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Valid as from 01.09.2023

Fitting manual for Playground Tiles

IMPORTANT

Before you lay your Playground Tiles, please read through this manual carefully, this describes the basic conditions for storing, handling, and laying rubber tiles.

- **The seller bears no liability for how you prepare and lay your base for rubber tiles or rubber products.**
- **The seller bears no liability for any damage and injury during laying or handling of rubber tiles or rubber products.**
- **Owing to the production processes and the properties of the materials used, the seller can only guarantee a relatively identical colour shade of rubber tiles and other rubber products that are in the same order/delivery as these are made from SBR recycled rubber granules and would therefore vary in colour.**
- **Your base must form a compact, even surface free from sharp objects and loose dirt.**
- **Make sure no material based on petroleum or petroleum derivate is used in the installation and use of rubber products.**

1. Laying Rubber Tiles

1.1 Preparing the Base

We recommend that the tiles should be laid on a suitably pre-conditioned base of concrete, asphalt, or another stabilised surface.

We recommended these tiles be laid only on an impermeable base, such as concrete, asphalt, concrete or a base partially permeable to water.

Any base must be compact and be conditioned regarding the expected load and method of use of the surface of rubber tiles or rubber products (this conditioning must be done in accordance with standard building procedures).

The base must be conditioned to make sure that it does not deform or sink over the rubber tile surface. Make sure no elevations or depressions occur because of weather changes and ground water effects. As rubber tiles follows the surface line of the base, it also follows any unevenness. Improperly conditioned base, unevenness, base elevations, and depressions may result in rubber tile damage.

The base must be so conditioned as to ensure proper drainage of water from subsoil. Accumulation and presence of water under rubber pavement or rubber products must be prevented. We recommend that surface should have an approximate gradient of 0,5% - 1% to facilitate and speed up the conducting of water from the safe rubber tile surface.

The sole responsibility for base conditioning lies with the contractor or the client.

1.2 Stabilised (Cast) Base – Impermeable and Partially Permeable

Concrete, asphalt, or other stabilised, impermeable base material, such as cobblestones or pavement tiles, must be flat, compact and of stable structure, and must be dry and free of any dirt, such as dust, leaves, wax, and oil (that of petroleum products, in particular) before rubber tiles are laid on the base.

Any stabilised base must be sufficiently mature. Rubber tiles and other rubber products must not be laid on freshly laid asphalt or concrete (base conditioning must be done according to standard building procedure).

Always check the quality and the condition of the base before you start laying rubber tiles. If cracks, gaps, or depressions greater than 2–3 mm are identified in a concrete, asphalt, or other stabilised base where water could collect over time, the surface must be re-levelled.

20mm Rubber tiles need to be fixed with a PU rubber adhesive (you can purchase this at most DIY stores), the 30mm and 40mm tiles come with free interlocking plastic dowels.

1.3 Laying Process

Size tolerance is a typical property of rubber tiles made of rubber granulate - thermal expansion, which causes shrinkage at low temperatures and expansion at high temperatures. The size tolerance of a rubber tile may be +/- 5 mm in length and width and +/- 2 mm in thickness. What needs to be considered is that thin rubber tiles respond to ambient temperature changes more than thick tiles.

Size change can also occur if you keep rubber tiles on pallets or at places with changing temperatures. If kept on pallets, the rubber tiles in low layers are exposed to a greater pressure, which results in a greater compression and greater size changes. We recommend the following to minimise size changes:

- (a) About 24 hours prior to laying, distribute onto the bedding all the rubber tiles you are going to lay so that the tiles can restore their original size and adapt to the ambient temperature.
- (b) Make sure that all rubber tiles have the same temperature for the laying process and the ambient temperature is relatively stable.

Check the current ambient temperature and weather on the day you are going to lay the tiles. Rubber tiles must be laid within the temperature range of 5°- 25 °C. If using a polyurethane glue, you should not lay rubber tiles during rainy or damp weather and outside temperature range of 10°- 25 °C.

If you lay rubber tiles at higher temperatures than indicated above and the temperature drops later, thermal expansion may cause the tiles to shrink, and gaps may occur between tiles. If you lay rubber tiles at considerably lower temperatures than those indicated above (less than 0 °C), the tiles may shrink to lower sizes.

When weather temperatures reach 30°- 40 °C in summer, rubber tiles may expand, with unevenness and a curvy surface as a result. What is also important is to make sure that both rubber tiles and their bedding are free of any dirt.

For the laying process we recommend using polyurethane-based glues. As humidity speeds up the solidification of the glue, it is very important that you work in a dry environment and use rubber tiles that are dry.

IMPORTANT

When fitting and laying rubber tiles, always take account of the possible rubber tile size changes due to weather conditions and, in particular, the common thermal expansion due to temperature changes. It is a natural property of rubber tiles, so such rubber tile size changes are not a defect and are not a justified reason for complaint. Please note that if you lay rubber tiles between fixed construction elements, such as walls, stairs or curbs, at a time of too low temperatures, flexible rubber tiles will only absorb thermal expansion to some degree.

1.4 Recommended Equipment and Tools to Lay Rubber Pavement

- (a) Working clothes, protective and rubber gloves, knee pads
- (b) Stanley knife with spare blades, hand saw, electric jig saw or other similar cutting tool



Electric jig saw



Stanely knife (with spare blades)

- (c) Marker or chalk
- (d) String
- (e) Protractor
- (f) Rubber mallet
- (g) Dispenser or brush for glue
- (h) Toothed adhesive spreader



Toothed adhesive spreader



Toothed adhesive spreader

1.5 Laying Process

Rubber tiles must be laid and joined in accordance with general building procedures, such as observing the right angle, and the instructions given below.

Laying of Rubber Tiles with Polyurethane Glue (not applicable if using dowels)

If you use a polyurethane glue for the laying of rubber tiles, you must follow our user manual and the instructions from the glue manufacturer about the time of working with the glue because current weather conditions, such as humidity and the temperature of air and base, can have a considerable effect on the solidification and curing of the glue applied.

When you lay rubber tiles, put them with their rough surface down. Polyurethane glue is suitable for all rubber tiles. Before applying the polyurethane glue onto the base or rubber tiles, make sure the base and the tiles are clean and dry to preserve the full adhesive capacity of the glue and the full solidification and curing times specified and recommended by the manufacturer and required for the proper fitting of rubber tiles.

The glue is to be applied on one or both surfaces, depending on type. Working with rubber tiles, the glue is to be applied on the rough, i.e., the bottom, surface, which will be in contact with the base. apply the glue on the sides of the tiles and glue together individual tiles. The polyurethane glue must be applied to the tile sides no higher than one half of tile thickness so that the glue is not squeezed out when tiles are pressed together.

Rubber tiles are also recommended to adhere to curbs (preferably rubber curbs). This process gives you a compact rubber surface. After you apply the glue and lay the rubber tiles onto the base, you need to use a rubber mallet to knock tiles together to remove any air bubbles between the glued surfaces (for this never use any hard and sharp tools, such as steel ones, which could damage or destroy the rubber tiles).

When you have laid all your tiles and used a polyurethane glue, we recommend you should leave the pavement intact and not tread on it until the glue has completely cured so that no unevenness would occur on the surface. The curing time of a polyurethane glue (the time after which you can step on the pavement) depends on the glue type and weather conditions and ranges from 24 to 48 hours (waiting for 48 hours to let the glue cure is recommended).

The surface of the rubber tiles is exposed in the exterior to changing atmospheric conditions. For this reason, the rubber surface may be released from the subsoil. This phenomenon is quite natural and is not a reason to complain. In this case, the rubber tiles must be removed and then reattached to the substrate using a polyurethane adhesive. In these operations, it is always necessary to proceed in accordance with the Instruction and Installation Manual of the rubber tiles and rubber products and the manual of manufacturer of the polyurethane adhesive.

Laying of Square Rubber Tiles Using Plastic Joining Pins

Square rubber tiles require plastic joining pins; the corresponding quantity of pins is supplied along with rubber tiles (see the figures shown below). **Rubber tiles which are less than 30 mm thick, are only installed with a polyurethane adhesive and DO NOT come with joining pins.**

Before you start laying the rubber tiles, make sure both the base and the tiles are clean. You need to insert pins in the holes on one side only and then make a tile line without joining the tiles with pins. Laying the next line, you need to insert pins on one side of the tiles and then push the tile holes onto the pins projecting from the previous line. Follow the same procedure in laying additional lines.

It is important that rubber tiles be aligned and pushed close together to prevent occurrence of major gaps because of temperature changes. A rubber mallet is the best tool for this job. You should never use hard and sharp tools, such as steel ones, to push rubber tiles close together. These tools might damage or destroy rubber tiles, which are made of rubber granulate.

We recommend that square tiles should **only** be laid in the brickwork bond, i.e. next line tiles by a tile half off the centres of previous line tiles (as shown in the figures below). This bond provides a very compact and homogeneous surface.

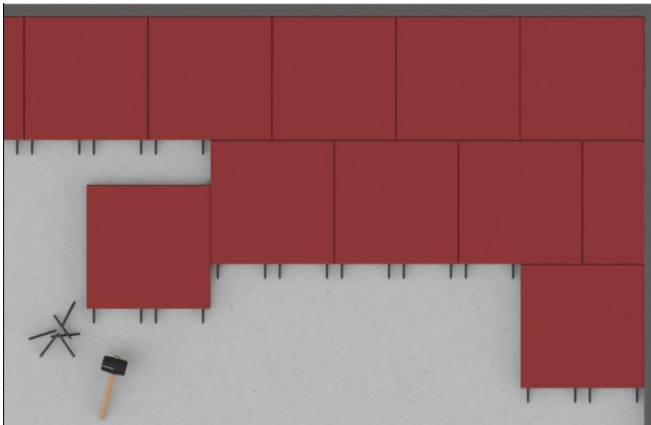


Fig. K1: Brickwork Bond for Square Tiles

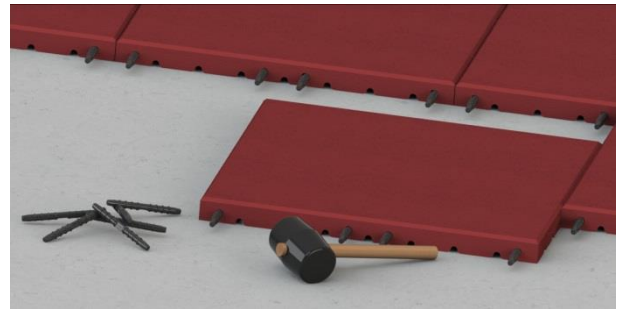


Fig. K2: Brickwork Bond for Square Tiles



Fig. K3: Joining Pin

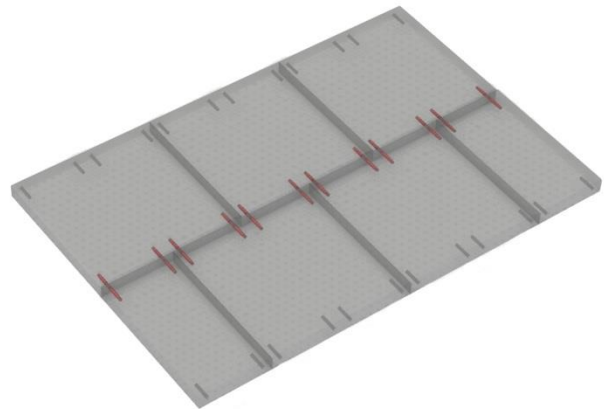


Fig. K4: Brickwork Bond for Square Tiles

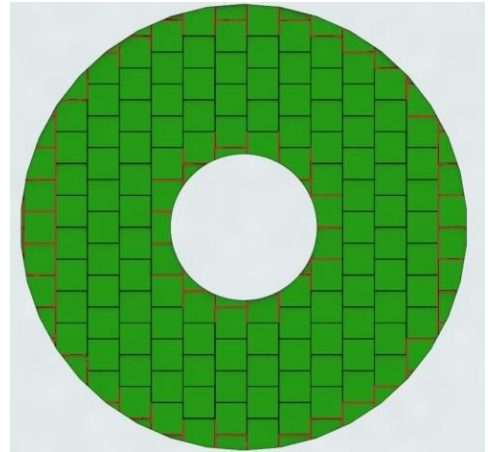


Fig.K6: Surface with cutted rubber tiles

If the surface of the rubber tiles is not of regular shape (oblique or rounded) tiles have to be cut, all cut pieces have to be glued to the substrate with polyurethane adhesive. Figure K6 shows an exemplary surface graphic of rubber tiles with irregular shapes. Reds are marked with cut tiles that have to be glued to the subsoil.

If you need to, use a chessboard bond (as shown in the figure below), the base must be impermeable to water because you will need to glue tiles onto the base to ensure compact surface and prevent distortion (please refer to the next paragraph for details).

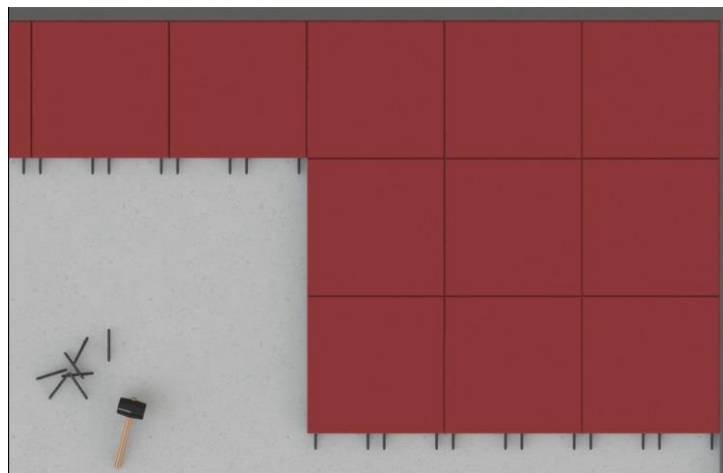


Fig. K7: Chessboard Bond for Square Tiles

We do NOT recommend laying rubber tiles without any polyurethane glue or joining pins because of size changes in a rubber tile (tiles shrink at low temperatures and expand at high temperatures) and the physical properties of rubber tiles (surface homogeneity may be compromised and distortion may occur if no polyurethane glue or joining pins are used).

4. Rubber Tile Use and Maintenance

Our rubber tile is designed for enhancing safety and absorbing impact in a collision of body and ground on children's playgrounds or sports grounds and should be used for that purpose. You as the seller undertake to use our products in accordance with the products' purpose.

Persons entering a rubber tile surface must wear footwear with smooth soles (regular sport footwear, trainers, flip-flops and similar footwear) without any sharp element. Athletic spikes, football shoes, skates and high-heeled shoes are not allowed on rubber tiles (unless rubber data sheet specifies otherwise). No skating rinks are allowed to be built on rubber pavement and no use of bicycles, skateboards, motorcycles and similar wheeled items is allowed on rubber tiles.

We recommend regular inspections of the surface (every week at least) to make sure the surface is free of dirt and anything that could damage the rubber.

Given the physical properties, we recommend sweeping the surface and cleaning it with a stream of water (at regular, non-increased pressure). No chemicals, salt and no hard, steel or sharp tools or apparatuses may be used for cleaning.

You are required to inspect every month the surface made of rubber tiles or other rubber granulate products, check the condition of the surface and make an inspection report. Please note that changes in the colour shade of tiles and rubber products are a normal phenomenon, which is caused by changing weather conditions and ultraviolet radiation.

On the basis of regular inspections, you as the buyer are also required to clean the rubber tiles or rubber product surface at least every 6 weeks.