

## Installation Instructions

### Ballistic Tiles

#### Upon Delivery of Product

1. **VERIFY** packing slip matches with product and order.
2. **INSPECT** delivered product thoroughly. Report any discrepancies of original order, product defects, etc. No reimbursement/warranty claim will be given for labor on material installed with visual defects. Any defects – size, color, or otherwise – must be reported to the place of purchase prior to installation.
3. **STORE** product and adhesives in clean, dry, environment with temperatures between 70° and 95° F.
4. **READ** product and sub surface floor preparation, instructions, warranty and other disclaimers carefully and completely before beginning any installation.

#### Warning:

**DO NOT** use recycled rubber products in conjunction with any petroleum based products. This includes solvents, adhesives or sealants. All substrates (especially new concrete) must be fully cured for a minimum of 10 days prior to installing rubber tiles.

**INTRODUCTORY NOTE:** This installation guide is intended to provide the necessary information for the proper installation of Ballistic rubber tiles. These instructions are believed to be based on accepted industry standards and are provided for informational use only. **Greatmat.com. DOES NOT WARRANT ANY INSTALLATION PERFORMED PURSUANT TO THESE INSTRUCTIONS OR OTHERWISE AND SPECIFICALLY DISCLAIMS LIABILITY FOR ANY DIRECT OR INDIRECT PERSONAL INJURY, PROPERTY DAMAGE OR OTHER COSTS OR LOSSES RESULTING FROM INSTALLATION.** Ballistic rubber tiles should be installed by qualified and experienced personnel.

#### Recommended Tools

Measuring Tape or Ruler  
Metal Straight Edge  
Non-Retractable Utility Knife with Extra Blades  
Jig Saw with fine tooth saw blades  
White Marker or Chalk  
Chalk line  
2" X 4" Wood Block  
Mallet  
"V" - Notched Trowel  
Cordless Drive  
Hole Saw  
Rubber Gloves  
Commercial Grade Caulking Gun



3/16" x 1/4" x 1/4" flat  
"V"-notch; Coverage  
50-60 sq. ft. per gal.

#### Recommended Adhesive

Masterweld CX-941 Trowel Grade Adhesive  
Masterweld CX-948 Gun Grade Adhesive

# Ballistic Tile Adhesive

Protect unopened containers from heat and direct sunlight. In cool weather, store containers at temperatures of 70° to 95°F for at least 24 hours before using. CX-941 has a shelf life of one year when stored properly. Apply in temperatures above 40°F.

- Wear gloves during application. CX-941 is difficult to remove from skin and clothing. If adhesive gets on skin, immediately wipe it off with a dry cloth.
- Do not apply on frozen surfaces or standing water.
- Avoid contact with water or alcohol before use and before complete cure.
- Do not use in areas subject to hydrostatic head pressure.
- Do not use on wet, contaminated, or friable substrates.
- It is the user's responsibility to check adhesion of the cured adhesive on typical test areas at the project BEFORE application.

## DO NOT USE

Petroleum Based Products To Clean Ballistic rubber tiles.

## RUBBER TILE CLEANING

Indoors: Sweep, sponge mop or vacuum rubber flooring for everyday maintenance.

Outdoors: Use of a water hose, leaf blower or broom is usually sufficient.

Use Cleaner/Deodorizer, disinfectant or a mild detergent with a sponge mop and water for more extensive cleaning.



# Ballistic Tile Preparation

## Product

Ballistic rubber tiles should be protected from weather and physical damage prior to and during installation as well as during adhesive curing period. Precipitation should be avoided during and for 12 hours after installation.

## Sub-Surface

Requirements for all Sub-Surface are as follows:

1. All play structures should be in place prior to Ballistic rubber tiles installation.
2. Structurally sound and fully cured for a minimum of 10 days (concrete or asphalt).
3. Have good drainage with a gradient (2% is suggested) that prevents the pooling of water.
4. Be reasonably flat and free of variances of more than 1/8" in 10 feet.

## Concrete & Asphalt

1. New concrete must be allowed to fully cure thoroughly prior to installation (10 days). If sealants are used, **DO NOT** use one with a petroleum base.
2. Old concrete must be repaired and have joint sealants and fillers installed as necessary. All cracks or flaws should be filled in or repaired prior to covering with rubber products. Use patching materials as appropriate. *Mechanical surface profiling is the preferred floor preparation method. It is the only acceptable preparation method where warranties are issued (with CX-941 adhesive). Acid etching is not recommended. Mechanically profile the floor to medium-grit sandpaper texture. Remove curing and parting compounds and other surface hardeners and floor coatings in accordance with the manufacturer's instructions.*
3. Surface must be thoroughly cleaned of dirt, dust, grease, or other foreign matter by shot blasting or other mechanical means with a commercial degreaser. Any bumps or debris will cause excess wear and/or cushion damage.
4. Allow the surface to completely dry before beginning installation.
5. Asphalt may require a re-surface coating for best results. Due to variations in asphalt substrates, it is the user's responsibility to check the adhesion of the cured adhesive on typical test areas at the project BEFORE application. Due to asphalt porosity adhesive spread rate may be up to 50% less than posted rate.

## Compacted Surfaces

1. Subsoil (existing dirt) layers must be free from large rocks and any organic material such as leaves, peat, wood or other materials which could decompose over time, potentially causing settling of the matting surface.
2. Subsoil should be flat and level. Compaction of the subsoil with a compactor or roller may be required where subsoil is unusually soft or loose.
3. Install the first layer of 5/8" minus or 3/4" minus crushed rock, approximately 2" thick, and compact the material using a plate compactor to a 95% compacted rate, sprinkling water as necessary to get the crushed rock material to compact tightly. Surface should be hard and flat after compaction. A slope of up to 2% may be desired for drainage.
4. Repeat the rock installation and compaction with 1/4" minus so that the crushed rock base is 3"-4" thick after compaction. Additional layers may be required over unusually soft or unstable subsoil materials. Be sure that the final layer produces a smooth surface without bumps or depressions more than 3/16" in size. (Any imperfections will telegraph through your Ballistic rubber tiles, and will become noticeable in the final installation.)
5. Roll out a layer of woven geo-textile fabric (GEOTEX 200ST), and overlap seams by 3" or more. Glue the layers together with the adhesive provided or tape with duct tape. Keep the fabric flat by temporarily staking the fabric at both ends.
6. Install the Ballistic rubber tiles to the fabric, as you would install to a hard surface and tile to tile. Be careful not to bunch up or wrinkle the fabric during the installation process.

# Ballistic Tile Installation

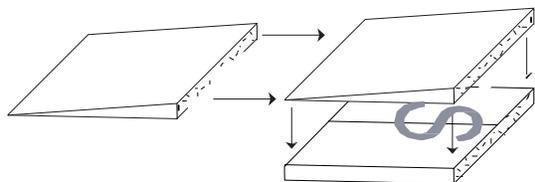
- 1) Assume that any fences, walls or curbs that the tiles will butt up against are not perfectly straight or square. Start by measuring the dimensions of your project. Divide the dimensions (in feet) by two to determine number of whole tiles and fraction of a tile required for each dimension. If you are filling a defined space, you will generally have border on at least two sides that is less than a full tile. Generally plan to make the border that consists of less than a whole tile to be the back or least accessed side of the playground. Additionally, plan for this border to be a half a tile or more. This may require starting with less than a full tile on the front or most accessed border.
- 2) Start by setting a chalk line on the front or most accessed side of the playground that is the desired border width from either end of the play area, similar chalk line on the perpendicular side (Figure 1).
  - a) **Using Full Floor Adhesive CX-941** Apply CX-941 adhesive prior to laying each tile and apply only within the area of the tile (or tiles) to be laid down. The adhesive should be applied thinly and evenly over the substrate with 3/16" x 1/4" x 1/4" "V"-notched trowel. After placing each tile, press firmly throughout the tile to remove bubbles and establish bond. CX-941 adhesive will cover 50 to 60 square feet per gallon on smooth surfaces. *Do not apply more adhesive than can be utilized within a 30 minute window. In ideal temperatures there is approximately 30 minutes of open time to apply the adhesive and maneuver the rubber tile onto the adhesive and position prior to curing onset.* Wipe off excess adhesive on hands with mineral spirits. Gloves are strongly suggested during application, as CX-941 is aggressive on skin. **DO NOT** allow mineral spirits to come in contact with the rubber tiles.
  - b) **Using Tile-to-Tile Adhesive CX-948** Apply a 1/4" wide bead of CX-948 adhesive 9" in each direction from the corners, just below the radius edge. This will provide 6" of unattached edge for greater water permeability. (Figure 3).
 

**NOTE:** It is strongly recommended to use both methods of adhesion when installing product or Geotextile fabric sub-surface. Using both of the above mentioned adhesive procedures will ensure the most long-term, trouble-free installation of your Ballistic rubber tiles product.
- 3) Start by laying full tiles along the insides of the two perpendicular chalk lines. Continue laying full tiles until play area is covered except for a border. Be careful to keep the seams straight (Figure 2).
- 4) Once the center of the play area is covered measure and fit each tile of the border.

**ADHESIVE CLEAN UP TIPS:** Before troweling with CX-941, cover the unused portion of the trowel with duct tape. After troweling, tear off the tape before the material cures. Clean all tools of excess CX-941 immediately after use with mineral spirits. Use proper precautions when handling solvents. Cured adhesive can be removed by cutting with a mechanical tool. **DO NOT** allow mineral spirits to come in contact with the rubber tiles.

## ADA RAMP KIT INSTRUCTIONS (for 7-8' and 9-10' Fall Heights)

- 1) Ensuring that you have a level, sound surface, lay two tiles side by side so they combine to make a 48" wide surface. Glue the meeting edge with a 1/4" wide bead of CX-948.
- 2) The ramp included in your kit that covers the two tiles will be installed next using a wavy or "S" pattern. With the CX-948, place a 1/4" wide bead on the two tiles and around the perimeter approximately 1/4" in from the outside edge (adhesive is depicted in the diagram below by dotted lines) Then place the matching ramp on top of the tiles.
- 3) The remaining ramp should have a 1/4" wide bead of adhesive across the face of the thick side and butted against the face of the tile/ramp assembly.



Adhere to main surface area

Kit Includes: 2 - 24" x 24" Tiles  
2 - Tapered Ramps

Figure 1

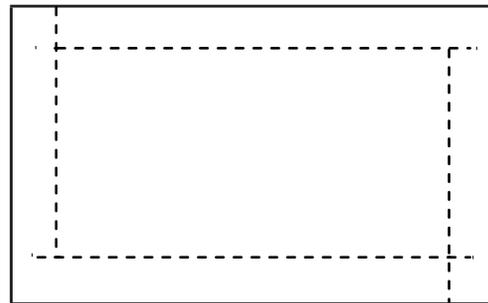


Figure 2

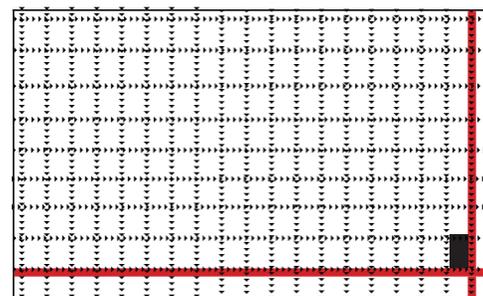
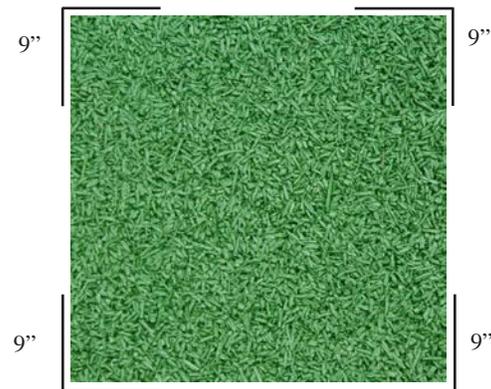


Figure 3



Tile to Tile CX-948 Placement 1/4" wide bead 9" in from all 4 corners

The instructions provided are based on using CX-941 and CX-948 Polyurethane Adhesives. If another adhesive product is used, be cautious as to the manufacturer's instructions, curing times, and bonding window.

## Ballistic Tile

### Cutting Tips

Tips on cutting rubber tiles: When using a non-retractable utility knife, be sure to keep the blades sharp to aid in the cut, and help reduce the possibility of injury due to dull blades.

1. Mark the tiles you will need to cut with chalk or a chalk line.
2. Put your straight edge on the corresponding marks you have placed on the tiles.
3. Holding the straight edge firmly in place, score the tiles two or three times.\*\*
4. Grab the tile close to the score line, lift and bend the tile toward you. The score line will “break open”.
5. Make several more passes with the knife, working down the established cut, until the cut is complete.

\*\*This process may be made easier by cutting the tile upside down on a raised surface such as the 2x4 wood block used during installation. Gravity will depress the cut edge down and away from the cut, and will be less likely to catch the knife blade.

A holesaw or sawzall with a fine tooth blade is also an effective tool to make circular cuts around poles, posts, etc.

- 1) Draw a circle on the tile using chalk for the desired diameter. (If there are several cuts of the same nature, create a pattern out of cardboard.)
- 2) Begin the cut at the edge of the tile closest to the drawn circle, cut straight line to circle. Cut around drawn pattern. Push out unwanted piece(s).

## Ballistic Tile

### Curing Times

Masterweld CX-941 Adhesive  
Standard Set: Firm Set 1-2  
Hours Light Traffic: 8-10  
Hours Normal Traffic: 24  
Hours

Masterweld CX-948 Tile to Tile Adhesive  
Foot Traffic 48 Hours

## Ballistic Tile Product Warranty

Ballistic rubber tiles offer a 10 year limited warranty.

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