

## Installation Guide

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### 01 The Sub Floor

For new or renovation jobs, the flooring contractor is solely responsible for laying down the floor covering. He must ensure that the sub floor has been suitable prepared and is ready to receive the vinyl floor. It is required that the sub floor is hard, level, dry, smooth and structurally sound to be considered suitable for installation. Please note that in some cases additional parameters need to be met before laying the vinyl floor. Also, all local regulations and conditions must be considered while inspecting and or preparing sub floors before the vinyl floor covering installation.

#### 1.1 Preparation of Sub floor

It is important that the sub floor is hard, level, dry, smooth and structurally sound. It must be free of cracks and other irregularities and must not be contaminated with paint, plaster, oil, grease or any other substance that could affect the adhesives used.

#### 1.2 Cracks

Cracks must be filled with an appropriate crack repair material that does not cause undulations or unevenness on the floor surface. Our installation procedure are basic and more technical assistance may be required from site to site. Please contact us for the full technical guide.

#### 1.3 Hardness

Use cement based screeds for sub floor preparation and make sure that they are not crumbly or flaky.

#### 1.4 Flatness

Maximum deflection, for a 0.30m spirit level: 7mm, and for a 0.20m spirit level: 2mm. Surface state must be fine and regular.

#### 1.5 Dryness

Moisture content in sub floors should be measured using rH meters and should be in accordance with relevant standards in each country. According to prevalent ASTM standards, the relative humidity in the sub floor must not be more than 75% R.H.

Due to the quantity of water used for concrete mixing and laying of screeds, a drying time is required of approximately 1 day per millimeter (1 month for 25 mm). This is considered for screed thicknesses up to 50 mm. Adapt the drying time according to how cold or damp the conditions are.

#### 1.6 Smoothness

A self-leveling compound must be applied to the entire surface. The thickness of the compound depends on the undulations of the screed. Self-leveling compounds are designed only to cover minor surface undulations and cannot be replaced for dramatic leveling deficiencies in the sub screed. The self-leveling compound must be allowed to dry in accordance with manufacturers instructions. To obtain a perfectly smooth surface, rub down using a carborandum stone. Sweep or vacuum up any dust. Spread the adhesive.

#### 1.7 Expansion joints or movement joints

Floor covering should be laid up to the joint and the joints should be covered with an appropriate plastic or metal sliding joint cover.

#### 1.8 Sub floors direct to ground

A damp proof membrane or other water resistant barriers must be established to act against underlying hydrostatic pressure and moisture.

#### 1.9 Under floor heating

The sub floor must be allowed to dry in accordance with local standards. The heating system should be switched on at least 4 weeks before laying the floor covering, then switched off 24 hours before any sub floor preparations. The mains should be switched off during installation of the floor covering. The heating should then be switched on 48 hours after installation of the flooring and the temperature progressively increased to normal working temperatures over 5 - 7 days. Floor temperature < 28° C.

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### 1.10 Old carpeting

Remove old carpeting, clean the sub floor and apply a self-leveling compound before installation.

### 1.11 Wooden Floorboards

Check the condition of the floorboards and secure any loose boards. Any knotholes should be filled as necessary. Cover with hardboard, chipboard or plywood, minimum thickness 8 mm. These sheets should be nailed or stapled every 10-15 centimeters. Check that the floorboards are dry and ventilated on the underside. All non-ventilated wooden floors must be removed.

### 1.12 Ceramic tiles

Any loose tiles must be removed with all traces of paint, plaster, and grease. The sub floor must be cleaned and then primed with an appropriate primer prior to applying self-leveling compounds in full accordance with manufacturers instructions. Sweep thoroughly. Apply the adhesive as instructed by the manufacturer.

### 1.13 Old Flooring

Old vinyl, linoleum and rubber floor covering must be removed and the sub floor examined and prepared as necessary before installing the new floor covering.

## 02 Prior to Installation

### 2.1 Conditions and Requirements

1. The sub floor must be clean, dry and free from cracks. Dust and contaminants that could prevent adhesion, such as patches of paint, oil, etc., must be removed. Note that asphalt, oil spillage, impregnation agents, pen marks, etc., can cause discoloration. Damp proofing to be carried out according to the local building standards. Where required an effective damp proof membrane must be incorporated in the sub floor. Check for dampness in ground supported floors, floors above boiler rooms, floors with under floor heating or containing high temperature pipe work etc.
2. When installing this product on concrete sub floors that do not include damp proofing, the moisture content measured in terms of relative humidity must not be higher than (85% in UK and 75% in Ireland according to BS 8203).
3. Where pipes are laid in the floor they should be arranged so that the flooring material is not continuously subjected to a temperature above 30°C, otherwise there may be discoloration and other alterations of the material.
4. Extra special care must be taken with installations on surfaces where significant temperature changes can be expected, for example, floors exposed to strong sunlight, as adhesion strength and sub floor treatment may be heavily stressed.
5. Floor boards and similar substrates should have moisture content of 8% (equivalent to 40% RH at +20°C), so that any subsequent movements cannot cause damage.

### 2.2 Preparation

1. Dust and loose particles must be thoroughly removed. Highly absorbent or variably absorbent substrates should be sealed with diluted flooring adhesive (1:4). The primed surface must be completely dry before laying commences.
2. When applying smoothing compounds, use compounds that meet the minimum requirements in the building standards. NOTE: Discoloration can occur when using two-part polyester compounds if they are mixed incorrectly and /or insufficiently. Do not mix directly on the substrate.
3. Where required, damp proofing must be carried out.
4. Use only a lead pencil or marking. Note that any marks made with felt-tipped pens, permanent and non-permanent ink makers, ball point pens etc. can cause discoloration due to migration.

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5. If material from several rolls is used, they should have the same manufacturing serial numbers and be used in consecutive order.
6. Prior to laying, allow the material, adhesive and sub floor to reach room temperature, i.e. A temperature of at least 18°C. The relative air humidity should be 30-60%.
7. The rolls should be stored upright. Any faults in the material should be reported immediately to your nearest sales office. Always quote the colour and roll numbers, which are stated on the control card.

### 03 How To Install : Sheet

#### 3.1 Vinyl Sheet Installation

The vinyl sheets must be unrolled and kept in ambient conditions in the room to be covered. The minimum temperature to be maintained is 20°C (68°F). The adhesive should also be acclimatized to the vinyl. Recommended unrolled time is 48 hours.

1. Lay first length along guideline, ensuring sheets are laid lengthways in the same direction as the light falls.
2. Fold back sheets half way.
3. Use a finely serrated trowel to apply the single stick water based acrylic adhesive. Carefully follow instructions by the adhesive manufacturer. Insufficient drying time or excess adhesive will cause bubbles. If the open time is too long the adhesive transfer will be poor.
4. Smooth down manually then roll with a 65 kg flooring roller.
5. All joints should be grooved and then welded using supplied welding rods only after 24 hours have elapsed. Proper grooving and welding equipment needs to be used. Installers are also required to have appropriate training for the same.
6. Do not traffic the floor covering for 48 hours after installation.

#### 3.2 Antistatic Sheet Installation

Please refer to Installation Instructions for Sheet Vinyl Flooring. Only recommendation is to use high performance acrylic adhesives with low water content. The flooring has antistatic properties of its own.

#### 3.3 Dispersive and Conductive Sheet Installation

Recommended installation is with conductive adhesives and a conductive primer. Copper Strips are required only along the edges and on the diagonal. The sheets must be unrolled and left in the room to be covered, with the adhesive, for at least 48 hours prior to installation. Minimum ambient temperature must be 20°C (68°F).

Copper strips: code 0584

Width: 1 cm

Average length: 250 lm

Thickness: 6/100 mm

Weight: about 3.60 kg



1. Apply a conductive primer. The coverage should be 100-150g/m<sup>2</sup>. Leave to dry for at least 12 hours or according to manufacturer specifications.
2. Install first lengths along guideline, ensuring sheets are laid lengthways in the same direction as the light falls.

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3. Use 2 LM of copper strips for every 30 M<sup>2</sup>. Connect the copper strip to the earth (1 connection for every 30 M<sup>2</sup>). For rooms over 30M<sup>2</sup>, install copper stripes at the periphery of the room and along the diagonal.

4. Adhere with an acrylic single stick conductive adhesive and a sharp-toothed spatula, or similar approved adhesive. The coverage should approximately 200-300 g/m<sup>2</sup>. In order to achieve a regular and appropriate coverage change the spatula regularly.

Carefully follow the manufacturer's instructions when applying primer and adhesive. Ensure that the suppliers can provide a 10-year guarantee for the conductivity of the adhesive.

5. Install the floor covering as per the vinyl sheet instructions mentioned earlier.

6. Manually smooth down the roll with a 65 kg flooring roller.

7. Groove and hot rod the weld joints 24 hours after installation. Extra care must be taken to ensure that there are no gaps in welding and that a contiguous floor is formed. Responsive takes no responsibility for poor welding which results in failure of the conductive nature of the product. Dried adhesive on surface of flooring may be removed with white spirit or surgical spirit.

8. Do not allow traffic on the floor covering for 48 hours after installation.



### 3.4 Further Detailed Installation Instructions

1. Installations should be made at room temperature (at least +18°C). The relative air humidity in the premises should be 30-60%. Installation during other conditions must not be carried out.

2. Cut the sheets to length and, if possible, lay them out to acclimatize for a while prior to laying. This is particularly important to longer lengths.

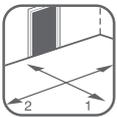
3. The sheets are fully adhered with an adhesive approved for vinyl floors. Solvent-based chloroprene contact adhesive must not be used as it can cause discoloration. See the adhesive manufacturer's instruction regarding coverage, open time etc. The assembly time depends on the type of substrate, its absorbency, the temperature and air humidity in the premises.

4. Sheets must be installed such that colour differences are avoided. Reverse sheets whenever possible.

## 04 How to Install: Tile

### 4.1 Vinyl Tile Installation

Unpack the tiles 24 hours before installation and store stacked horizontally at a minimum ambient temperature of 15°C. (59°F)



1. Strike an axis perpendicular to the main entrance. Strike a perpendicular line to this axis ensuring cuts for tiles on both sides.

2. Apply adhesive to a few square meters of sub floor in one quarter. Insufficient open time of the adhesive will cause bubbles. If open time is too long the adhesive transfer will be poor.

3. Press each tile into position ensuring joints are butted tight. Plain tiles should be laid tessellated at 90° angle.

4. Smooth down manually then roll with 65 kg flooring roller.

5. If necessary hot rod welds joints after 24 hours have elapsed. Do not traffic the floor covering for 48 hours after installation.

### 4.2 Dispersive and Conductive Tile Installation

Installation procedure for conductive tiles is on a copper strip grid system. The tiles must be laid out in the room for at least 24 hours prior to installation. Minimum ambient temperature must be 20°C (68°F). A high performance acrylic adhesive with low water content must be used.

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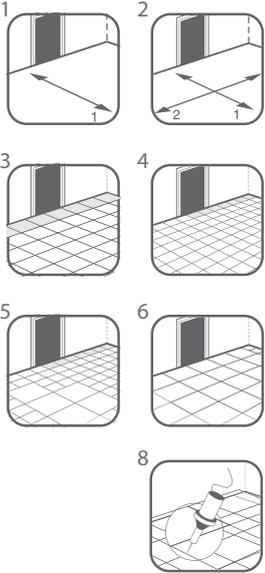
Copper strips: code 0584

Width: 1 cm

Average length: 250 lm

Thickness: 6/100 mm

Weight: about 3.60 kg



1. Strike an axis perpendicular to the main entrance.
2. Strike a perpendicular line to this axis ensuring equal cuts for tiles on both sides.
3. Set out tiles leaving a walkway around the perimeter of the room.
4. Lay out the copper strips so that they form a cross under the center of each tile.
5. Apply adhesive to central area (leave walkway free).
6. Install the copper strips and then the tiles which may be closely butted at joints. Make sure the adhesive does not contaminate the copper strips. Fold back the copper strips. Apply adhesive to the peripheral walkway and then replace the copper strips back into adhesive. Lay the peripheral copper strips. Lay a 10 cm band of copper strip for every 40 or 50 M2 for earthing. Install tiles in walkway.

7. Smooth down manually then roll with 65kg flooring roller.

8. Groove and hot rod weld the joints 24 hours after installation. Dried adhesive on surface of flooring may be removed with white spirit or surgical spirit.

Do not traffic the floor covering for 48 hours after installation.

## 05 Special Areas:

### 5.1 Installation in wet room areas

1. The flooring is coved approximately 100 mm (4 in) up the wall. If wall covering is to be installed, then it should overlap the wall base by at least 30 mm (approx. 1 in). For the best result, the thickness of the wall base is leveled out before installation of the wall covering, so that a smooth juncture is obtained. Use a water resistant leveling compound.

2. Within 0.5 m radius from floor drains etc. seams are not recommended.

### 5.2 Fitting for coves and corners



1. Using a straight edge and pencil, mark at a height of about 10 cm (approx. 4 in.) all walls where the flooring will be coved. Apply the adhesive on the walls up to the marked line, using a fine notched trowel. Spread some of the adhesive out onto the floor, as shown in the picture.



2. While the adhesive becomes tacky, the sheets are cut. The sheets should be cut longer than the room length to allow sufficient material for coving. When a sheet fits the width of the room, make a cross mark on the bottom of the material and the sub floor to indicate the center. This will help you place the sheet in its exact position. The cross marks are to coincide at installation.



3. When the width of the room exceeds the sheet width (more than one piece has to be installed to cover the area), mark a line on the floor parallel to the longitudinal wall at a distance equivalent to 12 cm (about 4 1/2 in.) less than the sheet width. Mark the room's center on this line. On the bottom of each sheet, mark their center. The cross marks on the sub floor and sheets shall coincide at installation.

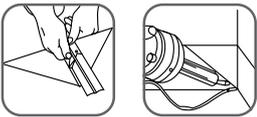


4. Fold back and loosen the sheets covering half of the floor area. Apply the adhesive on the sub floor with a fine notched trowel. Use a soft brush around drains and hard-to-reach areas. Around and inside drains, use adhesive recommended by the manufacturer of the drains.

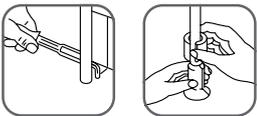
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5. Use a corner roller to press the material firmly into the juncture between the floor and wall. In areas where one sheet is sufficient to cover the sub floor, the adhesive can be applied over the entire surface area before installing the sheet. Although this requires experience, it is the fastest installation method.



6. When fitting in-corners, make a cut in the excess material starting about 5mm (about 1/4 in.) above the floor in the corner. If the material has to be heated before folding, heat the area between the sheet and the wall. This provides better contact between the sheet and adhesive.



7. Press the material firmly into the corner with a Corner Roller.

8. The corner seam shall be placed on one of the walls at a 45 degree angle.

9. When fitting at our-corner, the sheet is folded against the corner and cut about 5 mm (1/4 in.) from the floor. The guidelines in the picture show the corner on the sheet and the position of the cut at about a 45 degree angle. Then a diagonal cut is made as shown.

10. To glue the triangle shaped piece more simply and securely, cut a groove at the back of the triangle with Corner Knife. The depth of the groove shall be no deeper than half of the sheet thickness.

11. The triangle can now be folded and placed on the corner. It will overlap the covered floor. Cut through the overlapping material to make a tight fit.

12. Use a hot-air gun for welding with thread at in-corners and out-corners. Speed Welding Nozzle is specially designed for welding vinyl floors. For a perfect job, a Repair Gun to the Swan Neck is usually required to effectively seal all seams nearest to the floor.

### 5.3 Fitting around pipes and floor drains

Around pipes by walls, cut the sheet and press it against the pipe to form a collar. In tight or cramped areas between pipes and walls, cut as shown by the dotted line. If a cover is required, do the following:

1. If you make a cover out of floor material, fit it against the pipe with adhesive. Weld the seams together using Repair Gun.
2. Prefabricated covers are applied according to the manufacturer's instructions. Seam sealer or sealing compound approved for this purpose, can be used for an extra tight fit around pipes.

Around drain pipes, fold the sheet against the pipe and mark a line on the material where the center of the pipe is. Cut a hole about 25 mm (about 1 in.) smaller than the diameter of the pipe. As shown, cut the hole at the start of the fold. Heat the sheet vinyl and press it over the pipe. Trim off excess material with a hook knife so that the break in the pipe wall is cleared.

Around flush drain openings, heat the sheet and mark the location of the drain using a clamp ring. Then cut a small hole in the center of the drain within the mark. Heat the flooring and press the clamp ring down into the edge of the drain. When using an adjustable clamp ring, make sure it fits tightly. Trim the material around the perimeter of the ring.

## 06 Adhesives

NOTE: Instructions for use are provided by the adhesive manufacturer. These are applicable for normal hydrometric conditions and sub floor porosity. However, they may need modification depending upon site conditions.

Waiting time: This is the time that must be left between application of the adhesive to the sub floor and sticking down the flooring.

Open time: During this time, the adhesive is in a suitable condition to receive the floor covering.

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### 6.1 Water-based or emulsion

Suitable for most types of flooring. Their sticking power is determined according to their rate of evaporation. They are normally applied with a finely notched trowel or roller.

### 6.2 Contact adhesive

These are resins in solution and flammable. They are usually double stick and applied using a stiff brush or trowel. Neoprene adhesive should be used for certain types of flooring e.g. Rubber Polyurethane contact adhesive is recommended for difficult areas e.g. skirting panels to PVC.

### 6.3 Two part adhesives

This type of adhesive (epoxy + polyurethane) is used for flooring subjected to heavy traffic, dampness or exposure to the elements. Single application.

### 6.4 Recommended adhesives per product type

For more information refer to adhesive manufacturer's instructions or contact the technical department at Responsive Industries.

## 07 Welding

### 7.1 Cold Welding

1. Overlap the edges by 3 or 4 cm and cut through both thicknesses with a stanley knife using a ruler as a guide-line. It is beneficial to place a flat straight edge beneath the joint to be cut. This will avoid damaging the sub floor and ensure a tight butt joint is achieved. But the sheet edges together to form a compression joint.

2. Cover the joint with paper adhesive tape.

3. Cut through the tape into joint.

4. Fit the necessary nozzle onto the bottle, depth welding: nozzle with guide, surface welding: feed nozzle. Insert nozzle into joint and squeeze bottle until there is an excess of liquid on the surface of the tape. Wait for 60 seconds.

5. Remove adhesive tape.

### 7.2 Hot Welding

Allow 24 hours after laying. Welding can then be done either manually or mechanically using a welding machine and weld rod.

1. Grooving can be done manually or mechanically using an electric grooving machine.

Foam backed vinyl: only groove through the depth of the wear layer.

Homogeneous material: the depth of the groove should be equal to the total thickness of the material minus 0.3 mm.

2. Mechanical or manual welding

3. Trimming the joint: First trim using a crescent bladed knife with cable slide. When the joint has fully cooled, trim for a second time with the crescent bladed knife to ensure that the weld rod is flush with floor covering.

For E3 classification it is compulsory to install set- in coved skirting with a welded joint. The sheets are heat-welded. Do not weld until the adhesive has bonded completely. The joints are chamfered or grooved to about 3/4 of the thickness using a hand grooving tool or machine prior welding. Weld with hot-air and Speed Welding Nozzle.

CAUTION: Weld seams must cool to room temperature before trimming. Start trimming where you began welding. All trimming of welding thread is recommended in two steps: rough and fine trimming. With Trimming Knife rough and fine trimming can be done by turning the knife. When fine trimming welding thread, turn the grooved side up.

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### 08 Inspection

The work must be completed with an inspection. Ensure that the newly laid flooring is free from adhesive residues and that the bond is consistent with no bubbles.

For the best results:

1. Make sure all specifications and instructions are followed carefully.
2. Use only adhesives recommended by adhesive manufacturers.
3. Check the installation afterwards.
4. Contact your representatives if unsure about any part of the installation.

Modern day-room cleaning aims at a reduction of wet-cleaning procedures and their replacement by dry-cleaning techniques that utilize impregnated disposable cleaning materials while making full use of the appropriate machines. This makes work easier for the cleaning personnel and also protects the flooring and environment due to less use of cleaning chemicals. This way the cleaning procedures yield improved results of a constant quality. Flooring has a polyurethane (PUR) reinforced surface and is ideally suited to this kind of cleaning techniques.

### 09 Cleaning

#### 9.1 Initial site cleaning

An initial site cleaning is always carried out before using new flooring. Always protect the floor with hardboard or similar during the construction period.

Lightly soiled floors: Vacuum, sweep or damp mop the area to remove loose dirt and building dust. A combined machine with brushes and white/yellow floor pads is very effective on large, open areas. Use a neutral detergent, pH 7-9. When necessary, dry buff at high speed using white/yellow floor pads.

Severely soiled floors: Remove loose dirt and building dust. Then scrub the floor with a scrubbing machine and red floor pads. If there is a lot of building dust, use a detergent with pH5-7. Rinse with warm water. Dry buff at high speed using red floor pads.

#### 9.2 Daily Cleaning

Dry or damp mopping suffices for daily cleaning.

#### 9.3 Cleaning with Chemicals

If wet-cleaning is necessary, use a neutral floor-cleaner. Wet rooms may necessitate occasional cleaning with acidic cleansing agents (pH 3-5) in order to remove residual lime and soap  
Warning: Always follow dosage instructions carefully!

#### 9.4 Machine cleaning

In order to achieve good results, clean the floor gently with a combined scrubber-dryer machine and medium-hard brush or preferably red pad.

#### 9.5 Preventive measures

Stop dirt right at the door, 85% of it enters a room this way. There is effective entrance barrier matting to bind dirt from people's shoes. Remember that grit and sand particles are the number one cause of damage.

## Maintenance Guide

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### 01 Dry buffing

Dry buffing is an efficient method used to remove traces of scuff marks and to restore a floor's surface once wear has become visible. It is best to dry-buff right after you have machine-cleaned the floor. Dry buffing limits renewed soiling. Be sure to use the correct type of pad. Best results are achieved at approximately 1000 rpm and using a red buffing pad. Dry-buff frequently according to the amount of wear.

### 02 Machine cleaning

Heavy wear and soiling necessitates machine-cleaning. Apply the cleaning solution (a fairly strong cleansing agent added to water, pH 10-11) to the flooring and allow to penetrate for a few minutes. Clean the flooring using the machine and a red cleaning pad. Vacuum away the dirty water immediately afterwards. Rinse with clear water. Allow the flooring to dry and then dry-buff according to the maintenance instructions above. Do not treat the flooring with polish!

### 03 Removing marks and stains

Treat marks and stains immediately. Use white/red nylon pads with methylated spirits, cleaning spirit or neutral detergent. Wipe afterwards with clean water.

### 04 General advice:

1. Resilient floors are damaged by solvents.
2. Wipe up any split oil immediately because it may damage the surface.
3. Black rubber wheels and rubber feet can discolour the floor.
4. All chair legs must have protective feet.
5. Remember that light colours need to be cleaned more frequently.

For specific brands please contact Responsive Industries for detailed maintenance instructions.