TECHNICAL BULLETIN – TB036

ARDEX FLOOR SMOOTHING CEMENTS AND ADHESIVES LEVELLING FLOORS FOR THE INSTALLATION OF PARQUETRY WOODEN BLOCKWORK & DIRECT STICK TIMBER FLOORING

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INTRODUCTION & SCOPE

The resurgence and appeal of parquet and directly adhered timber flooring has led to a greater need in precision for pre-levelling prior to installing new timber flooring.
New building designs such as open living rooms, larger glass windows and doors which allow light, heat, and sun penetration onto larger arrears of flooring throughout the day are now very popular. These design features result in a rapid response to external climatic changes and resultant timber movement. The widespread use of air-conditioning also creates circumstances where timber movements can occur. Increased timber movement has also been linked to the wider use of plantation grown immature timber. These movements can produce significant tensile stresses in the flooring system.

ARDEX has procedures and products deemed suitable to meet the challenges of timber floors today.
The following underlayment products can achieve the required performance for parquet and strip timber installation. To provide additional protection against the forces applied by natural that *displays rapid or large dimensional change*, which can be timber species dependent, we recommend the addition of ARDEX E25 Resilient Emulsion. This does not apply to ARDEX K55 or K65.

SURFACE PREPARATION

Sub-floors must be structurally sound with all previous coatings removed. The substrate must be clean and free of oil, grease, wax, latex compounds, curing compounds, efflorescence, laitance, dust and all foreign matter. The substrate should be prepared to provide an open porous matrix of the concrete. Professional cleaning by mechanical means in line with sound building industry practices is advised and suggested. Methods in line with the “International Concrete Repair Institute” Guideline No. 310.2R-2013 (formerly Guideline No. 03732) are recommended. These include shotblasting, scarifying or diamond grinding to provide a surface profile of between CSP3 to CSP7. Refer to ARDEX Technical Bulletin TB041 for more details about general floor preparation.

INSTALLATION

This procedure refers only to masonry sub-floors, and where the subfloor is strip timber (not ply or particleboard) the process of filling and over-sheeting described in Technical Bulletin TB016 can be applied. Installation of smoothing cements over pre-existing parquet floors is not recommended. Where the subfloor is particleboard or plywood, the process described for filling low spots with ARDITEX NA and covering the floor with sheet underlayment as described in Technical Bulletin TB015 is recommended.

It is not recommended to direct bond timber flooring to ARDITEX NA flood or patch coats such as Feather Finish.

1. ARDEX P51 Primer is required for porous concrete or when re-coating ARDEX Levelling Cements. Dilute 1:2 with water and apply by a push broom.
2. ARDEX P82 Ultra prime is required for non-porous surfaces such as ceramic tiles, terrazzo etc. Mix the two parts and apply by roller, and brush into grout lines.

3. The following smoothing cements can be used neat (unless used with ARDEX P82 priming in which case ARDEX E25 **must** be added). Irrespective, the addition of ARDEX E25 will increase overall resilience and will improve performance.
    - ARDEX K15 Microtec
    - ARDEX K55 (no E25 required)
    - ARDEX A45
    - ARDEX K12 New
    - ARDEX K65 (no E25 required)

*These are not Ardurapid system products and require longer cure times before strip timber placement.

4. When installed with the addition of ARDEX E25 the following mix designs apply.

Smoothing cement 20kg bags	*ARDEX E25 added*	*Mix water added*
ARDEX K15M	1.6 litres	4 litres
ARDEX A45**	1 volume	2.5 volumes
ARDEX K12N	1.25 litres	3.75 litres

** A45 is usually mixed in small quantities rather than full bags.
ARDEX K55 and K65 requires no addition of ARDEX E25.
Note: Minimum thickness for each product is 2mm.

5. Recommended underlayment curing times prior to the installation of timber flooring at *23°C* is tabled below:

Smoothing cement	*Parquet blocks*	*Timber strips*
ARDEX K15M	48 hours minimum	24 hours minimum
ARDEX A45	36 hours minimum	24 hours minimum
ARDEX K12N	48 hours minimum	24 hours minimum
ARDEX K55	24-36 hours	24 hours minimum
ARDEX K65	48 hours minimum	48 hours minimum

Where the temperature falls below about 15°C these times are likely to be extended and installation is not recommended below 10°C. Note the floor temperature can be several degrees colder than the air temperature, especially slab on ground situations.

Care is required in southeastern NSW and the ranges, the ACT, Victoria and Tasmania in the cooler months where temperatures can regularly fall below the minimums for days at a time.

IMPORTANT POINTS WHEN INSTALLING PARQUETRY OR STRIP TIMBER

Check moisture content of subfloor. Note that tiled floors may have performed adequately on a damp substrate as the moisture could escape through the grout lines. When covered with timber flooring this situation can change and both coverings become unstable. Application of moisture barriers over tiled subfloors is not a recommended

- practice. Where moisture is identified as a problem with tiled floors, it is recommended that the tiles are removed, and a moisture barrier system installed. Refer to Technical Bulletin TB006 for information about moisture barrier systems.
- The subfloor moisture shall not exceed the maximum relative humidity reading shown in Appendix A of AS.1884-2021 or as specified by the parquet manufacturer. Note – Direct application over rigid epoxy type moisture barriers is possible but is not generally recommended,

see Technical Bulletin TB053 for more information. Direct application over flexible waterproof membranes is not recommended.

- Acclimatise parquetry and timber on site, remove packaging and stack individually for a minimum of 2 weeks or until equilibrium moisture content is obtained.
- Acclimatisation is even more critical where the subfloor is 'heated', as un-equilibrated timber will make rapid and unpredictable dimensional changes when the heated floor is turned on.
- Leave the laid parquet or timber floor to dry for 21 days or until moisture content equilibrium is obtained before sanding and then sealing.
- Use the correct sealer as recommended by the parquet or timber manufacturer.
- Beware of any environmental situations, which may affect the long-term performance of natural timber flooring i.e. air conditioning, floor to ceiling glass doors and windows, large variations in humidity throughout the year (tropical north of Australia).

Always install test areas to determine the suitability of the product for the intended purpose.