

### Concrete Sub-base

Concrete must be poured with adequate fall/slope to allow for drainage underneath the tiles. 1-2% over the length or width of the concrete pad will be adequate. Typically the slope should fall in the direction in which the geography does.

General concrete specifications:

- 2-3 inch minimum of crushed aggregate sub-base or sand (pea gravel is not recommended for this application)
- 4 inch minimum thickness; reinforced with fiber mesh or rebar (contractor or RFP discretion)
- Joint cuts where contractor decides
- Medium broom finish for best adhesion



### Tools Needed for Tile Installation

Like any job, having the right tools will make the installation of your DuroMat ELST go a lot smoother.

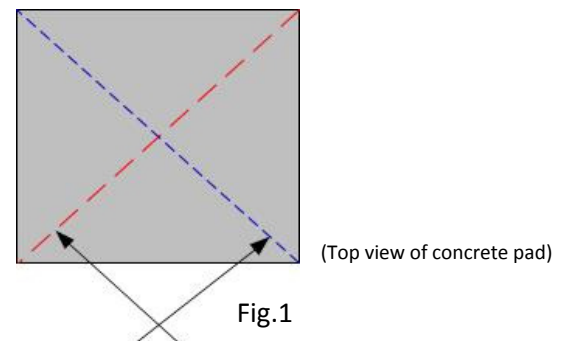
- Broom/s
- Leaf blower
- Measuring tape/s
- Heavy duty scraper
- 36 inch aluminum straightedge
- Jigsaw – minimum 2800 strokes per minute, medium tooth blade. Blade should be long enough to cut through tiles (max length 4")
- Squeegee with 6 foot handle. Will be used to spread the adhesive into thin layer on concrete sub surface.

- Sledge hammer
- Carpenter square
- Utility knife with replacement razor blades
- Keson G100VA Little Giant Chalk Line or equivalent
- Red chalk for chalk line
- Electrical extension cord
- Disposal towels and wipes for clean up
- Permanent markers – black and silver metallic
- Gasoline generator (in case electrical hook up is not available)
- Disposal gloves (latex, nitrile, or other)
- Work gloves
- Safety glasses
- Knee pads

### Squaring off the Concrete Pad

A square concrete pad is essential for proper installation of the DuroMat ELST. Checking to ensure the pad was poured square before beginning can save a lot of time and headache.

A quick method for checking the pad: Go to one corner of the pad and pull a tape measure at a diagonal across to the opposite corner, be sure to note the measurement. Go to the other side and measure corner to corner diagonal distance. If the concrete was poured square then these two measurements should be the exact same (Fig. 1).



Depending on location of the playground structure it is sometimes recommended to make the pad 1' larger on both sides to create a buffer between the grass and tiles. By adding the 1' you will have 6" on all 4 sides. This buffer helps protect the tiles when maintenance or the grounds crew is mowing or string trimming around the area.

If this is the case and the buffer is desired then you will need to find a square corner to start from.

- Measure in 6 inches close to the bottom corners make an 'X' with a permanent marker.
- Snap a chalk line from edge to edge making sure the chalk lines crosses the center of your marks. We have found that red chalk works the best for showing lines on concrete (Fig. 2).
- Repeat this method to the other side of the concrete pad (Fig. 3).

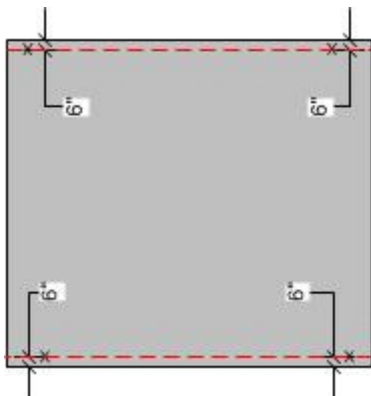


Fig.2

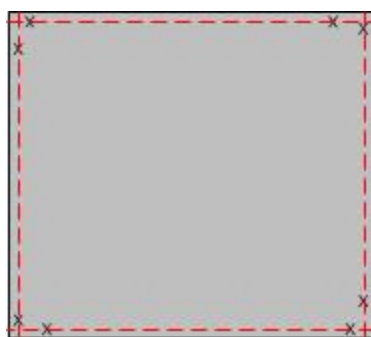


Fig.3

Make sure you have a square corner to start laying your tiles.

- Use the bottom left corner. Measure 3' in from where the two chalks line intersect, make a mark
- From the intersection point of the chalk lines now measure 4' up along the other chalk line, make a mark.
- Now measure across from your mark on the 3' line to the mark on the 4' line. If the corner is square the measurement should be 5' (Fig. 4).

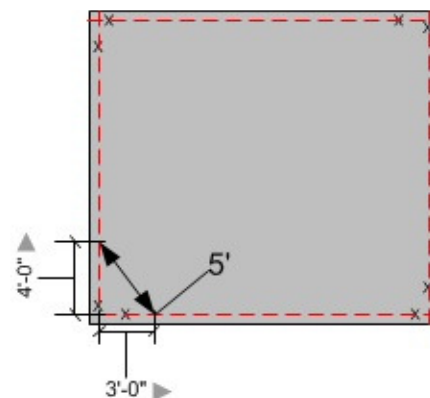


Fig.4

### Laying Tiles

- Start with the corner from Fig.4 to begin laying tiles from.
- Measure 4' from the red chalk line that was already created. Make 2 marks at 4' with your permanent marker towards the top and bottom.
- Snap another red chalk line. This chalk line will be the edge of where you spread your adhesive to (Fig. 5).

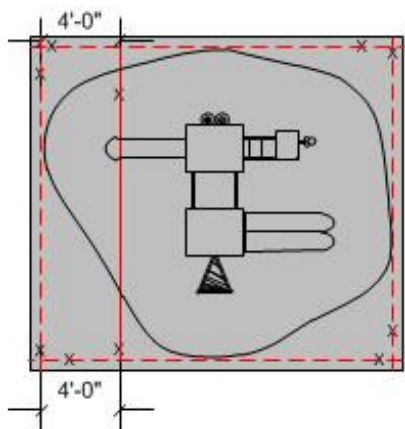


Fig.5

Select one of the 5 gallon buckets of adhesive that was provided with the tiles. Remove the banding around the lid (1), but leave the lid on the bucket. With a utility knife cut a triangle (2) out of the lid. This will make pouring the adhesive easier (Fig 6).



Fig.6

- Attach the disposal squeegee to the end of a broom handle (Fig. 7).
- Begin at the top and in a serpentine pattern pour out a liberal amount of adhesive while walking backwards (Fig. 8).



Fig.7

- With the glue dispersed in a pattern like Fig. 8 it is now time to spread the glue with the squeegee.
- Stand off to the side and start spreading adhesive at the top working your way to the bottom.
- The adhesive should be spread thin and even, now covering the complete area between chalk lines (Fig. 9).

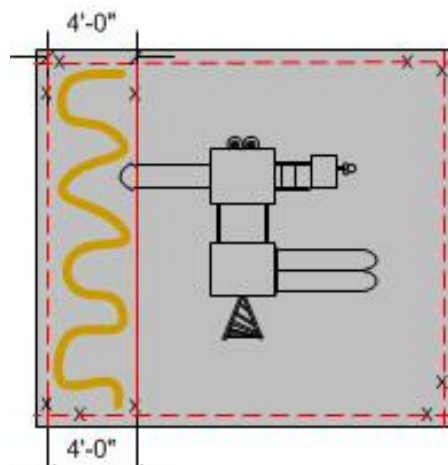


Fig.8

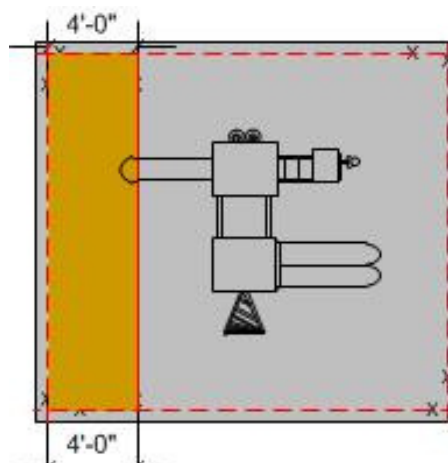


Fig. 9

It is time to start laying tiles. Unlike floor tile, DuroMat ELST should be installed from the corner or end of the playground structure and installed left to right or front to back. Be sure to follow the design layout provided with your shipping material. Keep the tiles butted tightly together to prevent material from building up in the crevices between tiles (Fig. 10).

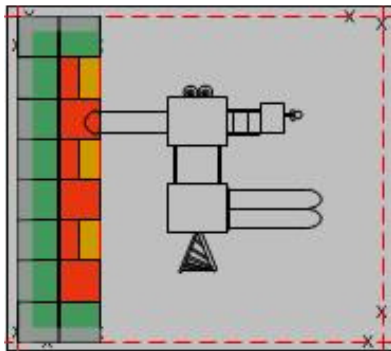


Fig. 10

- Once again mark 4' out from the edge of the tiles on the top and bottom. Pull and snap a chalk line.
- Pour out adhesive in serpentine pattern and spread into a thin even layer with the squeegee making sure not to cross the 4' chalk line.
- Work off the previously laid tiles and continue placing additional tiles in place from the top to the bottom (Fig. 11).

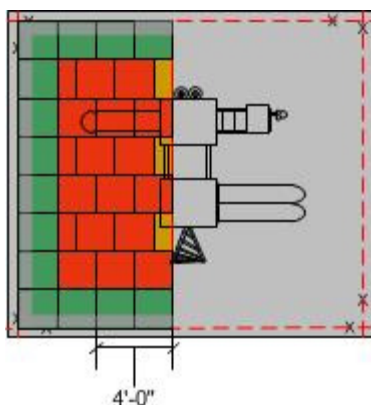


Fig. 11

### Cutting Tiles

Most straight cuts can be made with a utility knife. Place tile on a level surface and score the area to be cut with a firm initial pass with the blade. Once the score has been made you can apply pressure to open the cut. With the cut open additional passes with the utility knife will allow for the blade to pass through easily allowing for the cut to make its way through the tile.

Irregular cuts can be accomplished with the jigsaw. Included with the tiles there will be a cut tile that is clearly marked with a "C." Take this tile and turn it upside down on your work station, so that the bottom side is facing up. This will allow you to cut through the tiles without damaging the saw blades.

Cutting the tile can be accomplished by using a medium tooth blade (MTB). Length of the blade is determined by the thickness of the tile.

### Additional Installation Details & Clean Up

Any adhesive spilled on the playground surface will leave a glazed cosmetic smear, as it does not wipe off without leaving a blemish. For this reason it is strongly recommended that any person applying the adhesive should never cross over any part of the tiles with adhesive bucket, squeegee, or any items used in applying adhesive. Individuals working with the adhesive should wear protective gloves.

Cardboard from the packaging should be placed on the ground near the installation to eliminate spills.

Cardboard should be discarded upon completion of the project. Partial buckets of adhesive left over should be closed tightly and stored in a safe location away from children. Adhesive should be stored where it will not freeze.

It is recommended that the tools come into contact with the adhesive (squeegee, gloves, etc.) be safely disposed in a dumpster upon completion of the installation.

### Inspection and Routine Maintenance

Having a routine maintenance program will ensure longevity and appearance of your resilient rubber safety surfacing. Daily inspection of the tiled area is recommended to identify any unwanted debris or hazardous material from the tiled area prior to use.

#### 1. Using a water hose

A pressure spray tipped water hose may be used to wash unwanted debris from the tiled area. This is effective and provides adequate cleansing in most cases.

#### 2. Vacuuming and Sweeping

Using a commercial quality broom is also a common process for removing unwanted debris from the tile area. Depending on the surrounding environment this may not remove all unwanted debris.

If the area surrounding the tiled area contains loose fill material such as rubber mulch, sand, wood chips or just bare earth, it may be prudent to periodically vacuum the surface with a commercial quality vacuum to remove small particles of debris from the surface and seams.

#### 3. Power washing

If power washing equipment is available it may be used with a wand tip to wash the tile area for a deep cleaning. Take caution not to use a jet tip as this may cut the resilient rubber surface.

#### 4. Cleaning Solutions

Use of disinfectants or common household cleanser can be used to remove stains and bacteria from the tiled area.

**IMPORTANT: To avoid affecting the adhesive properties of the binder DO NOT use petroleum based, ammonia based or chlorine based cleaners on the tiled area.**

#### 5. Snow Removal

Snow can be removed from the tiled area. Plastic snow shovels, and power brooms work very well for removing snow. Snow blowers/throwers with rubber or plastic augers/paddles can be used. Snow blowers with metal augers are not recommended as they can damage tile.

Ice melt is not recommended as it will leave stains on the tile surface. Skid loaders or tractors are not recommended either as they can crush the impact chairs underneath the tile or cause irreparable damage.