Installation

1. Subfloor Preparation

1.1 General Requirements

Proper subfloor preparation is essential to ensure a successful long-lasting installation. The surface must be clean, dry, level, and structurally sound. All contaminants such as oil, paint, or adhesive residues must be removed before installation.
Surface regularity must not deviate more than **5mm over a 2m straight edge**. For intricate LVT patterns, a stricter tolerance of **3mm over 2m** is recommended.

1.2 Moisture & Damp Control

Moisture is the most common cause of LVT installation failure. Whether due to construction moisture or the absence of a damp-proof membrane (DPM), it can lead to debonding and adhesive breakdown.

- **New concrete/screed:** Due to variable factors influencing the rate of drying, an exact drying time cannot be determined. As a guide, allow one month per 25mm for the first 50mm of thickness. Greater thicknesses require proportionally more time. For example, an 150mm thick slab drying from one face may take up to 12 months.
- All subfloors must be tested using a hygrometer over a 72-hour period. Installation should only proceed if the relative humidity (RH) is **75% or lower**.
- If RH exceeds 75%, apply a suitable surface DPM before installation.

1.3 Specific Subfloor Types

1.3.1 Concrete & Screed (BS 8204)

Must include an effective DPM. If absent or damaged, apply a surface DPM. In all instances, a **minimum 3mm smoothing compound** must be applied prior to LVT flooring installation. The smoothing underlayment supplier will advise on the correct product to use from their range that suits both the end use application and subfloor construction. If applicable, they will also advise on the correct primer to apply.

1.3.2 Power-Floated Concrete

If laid directly to the ground, an effective DPM must be used. Smooth dense concrete subfloors – such as those created by a power floated finish – can prove difficult to bond to, due to the impervious nature of the surface. In such instances, the floor should initially be shot blasted to remove the top surface and then made good. In all instances, a **minimum 3mm smoothing compound** must be applied prior to LVT flooring installation. Curing agents or surface hardeners must not be used with power-floated concrete.

1.3.3 Mastic Asphalt

Ensure at least a 15-20mm thickness is applied and brought to a finish with a wooden float. In all instances, a **minimum 3mm smoothing compound** must be applied prior to LVT flooring installation. The asphalt must not just be skim coated, it is important to ensure that the smoothing underlayment is of a type recommended for use on asphalt floors and that a suitable primer key coat is applied if directed.

Never adhere LVT floor coverings directly onto a mastic asphalt subfloor.

1.3.4 Magnesite

Composition floors which are composed of magnesium oxychloride cement or polyvinyl acetate/cement are highly absorbent. As such, if overlaid with an impervious material, they can break

down due to the effects of rising moisture, as the majority of these floors do not incorporate an effective DPM. In all instances where the material is laid directly to ground, the manufacturers recommend that the screed be uplifted and relaid incorporating an effective DPM.

1.3.5 Terrazzo / Quarry / Ceramic Tiles
Terrazzo has a dense hard surface, which is normally impervious. The floor must be sound and firmly fixed and any loose or powdery material removed from the joints. The surface should be thoroughly washed/degreased to remove any surface contaminants and any cracks cleaned out and filled with a suitable resin bonded cement/sand mixture. The surface may also need some mechanical abrasion to enable the smoothing underlayment to key to the surface. In all instances, a **minimum 3mm smoothing compound** must be applied prior to LVT flooring installation.

1.3.6 Gypsum / Anhydrite / Calcium Sulphate Screeds
These type of screeds can be difficult to identify – if in any doubt check with one of our approved adhesive manufacturers or the subfloor preparation products manufacturer prior to commencing the installation. Always check the screed for moisture prior to installation. Should you suspect the screed to contain excessive moisture seek advice from one of our approved adhesive manufacturers or the subfloor preparation products manufacturer prior to commencing the installation.

These types of screeds can also be affected by laitance and moisture in the smoothing compound, resulting in the loss of bond. Any such laitance should be mechanically abraded and fully removed. Anhydrite/Calcium Sulphate/Gypsum screeds also require the application of a special primer before the installation begins. In all instances installations on these types of substrate should be discussed beforehand with one of our approved adhesive manufacturers. If a failure occurs, it is normally below the vinyl floor covering and as such manufacturers will not accept responsibility for failure.

1.3.7 Expansion Joints
Expansion joints are incorporated into buildings to permit movement without cracking therefore it is important that these joints extend through the floor covering. Proprietary expansion joint covers are available which blend with the floor covering and disguise the joint. Some are made of vinyl that incorporates a flexible portion and are welded to the abutting LVT to form an impervious layer. Other types are a combination of aluminium and PVC, which again contains a flexible section. Filling the expansion joint with sealant which is not specifically designed for expansion joint filling or floor smoothing underlayment will lead to floor failure and is not recommended by manufacturers.

1.3.8 Timber Substrates
New timber suspended floors should be constructed of either plywood or chipboard specifically manufactured for flooring. Spacing of the supportive joists should be in accordance with the manufacturer's recommendations in relation to the board's thickness.

1.3.9 Chipboard (Structural / Load Bearing)
Chipboard floors are widely used as load bearing substrates; however, manufacturers recommends that this type of substrate should be overlaid with plywood sheets conforming to EN 636-3 and EN 314-2 Class 3 with a minimum thickness of 5.5mm, as described in Section 'existing wooden floors'.

- For joist centres up to 450mm use 18mm thick load bearing chipboard.
- For joist centres of 610mm use 22mm thick chipboard.
- All chipboard should comply with EN312, be P grade P4, P5, P6 or P7.

Plywood overlay sheets must be conditioned on-site by loose laying them individually or loose stacking them in the temperature and humidity conditions which will prevail in service, for at least 3 days prior to fixing. Do not overlay boards where a moisture content exceeds 7% in either the chipboard base; or the plywood overlay (when tested using an electrical resistance moisture meter).

1.3.10 Chipboard Floating Floors
Manufacturers recommends that the chipboard floating floors should be overlaid with flooring grade plywood conforming to EN 636-3 and EN 314-2 Class 3 with a minimum thickness of 5.5mm,

as described in Section 2.12.3 below; with the plywood laid half bonded over the chipboard joints, screw fixed or nailed (refer Section 'existing wooden floors').

1.3.11 Woodblocks / Granwood
Although many woodblock floors appear sound, even when overlaid with plywood, the application of an impervious floor covering on a direct to earth subfloor can cause expansion and lifting of the base. Manufacturers recommend that, in all cases, the woodblock floor be removed and the subfloor brought up to the required standard to accept LVT flooring.

1.3.12 Existing Wooden Floors
Existing wooden floors may have received a preservative treatment that will cause poor bonding, due to a chemical interaction between the preservative and the adhesive. In such cases, they should not be laid onto directly.

All loose boards should be firmly nailed to the joists and any worn or broken boards replaced. The floor should be sanded to remove high spots and any hollows or cracks filled with a suitable flexible underlayment. The existing wooden floors should then be overlaid with suitable flooring grade plywood of a minimum thickness of 5.5mm which conforms to EN 636-3 and EN 314-2 Class 3.

- The sheets should be laid with staggered joints.
- The plywood should be fixed to existing floorboards using suitable annular ring shank nails of minimum 20mm length; or suitable countersunk wood screws.
- Fixings should be at 100mm centres along the edge of each sheet, with a fixing line 12mm from the edge and thereafter at 150mm centres throughout the entire area of the sheet.
- Perimeter fixings must not be more than 18mm from the board edges.
- Plywood should be conditioned as described in Section 'existing wooden floors' prior to application of the floor covering.
- With suspended timber at ground level, it is of vital importance to obtain good ventilation below the floor through the existence of air bricks. Without good ventilation, the application of an impervious floor covering could lead to dry rot in the structure beneath. Always seek advice from the smoothing underlayment manufacturer for the correct product for your specific application.

1.3.13 Metal Floors
Metal bases are generally, but not exclusively, steel and can be contaminated with rust or oxidisation, oil and grease.
- The surface should be thoroughly degreased and then abraded or wire brushed to remove the rust or oxidisation.
- Any high spots may need to be ground off.

In most instances, but not where there is excessive vertical or lateral flexing or movement, a suitable cementitious smoothing compound of at least 3mm thickness must then be applied prior to the installation of the vinyl floor covering. The smoothing underlayment supplier will advise on the correct product to use from their range that suits both the end use application and subfloor construction. If applicable, they will also advise on the correct primer to apply.

1.3.14 Painted or Epoxy-Coated Floors
Epoxy and polyurethane surface coatings should be removed, in order to ensure that no breakdown of the sub-floor occurs after installation of the resilient floor covering

Painted floors will impair the adhesion of the resilient floor covering and should be removed prior to the application of the floor covering. Mechanical methods such as grinding or blasting are the most suitable methods for removing these coatings. However, where the paint proves difficult to remove, the floor may need to be scabbled. If the epoxy coating is well bonded to the subfloor, it is possible to apply the flooring after grinding or blasting.

In both instances, the surface should then be made good with a 3mm minimum coating of a suitable cementitious smoothing underlayment applied in accordance with the manufacturer's

recommendations, which may include the application of a primer key coat.

1.3.15 Existing Floor Coverings
Unless specifically stated within the individual product range literature LVT flooring should never be laid over existing floor coverings and in such instances where this is carried out, manufacturers accept no responsibility for non-performance of its products.

- All existing floor coverings must be uplifted and as much as possible of the old adhesive removed from the subfloor.
- Special care must be taken on very old floors, as some products contained asbestos. In these instances, contact the manufacturer for further information.
- The removed floor coverings should be reclaimed and recycled, providing that there is no heavy contamination.
- A suitable floor smoothing underlayment with a minimum thickness of 3mm should then be applied to the whole floor. Failure to remove sufficient adhesive can lead to premature failure of the underlayment.
- After uplifting existing floor coverings laid on plywood, used as fabricated underlay, replacing the plywood is almost always necessary.
- After uplifting existing floor coverings laid on suspended chipboard; hardboard or plywood subfloors, plywood sheet with a minimum thickness of 5.5mm should then be applied to the subfloor as described in Section 2.12.6.

1.3.16 Access Plank / Tiles
When access is no longer required beneath a floor and it is proposed for access plank/tiles to be overlaid, provided the plank/tiles are sound and level, manufacturers would recommend that a minimum 5.5mm ply sheet should be installed over the access plank/tile and adequately fixed. A suitable smoothing compound should then be used to fill any joints and hollows.

1.3.17 Subfloor Conditions
In common with the installation of any type of flooring, the subfloor should not only be in sound condition, but also free of any contaminants, such as oil, paint, preservative treatments or anything that may impair adhesion, must be removed prior to installation. Other forms of marking, such as a permanent marker pen must also be removed.

1.3.18 Surface Regularity
The manufacturer's recommendation would be that the surface regularity in general should not deviate by more than 5mm when measured using a slip gauge or similar accurate measuring device under a 2m straight edge; however when installing intricate LVT, a higher degree of surface regularity may be required with deviation not exceeding 3mm when measured the same way as above.

2. LVT Installation

2.1 Receipt & Storage

Upon receipt of LVT:

- Check that colours correspond to those ordered, that quantities are correct and there is no damage.
- In particular, check that tiles/planks are from one batch, if that was requested on the order.
- On arrival at site, the tiles should be stored indoors, together with the adhesive, at a consistent temperature of between 18°C and 27°C for at least 24 hours prior to laying.
- Following off-loading, boxes should be stacked no more than five high during the conditioning period. The boxes should be opened and conditioned / acclimatised in the area where they are to be installed together with any adhesive; subfloor preparation products such as plywood etc.
- For design floors, identify and check each element before work proceeds.

2.2 Prior To Installation (Underfloor Heating)

On installations where underfloor heating is used:

- The system should be fully tested and commissioned prior to the flooring installation commencing.

- Underfloor Heating systems should be switched off and be fully cooled for a minimum of 48 hours prior to the installation commencing. The system should remain off and fully cooled during the installation and for a minimum of 48 hours afterwards. It should then be slowly brought back up to the working temperature incrementally over several days.
- A maximum subfloor temperature; (at the adhesive line) of 27°C should never be exceeded.
- Only specialist high temperature or epoxy adhesives should be used in areas with underfloor heating, direct sunlight, and areas of high solar gain. Contact your adhesive manufacturer for more information.

2.3 Preparation For Installation

The decoration of tiles is randomly distributed and can be heavier on some tiles than others. To prevent 'heavy' and 'light' areas, the tiles should be unboxed and, if required, 'shuffled'. Alternating the direction of tiles may be required to avoid repeat patterns.

2.4 Product Conditioning

The majority of installation failures are not caused by poor fitting but instead simply by failure to condition the vinyl tiles and planks correctly prior to installation:

- The tiles and planks plus any other products such as borders, feature strips, design strips, tozzettos and adhesives and new plywood bases; should be conditioned together for at least 24 hours prior to installation.
- Boxes of tiles/planks must be stacked less than 5 boxes high and planks/tiles removed 30 minutes before use.
- The room temperature should ideally be between 18°C and 27°C but more importantly should be constant and not varying by more than 2°C.
- Conditioning / acclimatisation should **always** take place in the area that is to receive the installation.
- The conditioning time should be increased to at least 48 hours where the planks/tiles have been stored and/or delivered at temperatures below 10°C.
- As extremes of temperature can occur between day and night time, temperatures will fluctuate. It is essential that the effects of these fluctuations be avoided.
- The temperature fluctuations described above will typically occur where south facing and full height windows; (including patio & bi-fold doors) are installed; and in conservatories / orangeries. Windows in such areas should be shaded or covered both during the conditioning period; the installation period; and for 24 hours after the installation has been completed to minimize this effect.

2.5 Preparation of the Work Area

The work area should now be prepared to receive the tiles:

- Ensure that all other trades have completed their work and removed all their equipment and materials.
- Remove all debris and vacuum the whole subfloor area. Check the condition of the subfloor and make good as necessary.
- Stone or power grind any cementitious subfloor to remove any 'nibs' or ridges. Remove any surface contaminants that may affect adhesion.
- Sweep or vacuum again prior to laying.
- As best practice, checking the moisture content of the subfloor and recording the results and method used, should be carried out.
- Good lighting is essential.

2.6 Setting Out and Installation for Tiles/Planks Straight Fitting

The optimum appearance can be produced by carefully planning and setting out of tiles and/or planks:

- It is advantageous to dry lay a section of the floor so that it can be determined whether the appearance of the pattern is acceptable and also to ensure any graining/texture within individual tiles is correct.

- Traditionally the starting point for tiling is the centre of the room.
- Before adhering confirm that the overall appearance of the flooring is acceptable. Some designs require directional laying and will feature arrows on the reverse side of the tile or plank. In box instructions will advise on directional laying of the product.
- If the room is irregular in shape it may be necessary to square up the tiles off the longest wall or a specific feature.

2.6.1 Setting out Planks for Straight Fitting

- Prior to laying the first plank, ensure all cuts are of an acceptable length (min. 150mm).
- As the planks are not required to be laid 'in bond' in the length, it is possible to begin installing from an end wall.
- Planks must be staggered to obtain a random finish, however ensure that plank ends are not within 150mm of adjacent planks.

2.7 Spreading the Adhesive

- Once the start point has been established, depending on the size of the area and the type of adhesive to be used, it may be necessary to section off the area so that the adhesive can be applied to areas that can be laid within the recommended open time.
- Always follow closely the approved adhesive manufacturer's instructions.
- Spread the adhesive using a suitable trowel to the manufacturer's recommendations ensuring that the correct notch size is maintained throughout the installation. If the notch on the trowel shows signs of wear it should be renewed immediately.
- If using a manufacturer approved pressure sensitive adhesive it may be necessary to flatten out any resultant serrated adhesive ridges using a lambswool roller pre-wetted with adhesive to prevent 'grin through' once the installation has been completed.
- Always read carefully the adhesive manufacturer's application instructions as these can change from brand to brand. **Note**: This can be especially important when installing planks/tiles in areas where temperature fluctuation may occur and/or where planks/tiles are being bonded to an absorbent substrate such as sand and cement screeds; plywood etc. in order to ensure an adequate bond strength.
- When a section has been laid, except for the perimeter, it should be thoroughly rolled in both directions with a 68kg articulated floor roller. Repeat for each section until the main field of tiles has been laid.
- It is advantageous to leave the last full tile or plank and the cut at the perimeter without adhesive until all planks have been cut to size.

2.8 Adhesives

In areas subjected to direct sunlight or extremes/fluctuations in temperatures manufacturers always recommend the use of an approved polyurethane; epoxy or suitable high temperature adhesive. Manufacturers provide this information only as guidance and the legal responsibility for the supply and performance is that of the adhesive manufacturer. Use of the correct adhesives is important if the installation is to be successful.

3. Homeowner Responsibilities

To ensure the longevity of your floor and validate your warranty, the following responsibilities apply:

- Flooring must be installed exactly as described in these **LVT Installation Instructions**.
- Only use **vinyl-safe cleaning products** approved for resilient flooring.
- Retain **three spare planks** from the original installation batch for potential product testing.
- Keep a **copy of your purchase receipt** and **installation records** for warranty purposes.
- Avoid alterations that may compromise the floating installation system, such as gluing planks down or pinning mouldings through the floor.