

# Installation Guidelines



## For Rubber King Play Tiles



This product has been certified by SCS to meet the rigorous indoor air quality requirements of the FloorScore® certification program.

**The following pages are guidelines, if not followed, warranty will be voided. Please read this manual thoroughly before installing Rubber King products.**

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## **SECTION I - GENERAL INFORMATION**

- This installation method and tile format is a must for all areas in extreme temperature and humidity change, or where surface moisture may be present after installation, i.e. ice arenas, locker rooms and entry ways.
- Product Information:
  - Thickness Tolerance of  $\pm 2\text{mm}$  (5/64")
  - Dimensions:  $24'' \times 24'' = 4 \text{ ft}^2$  (60.96cm x 60.96cm 0.37 m<sup>2</sup>)
  - Half Tiles:  $12'' \times 24'' = 2 \text{ ft}^2$  (30.48cm x 60.96cm 0.19m<sup>2</sup>)
  - Thickness:
    - 2 ¼" 6 ft Fall Height

## **SECTION II - MATERIAL STORAGE & HANDLING**

### **General Information:**

- Orders from Rubber King are packaged in cardboard boxes
- Each box will include 1 tile & 4 connecting tubes
- Half tiles will be packaged 2 to a box

### **Receipt of Merchandise:**

- It is recommended you double-check your order is correct.
- Inspect for any damage that may have occurred during transportation.
- Identify any other possible shortcomings.
- For your own protection, ensure that defective product is identified prior to the start of the installation.
- Rubber King is not responsible for any installation costs that occur because of defective product being installed.

### **Storage:**

- Store product in a dry and clean area.

## **SECTION III - TOOLS & ACCESSORIES**

### **Tools and Safety Equipment:**

- Rubber King Installation Guidelines
- Safety glasses
- Solvent safe rubber gloves
- Knee pads
- Broom and dustpan
- Heavy duty utility knife
- Jigsaw, reciprocating saw, or bandsaw
  - Suggested blade is 12-14 teeth per inch or a rubber cutting blade.
- Mallet
- Measuring tape
- Transit level and straight edge
- Chalk snap-line
- White Chalk sharpened to wedge for marking cuts
- Interlocking tubes

**Interlocking Tubes:**

- Interlocking tubes are made from black polyethylene.
- Each tile requires four (4) Interlocking Tubes.
- Interlocking tubes should be installed in the same direction as the longest part of the installation area.



**Interlocking Tube**

**Half Tiles:**

- Designed so full tiles can be installed in a staggered layout.
- Full tiles may also be cut on site.

**SECTION IV - SUB-SURFACE**

**Preparation of Sub-surface:**

- Rubber King Play Tiles may be installed over a solid sub-surface such as concrete or asphalt, or over a compacted granular sub-surface.

R = Recommended	NR = Not Recommended			
	Interior		Exterior	
Surface	24" x 24"		24" x 24"	
	Interlocking	Glue Down	Interlocking	Glue Down
Concrete Surface	R	R	R	R
Asphalt Surface	R	R	R	R
Plywood	R	R	R	N/R
Compacted Gravel	R	N/R	R	N/R
Wood or Tile	R	N/R	R	N/R
Resilient Flooring	R	N/R	R	N/R
Carpet	R	N/R	R	N/R

- The sub-surface must be flat/smooth, clean, and dry, structurally sound and all debris including old adhesive must be removed.
  - Scraping may be required to remove debris.
- Particleboard, chipboard, Masonite, and Lauan Plywood are not considered suitable underlayment.
- In all cases, proper drainage must be provided due to the porous nature of the tiles.
  - This can be achieved by either a well-defined gradient of the surface or well-placed drainage pipe in lower spots.
- Site Elevation:
  - On grade installation: The finished installed height of the Rubber King Play Tile surface will be equal to or slightly higher than the perimeter grade but not more than 1" higher unless approved by the project engineer.
  - Above grade installation: The installation of Rubber King Play Tiles over existing decks or slabs is referred to as an "above grade installation" and will usually require the use of reducers around the perimeters of the area to

transition smooth back to the floor elevation, unless the site terminates at a wall or other vertical surface.

- Adequate drains must be in place prior to the installation of the tiles.
  - When preparing a new hard base, a minimum slope equal to 1" or 10' of run shall be applied to the finished surface with slope toward the down-grade side of the site, as appropriate.
  - Provide for drainage system to eliminate standing water.
- If the sub-surface has been previously sealed or finished the surface may need to be stripped and cleaned to ensure an adequate bond.
- 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 may be available on request.
- Contact Rubber King for verification.

### **Concrete Sub-Surface:**

- 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).
- Consult adhesive specifications for allowable moisture tolerance.
- Concrete substrates should not exceed 90% RH and/or 5lbs x 24-hours x 1000 sq. ft.
- It is essential that PH tests be taken on all concrete floors. This must range between 7 and 9. If it does not, the sub-floor must be neutralized prior to the beginning of the installation. **These tests must be documented.**
- Moisture vapor emissions test in accordance to ASTM F1869 and relative humidity in concrete test in accordance to ASTM F2170 must be completed.
- Sub-surface must be smooth and level to a tolerance not exceeding 1/8" in 10 lineal feet.
  - The Concrete Surface Profile (CSP) must achieve a requirement of CSP2.
- If existing concrete is too rough, or does not meet the above criteria, apply a Portland cement based leveling compound to smooth and level the surface. Follow all leveling compound manufacturer's instructions.
  - Enkadrain by Colbond can be used as an alternate method of leveling rough or uneven concrete.
- Moisture is the single most significant factor that causes bonding failure to the sub-surface.
- Warranty is not applicable if specified moisture ranges are not adhered to.

### **Asphalt Sub-Surface:**

- New asphalt must be cured for a minimum of 14 days.
- Asphalt sub-surface must be level and free of grease, oil and other contaminants.
- Surface must be power washed to remove all loose material and thoroughly dry before commencing installation
- To ensure good adhesion and minimize expansion issues, install a woven geotextile slip sheet over the asphalt surface.

### **Compacted Granular Surface:**

- Compacted granular surfaces are defined as dirt or gravel base.
- Excavate the area to the depth of the thickness plus a minimum of 4".
- Level and compact the area with a medium to coarse crushed gravel (3/4" minus gravel range).
- Moisten and compact with a flat plate vibratory compactor to 95% proctor.
  - Depending on the irregularity of the resulting surface, use up to 1/4" granular fines to make a smoother surface
  - A small amount of concrete may have to be added to the fines, moisten and compact again.
- Apply a woven geotextile fabric over top of compacted, level sub-surface.
  - Adhere to perimeter containment.
- Even after proper compacting, this type of installation may be susceptible to ground settling.
  - Heaving or settling of soft ground sub-surface as a result of freeze/thaw is the sole responsibility of the installer and or/owner.

### **Roof Top:**

- Rubber King Play Tiles are compatible with most EPDM roofing membranes.
- The installation of a protective intermediate cover is not required in most cases.
- Please check with your membrane manufacturer for compatibility and warranty confirmation.
- If necessary, a woven geo-textile slip sheet may be placed between membrane and tiles.
- Some PVC membranes may not be compatible for use with rubber tiles.
- Clear membrane of all loose dirt and debris.
- To provide extra drainage when required, site engineer may recommend the addition of a drainage layer.
  - Products such as, or similar to, Enkadrain® by Colbond are suggested ([www.colbond-usa.com](http://www.colbond-usa.com))
- Tiles can be loose-laid and interlocked over the membrane which offers optimum membrane protection without limiting accessibility.
  - The interlocking tiles can be removed to access the roof surface for maintenance and repair.
- For all rooftop applications, check with an accredited structural engineer to ensure the rubber tiles meet(s) your roof load and wind lift requirements for this project.

## **SECTION V - PRE-INSTALLATION**

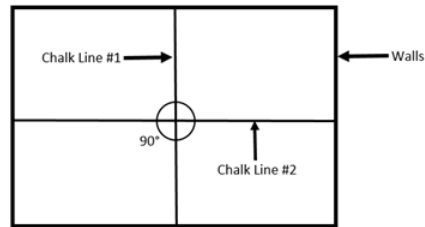
### **General Information:**

- For playgrounds, the contractor and/or installer are reminded to comply with local guidelines regarding the required size of safety surfacing zone around play equipment.
  - Suggested reading:
    - **CAN/CSA** - Z614-07 (4<sup>th</sup> edition) "Children's Play spaces and Equipment."
      - [www.csa.ca](http://www.csa.ca) or [www.shopcsa.ca](http://www.shopcsa.ca)
    - **CPSC** "Handbook for Public Safety."
      - [www.cpsc.gov](http://www.cpsc.gov)

- Rubber King is not responsible for any product failure if proper sub-surface preparation or installation procedures are not followed.
- Check ambient temperature.
- For indoor installation in-floor radiant heat should be shut off for 24-hours prior to acclimation, be shut off throughout installation and remain off for 48-hours after installation is complete.

### Chalk Lines:

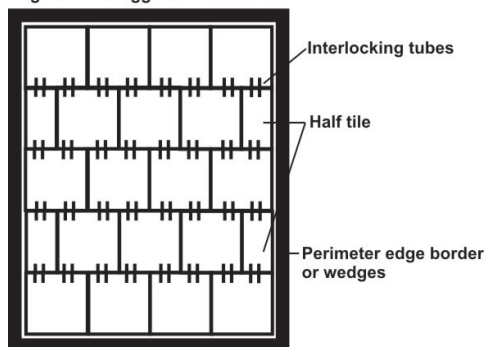
- Locate the midpoint of the room, chalk a start line down the center. Chalk another similar start line 90° to the first one. (Figure 1)



### Tile Layout:

- The installer should have all relevant information about the tile arrangement from the owner.
- Insert four (4) interlocking tubes.
- Be sure to leave enough tiles without tubes to complete the first row.
- Begin tile layout from the point where the two chalk lines intersect.
- Work outwards in both directions
- Start second row on either side of the center line towards the chalk line.
- Make sure that second row is installed by staggering tiles.

Figure A - Staggered Installation



### Acclimation and Dry Lay:

- **Acclimation/Dry Lay Checklist is required to be completed or warranty will be void.**
- A minimum of 48-72 hours before starting installation.
  - Storage longer than 2 weeks will require a longer acclimation period.
  - Tiles in the lower portion of the stack will compress to a greater degree than those in the upper portion.

- A tile laid down in the morning hours at 0°C (32°F) would be a different size than a tile laid at 20°C (68°F) later in the day.
- Acclimation should only begin once the sub-surface has reached a temperature between 14°C (57°F) and 23°C (72°F).
- Layout all tiles on the sub-surface in piles of 2 or less:
  - Be sure to mix tiles from several different orders to blend minor shade variations.
  - Allow them to acclimate until they have reached a consistent size
  - Check for any shading or uneven color variation:
    - This is not considered to be a product defect.
    - Color variation in no way affects the quality of the tile.
    - Rotating the tile 90° or installing it in a less visible area may help improve the effect.
  - Inspect all tiles for visible defects.
    - Ensure the defective product is identified prior to the start of the installation, notify online support immediately.
      - Labor will not be covered if any defective product is installed.

### Cutting:

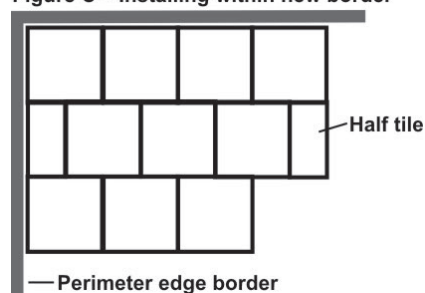
- Before cutting, ensure that each tile is measured carefully so that the tile will fit properly.
- Lay tiles on a flat surface, hold the metal straight edge on the cut line, and cut with sharp utility knife.
- Keep scoring the cut until separated.
- Change or snap off blades frequently to ensure clean cuts.
- For odd angles, circular patterns, etc. a cardboard template is suggested.
- Join factory edges together. Hand cut edges should be used against perimeter walls only.
- If a large amount of cutting is required, a jigsaw or reciprocating saw could be used.
- Depending on thickness and length of cut, inserting a wedge into start of cut will help minimize any binding on the blade.

## **SECTION VI - INSTALLATION**

### **General Information:**

- **Do not install** the tiles if they are not square and the appropriate thickness has not been reached.
- If installing a new perimeter edge border, it is best if only two edges (L shape) are installed. This will reduce the movement of tiles when inserting the interlocking tubes.

Figure C - Installing within new border

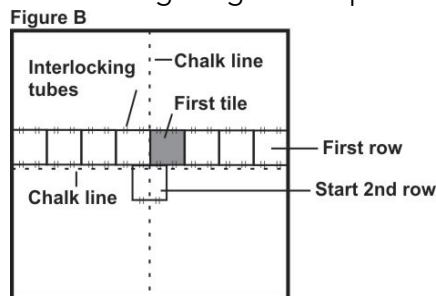




- Once installation is complete, install the last two remaining perimeter borders, make sure they are as tight as possible against the tiles.
- If installing on a woven Geotextile Fabric over compacted granular base, ensure the sub-surface is level and compacted.
  - Install landscape fabric and provide a minimum 12" overlap on all joints. Secure overlap with duct tape.
  - Secure landscape fabric to the perimeter border with adhesive, rust proof nails or staples.

### Interlocking Tiles (No Adhesive Required):

- Installing along a straight edge:
  - Place first tile at 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 interlocking tubes in first row of tiles.)
  - Interlocking tubes should be installed in the same direction as the longest part of the installation area.
  - Start second row with a half tile, which is simply a full tile cut in half.
  - As you are installing each tile, tilt slightly to ease pegs into existing tile.
  - Tap with mallet ensure tight fit.
  - Continue installation in staggered method. Repeat first and second row until installation is complete.
- Installing Irregular Site Configurations:
  - Use the chalk lines (Section V) as a reference as a guide for laying the first row of tiles.
  - Place the first tile where the two chalk lines intersect.
  - Work outwards in both directions.
  - Start second row on either side of the center line towards the chalk line.
    - Be sure to stagger the second row.
  - Refer to Section V for cutting irregular shapes.



### Glue Down Installation:

- Installing Along Straight Edge:
  - Glue the first row of tiles along straight edge.
  - Start second row with a half tile, which is simply a full tile cut in half.
  - Continue installation in a staggered method.
  - Repeat first and second row installation until installation is complete.
- Installing Irregular Site Configurations:
  - Use the chalk lines (Section V) as a reference as a guide for laying the first row of tiles.

- Place the first tile where the two chalk lines intersect.
- Work outwards in both directions.
- Start second row on either side of the center line towards the chalk line.
  - Be sure to stagger the second row.
- Refer to Section V for cutting irregular shapes.

**Clean Up Adhesive:**

- Do not get adhesive on the top surface of the tiles as it is impossible to remove when cured.
  - Immediately use a clean damp cloth to remove any adhesive.
- Rubber King does not warranty product where the attempt to remove adhesive has been made. Any damage to the tile because of adhesive removal is solely that responsibility of the installer.
- Contact online support immediately for suggested cleaning methods if this happens.
- Caution: the use of mineral spirits can cause the area to appear darker.
- Intense scrubbing of the seams will also darken the edges.

**SECTION VII – POST INSTALLATION CLEANING**

- Tiles are coated with a water-based mold release residue, a natural result of the manufacturing process. This will initially cause slight discoloration and slipperiness.
- **Outdoor Installation:**
  - Tiles should be swept thoroughly or dry vacuumed using a heavy-duty shop vacuum.
  - As an alternative, some outdoor sites may be blown clean with a powered leaf blower.
  - Apply a solution of neutral cleaner and agitate with a brush or mop, rinse with clean water.
  - Exposure to sun and rain will naturally remove this residue.
    - This may take up to four weeks to remove.
  - Do not power wash.
- **Indoor Installation:**
  - Remove all surface soil and debris by sweeping, mopping, or vacuuming.
  - Apply a solution of neutral cleaner and agitate with a brush or mop, rinse with clean water.
    - Use as little water as possible.

**Disclaimer:**

The installation guidelines in this manual represent typical installation work procedures. Every site is different, and Rubber King does not claim to have covered all possible circumstances.

Rubber King 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 Rubber King's Limited Warranty for the particulars of warranty coverage relating to Rubber King's products.

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