



## LAYOUT, DESIGN AND INSTALLATION

### NOTE BEFORE COMMENCING

(1) The customer or main contractor should always be made aware of the duration of the installation and limitations involved with rubber surfacing. No other trades are to be allowed in or around the work area 24 hours before installation and 7 x full days afterwards.

(2) Only Rephouse specified materials are to be used. Any and all chemicals, whether adhesive or other materials should be kept from frost, rain or excessive heat. Any adhesive or other materials that have been exposed to these elements voids any warranty.

(3) The sub-grade and sub-surface shall be constructed to a qualified Engineer's specification however, no significant settlement should occur of either as a result from its own weight or removal of soil.

### HARD SUB SURFACE

(4) If the sub-surface shall be constructed out of asphalt then it should be done in accordance to DIN 18035, Part 6 specifications. Asphalt shall be left to cure for a minimum of 14 days after completion.

(5) If the sub-surface shall be constructed out concrete then it should be done in accordance to a qualified Engineer's specification. Concrete shall be left to cure for a minimum of 28 days after completion.

(6) The finished sub-surface shall be smooth and trimmed and have no compaction or trowel ridges and shall not vary from the required levels by more than 4mm measured under a 4m straight edge, measured in any direction. For outdoor installations, any resultant ponding of water after flooding, the sub-surface shall be corrected until no pond is deeper than 1mm.

(7) For outdoor installations, the sub-surface should be constructed with a designed

slope of  $\leq 1\%$ .

(8) Make sure the sub-surface on which Versatile™ will be installed is completely dry and clear of all foreign matter and free of dust, dirt, oil or any kind of spills. The recommended method for cleaning for maximum adhesion is by pressure washer.

(9) Make sure all sub-surface requirements have been complied with:-

(a) Curing compounds on concrete, if used, must be mechanically removed from the concrete surface prior installation of Versatile™.

(b) all cracks and holes must be patched

(c) Contamination can affect the bond of the rubber flooring and must be removed. Types of contamination are:

- *Oil, grease, or food fats* can usually be burned off with a flame gun or removed with a commercial degreasing compound or solvent, or mechanical methods.

- *Curing compounds, sealers, and other laitance* are best removed mechanically with: vacuum blasting, scarifying, sand blasting, shot blasting.

(d) Test for moisture: Rubber flooring system bond failures on slabs on grade caused by moisture vapour transmission are the industry's largest single problem and result in extreme frustration from owners, clients, and contractors. Rephouse recommends testing for moisture by one of the following methods:

- *ASTM D4253 (Plastic sheet test)*: Place plastic sheet on concrete slab for 24 hours. If moisture has collected or slab has darkened, the vapour transmission is too high for a successful rubber flooring application

- *Calcium Chloride Crystal Test*: The maximum allowed water/vapour transmission rate is 2 pounds per 1000 ft<sup>2</sup>/ 24 hours.

### SOFT SUB SURFACE

(10) Versatile™ products such as the EPT, ZXT and EPT-32 at 45mm thickness can be installed on a crushed rock base. The base should be compacted Road Type Base 100 mm to 200

mm deep (depending on soil conditions) and lead to an underground drain. Drainage must be adequate to prevent heaving of sub-surface due to water saturation. The layer above the Road Type Base should be a > 35 mm thick fine sand layer compacted to 90% dry density. An optional geotextile fabric can be laid over the sand for extra stability.

(11) For all Versatile™ surfacing installations, normal resilient tile surfacing installation practices should be followed.

(12) The Versatile™ surfacing will follow the contours of the sub-surface which it covers. The smoother the sub-surface, the better the Versatile™ surfacing finish.

### **General Specifications Installation**

(I) The installation of Versatile™ should not begin until all works and trades on or around the site have been completed and the complete area cleared of extraneous materials. If the requirements are as such that Versatile™ surface must be installed before other trades have completed their work, the installed Versatile™ surface should be covered with a suitable protective covering.

(II) Rubber will expand and contract with temperature and humidity changes. A tile laid in the morning say at 15°C (59°F) would be a different size than a tile laid at 30°C (86°F) later in the day. Therefore, before starting the installation, Rephouse recommends that ALL tiles are laid out on the sub-surface on the day that you plan to install the next day. It is important that the tiles are allowed to equalise in size at ambient temperature.

#### **NOTE**

*To minimise installation difficulties, avoid extreme temperatures between storage and installation areas.*

(III) Before the installation of any Versatile™, the surface must be examined for moisture test for moisture vapour transmission or high moisture content using ASTM-D-4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.

(IV) For fully adhered installations, spread adhesive evenly and at the recommended rate.

Weights such as sand bags have to be used on the edges, corners and seams of the Versatile™ surface installation until the adhesive is cured. Do not overlap adhesive applications as this will cause butt-joints to 'stand up' along the seams.

(V) a two-part polyurethane adhesive such as Rephouse's PU88 is used to bond Versatile™ to the sub-surface and together (see details below).

(VI) Follow the transverse lines of the play structure decking and chalk line out on to the sub-surface these lines in the "North/South" directions and likewise, in the "East/West" direction.

(VII) By way of a notched trowel, apply the adhesive to the sub-surface along the area following the "North/South" direction to a width of approximately one tile and do like wise in the "East/West" direction. You can apply the adhesive in strips. Set the 1st tile at the corner of the chalk line cross point. Apply a strip of adhesive against the side face of the 2nd tile. Set the 2nd tile against the 1st tile and butt-join snugly. Follow this action with the 3rd, 4th, etc. tiles following the "North/South" chalk line. Do the same simultaneously in the "East/West" direction. Visually check the alignment of the tiles making sure the tiles themselves are tightly joined. Check your adhesive consumption regularly.

(VIII) Weights such as sand bags must be placed on edges, seams, corners, ends until such time the adhesive has set.

#### **NOTE**

*Allow sufficient time for adhesive to cure properly prior to allowing foot traffic onto Versatile™ surfacing*

(IX) care should be taken when embedding Versatile™ into the adhesive. Do not drag the Versatile™ surface across the adhesive, thereby possibly contaminating the adjacent tile.

(X) Versatile™ can be field cut by utilising a razor (or Stanley) knife and a straight edge.

#### **NOTE**

*Use caution whenever using razor knives or similar cutting devices to prevent accidental injuries.*

(XI) Reducing strips, edge guards and corner strips manufactured from metal, vinyl or rubber

may be used by the installer at his discretion.

(XII) Game lines may be painted directly onto Versatile™ using a 2-component non-yellow aliphatic polyurethane line paint

(XIII) Refer to maintenance procedures for cleaning and finishing options before handing over work to the customer.

## PU 88 POLYURETHANE ADHESIVE

### Benefits

- solvent free
- withstands heavy duty wear
- resistant to moisture and weather
- highly economical in use
- transportable up to -20°C

PU88 is a solvent free non-flammable, moisture and weather resistant 2-part polyurethane adhesive suitable for indoor and outdoor applications.

### APPLICATION FIELD

PU88 is recommended for bonding Rephouse Versatile™ playground tiles and outdoor rubber flooring systems such as Neoflex™, Decoflex™, Evopave™ and Isodec™.

### COMPOSITION

A solvent free 2-component polyurethane adhesive with inorganic fillers.

### CHARACTERISTICS

	Part A	Part B
Viscosity	paste	liquid
Colour	grey	dark brown
Specific Gravity	1.70 kg/l	1.2 kg/l
Mixing ratio (by wt.)	5 parts	1 part
Pot life at 20°C	± 30 minutes	

High temperatures accelerate, while low temperatures retard curing.

10°C - ± 90 minutes

30°C - ± 15 minutes

Consumption on smooth cement/concrete

B2 serration at ± 0.60 kg/sqm

B3 serration at ± 0.80 kg/sqm

C1 serration at ± 1.20 kg/sqm

Consumption on smooth tightly compacted asphalt

B2 serration at ± 1.00 kg/sqm

### DISCLAIMER

The above data, particularly the recommendations for applications and use of this product is based on our knowledge and experience. Due to varying conditions during applications, which are beyond our control, we strongly recommend to carry out sufficient tests in order to ensure that Versatile™ is suitable for the intended flooring installation. Except for wilful act, any liability based on such recommendations or any oral advice is hereby expressly excluded. This Layout, Design and Installation document supersedes all previous editions.

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# STEP # 1

N-S Orientation Line

Outline of Area  
to be covered

E-W Orientation Line

1st Versatile

## STEP # 1 PROCEDURE

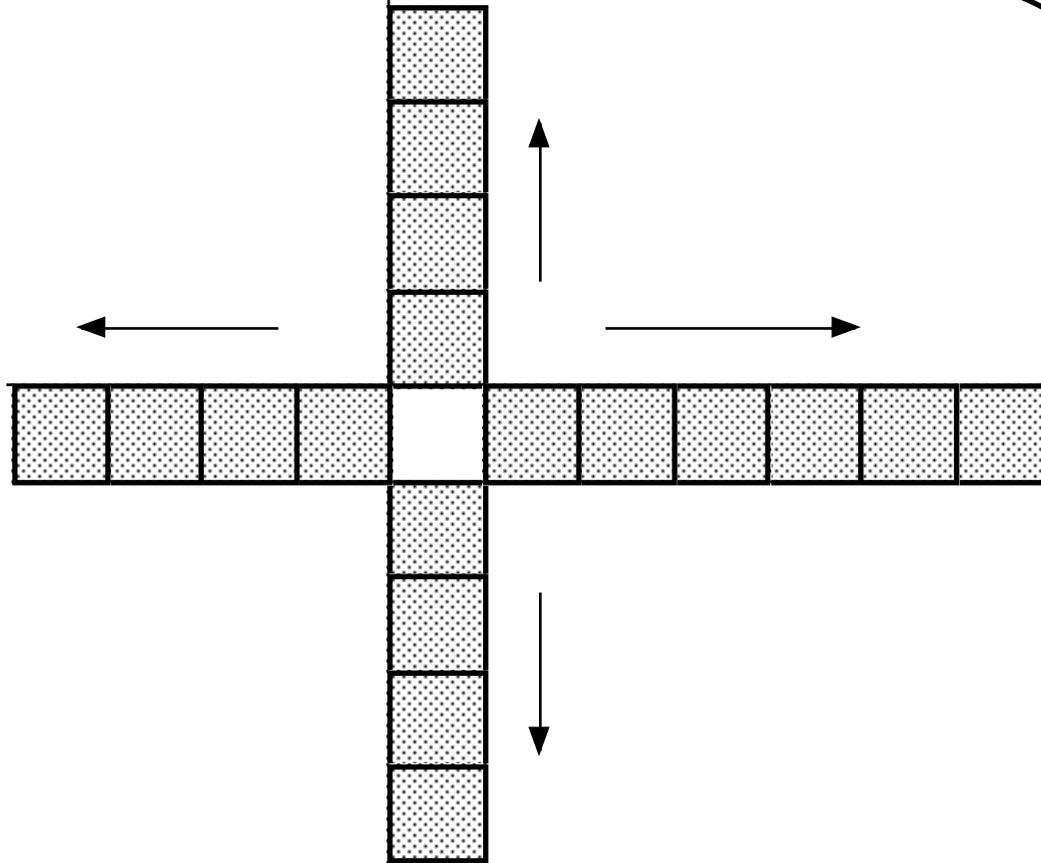
1. Make sure the sub-floor is well drained, clean, free from oil, dirt or any kind of foreign deposits.
2. chalk line out the N-S and E-W orientation lines on the sub floor
3. Bond the 1st Versatile™ Rubber Tile at the cross over of the orientation lines
4. Weigh down Play Tile until the adhesive has set.

# STEP # 2

N-S Orientation Line

Outline of Area to be covered

E-W Orientation Line



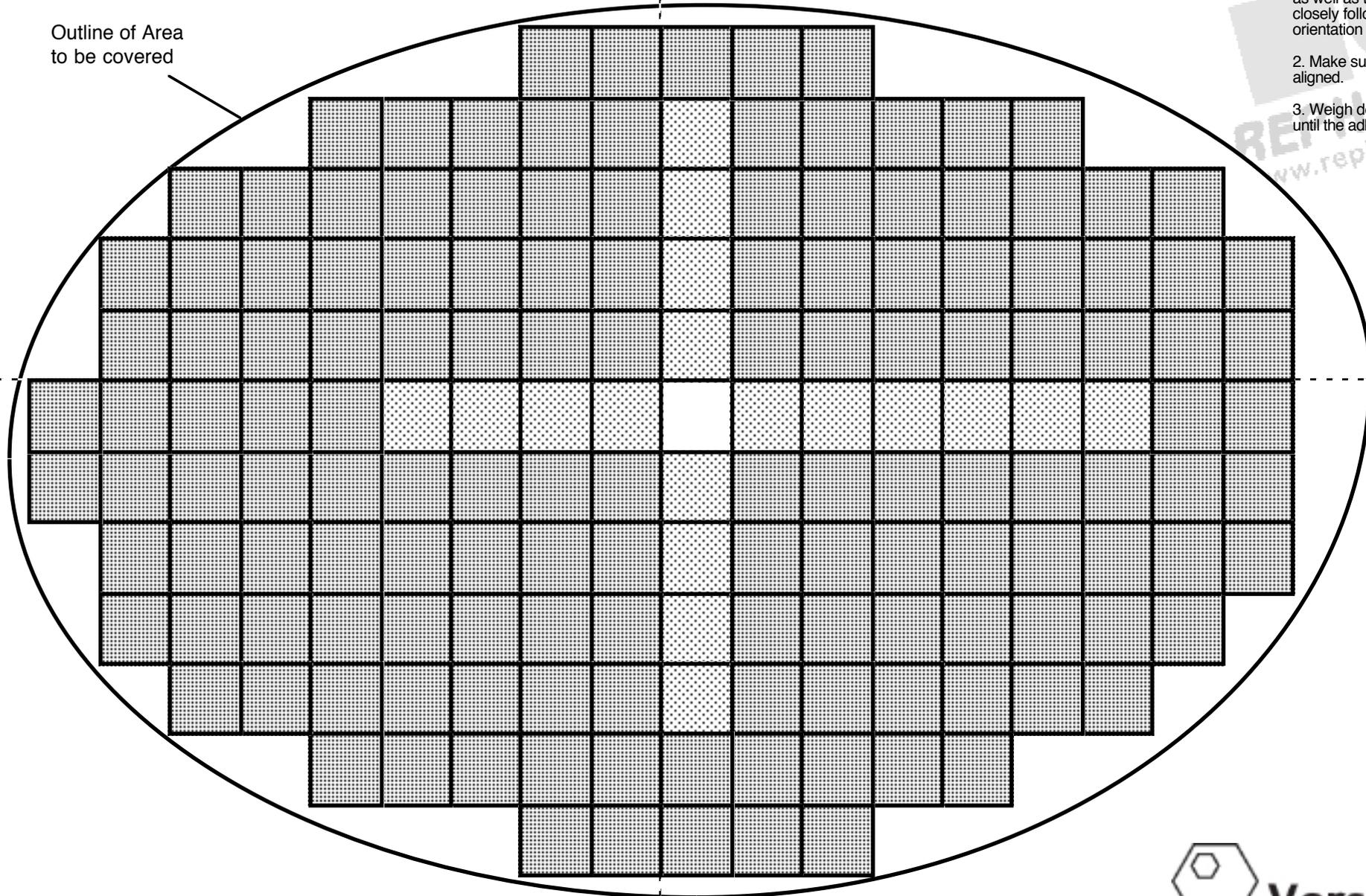
## STEP # 2 PROCEDURE

1. Bond the 2nd and ensuing Versatile™ Rubber Tile against the 1st as well as to the sub-floor closely following the orientation lines
2. Weigh down Rubber Tiles until the adhesive has set.

# STEP # 3

N-S Orientation Line

Outline of Area to be covered

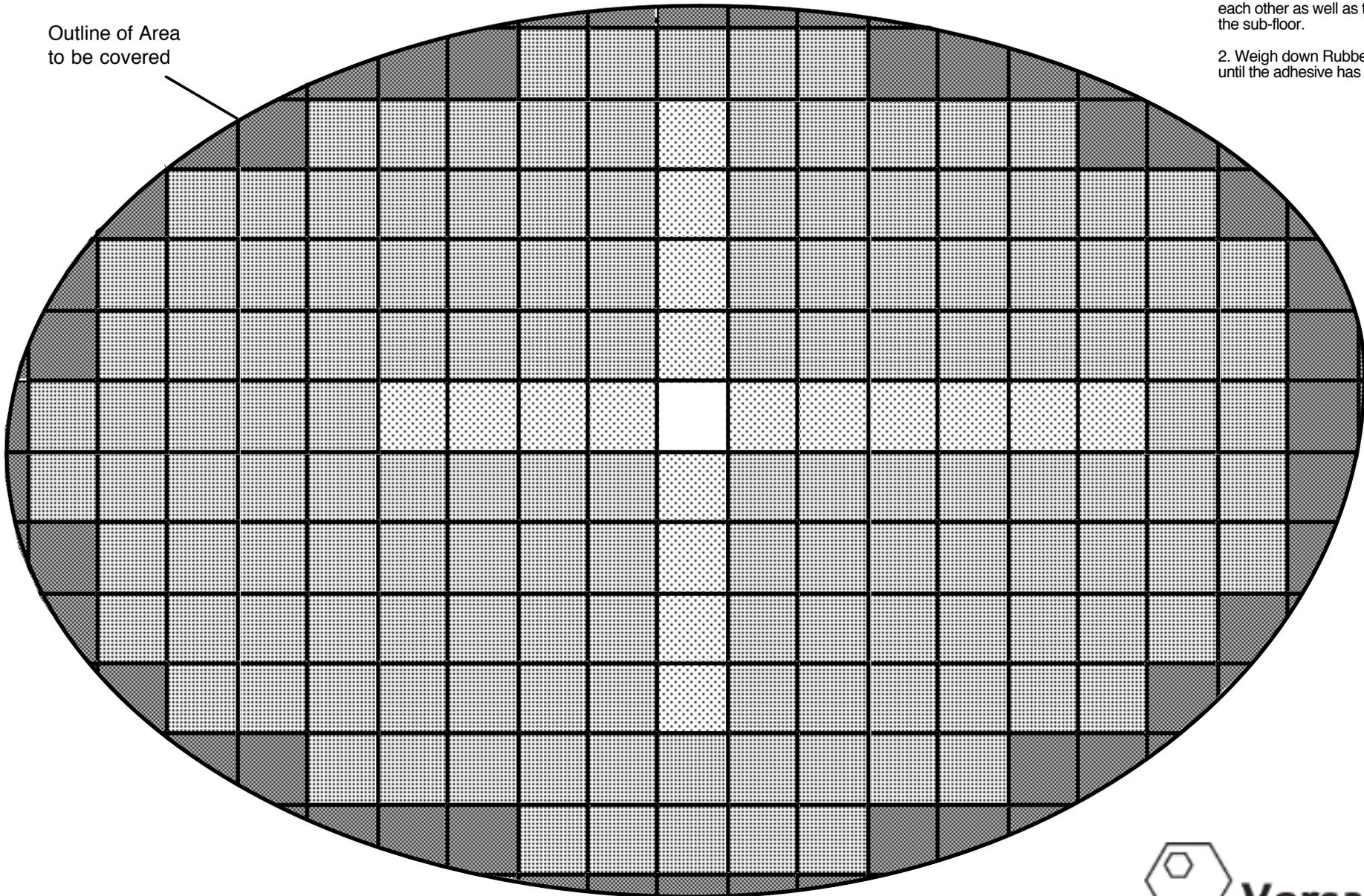


## STEP # 3 PROCEDURE

1. Continue to bond Rubber Tiles against each other as well as to the sub-floor closely following the orientation lines.
2. Make sure the joints are aligned.
3. Weigh down Rubber Tiles until the adhesive has set.

## **STEP # 4**

Outline of Area  
to be covered



### STEP # 4 PROCEDURE

1. Cut and trim Rubber Tiles to suit the outline of the area and bond against each other as well as to the sub-floor.
2. Weigh down Rubber Tiles until the adhesive has set.