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GAMECOURT® PVC INSTALLATION INSTRUCTIONS

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NOTE: THIS GUIDE PROVIDES A FUNDAMENTAL REFERENCE FOR THE INSTALLATION OF THE GAMECOURT® PVC SYSTEM. THESE INSTRUCTIONS ARE FOR INFORMATIONAL PURPOSES ONLY. WHILE MOOSE SPORTS SURFACES, LTD. BELIEVES THAT FOLLOWING THESE INSTRUCTIONS WILL RESULT IN THE BEST INSTALLATION, IT MAKES NO WARRANTY OR REPRESENTATION OF ANY NATURE, TYPE, OR DESCRIPTION EXPRESSED, IMPLIED, OR PROVIDED BY LAW RESPECTING THE INSTALLATION PROCESS OR THE RESULTS ACHIEVED. ALTHOUGH VALUABLE INFORMATION IS PROVIDED IN THIS GUIDE, IT IS NOT INTENDED AS A SUBSTITUTE FOR ON SITE TRAINING BY QUALIFIED AND EXPERIENCED PERSONNEL.

1. FLOOR PREPARATION

Concrete to cure a minimum of 90 days. The concrete slab should be tested for moisture content and pH levels prior to installation. The moisture content of the concrete slab should not be greater than 5 lbs. of moisture per 1000 Square Feet per 24-hour period in accordance with the RFMA (Rubber Flooring Manufacturer's Association) Calcium Chloride Test. The maximum pH level allowed is 8.5. The temperature in the building should be between 65-70 degrees, max humidity at 70 - preferable at 50%, HVAC installed and running.

Prior to delivery and starting installation, inspect jobsite to see if area to receive synthetic flooring is ready and concrete is level and dry. Necessary measures, such as scraping, sanding and grinding must be performed to remove all dirt, paint, drywall compound or anything that will prevent the adhesive from bonding the basemat to the substrate.

Disc sand entire floor to remove all foreign materials from the concrete subfloor and rough up the surface for proper adhesion. Use 36 grit sandpaper discs. Use these discs on a buffer with a sanding head (the type that has a hub for attaching the sandpaper).

After the floor is disc sanded, remove all dust and debris by first sweeping and then tacking the floor with methanol or water. Vacuum as necessary to remove all dust. This floor prep should be performed prior to unrolling the GAMECOURT® PVC as this will keep it clean.

Fill all expansion joints around walls and throughout the floor with joint filler. Joints should be flush with the floor. If joint fill is higher than the floor, scrape or sand accordingly.

DOOR OPENINGS - If transition strips are specified and synthetic is to butt to carpet, vinyl or tile - install snap track. Roppe Corporation (800-537-9527)(SWEETS 09650/ROP) makes vinyl reducers and metal snap track (for both straight and flexible applications).

GameCourt PVC may be installed over radiant heated floors provided the operating temperature does not exceed 85 degrees F. To allow proper adhesion of the adhesive to the sub floor, the radiant heating system should be lowered, or turned off at least 48 hours prior to installation of flooring material. This is to ensure the surface temperature of the sub floor does not exceed 85 degrees F during the installation of the flooring material. The room temperature must be maintained at a minimum of 70 degrees F prior to, during and after installation for 72 hours after which the temperature of the radiant heating system can be increased. When raising the floor temperature, do so gradually so that the substrate and the flooring material can adapt to the temperature change together. A rapid change could result in bonding problems. For more information, contact Moose Sports Surfaces Ltd.

2. INSTALLATION PREPARATION

INVENTORY AND SEPARATE MATERIALS -Check incoming product against the packing slips to ensure proper quantities are delivered. NOTIFY MOOSE SPORTS OF ANY DAMAGED OR SHORT SHIPPED QUANTITIES AS SOON AS POSSIBLE. This will allow us to get the correct quantities to you in a timely fashion. Check quantities shipped with the floor area square feet to ensure adequate product was shipped. Approximate coverage rates per working unit are:

GAMECOURT® PVC	Full Roll	291 SF/roll
2525 Acrylic Adhesive	4 gallon unit	500 SF/unit
2300 Polyurethane Adhesive	1 gallon unit	200 SF/unit

Keep material rolled face out on a sturdy core until time of installation. GameCourt PVC rolls are to be stored vertically (standing on end) and secured to prevent falling. If unable to store vertically, rolls can lay horizontally on a smooth, dry, level floor and should not be stacked or left on its side for a long period of time.

3. POSITIONING THE GAMECOURT® PVC

Temperature in room to receive flooring should be at 70 degrees F. for approximately 1-2 weeks prior to installation. Maintain room temperature, flooring and adhesive at 70 degrees F. before, during and a minimum of 2 days after completing installation.

Flooring material and adhesive must be acclimated to the installation area for a minimum of 24 hours prior to installation.

Ensure that all recommendations for sub floor and job site conditions are met prior to beginning the installation. Once the installation has started, you have accepted the conditions.

For best color match on installations requiring more than one roll, be sure rolls to be used in same area are from the same batch number. It is VERY IMPORTANT to install rolls in numerical order according to sequence number.

Install rolls in sequential order.

Do not reverse sheets for seaming.

Once the rolls are all laid out, the installer should review the entire floor for consistency of pattern and color.

For "wood patterned" GameCourt PVC only, thoroughly inspect the pattern to make sure that the "maple design" patterned boards are parallel with the long edge seams. The board pattern should be printed straight on the roll and should match up with the edges. If the board pattern is skewed and does not match up, do NOT begin installing materials. Call Moose Sports and review the situation.

"IMPORTANT NOTE" – MATERIAL WARRANTY

Any material installed with visual defects will NOT be considered a legitimate claim.

GameCourt PVC can be installed starting at a side wall or from the room's centerline, at the installer's discretion.

Allow the material to run up the end and side walls to ensure there is enough material to cover the floor.

Let the GameCourt PVC relax for at 24-48 hours before beginning to adhere. During this time, the gym must be kept within the temperature range specified above. Relative humidity should be below 75%. This means that ventilation (and in cold weather, the heating system) must be running constantly during installation.

On occasion, the roll ends may not lay down flat to the floor. You can remove the curve by heating the PVC side with an electric heat gun @ the "low" setting. To prevent damage, determine the distance between the heat gun and the PVC roll on a scrap PVC piece before attempting this procedure on the laid rolls.

Do not compression fit seams. Leave an approximate 1mm gap between rolls.

4. GLUING THE GAMECOURT® PVC

Recommended Adhesive: GameCourt PVC #2525 Acrylic Adhesive, 4 gallon unit, coverage at 500 SF/unit for a full glue down. Under bleacher areas, GameCourt PVC #2300 2-part Polyurethane Adhesive must be used and a 1-gallon unit covers 200 SF. Apply adhesive using a 1/16" deep X 1/16" wide X 1/16" apart, "V" notched trowel for porous substrate

and 1/32" deep x 1/32" wide x 1/32" apart notched trowel for non-porous substrate. Do not apply adhesive too heavy. Moose Sports Surfaces, Ltd. will not accept responsibility for flooring problems caused by excessive adhesive application or the use of a non-recommended adhesive.

Adhesive Bond Test. In several locations throughout the area to receive the flooring, glue down 3' x 3' pieces of flooring with the recommended adhesive. Bond tests give the installer the opportunity to evaluate the porosity of the sub floor and determine the correct timing for application of the flooring material. Allow the bond test to set for 72 hours before attempting to remove. It is also a good practice to place your bond test over some areas where a patching compound has been used in order to check the bond strength of the patching compound. When removing the bond tests, check for looseness around the edges of the material, moisture always takes the path of least resistance. A proper bond test should show no signs of moisture and it will restrict the movement of the material. When peeling back the material you should see proper transfer of adhesive between the sub floor and the flooring material. If there are any doubts as to the results of the bond test you should always call the manufacturer.

After the rolls have been rolled out and relaxed for 24-48 hours, apply the adhesive using the "fold" or "roll up half of the roll" methods. Avoid moving the rolls from their original positions.

Apply glue to the uncovered half of the sub-floor for 100% glue down.

Spread the glue using above recommended trowel size. Using too much adhesive will cause trowel notch telegraphing, a change in color to the floor, seam contamination and will affect the normal indentation resistance of the floor.

Allow the adhesive to become tacky before positioning the flooring (follow the recommended adhesive manufacturer's instructions on the adhesive container. Flooring must be placed into adhesive within 30 minutes after becoming tacky.

Apply the glue to the sub-floor in even coats. In order to ensure that the glue is properly transferred to the back of the floor covering, do not glue too large an area at one time.

Lay the GameCourt PVC into the adhesive after the setting time specified by the glue manufacturer has passed.

Continually roll the surface parallel and perpendicularly to the seams with a 100 lb. roller to eliminate any bubbles that might form between the sub-floor and the flooring material.

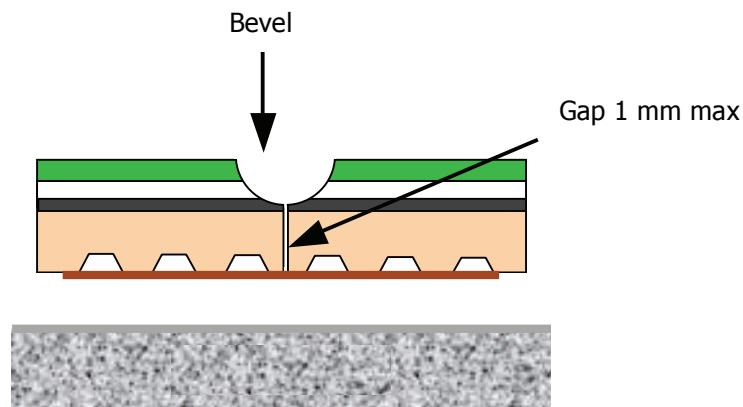
After gluing, wait approximately 8-10 hours before starting to heat weld the seams.

If adhesive gets on the PVC surface, remove with acetone (make sure to test acetone on the surface in an inconspicuous area first).

5. HEAT-WELDING SEAMS

All seams must be heat welded. Equipment for welding can be purchased at Winkelman Sales in Buffalo, NY (800-929-4326). Four pieces of equipment are necessary for installation: (1) automatic router/groover/miller (2) automatic welding machine (3) hand welding machine (4) hand grooving machine. Total cost for equipment is estimated at \$6500.

A curved blade should be used for milling to ensure proper contact between the welding beads and the covering. (Max depth: 1", width: 1 5/8", bead diameter: 2"). Remove all impurities caused by milling.

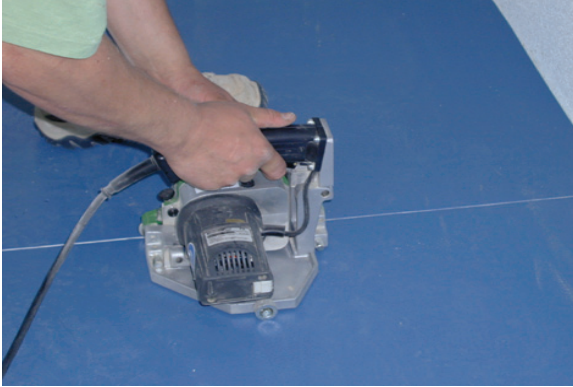


6. MILLING (ROUTERING)

Milling (Routing) must be performed only with an electric tool using a curved blade, as described above.

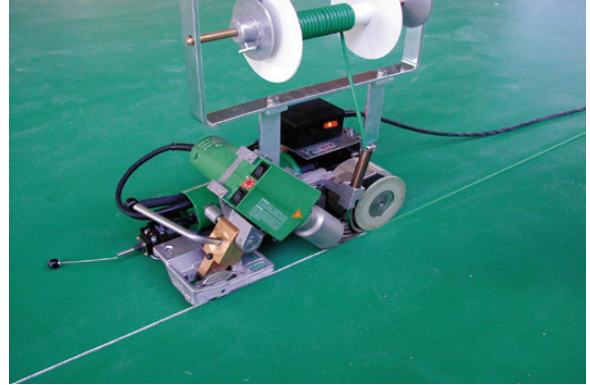
It is highly RECOMMENDED to practice on a scrap piece of material first to ensure the milling/router machine is set to the proper depth.

Do not route into foam layer.



Milling/Router machine

Milling/Router Machine



Automatic welding machine

7. WELDING

Heat welding provides for strong, watertight, and hygienic seams.

The welding cord is made from pure PVC, which is designed to melt at the same temperature as the PVC of the sheet flooring. This is why you should never use welding rods other than those specified for the product you are installing.

Although welding can be performed manually, we strongly recommend using an automatic welding machine, which will produce more regular, professional quality welds. A hand welder will need to be used in areas that the automatic cart cannot reach (i.e.: walls). When hand welding, it is very important to watch the temperature and the speed of application.

Heat weld seams 8-10 hours after gluing the GameCourt PVC (usually the following day).

“IMPORTANT NOTE” – AUTO WELDER SET-UP

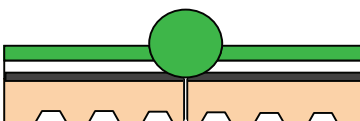
It's always a good idea to practice on a scrap piece of material first to ensure the automatic welding machine is set to the proper temperature and speed.

8. TRIMMING THE WELD

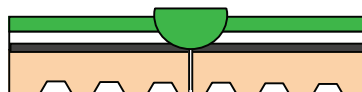
Tool required for trimming: “Quarter-moon” or “crescent” knife with trimming guide. Welds should be trimmed in two stages; the first trim while the weld rod is still warm using the above specified knife with trimming guide.

When welding rod is heated it expands, when it dries and cools, it contracts.

Once seaming is complete, wait at least 30-45 minutes before trimming the seam, because when it starts to cool it shrinks, cutting a hot seam will create a cupped seam that will collect dirt.



Weld is hot



1st trim **before** cooling



2nd trim **after** cooling

9. PAINTING GAME LINES

Double-check marking of playing lines before application, as the painted lines will be **nearly impossible** to remove.

Apply game lines at least 8-12 hours after welding the seams, check to ensure the surface is dry, clean and free of dust and grease. If not striping the GameCourt PVC within 8-12 hours of the installation OR if the GameCourt PVC is not clean, wipe the area to be striped with denatured alcohol or an acetone-dampened rag.

Mark off playing lines with a high-quality masking tape with good releasing qualities (3M #233 or #232 solvent resistant tape found at automotive paint supply stores). Use tape machine and press hard on the back wheels of the tape machine or double roll with the tape machine to make sure that the tape is well bonded. Apply one coat of 2-component polyurethane GameCourt Line Paint. **Primer is not necessary.** Yellow and white lines need to be double coated.

Coverage of line paint is approximately 160 lineal feet per ½ kg unit for a 2" line. Line paint is sold in full case units only.

Each case contains 8 units that are ½ kg per unit.

“IMPORTANT NOTE” – CAUTION

Any drips or spills of the GameCourt Line Paint on the GameCourt PVC must be cleaned IMMEDIATELY.

If allowed to set, it is nearly impossible to get the Line Paint off without damaging the clear polyurethane coating on the GameCourt PVC.

Remove masking tape as soon as painting is complete. The surface is ready for normal use 72 hours after application.

10. PAINTING KEYS AND/OR BORDERS

GameCourt two-component polyurethane top coating may be used to paint keys and borders. **Primer is not necessary.**

Coverage is 556 SF/unit for roller application and 385 SF/unit for spray application. To prep surface that will receive top coat, sand with 120 grit sand paper OR use a black highpro pad on a buffer to scratch up the surface and create a mechanical bond. Clean area well using a clean white towel and acetone (not too much acetone). Wipe the floor thoroughly. If it is very dirty, wipe the floor twice.

Two applications of top coat may be necessary when using lighter top coat colors.

11. INSTALLING GAMECOURT® PVC OVER UNDERLAYMENT

An underlayment is recommended when “high moisture” content exists in the concrete substrate.

The sub-floor must be carefully swept and dusted. Unroll the underlayment on the clean sub-floor as per manufacturer’s recommendations.

Be particularly careful cutting around sleeves, anchor boxes and the boundary of the gym.

Refer back to section 3.0, Installation – GameCourt PVC to complete installation.

12. OTHER INSTALLATION “TIPS” AND GENERAL INFORMATION

Occasionally, butt seams (end seams) may require the area to be weighted down overnight.

Do not use the last 6” of material length on the roll when end seams are needed.

Don’t cut seams too tight or an automatic groover can go off track.

Make sure that Welding Rod does not BURN when coming out of tip.

Temperature on welder should be set ¾ of the way up (60-75%). Depends on quickness of installer. The higher the temperature, the faster the installer has to go.

An automatic welder can seam 125’ in about 12-15 minutes.

Make sure that there is enough length in the welding rod spool because you would rather not run out in the middle of a seam.

Welding of 12,000 SF should take 1 day using 3 guys if they have experience installing heat-welded PVC flooring.

When welding, stop 1' from the wall and leave a 2" tail for trimming.

Use a clean white rag with cold water and dish detergent and run over the welded seam line.

Flat trim welded seam with turbo trimmer by putting a knife into a twin-plate. Still make sure to trim in 2 passes.

The key to welding is to be as smooth as possible and not start and stop in the middle of the seam.

Armstrong website – shows how to heat weld. www.Armstrong.com.

Sinclair – equipment used for “vinyl heat welding” - www.sinegco.com. Sinclair manufactures a kit that has the hand welder and hand groover in it and Winkelman sells the kit. Winkelman Sales is located in Buffalo, NY and the phone # is 800-929-4326. All equipment to install GameCourt PVC can be purchased at Winkelman (automatic welder, automatic groover, hand welder, and hand groover)

Turbo Trimmer and the Turbo Groover which are hand tools that are a little more expensive but work great (the Trimmer trims all at one time instead of going back twice).