



## TECHNICAL BULLETIN – TB174

# MESH REINFORCED LEVELLING COMPOUNDS OVER WOOD BASED SUBFLOORS

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### INTRODUCTION & SCOPE

One of the most common problems in renovating and remodelling existing buildings is levelling and smoothing wooden subfloors to receive floor coverings.

Wooden floors move under stress and expand or contract with temperature and humidity changes. These movements can be up to +/-0.3% per metre for each 1% change in relative humidity. So, timber floors could move +/-1.2%, or 12mm per metre, in areas with notable temperature and humidity variations.

Joints between boards can be pronounced, and the surfaces are often rough and uneven, with deviations from zero to several centimetres in three metres.

Covering these wooden subfloors with more wood is labour-intensive and will result in floor elevation problems at doorways and hallways. Levelling compounds that contain gypsum cannot sustain this degree of movement. They will crack along joints, break bonds with the lateral wood movement, and often disintegrate when exposed to traffic stress.

### SOLUTION

The mesh-reinforced ARDEX K15 or ARDEX K55 system is a successful, fast-track method that allows the installation of high-quality levelling compounds in a thin layer (6-8mm) while maintaining the ability to handle traffic stress and floor movements.

The resulting cementitious surface is smooth and hard and suitable for any type of flooring material, including resilient flooring, parquet, and ceramic tiles. Most types of adhesives normally used over concrete surfaces can be used over ARDEX K15 or ARDEX K55 surfaces.

### PREPARATION

1. Particleboard subfloors are **NOT** recommended as suitable substrates for installing **ARDEX K55**. Only **ARDEX K15 is suitable**. When a particleboard floor has been subjected to rain or moisture damage, the surface is weakened and is not likely suitable for flood-coating high-strength levelling compounds such as ARDEX K55 or ARDEX K15.
2. The wood subfloors must be clean and free of oil, grease, wax, etc. Sanding is necessary with 40-grit abrasive to remove contaminants, which must then be vacuumed clean of dust. In the case of particleboard, all waxes and coatings must be removed.
3. The subfloor should be solid and fixed securely to provide a rigid base, with deflections less than 1/360<sup>th</sup> of the span distance of the floor joints.
  - a) Particleboard floors should be screwed fastened to the floor joists. Nail fixing is not acceptable.
  - b) Any strip boards exhibiting movement should be re-nailed.



- c) Open joints should be filled with a suitable fast-setting mortar (such as ARDEX A45 or, for small gaps, ARDEX FEATHER FINISH mixed with ARDEX P82 primer in the ratio of 1.5:1).
  - d) Examination of the subfloor by professional evaluation is recommended.
4. Prime the wood subfloor with ARDEX P82 Ultraprime in accordance with printed technical data.
  5. Staple a thin galvanised, diamond metal lath mesh to the subfloor (15mm Tilers' lath). **Chicken wire or bird mesh are not suitable substitutes.**
  6. The cement-based levelling compound applied to **strip timber** flooring should be either ARDEX K15 or ARDEX K55 levelling compound.
  7. The levelling compound applied to **particleboard** flooring should be ARDEX K15 underlayment cement.
  8. To ensure the levelling compound's flexibility, the additive to be mixed with ARDEX K15 should be ARDEX E25 Resilient Emulsion.

*Note: ARDEX K15 is to be mixed with ARDEX E25 as follows: -*

*1.6 litres ARDEX E25  
plus 4.0 litres of water  
to 20 kg ARDEX K15*

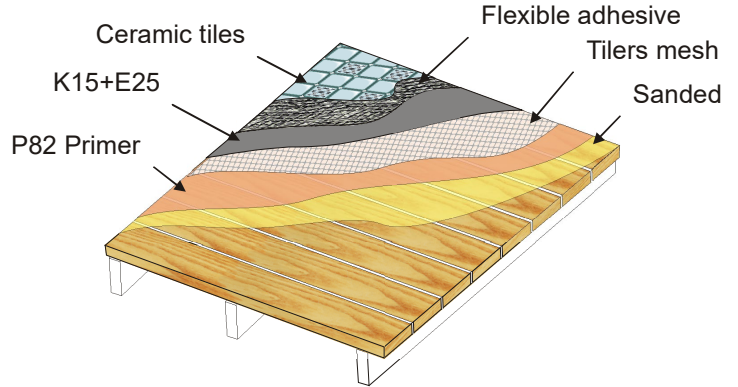
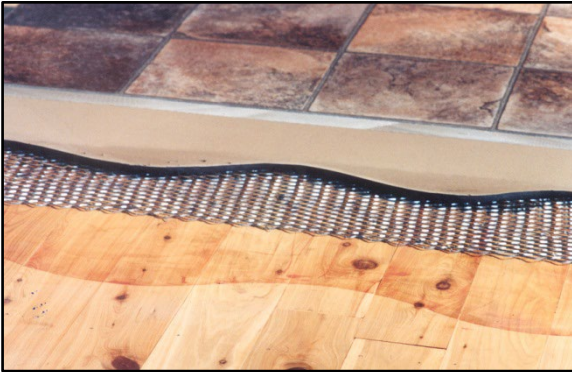
ARDEX K55 **does not** require the addition of ARDEX E25 Emulsion.

9. The minimum installation temperature is 15°C.
10. Where ARDEX K15 has been used, the floor can be walked on 3 to 4 hours after installation, depending on temperature. Floor coverings can be installed the next day.
11. Where ARDEX K55 has been used, the floor should be cured in 60-90 minutes and ready for floor coverings afterwards.

#### **Special Notes:**

- a) Ensure adequate cross-flow ventilation and maintain the minimum height clearance between the earth and the timber flooring, per AS1884. Failure to have adequate ventilation can result in moisture build-up under the subfloor, which can cause excessive floor deformation, mould growth, or moisture permeation through the underlayment, which may produce blistering of sheet vinyl.
- b) Where directly bonded timber floor coverings are used, silane-based materials such as ARDEX AF180MS are recommended. Other options include epoxy and acrylic types. Solvent-based polyurethane adhesives are not recommended for this type of installation.
- c) The levelling compound must be applied to a sufficient thickness to completely hide and cover the mesh and prevent ghosting through the underlayment surface.
- d) The moisture content of timber floor subfloors and any bonded timber or parquet shall be in the range 12-16%.

*Always make a test installation first to assure success, as floor conditions vary from site to site.*



Typical installation over T&G floor.

**IMPORTANT**

This Technical Bulletin provides guideline information only and is not intended to be interpreted as a general specification for the application/installation of the products described. Since each project potentially differs in exposure/condition, specific recommendations may vary from the information contained herein. For recommendations for specific applications/installations, contact your nearest ARDEX Australia Office.

**DISCLAIMER**

The information presented in this Technical Bulletin is to the best of our knowledge true and accurate. No warranty is implied or given as to its completeness or accuracy in describing the performance or suitability of a product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

**REASON FOR REVISION-ISSUER**

Change of slogan and address

**DOCUMENT REVIEW REQUIRED**

36 months or whenever third-party suppliers change their recommendations.

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