
- Once the Primer has set, install the flooring following the installation instructions
- Do not use Gerflor T-111 Polyurethane adhesive over this type of substrate.

2.2. SUBFLOORS WITH RADIANT HEATING SYSTEMS

Gerflor floor coverings can be installed over subfloors with radiant heating systems.

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

- In all cases, it is necessary to respect the curing time of the concrete slab.
- Before the installation, the radiant heating system must have been turned on for at least 4 weeks to stabilize the moisture content of the concrete slab and to avoid any moisture peak when the system will be in service after the installation of the flooring.
- A certified technician should turn on the system as per the manufacturer recommendation.
- The temperature must be kept at its maximum 85°F for 8 days prior to the installation of the floor covering.
- The maximum temperature will not exceed 85°F at any time.
- To install on a subfloor with a radiant heating system, the system must 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 during that period.
- The heating system should be turned on gradually starting 72 hours after the installation.
- 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.

Setting the radiant heating system prior and during the installation:

10 days to 2 days prior at 85°F	48 hours prior to the installation turned-off	Turned-off during the installation	72 hours after installation the system remains turned-off	Gradually turn on the system
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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.

- During the drying period of the concrete slab, moisture tests shall be performed per the conditions stated in ASTM F1869-16, ASTM F2170-16 standards and substrate conditions will meet ASTM F710-11 standard.
- When using Gerfix TPS+, moisture tests for subfloors with Radiant Heating Systems shall not exceed 8-lbs/ 1000 sq. ft./24hrs per ASTM F1869-16, 90% RH per ASTM F2170-16 and pH tests to range from 6 to 11.
- When using Gerfix Spray, moisture tests for subfloors with Radiant Heating Systems shall not exceed 8-lbs/ 1000 sq. ft./24hrs per ASTM F1869-16, 95% RH per ASTM F2170-16 and pH tests to range from 6 to 11.

- When using Gerflor T-111, moisture tests for subfloors with Radiant Heating Systems shall not exceed 3-lbs/ 1000 sq. ft./24hrs per ASTM F1869-16 and 75% RH per ASTM F2170-16 and pH tests to range from 6 to 11.

3. INSTALLATION OF RECREATION

3.1. FLOORING INSPECTION

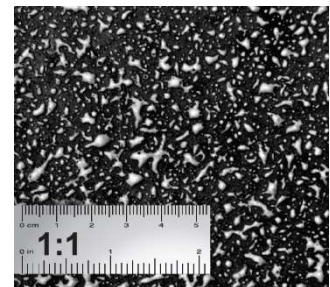
- While unwrapping the rolls, keep the identification tags of each rolls and verify on the tags whether the flooring is to be installed the same direction or reversed.
- Inspect all the flooring carefully to verify that correct colors, lot number, patterns, quality and quantities have been shipped as ordered. Do not install, cut, or fit any material that has visible defects. Material that may have minor edge damage or distortion must be trimmed and removed prior to installation of the sheets.
- **A contractor that installs material that has 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

- The concrete floor temperature will be maintained at a minimum of 65°F for 48 hours prior, during, and 48 hours after the installation.
- Mark the center starting line.
- Unroll the first length of material along this chalk line and then work progressively outward, leaving a ¼" gap between the sheets to allow the material to relax for at least 16-24 hours.
- 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.
- Before applying the adhesive, bring the loose sheets close together leaving a gap of 1/32".
- The 1/32" gap is the space needed for the guide of the electric groover.
- This gap must be constant in width.

3.3. GERFIX SPRAY ADHESIVE INSTALLATION METHOD

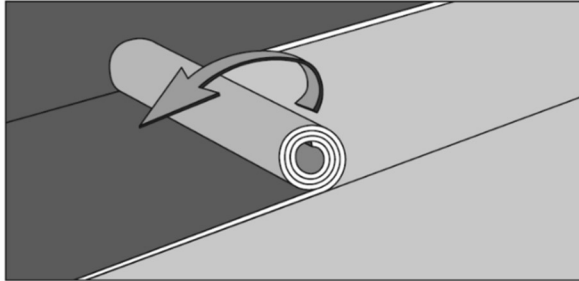
- Use only Gerflor's Gerfix Spray adhesive.
- Follow the guidelines indicated on the container of adhesive.
- Recommended spray pattern:
- Ensure substrate, flooring and surrounding areas are clean and dust free.
- Damp-mop substrate if dust is present.
- Only use Gerpatch patching compounds.
- Wipe hand across surface to verify for dust.
- If dust transfers, substrate is not clean.
- Protect from overspray with a spray shield, drop cloths, paper or masking.
- Starting from the center line and working outward, fold back the sheets (width) halfway and apply the adhesive to the subfloor.
- Installer may also use the "roll back" method.



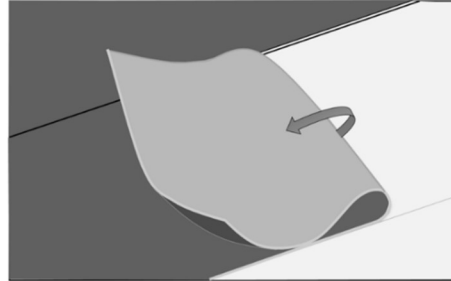
- Never pre-cut material to final trim until it is applied into the adhesive. Leave material 2"-3" longer for trimming after placement.

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

Roll back method



Fold back method

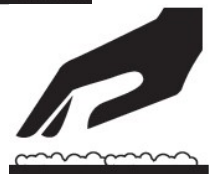


- Shake aerosol can well. Remove white cap.
- To ensure uniform adhesion of the entire surface, spray a workable amount of adhesive at one time.
- Stand straight up to spray. Hold can upside down, approximately 20-30 inches horizontally from the substrate, aim at floor and press tip with finger.
- Walk right to left smoothly to achieve results as seen on photo.
- Adhesive should spray out in a wide mist and fall similar to snow.



NOTE:

- Spraying in a sweeping motion may result in an inconsistent spray pattern.
- Excess buildup or inconsistent spray pattern on substrate may cause telegraphing.
- Avoid extremely heavy application.
- To ensure optimal spray pattern, remove any adhesive build up that may occur during the application process.
- If overspray occurs, it may be removed with a damp cloth while the adhesive is still wet.
- Allow adhesive to dry until there is no adhesive transfer when lightly touched. (10-20 min)
- High humidity and/or low temperature increases tack time.
- Open time after application is 3 hours. While open, ensure that adhesive is not contaminated by dust.
- Roll flooring with a 3 section 100-lbs roller, within 1 hour after installation to complete the bonding process.
- After rolling, floor is ready for all access.
- Flooring may be heat-welded 1 hour after installation.
- Floor is open to all traffic immediately after installation.



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

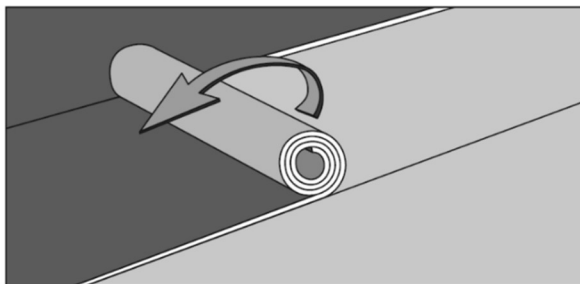
- Continue laying sheets by keeping the edges spaced 1/32", trimming each side with a straight edge or scribing when needed. The goal is to produce a uniform 1/32" spaced seam for welding.
- The width of the gap has to be even and may be less than 1/32" depending on the guide of the groover used.
- **Leaving a wider gap to weld directly into the gap without grooving is not recommended and will lead to a welded seam failure**
- Leaving a wider gap for welding directly into the gap without grooving is prohibited and will directly lead to heat welded seam failure.
- During the installation, always double check the flooring for bubbles with the lights on and off.

3.4. GERFIX TPS+ ACRYLIC ADHESIVE INSTALLATION METHOD

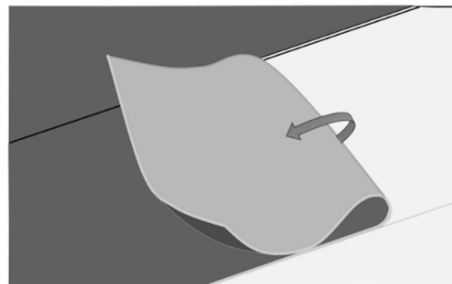
- Use only Gerflor's Gerfix TPS+ adhesive.
- Always refer to the Gerfix TPS+ Adhesive Technical Data Sheet.
- Follow the guidelines indicated on the pail of adhesive.
- Only use Gerpatch patching compounds.
- Recommended trowel size is 1/32" x 1/16" x 1/32", covering up to 245 sq. ft. per US gallon.
- Starting from the center line and working outward, fold back the sheets (width) halfway and apply the adhesive to the subfloor.
- Installer may also use the "roll back" method.
- Never pre-cut material to final trim until it is applied into the adhesive. Leave material 2"-3" longer for trimming after placement.

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

Roll back method



Fold back method



- To ensure uniform adhesion of the entire surface, apply a workable amount of adhesive at one time.
- Maintain a uniform spread rate. Replace trowel (or trowel blade) with every pail used.
- 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.**
- Once the adhesive is applied, fold back or roll back the flooring into the still wet adhesive for 4"-6". This will ease the fold-back or roll back of the second half and it will help avoid an overlap of the glue-line. **Should this method not be followed, the glue-line mark will telegraph through the flooring.**
- **Open time is the combination of flash time and working time.**

- “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. An insufficient open time will result in poor adhesion.

Application Characteristics over Porous Substrates		
	Flash Time*	Working Time**
Sheets (homogeneous & heterogeneous)	15 to 30 minutes (to reach a wet tacky*** state)	30 to 60 minutes

* Flash Time is the waiting time required before installing flooring.

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

*** Wet tacky: When parts of the adhesive show withish areas but still has some tackiness.

Note: Flash time and working time may vary based on temperature, humidity, substrate porosity, trowel size and jobsite conditions.

- When 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 method of installation.
- By keeping the roll tight and maintaining 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 unfold it back too quickly.
- Once flooring is placed into the adhesive, immediately roll thoroughly with a 3 section 100-lbs roller, in both directions.

Note: In addition to rolling the flooring in both directions with a 3 section 100-lbs roller, use a 14” to 16” cork board or a piece of 2” x 4” wrapped with a piece of carpet to remove air bubbles.

- Continue laying sheets by keeping the edges spaced 1/32”, trimming each side with a straight edge or scribing when needed. The goal is to produce a uniform 1/32” spaced seam for welding.
- The width of the gap has to be even and may be less than 1/32” depending on the guide of the groover used.
- **Leaving a wider gap to weld directly into the gap without grooving is not recommended and will lead to a welded seam failure.**
- During the installation, with the lights on and off, always double check the flooring for bubbles with portable, ambient, and/or fixed lighting.
- Avoid adhesive displacement by prohibiting traffic for a period of 48 hours and 72 hours for rolling loads.



3.5. GERFLOR T-111 POLYURETHANE ADHESIVE METHOD (To use in areas with heavy rolling exceeding a point load of 175-lbs)

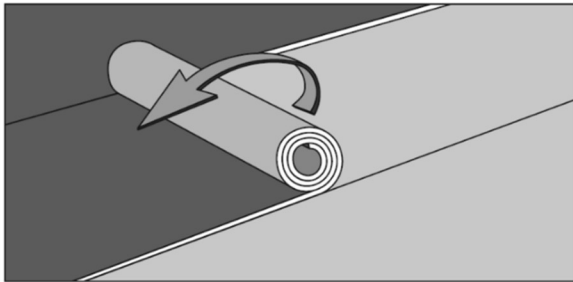
- Use only a Gerflor T-111 Polyurethane adhesive.
- Always refer to the Gerflor T-111 Polyurethane Adhesive Technical Data Sheet.
- Respect the guidelines indicated on the pail of adhesive.
- Only use Gerpatch patching compounds.
- Recommended trowel size is 1/32” x 1/16” x 1/32”, covering up to 245 sq. ft. per US gallon.
- Mix polyurethane adhesive part A and part B as recommended by the adhesive manufacturer.
- Installers **must** be familiar with the use of polyurethane adhesives.



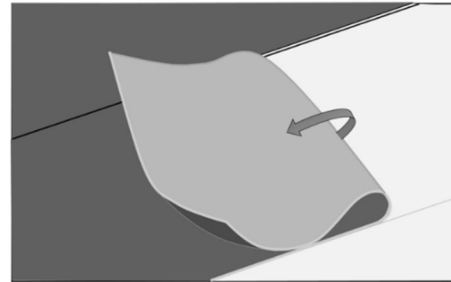
- Starting from the center line and working outward, fold the sheets back halfway and apply the adhesive to the subfloor.
- Installer may also use the “roll back” method.
- Never pre-cut material to final trim until it is applied into the adhesive. Leave material 2”-3” longer for trimming after placement.

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

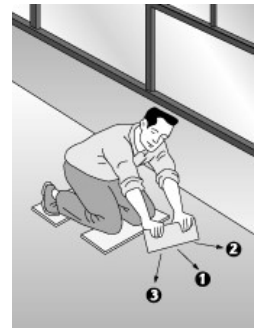
Roll back method



Fold back method



- To ensure uniform adhesion of the entire surface, apply 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.
- When 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 method of installation.
- By keeping the roll tight and maintaining 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 unfold it back too quickly.
- Once flooring is placed into the adhesive, immediately roll thoroughly with a 3 section 100-lbs roller in both directions.



Note: Rolling and pushing the air out are critical with this type of adhesive. Two-part polyurethane adhesive will never emit gases while setting; therefore, any bubbles that will appear are entrapped air under the flooring caused by improper rolling.

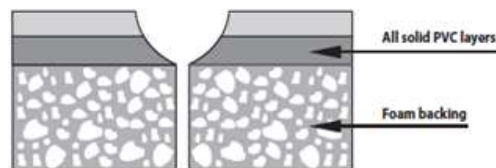
Note: In addition to rolling the flooring in both directions with a 3 section 100-lbs roller, use a 14” to 16” cork board or a piece of 2” x 4” wrapped with a piece of carpet to remove air bubbles.

- Continue laying 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.
- During the installation, with the lights on and off, always double check the flooring for bubbles with portable, ambient, and/or fixed lighting.
- Avoid adhesive displacement by prohibiting traffic for a period of 48 hours and 72 hours for rolling loads.
- **The use of knee boards and walking boards are mandatory to protect from adhesive displacement during installation.**

4. HEAT WELDING (Refer to our document: Verification of Heat Welded Seams)

4.1. ROUTING:

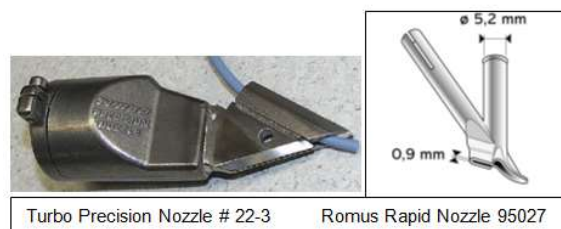
- Use an electric routing machine for major installation such as Leister or equal, approved by manufacturer.
- The Master Turbo Groover is a great tool and is highly recommended to groove our compact products.
<http://turboheatweldingtools.com/shop/>
- The Master Sport Groover is a great tool and is highly recommended to groove our comfort products.
- The Pico groover is a great tool to groove our products.
- The use of a straight edge and hand groover will provide good results for smaller installations. Maintain a uniform width and depth of groove for a uniform welded seam.
- **Rout the solid PVC layers of the sport flooring. Do not rout into the foam layer.**



4.2. MANUAL WELD:

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

- Groove and weld only 16-24 hours after the installation. **HOWEVER, using Gerfix Spray Adhesive will give you the ability to groove and weld the flooring 1 hours after installation.**
- 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.
- Turbo Precision Nozzle # 22-3 is highly recommended as well for proper welding.
<http://turboheatweldingtools.com/shop/turbo-precision-nozzle-45mm/>
- Nozzle size is 5mm as the Romus Rapid Nozzle 95027.
- The use of a non-recommended tip will jeopardize proper welding and could damage the flooring.
- Always keep the tip clean.



4.3. AUTOMATIC WELDERS (REQUIRED ON LARGE PROJECT)

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.

- Do not let the robot operate without surveillance.
- Turbo Welding Gun #25 is the recommended welding robot as it comes with the right welding tip.
<http://turboheatweldingtools.com/shop/chiquita/>

Note: Should another type of welding robot be used, such as Leister robot, care must be taken in the choice of tip as for most cases the opening of the tip is more than 2mm. This could damage the flooring and lead to a seam failure.

- The recommended tip for the Leister Robot is Romus 95253 2mm Unifloor Anti Glaze Nozzle.



WARNING: Do not weld the flooring using the Leister robot without the proper tip.

- Verify not to reduce the power with electrical cords that are too long.
- Frequently verify the weld.
- The ambient temperature, open windows and doors and other electrical equipment plugged in the same electrical outlet may influence proper welding.

Notes:

- For any type of installation, do not heat weld resilient flooring for a minimum of 16 to 24 hours after the material has been placed into the adhesive *Unless you are using Gerfix Spray Adhesive*.
- Refer to ASTM F1516-13 "Standard Practice for Sealing Seams of Resilient Flooring by the Heat Weld Method".



4.4. TRIMMING WELDED ROD

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

- Trimming must be done in two passes.
- The Turbo Plane tool is recommended and will trim in one pass. <http://turboheatweldingtools.com/shop/>
- Use trimming tools sharpen in the middle only, such as the Mozart trimmer.
- This type of trimmer will not damage the flooring.
- 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.



Turbo Plane tool



Mozart tool

5. ONCE THE INSTALLATION IS COMPLETED

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

For any information, please refer to Gerflor Technical Services.



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