

ARFA Technical Bulletin 004

Acclimatization and Conditioning of Resilient Flooring. Compliance with AS 1884 – Floor Coverings Installation Standard

This technical bulletin outlines the critical importance of acclimatization and conditioning of resilient floor coverings, adhesives, and subfloor preparation materials prior to installation. Proper conditioning in accordance with **AS 1884:2021** and manufacturers recommendations, is essential to ensure product performance, dimensional stability, and long-term durability of the installed system.

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01 Scope

This bulletin applies and associates to the following materials:

- Vinyl sheet and tile flooring
- Luxury vinyl tile/plank (LVT/LVP)
- Rubber and linoleum flooring
- Hybrid flooring
- Vinyl walling products
- PVC skirting
- Subfloor smoothing and leveling compounds
- Subfloor underlays
- Adhesives for resilient flooring

02 Why Acclimatization Matters

Resilient flooring materials like vinyl are sensitive to temperature changes. Without proper acclimatization, they may expand, or contract once installed, causing visual and structural issues such as buckling, warping or gaps between planks or tiles.

Timber-based underlays (such as plywood, hardboard, or Masonite) are also affected by moisture fluctuations and need time to reach equilibrium with site conditions to avoid swelling or shrinking.

Temperature acclimatization allows the flooring material to reach equilibrium with the installation environment, reducing the likelihood of such problems.

Resilient flooring materials are often transferred directly from vehicles, such as cars or trucks, to the installation site without undergoing proper temperature acclimation. This practice can result in dimensional instability due to sudden changes in ambient temperature. Simply having the material on-site does not ensure readiness for installation, particularly in environments subject to significant daily temperature variations. Storage in uncontrolled areas such as garages, loading docks, or exterior bays can worsen the problem. When these materials are subsequently introduced to far warmer or cooler work environment for installation, the rapid thermal transition may induce expansion, contraction, curling, or gapping, compromising both the performance and appearance of the finished floor system.

03 Key Requirements of Manufacturers and AS 1884.

1. Site Conditions

AS 1884 recommends that the installation environment must be maintained within a **temperature range of 15–28°C** for at least **24 hours before, during, and after installation**. These conditions must be consistent to prevent product distortion or bond failure. It is important to always reference **manufacturer's guidelines** as specific products may have stricter requirements—some hybrid products, for example, require ongoing climate control even after installation. These conditions must be communicated to clients early, especially if continuous air conditioning or heating isn't practical for the space the resilient flooring is being laid in.

2. Acclimatization of Materials

Flooring, adhesives, and related products must be acclimatized in the installation environment for a **minimum of 24 hours** prior to installation or as per manufacturer recommendations.

- **Resilient flooring:** Follow manufacturers storage recommendation to allow even temperature and exposure as required prior to installation
- **Adhesives:** Stored in original containers within the same temperature-controlled environment.
- **Preparation compounds:** Must also be stored under site conditions to maintain product consistency.

04 Guidelines for Conditioning

1. Assess the Installation Environment

Measure and stabilize site temperature and humidity before starting acclimatization. These temperatures should be maintained within the range recommended by the resilient flooring manufacturer prior to, during and post installation.

2. Allow Adequate Time

The duration of acclimatization depends on various factors, including the type of resilient flooring, the thickness and construction of the product and the temperature differential between where the product was stored and the installation space. It is recommended that the flooring acclimate for at least 24–48 hours, or longer if there's a significant difference between storage and installation environments.

3. Store Correctly

Store flooring in the same conditions it will be installed in. Avoid areas exposed to direct sunlight or extreme temperatures.

4. Monitor Conditions

Throughout the acclimatization period, monitor the ambient conditions in the installation environment. Make adjustments as necessary to maintain stable conditions in accordance with the manufacturer's instructions, as significant fluctuations can impact the effectiveness of acclimatization.

5. Follow Manufacturer Instructions

Always consult product-specific guidelines for conditioning and unpacking, as requirements may vary between manufacturers and product types.

05 Precautions and Considerations

Avoid exposing the resilient flooring to extreme temperatures and/or extreme temperature variations or direct sunlight during acclimatization.

If the installation has significantly different environmental conditions from the area the resilient flooring was stored in extend the acclimatization period accordingly.

Review and follow manufacturers installation instructions for guidelines on their specific acclimatization requirements.

06 Typical Expansion/Contraction Rates to be used as a guide

As a general guide for every **10°C** temperature change, the following dimensional changes may occur (when not adhered with adhesive):

- **Sheet vinyl:** ± 0.8 mm per linear metre
- **Safety vinyl:** ± 0.5 mm per linear metre
- **LVT (Luxury Vinyl Tile):** ± 0.5 mm per linear metre
- **Hybrid flooring:** ± 0.2 mm per linear metre

For floating hybrid flooring, a **20°C change** can result in up to **4 mm movement** over a 10 m span. This is why expansion gaps, scotia, and expansion joints must be used as per the manufacturer's instructions.

Dimensional changes can vary depending on the type of resilient flooring and the size of the area being installed. If the resilient floor gets hot-like from direct sunlight-it can expand whereas if the resilient floor gets colder it can contract.

07 Role of Adhesives

Where adhesives are used, they are responsible for two main things:

1. Preventing the flooring from lifting off the substrate.
2. Minimizing dimensional changes due to temperature fluctuations.

For the adhesive to perform properly, ambient conditions must be stable during the adhesive curing process. If the flooring expands or contracts while the adhesive is setting, it can weaken the bond. After the adhesive has fully cured, and temperatures have remained stable during the process, the flooring should remain stable even with later temperature fluctuations.

Important Notes:

Always use the correct adhesive suitable for site and environmental conditions, especially in areas exposed to direct sunlight.

Protect flooring from direct sunlight using the method recommended by the manufacturer.

Always follow the manufacturers of the adhesive and resilient floorings installation instructions.

08 Conclusion

Proper acclimatization is essential for a successful resilient flooring installation. By allowing both flooring and underlays to adjust to the environmental conditions of the site, you reduce the risk of long-term issues like movement, gapping, or adhesive failure. Following the correct procedures and manufacturer's instructions ensures durability and performance over the product's life.