

TECHNICAL BULLETIN No.36

DESCRIPTION

This Technical Bulletin provides information on the correct method of application of two part adhesives with particular emphasis on the installation of synthetic rubber flooring.

1. INTRODUCTION

When two part adhesive systems are used, the flooring industry generally makes use of either a polyurethane or epoxy two part adhesive. Despite their different formulae they both cure as a result of chemical reactions. One great advantage of two part adhesive is that; unlike bitumen, contact acrylic or latex adhesive; they contain no solvents and flooring materials can thus be laid directly into the wet adhesive.

2. CHARACTERISTICS

- 2.1 Both polyurethanes and epoxy have chemical activities and coating properties which give rise to excellent adhesion to most materials.
- 2.2 The cohesive strength within the glue line of properly cured polyurethane and epoxy adhesives is so great that stress failures occur more often in the substrate or at the interface between the substrate and the adhesive, rather than in the adhesive itself.
- 2.3 Due to absence of solvents, minimal shrinkage occurs in curing, giving rise to less strained glue lines and hence stronger bonds.
- 2.4 Both before and during the curing reaction polyurethanes are sensitive to water. The presence of water promotes the formation of foam which considerably reduces the bond strength. Once properly cured, polyurethanes are resistant to water and most common solvents.

3. GENERAL DESCRIPTION

The two part adhesive system comprise of a base (in paste form) and an activator (in liquid form). The measuring of quantities is unnecessary, as all the liquid activator must be mixed with the entire base. The base itself is often

pigmented for easy identification.

For more detailed information concerning FloorworX No. 55 see Technical Bulletin No. 35 FloorworX Flooring Adhesives and the Applications - refer to section 3).

4. USE WITH FLOORING

4.1 SURFACE PREPARATION

All floor coverings should only be laid onto firm sub-floors such as concrete screeds and smooth metal decks. Excessively porous or dusty surfaces must be primed using a suitable primer. Allow the primed surface to dry prior to the application of any adhesive. FloorworX Technical Bulletin No. 32: Sub-floor Surface Preparation describes methods by which sub-floors should be prepared for laying of resilient flooring.

4.2 MIXING OF ADHESIVE

The full quantity of activator should be added to the base and the subsequent mixture stirred thoroughly. Particular attention should be paid to stirring the sides and bottom of the container to ensure that the mixture is completely homogenous. Proper blending will be achieved after approximately 5 minutes stirring with an electric drill with a stirrer attachment. It should be noted that from the moment the two components are blended together the adhesive begins to cure. It is thus essential that mixing should be completed as speedily as possible. The mixed adhesive has a limited pot life. Speed is essential when working in warm environments as the increased ambient temperature reduces the pot life of the adhesive considerably.

4.3 APPLICATION AND COVERAGE

A TKB A2 Trowel must be used for spreading the adhesive. Care should be taken not to apply excessive amounts of adhesive as this leads to misaligned tiles and unsightly oozing of adhesive at the joints. Conversely, if too little adhesive is applied, or if the adhesive has hardened, there will be little or no transfer of adhesive to the tiles with consequent loss of bond strength. As there are no solvents in two part adhesives, the laying of tiles can commence immediately after the adhesive has been spread.

It is advisable to spread the entire contents of the container as soon as it has been mixed as this result in more even curing of the layer on the sub-floor. Coverage is approximately 12m² per 6kg twin pack, subject to the porosity of the sub-floor.

4.4 INSTALLATION

A two part adhesive system has no initial tack and care should thus be taken to ensure that tiles are flat when they are laid. If a corner has turned up during handling it will tend to lift out the wet adhesive. If this occurs, weight must be placed on the corner. In the case of sheeting, ensure that no air is entrapped.

It is essential to roll the flooring on completion of installation using an 68kg three sectional articulated metal floor roller. To ensure correct curing, no traffic may be permitted on the floor for four hours after the laying of flooring. Thereafter only light traffic should be permitted for a period of 48 hours. Any excess adhesive on the floor must be removed using a clean, water-dampened rag before adhesive has hardened. Once complete curing has taken place it is not possible to remove the adhesive without damaging the flooring. Remove overspread before the adhesive has hardened.

5. PRECAUTIONS DURING HANDLING OF ADHESIVES

When handling two part adhesives, care must be taken to ensure that neither the base nor the activator comes into contact with the skin. A barrier cream may be applied and proactive gloves worn. If the skin becomes contaminated, the affected area must be washed immediately with either a hand cleaner or soap and water. If the activator or base is splashed into the eyes, rinse immediately with copious amounts of clean water and consult a doctor without delay. Take care not to inhale the vapour as this may give rise to irritation of the respiratory tract.



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



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