



TECHNICAL BULLETIN – TB086

COOLROOM FLOORS

2nd December 2024

INTRODUCTION & SCOPE

Cool Room floors often require the application of sheet vinyl flooring or an epoxy or paint finish. These coverings provide a surface which is easy to keep clean and hygienic.

Resilient vinyl coverings and epoxy coatings will mirror the original concrete surface which can be uneven and have pitted surfaces that look unsightly. Surface irregularities can also result in high cleaning costs and rapid damage to the floor covering.

The ARDEX K15/ARDEX E25 self-smoothing underlayment for vinyl can be applied as thin as 3 – 4mm and be efficiently featheredged at doorways, roller doors etc. The topping can be covered after 24 hours and trafficked after only 48 hours.

For heavy duty applications, or with epoxy or polyurethane coatings, ARDEX K80 can be applied at a minimum thickness of 5-6mm.

For applications where moisture could be present due to condensation or the need to wash down the floor, ARDEX K301 can be substituted for ARDEX K80 with epoxy or polyurethane coated floors.

PRELIMINARY REQUIREMENTS

Existing cool rooms are required to be turned off, and the cool room environment including the concrete floor allowed to increase and return to normal external temperature conditions (the minimum is 10°C). Cementitious based products display slowed cure at temperatures below 10°C and do not cure when the temperature falls below 5°C.

Installation shall not be done in operating cool rooms.

The concrete floor must be allowed to dry and comply with requirements of A.S. 1884-2021 for maximum allowable water moisture content to avoid bubbling and blistering of the covering or coating.

SURFACE PREPARATION

1. Concrete floors must be structurally sound with all previous coatings removed, clean and free of oil, grease, wax, latex compounds, curing compounds, efflorescence, laitance, dust and all foreign matter. Professional cleaning by mechanical is advised. Suggested cleaning & preparation methods in line with the American publication, "International Concrete Repair Institute Guideline No. 312.R2-2013" (formerly No. 03732-1997) <http://www.icri.org/publications/guidelines.asp>, will provide a surface profile of between CSP3 to CSP7 (CSP=concrete surface profile)..
2. All cracks in the subfloor should be repaired to prevent telegraphing through the underlayment. Floor joints must be correctly detailed and not filled with cement.



PRIMING FOR DRY CONCRETE

3. The primer for standard absorbent concrete is ARDEX P51 Primer which is applied as an initial application of ARDEX P51 mixed with 3 parts water using a soft push-broom. Do not leave any bare spots and remove all puddles and excess primer.
4. Allow to dry thoroughly before proceeding with a second (2nd) application of primer, 1 part water to one-part ARDEX P51.
5. Allow the 2nd coat of primer to dry for a minimum of 3 hours and maximum of 24 hours. Underlayment shall not be applied until primer is dry.

DAMP CONCRETE

6. A moisture barrier is required where the concrete is classified as damp (as per AS1884). A coat of ARDEX WPM300 is applied to the concrete at a rate of 3.0m²/litre, and while the ARDEX WPM300 is still wet, clean, dry sand (~0.3-0.5mm) is spread over the surface. The coverage rate is around 700gms/m² and 90% coverage must be achieved.
7. The coated surface is allowed to stand for a minimum of 12-16 hours, and the excess sand is broomed and vacuumed off the surface.

APPLICATION OF THE FLOOR SMOOTHING CEMENT

Vinyl Flooring

8. The cement-based self-smoothing underlayment for vinyl is ARDEX K15 Self-Smoothing Cement.
9. The additive to be mixed with ARDEX K15 is ARDEX E25 resilient emulsions. The mix is as follows:-
 - 1.6 litres ARDEX E25 plus
 - 4.0 litres of water per
 - 20 kg bag of ARDEX K15
10. Install ARDEX K15 at a minimum thickness of 3-4mm and follow COLD WEATHER PRECAUTION.
11. ARDEX K15 hardens quickly and can be walked on after 3 hours, with floor coverings able to be installed after only 24 hours.
12. Refer to the vinyl flooring manufacturer for procedures to commission the cool room, and the maximum temperature reduction should not exceed increments of 5°C per day.
13. ARDEX K80 can also be used in this application, where a higher compressive strength surface is required, but the final surface smoothness is not as high as that of ARDEX K15.

Epoxy Coated Surfaces

14. The cement-based self-smoothing underlayment for epoxy coatings should be ARDEX K80 Industrial Levelling Compound or ARDEX K301 external smoothing cement.
15. Install ARDEX K80 at a minimum of 5-6mm or ARDEX K301 from a minimum of 2-2.5mm as per the product datasheet
16. ARDEX K80 or ARDEX K301 hardens fast and can be walked on after 3-4 hours when used as a wear surface.
 - a. For ARDEX K80, coatings can be applied after 24 hours @ 20° C and driven on after 48 hours.
 - b. For ARDEX K301, coatings can be applied after 48 hours minimum.



17. The surface should always be protected from wear, oil, salt, chemicals, and water by applying a suitable wear protection system, such as an epoxy coating or flooring paint no thicker than a coat of paint.

The epoxy coating is to be solventless and tension-free (e.g., 100% solids).

18. Note: Always install an adequate number of properly located test areas, including the finish coating, to determine the product's suitability for the intended use.

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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