MCCRANN CYRUS MFG

Quality Products and Services since 1977

APOLLO INSTALLATION

SECTION I

MATERIAL STORAGE & HANDLING

General packaging information:
All McCrann Cyrus Mfg products are packaged on wooden pallets.

On receipt of merchandise:
A) The product in front of you has gone through several quality assurance checks. However, it is recommended that you double-check that your order is correct, that no damage occurred during transport, and for any other possible shortcomings. For your own protection, ensure that defective product is identified prior to the start of the installation. Please note that McCrann Cyrus Mfg is not responsible for any installation costs that occur as a result of defective product being installed.

B) If adhesives were exposed to freezing temperatures, place indoors and bring to room temperature between 18°C (65°F) and 23°C (72°F) before using. Read Safety Data sheets and MSDS sheets for adhesive. Check adhesive for damage that may have occurred during transit.

McCrann Cyrus Mfg RF Bond It adhesive has a 12 month shelf life. If shipment has been stored for an extended time, see Batch label on can and refer to decoding instructions included with data sheet to confirm adhesive has not exceeded its shelf life. McCrann Cyrus Mfg is not responsible for expired adhesive used at the time of installation.

C) Storage Store tiles in a dry and clean area. Temperature and humidity changes will cause the rubber to expand or contract. The rubber tiles need to be kept dry during storage and the adhesive needs to be kept at a minimum of 10°C (50°F) in a heated space.

D) Installation after short term storage at least 48 hours before starting the installation lay out all tiles on the subsurface to allow them to acclimate to ambient temperature. The tiles should be placed in stacks no more than two high. Acclimation is complete when the products have reached a consistent dimension for a period of at least 24 hours. Refer to the Weights and Measures chart at the back of these guidelines. Installation should only occur when the sub-surface temperature is between 18°C (65°F) and 23°C (72°F). Short term storage should be considered as two weeks or less.

E) Installation after prolonged storage before placing any McCrann Cyrus Mfg product in prolonged storage remove the pallet banding, but leave the rest of the packaging on. During prolonged storage, the tiles in the lower portion of the stack will compress to a greater degree than those in the upper portion. This will show as thickness variations in the products taken from the top of the pallet as compared to those on the bottom. Product dimensions (length and width) may also be affected. A longer acclimation time will be required for product that has had a longer storage time. Exactly how long is very difficult to predict and may take up to 72 hours. The product should be taken off the pallet and distributed throughout the installation area in small piles of two or less. Installation should only occur when the sub-surface temperature is between 18°C (65°F) and 23°C (72°F). Acclimation is complete when the products have reached a consistent dimension for a period of 24 hours; check length, width, and thickness periodically until the right dimensions have been reached (see the Weights & Measures chart at the back of these guidelines). Do not install the tiles if they are not square and the appropriate thickness has not been reached. Prolonged storage should be considered two weeks or longer.

F) Measure the site and confirm you have adequate material to complete your installation.

G) Ensure all other trades have completed working prior to install. It is important to keep a clean working surface at all times. Protect tiles from dust and dirt.

H) Uneven distribution of color granules (shade variation) may occur from tile to tile; this is not considered to be a product defect. McCrann Cyrus Mfg recommends placing these tiles in less visible locations in order to minimize the visual effects of such minor variations.

I) Keep Apollo rubber surfacing dry prior to installation.

J) Petroleum distillates (e.g. solvents) as well as liquid animal fats may cause the surface bonding to fail. Test results for other harmful chemicals and compounds are available on request.

SECTION II

TOOLS & ACCESSORIES

A) Tools and safety equipment required
- McCrann Cyrus Mfg Installation Guidelines
- Safety glasses
- Heavy duty utility knife
- Band saw, jigsaw or reciprocating saw (Suggested blade size – approx. 12-14 teeth/inch or rubber cutting blade)
- Steel mallet Measuring tape
- Transit level and Straight edge
- Caulking gun
- Chalk snap-line
- Heavy duty white chalk sharpened to wedge for marking cuts
- Trowel (if adhesive is required)
  - o For fine finish concrete surface 1/8" (3.2mm) V-notch
  - o For rough finish concrete 1/8" (3.2mm) Square- notch
  - o Disposable plastic spatula for spot gluing
- Carpenter's square
- Perimeter border if required
- Transition wedges and corners if required

B) Finishing kits
The Finishing Kit consists of 4kg rubber granules and 800g polyurethane binder. It is convenient to have on site at the end of the project to make installations look professional and clean. Use the finishing kit to fill in cuts around posts if necessary.

C) Adhesive (if required) IMPORTANT: If adhesive other than the products noted below is used, these installation guidelines may not apply. Contact adhesive manufacturer for specific guidelines for Apollo Fitness Tiles.

McCrann Cyrus Mfg recommended adhesive:

1) Edegwood RF Bond It (V.O.C. compliant)
- One component, water free, polyurethane adhesive
- 4 gallon pail: 55 lbs (12 kg).
- Approximate coverage 150 sq. ft. (14 m^2) per pail.

2) Roberts RB40 Adhesive (V.O.C. compliant)
- Copolymer rubber adhesive
- 825 ml gun grade: 1.74 lbs (27.9 oz tube)
- Approximate coverage: - 1/4" (6 mm) bead = 90 lineal feet - 3/8" (10 mm) bead = 40 lineal feet

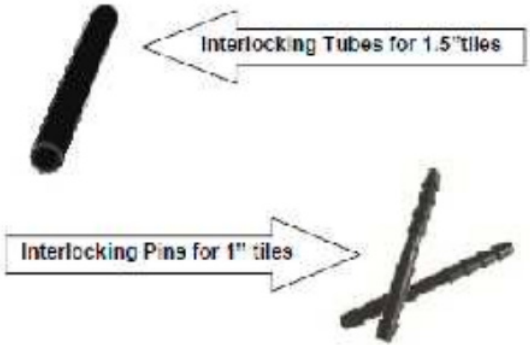
It s not uncommon for a moisture cured urethane product, such as RF Bond It, to develop a slight skin on the top surface of the product. The slight skinning can be the result of the product getting older, or in the case of newer product, perhaps a poor seal in the lid. Regardless, the product is still good; simply trim the skin and discard. In the case of older product, a thicker skin may have developed, and the viscosity of the overall product may have thickened; making the application a bit more difficult, in most cases it will still perform.

For detailed information and product use, refer to the RF Bond IT Product Data Sheet included with the adhesive.

D) Transition Pieces
Wedges are used around the perimeter of an area to create a transition. They can be adhered to the edge of the rubber tile or glued to the sub-surface. Corner pieces are available only for the 1.5" tiles. There are inside and outside wedge corners, designed for use on all 90º angles. Corners for the 1" tiles must be fabricated on site from the 36" x 1" x 4" wedge accessory.

F) Half tiles
Half Tiles were designed so that full tiles can be installed in a staggered layout. Tiles may also be cut on site – see Section VI – Measuring & Cutting.

H) Interlocking tubes and pins
The interlocking tubes and pins are made from black polyethylene. Each tile requires four (4) interlocking tubes or pins which are included in every order at no charge.



SECTION III

BEFORE STARTING THE INSTALLATION

The sub-surface must be smooth, clean, and dry.

A) During storage, rubber tiles must be kept dry and adhesive must be stored above 50°F (10°C) in a dry, heated space.

B) Check the ambient temperature:
- Temperature range for adhesive use: between 50°F (10°C) and 104°F (40°C).
- If indoors, in-floor radiant heat should be shut off for 24 hours.
- In all situations, working at the extreme ends of the temperature range will affect curing times, viscosity and pot life of adhesive, possibly resulting in adhesion problems. **For detailed information and product use, refer to the Technical Product Data Sheet, included with adhesive.**

SECTION IV

PREPARATION OF THE SUB-SURFACE

Fitness Tiles should not be installed on top of carpet as the tiles may shift apart. The sub-surface must be level, clean, and dry.

A) Concrete sub-surfaces
New concrete sub-surfaces must be thoroughly cured and free from hydrostatic pressure before rubber tiles are installed (a minimum of 30 days after pour). The sub-surface must be smooth and level to a tolerance not exceeding 1/8" in 10 lineal feet. If existing concrete is too rough, it can be leveled by sanding or applying a Portland cement based leveling compound, allowing a curing time as recommended by the manufacturer. Follow manufacturer's installation guidelines.

It is vital that a moisture and alkalinity test be completed prior to floor installation, and that sub-surfaces are cured and dry to acceptable levels. Concrete substrates should not exceed 65 percent RH and/or 3 lbsx24 hrs.x1000 sf. Moisture vapor emissions rate tested in accordance to ASTM F 2170 and ASTM F 1869. Moisture is the single most significant factor that causes bonding failure to the sub-surface.

B) Wooden sub-surfaces
- New plywood should be acclimatized for a 48-hour period prior to installation of the rubber flooring.
- CDX exterior smooth one side suggested for new wood substrates.
- Secure all nails to prevent future protrusion.
- Any cracks, holes, and rough or uneven areas should be patched with good quality cement based leveling compound.
- Wood sub-surface must be a minimum of 1" thickness and free from any flex movement.

It is vital that a moisture and alkalinity test be completed prior to floor installation, and that sub-surfaces are cured and dry to acceptable levels. Moisture vapor emissions rate tested in accordance to ASTM F 2170 and ASTM F 1869. Moisture is the single most significant factor that causes bonding failure to the sub-surface. Warranty is not applicable is specified moisture ranges are not adhered to.

SECTION V

INSTALLATION OF APOLLO FITNESS TILES

Apollo tiles are primarily installed without adhesive, using interlocking tubes or pins for stability. However, some installations may benefit from adhering edges of the tiles together. Where installations are not contained on all sides, perimeter tiles should be adhered to the sub-surface. Alternately transition wedges can be used as containment by adhering them to the sub-surface.

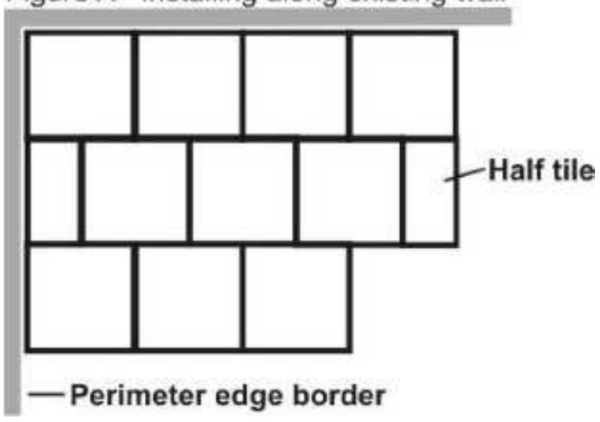
Important: See Section I, (D) and (E) regarding acclimation of tiles.

1. Arranging the Tiles
It may be to your advantage to insert four (4) interlocking pegs into each tile prior to removing from the pallet. Be sure to leave enough tiles without pegs to do your first row of tiles.

Make sure the sub-surface is properly prepared (see **Section IV – Preparation of the Sub-surface**). Determine the area for best layout. For irregular site configurations, a good starting point is often the center. Other installations are best started in the corner along a straight edge. **See Section VI for measuring and cutting tiles to fit.**

A) Installing Along Existing Wall
Place the first tile at your designated starting point, either against a wall or existing border. Align first row of tiles along a straight edge. Make sure that all interlocking holes are facing toward unfinished area. (Do not put any pegs in first row of tiles.) (See diagram below).

Figure A - Installing along existing wall

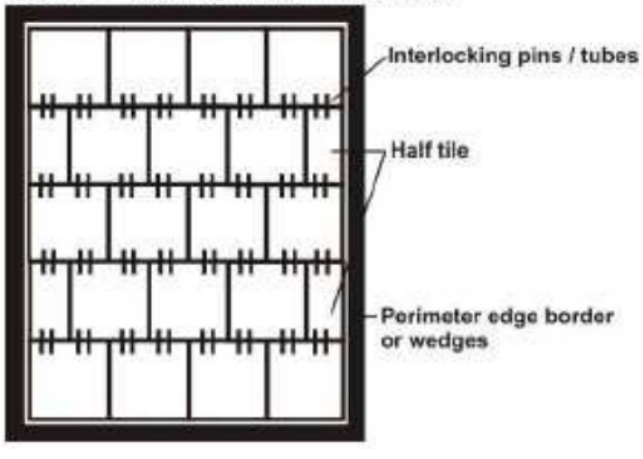


Start second row with a "half tile", which is simply a full tile cut in half (see **Section VI – Measuring & Cutting**). As you are installing each tile, tilt slightly to ease pegs into existing tile. Tap with mallet to ensure tight fit. Continue installation in a staggered method. Repeat first and second row until installation is completed.

B) Installing with Perimeter Border
If installing a new perimeter border, it is best if you only install two edges first (i.e. L shape). This will reduce movement of the tiles while inserting the interlocking tubes. After tiles are laid, install the last two remaining perimeter borders, making sure they are as tight as possible against the tiles. A mallet is helpful in this process.

The unique interlocking system allows the tiles to be securely fastened to one another.

Figure B - Installing with perimeter border

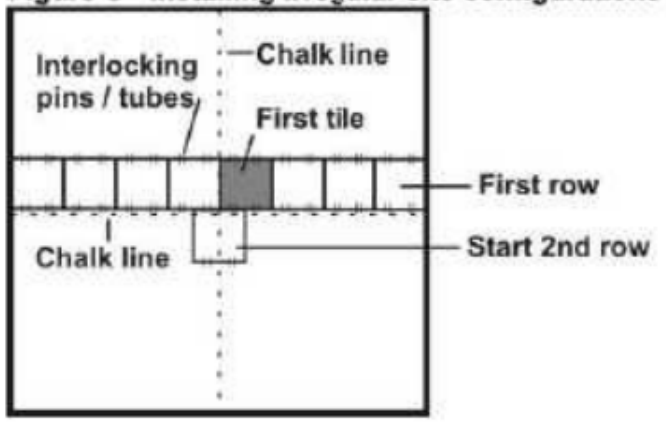


The correct installation of Apollo Tiles is a staggered pattern to ensure proper alignment and a tighter fit.

C) Installing Irregular Site Configurations
As reference for installation, measure the designated area and snap chalk lines both horizontally and vertically at the center of the installation area, the second chalk line will be 90 degrees to the first chalk line. These reference lines will serve as a guide for laying the first row of tiles.

Place the first tile aligned with the perpendicular center of the chalk lines. Align the first row of tiles along this chalk line making sure the interlocking holes are facing toward unfinished areas. Secure this first row of tiles by either gluing to sub-surface or creating a temporary border along one edge to hold the tiles in place.

Figure C - Installing irregular site configurations



Refer to Section VI – Measuring & Cutting for outside cuts and cutting irregular shapes.

SECTION VI

MEASURING & CUTTING ADHESIVE

Lay tile on a flat surface, hold the metal straight edge on the cut line, and cut with sharp utility knife. Keep scoring the cut until separated. Change or snap off blades frequently to ensure clean cuts. For odd angles, circular patterns, and to cut around structure mounts, a cardboard template is suggested. If a large amount of cutting is required, installers may consider using a jigsaw or reciprocating saw. If so, suggested blade is 12-14 teeth per inch, or a rubber cutting blade. Depending on thickness and length of cut, inserting a small wedge into start of cut will help to minimize any binding on the blade.

As rubber has the ability to compress, it is best to cut your tile slightly larger than required. This will result in a tight fit. Cutting edges inward approximately 15 degrees will make placement along a solid edge easier. Hand cut edges should be used against perimeter walls only.

SECTION VII

ADHESIVE

A) General

- Please read the RF Bond IT Product Data Sheet thoroughly before starting with the installation.
- Moisture is the single greatest cause of bonding failure.
- Higher temperatures and humidity cause the adhesive to cure faster.
- Use safety glasses and rubber gloves when applying adhesive.

B) Applying Adhesive

Apollo tiles do not require a full glue down installation, however adhering perimeter tiles or transition wedges to create a perimeter containment may be required in some applications.

Wear gloves at all times when applying adhesive. Do not allow adhesive to cure on your hands.

All substrates must be structurally sound, smooth, clean, dry, and free from dust, loose material, grease, oil, wax, sealers, curing agents, and other foreign materials. Apply adhesive with trowel when spreading on sub-surface. Adhesive may also be applied directly to back of tile using a plastic spatula. (See **Section II – Tools and Accessories**).
If gun grade adhesive is used, run 1/8" to 1/4" bead across bottom of wedge/corner piece to ensure good bond with sub surface. When applying adhesive, glue must be spread evenly on sub-surface or on back of each piece to avoid differences in height. Allow 48 hours setting time. Avoid all traffic during curing time.

DO NOT GET ADHESIVE ON THE SURFACE OF THE TILES AS IT IS VIRTUALLY IMPOSSIBLE TO REMOVE.

Using mineral spirits or similar products to remove adhesive residue may alter the surface appearance of the tiles. If you choose to use this type of product to remove adhesive, test product for color fastness first using a small amount of mineral spirits applied with a clean, dry cloth. Do not scrub! Any damage to the tiles as a result of adhesive removal is solely the responsibility of the installer.

C) Clean Up Adhesive

Excess adhesive on sub surface or tools should be cleaned immediately as per adhesive manufacturer's instructions. Cured adhesive bonds tightly and is very difficult to remove. **Do not use solvents** on tile surface as they cause deterioration of the bonding compound between the rubber granules.

Higher ambient temperatures and humidity will result in a faster curing rate.

SECTION VII

GENERAL CLEANING & MAINTENANCE ROUTINE MAINTENANCE EXTENDS LIFE AND ENHANCES APPEARANCE.

A) Initial cleaning after installation

Clean tiles thoroughly with a high CFM vacuum to remove residual dirt or debris left from installation. The tiles are coated with water-based release agent, a result of the manufacturing process. This will initially cause slight slipperiness. For fast removal, damp mop with a solution of RF Refresh IT diluted in warm water; use a commercial microfiber mop. Be sure to mop with clean water to rinse away all detergent. Use a two bucket system and change the water frequently.

In rare circumstances, a more aggressive cleaning may be required to remove the release agent. This can be accomplished by using a water-based cleaner such as Stoner A538, which has a high pH. The high pH helps emulsify the release agent, while detergents keep it in suspension allowing it to be rinsed away. Apply undiluted A538 with a microfiber mop and let stand for 15 minutes. The cleaned area should be rinsed using a light weight auto-scrubber with a soft nylon cylindrical brush, and warm, clean water to remove residual cleaner. An rpm of 185 and brush pressure between 35 and 80 lbs are recommended. The water must be extracted after this step to remove any remaining moisture. It is recommended that you use a wet-vac to extract moisture.

B) General Maintenance

Typically, McCrann Cyrus Mfg Rubber Flooring requires less maintenance than other types of flooring. Regular dry vacuuming is recommended with occasional damp mopping using a solution of warm water and RF Refresh IT or mild household cleaner (1oz/gal). Use a two bucket system with a commercial microfiber mop and change the rinse water frequently. Do not use a string mop. When cleaning equipment/furnishings with disinfectant or other strong cleaners, be careful that overspray or excess cleaner does not drip onto the rubber flooring, strong chemicals may cause the surface to deteriorate. Products containing solvents and acids will attack the composite structure of the Apollo Tiles. McCrann Cyrus Mfg does not assume any responsibility for damages caused by chemical additives. **For interlocking floors, one step machines are not appropriate. Only use equipment that extracts dirty water as it cleans.**

C) Deep Cleaning
In areas of high traffic, a more aggressive cleaning may occasionally be required because of a buildup of dirt. A steam vacuum is ideal for deep cleaning. If required, a neutral pH cleaner such as RF Refresh IT can be used with this equipment (3 oz/gal). Be cautious not to flood the floor when using this equipment. It is important to use equipment that removes all liquids during the process. If necessary, tiles may be removed and cleaned thoroughly.
Be sure that tiles are completely dry and free of foreign material before re-installing. McCrann Cyrus Mfg does not assume any responsibility for damages caused by chemical cleaners.

SECTION IX

WEIGHTS & MEASURES

GENERAL PACKAGING INFORMATION
All McCrann Cyrus Mfg products are packaged on wooden pallets.

Product Information - Rubber Tiles:
Thickness tolerance of ± 2.0 mm

24″ x 24″ = 4 ft^2 per tile
(61 cm x 61 cm = 0.37 m^2 per tile)

Thickness: 1″ (25mm)
Tiles per pallet: 100
Weight per tile: 18 lbs (8.2 kg)
Pallet: 48″ x 48″

Thickness: 1½″ (38mm)
Tiles per pallet: 96
Weight per tile: 25 lbs (11.3 kg)
Pallet: 48″ x 48″

Wedges

Dimensions: 1″ x 36 ¼″ long x 4″ wide (25mm x 92 cm long x 10 cm wide)
Weight per piece: 3 lbs (1.3 kg)

Dimensions: 1½″ x 19½″ long x 6″ wide (38mm x 49.5cm long x 15.2cm wide)
Weight per piece: 3 lbs (1.3 kg)

Corners (inside/outside)

Dimensions: 1½″ x 9¾″ long (inside edge) x 6″ wide (38mm x 24.8cm x 15.2cm)
Weight per piece: 8 lbs (3.6 kg)

Dimensions: 1½″ x 9¾″ long (outside edge) x 6″ wide (38mm x 24.8cm x 15.2cm)
Weight per piece: 8 lbs (3.6 kg)

Note: corners for 1″ tiles must be fabricated on site from 36″ x 1″ wedge product

Weights and measures may change without notice. All measurements are nominal and subject to variation

DISCLAIMER

The installation guidelines in this manual represent typical installation work procedures. Every site is different and McCrann Cyrus Mfg does not claim to have covered all possible circumstances.
McCrann Cyrus Mfg does not warrant installation work and specifically disclaims liability for any direct or indirect personal injury, property damage, and other costs or losses resulting from installations or applications by third parties. Please, see the McCrann Cyrus Mfg Limited Warranty for the particulars of warranty coverage relating to McCrann Cyrus Mfg products.