

TECHNICAL BULLETIN No. 32

DESCRIPTION

This Technical Bulletin describes methods by which sub-floors should be prepared for the subsequent laying of Resilient, Rubber, Linoleum, Luxury Vinyl Planks & Tiles and Wood floor coverings.

1. INTRODUCTION

The final appearance and durability of any floor covering installation depends largely on the condition of the surface upon which it is laid. A little time and effort spent on the proper preparation of the sub-floor will often be repaid in terms of an installation of which all concerned can feel proud.

2. TYPES OF SUB-FLOORS

The most common sub-floor encountered in South Africa is concrete. Occasionally, the floor layer may be expected to install flooring on a bonded or floating wooden floor, or a metal sub-floor.

2.1 CONCRETE SUB-FLOORS

A good concrete sub-floor is the result of sensible planning, careful design and detailing, adequate specifications, good workmanship and proper inspection. It is important that the main contractor and the specialist subcontractor involved in the construction of the sub-floor have a clear understanding at the outset of the quality or the level of workmanship required before the installation of the respective floor covering. Dependent on the above, the quality of the finished floor will only be as good as the sub-floor on which it has been laid. All Resilient, Rubber, Linoleum, Luxury Vinyl Planks and Tiles and Wood floor coverings require a smooth, hard, clean, sound and level surface, not only for appearance but also for achieving a satisfactory adhesive bond and long-term durability. The specifier and main contractor shall ensure that the sub-floor is acceptable to receive the flooring specified in respect of levelness, smoothness, soundness and cleanness.

The minimum requirement is that the sub-floor is compliant to a Grade 1-floor finish as set out in SANS 10070 **Code of Practice**: The installation of resilient thermoplastic and

similar flexible floor covering materials, in terms of levelness. This optimum floor finish can be achieved using a high-quality, reliable, cementitious self-levelling compound, for levelling and smoothing work on interior surfaces. The flooring contractor shall ensure that the sub-floor is sufficiently dry before the installation of the flooring material by testing with a suitably approved Concrete Moisture Meter. (*Tramex CME 4, Caisson / Romus VI-D4 Pinless Concrete Moisture Meter, GE Protimeter Mini or a Hygrometer*).

See FloorworX Technical Bulletin No. 30: Moisture in Sub-Floors and Damp-Proof Membranes

Laying flooring onto a wet sub-floor will not only affect the adhesive but will also cause the flooring to curl and lift. The sub-floor should be swept, or preferably vacuumed, to remove all dust and dirt. (Always brush the sweepings away from the area onto which the flooring is to be laid).

It is important to remove all grease, any traces or patches of oil, and any oil-based paint from the sub-floor surface. This can be done using either paint strippers or degreasing compounds. Once the grease is removed, the sub-floor must be thoroughly washed to remove any stripper or residue and then allowed to dry thoroughly.

2.1.1 REPAIRING THE SUB-FLOOR SURFACE

It is sometimes necessary for the floor layer to repair the sub-floor surface before installing the floor covering. The most common method of obtaining a good surface is by the use of smoothing compounds such as FloorworX Pavelite. However, it should be remembered that smoothing compounds are only to be used on minor surface imperfections, such as small holes, filling thin cracks and smoothing over rough patches of concrete.

Pavelite is a smoothing compound and will not necessarily improve any sub-floor undulations, as it is not a self-levelling product. If the sub-floor is in such a poor condition then it is recommended that a reliable self-leveller be used that will achieve the desired result.

2.1.2 EXPANSION JOINTS AND SAW CUT (CONTROL) JOINTS

2.1.2.1 - Expansion Joints

Large areas of concrete may be divided using expansion joints, which are designed to accommodate movement within the building. It is important to note that it **is not permissible** to install any vinyl floor covering over these joints as it is deemed as bad flooring practice. It is therefore recommended that the floor covering be stopped at the edge of either side of the expansion joint, and then the joint filled with a suitable "soft joint sealing compound" and then covered with an expansion joint cover. Expansion joints and cover strips should be designed or approved by a civil engineer and the "soft joint sealing compound" sourced from a supplier that specialises in cementitious repair solutions.

2.1.2.2 - Control or Saw-cut Joints

Control or Saw-cut joints may be covered with a vinyl floor covering on the premise that the **concrete has settled and no further movement will occur**, and that the joints are properly treated with a cementitious compound that is deemed as appropriate for the specific type of joint. It is recommended a supplier that specializes in cementitious repair solutions be consulted in this respect.

2.1.3 CONCRETE CURING COMPOUNDS

It is recommended that no curing compounds be used on concrete sub-floors if a floor covering is required. Curing compounds may be added to the concrete mix or applied immediately after the final float finish. Many of these compounds contain oils, waxes or resins which prevent the adhesive bonding to the concrete sub-floor and will result in the flooring lifting.

2.2 WOODEN SUB-FLOORS

Wooden sub-floors can be divided into three types; suspended wooden or access sub-floors, boards fixed to concrete sub-floors, and woodblock floors.

2.2.1 SUSPENDED WOODEN & ACCESS FLOORS SUB-FLOORS

Wooden sub-floors must be level, dry, smooth and firm before the laying of flooring commences. Any surface contaminant, such as wax or paint, must be removed by

sanding. Since wooden floors will rot if exposed to excessive moisture, all suspended wooden floors must have adequate cross-ventilation provided by air bricks. The flooring contractor must check that the air space below the floor is properly ventilated by inspecting the air bricks, which should be completely visible, clean and unblocked. If there are no air bricks, or if the air bricks are blocked off, vinyl flooring should not be installed. Apart from ensuring a dry, firm, clean, surface, the flooring contractor should check that there is no movement of the wooden boards. Any loose boards must be secured to the joists. Damaged boards should be replaced. All protruding nails or screws must be driven flush with the boards. Any small holes or cracks must be filled with a mixture of wood glue and sawdust and allowed to set hard before proceeding with the installation of flooring.

If, after all preparation, the wooden boards are still springy and move, the wooden sub-floor should be completely covered with sheets of minimum 12mm shutter board (Marine Ply).

Access Floors should be properly checked for soundness and stability before commencing the installation. (In the event of any uncertainty surrounding the status of the floor, then it is highly recommended that the supplier of the access floor be consulted).

Covering these floors with wooden boards:

- The existing floor should be swept or preferably vacuumed, to remove all dust and dirt before the application of any boards.
- It is recommended that a minimum 12 mm shutter board (Marine Ply) be used.
- Boards should be cut into a nominal size of 1.2 x 2.4m size.
- It is preferable that the undersides of the boards are coated with a primer to protect the boards, but this is certainly not a prerequisite and relative to the area of installation.
- Boards need to be strictly installed in a brick bond

pattern and laid with the smooth side face down.

- The sheets must be screwed at 150mm centres around the border and across the centre of the sheet in both directions.
- All screws should be **self-tapper** screws with flat heads and of appropriate length to ensure that the boards will be properly fastened to the metal surface upon which they are secured. (It is preferable that the screws are secured into the framework).
- All screws must be countersunk and filled with wood filler or hard silicon and allowed to set.
- Any small holes/imperfections and butt joints must be filled with wood filler or hard silicone and allowed to set.
- Any unevenness on completion of the installation needs to be sanded to provide the desired finish to accept the flooring.

2.2.2 BOARDS FIXED TO CONCRETE FLOORS

There are various types of sub-floors consisting of wooden boards bonded directly to the concrete slab. Installing a floor covering over these surfaces is generally discouraged as it is not deemed as acceptable or good flooring practice, as dry rot is likely to occur, and the installation is at risk of potential failure.

2.2.3 WOODBLOCK FLOORS

Under no circumstances should vinyl, rubber, Marmoleum or Luxury Vinyl floor coverings be installed over woodblock floors, as sealing the woodblock surface from the air will cause the woodblocks to rot.

Such sealing may also prevent the woodblocks from breathing, causing them to swell and come loose from their adhesive bond, resulting in complete floor failure.

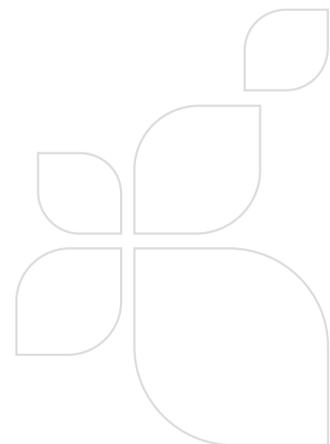
2.3 METAL SUB-FLOORS

All metal surfaces must be treated to remove all traces of grease and rust. Any embossing, rivets, welds or joints which stand proud need to be smoothed out through

grinding. The surface must be swept and preferably vacuumed to remove all loose dust and dirt, and then primed using a suitable metal primer, before adhesive application. The flash-off time of a solvent-based adhesive must be checked before any flooring is laid.



For more information please contact the **FloorworX TECHNICAL DEPARTMENT** by sending your query to **technical@floorworx.co.za**



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