

Technical Guidance for Architects, Designers, Specifiers & Builders Slip Resistance – AS 4586 & AS 4663

Recommendation:

All Armstrong Flooring products are tested for slip resistance in accordance with AS 4586 which tests new, factory-fresh flooring samples. In-service slip resistance test results (AS 4663) may vary - proprietary surface coatings, contamination, wear, and subsequent cleaning influencing the behaviour of the pedestrian surface such that AS4586 test results will not always be achieved in practice.

Armstrong Flooring products should not be specified for use or installed in areas requiring a slip rating in excess of that set out in the Technical Data Sheet issued by Armstrong Flooring for the specific product (available at armstrongflooring.au).

This Technical Guidance Sheet seeks to provide guidance to architects, designers, builders, and certifiers on the interpretation and application of slip resistance test results and how they apply to resilient vinyl sheet flooring, outlining testing methods, compliance context, and best-practice considerations for product specification and performance monitoring.

Reference Standards:

- **AS 4586** – Slip resistance classification of new pedestrian surface materials
- **AS 4663** – Slip resistance measurement of existing pedestrian surfaces
- **HB 198:2014** – Guide to the specification and testing of slip resistance of pedestrian surfaces

Summary Table – Test Methods and Applications

Test Method (AS 4586)	Classification	Typical Environment	Example Rating Range
Wet Pendulum Test (Appendix A)	P1-P5	General pedestrian surfaces, wet or dry	P1-P2 = low / P3 = moderate / P4-P5 = high
Oil-Wet Inclining Platform (Appendix D)	R9-R13	Oily, greasy, or lubricated areas	R10-R12
Wet Barefoot Inclining Platform (Appendix C)	A-C	Barefoot areas subject to water	C = highest resistance

Testing Standards and Classifications

1. What is AS 4586?

AS 4586 – Slip resistance classification of new pedestrian surface materials defines how new, unused flooring is tested under controlled laboratory conditions to establish baseline performance.

2. What is AS 4663?

AS 4663 – Slip resistance measurement of existing pedestrian surfaces specifies how to test installed floors to determine actual in-service performance.

3. Why are there two different Standards?

Surface texture and friction change with wear, contamination, coatings, and cleaning. **AS 4586** assesses *potential* slip resistance when new; **AS 4663** measures *actual* slip resistance in service.

4. When does a floor become an “existing pedestrian surface”?

Once a floor has been **trafficked for any purpose other than installation** (e.g. trades, delivery, or site use), it is considered an **existing pedestrian surface**.

At that point, any subsequent testing is to be conducted to **AS 4663** rather than AS 4586.

5. Which test method is most relevant to vinyl flooring?

For **resilient vinyl sheet flooring**, including both general-purpose and safety flooring, the **Wet Pendulum Test (P-rating)** under **Appendix A of AS 4586** is the most relevant and widely applied classification.

- **Oil-Wet Inclining Platform (App D – “R” rating)**: Review in **conjunction with the Pendulum result** where exposure to oils, greases or lubricants is likely – e.g. **commercial kitchens, food trucks, processing or light industrial environments**.
- **Wet Barefoot Inclining Platform (App C – “C” rating)**: Relevant for **frequently wet, barefoot areas** such as **showers, ensuites, change rooms, pool surrounds and spas**.

Note: The Wet Pendulum Test (P-rating) also provides the **most direct correlation to ongoing in-situ testing under AS 4663**, assisting designers and facility managers to monitor long-term performance and verify surfaces against design intent after installation.

In-Service Performance and Maintenance

6. What is the purpose of slip resistance testing?

To provide a **quantifiable measure** of a surface's ability to reduce the risk of slipping, supporting correct product selection and safe design.

7. Why might in-service results differ from new product results?

AS 4663 measures the real surface condition. Wear, coatings, cleaning, and contaminants naturally change slip resistance over time.

Additionally, **no two environments are identical** - differences in **use area, pedestrian traffic, cleaning methods, maintenance frequency, chemical use, staffing levels, and staff training quality** all impact the long-term performance of flooring. Even identical products in adjacent areas can yield different in-situ test results.

8. Why does Armstrong Flooring apply a “conservative” rating in its Technical Data Sheet (TDS)?

To ensure the specified slip rating reflects **expected in-service conditions**, reducing the risk of **over-specification** or unrealistic expectations.

9. What is “over-specification”?

Selecting a product with a **higher slip rating than is required** in service. This can lead to maintenance and/or expectation issues.

10. What does it mean if a floor achieves a different result under AS 4663 after installation?

AS 4663 contains **no pass/fail criteria** and does **not require equivalence** with AS 4586 classifications. It simply records the in-situ slip resistance.

Variation between AS 4586 and AS 4663 results should trigger **review of protection, cleaning, maintenance or suitability**, not be viewed as non-compliance.

Design & Specification Guidance

11. How do the NCC and Australian Standards relate to slip resistance?

The **National Construction Code (NCC)** mandates slip resistance only for **stair treads, nosing's and landings** in **Class 2–9** (multi-residential and commercial) buildings.

For all other areas, there are no prescribed values; designers use **AS 4586**, **AS 4663**, and **HB 198:2014** as **best-practice references** to demonstrate due diligence and safe movement design.

13. Why should the TDS be the definitive reference for specification?

The **Armstrong Flooring Technical Data Sheet** lists the recommended, conservative slip rating appropriate for design documentation and realistic in-service conditions.

14. What are the typical slip resistance requirements by classification?

As referenced in **HB 198:2014 – Table 3A**, typical recommendations are:

Pendulum Class	Slip Resistance	Recommended Use
P1–P2	Low	Dry or generally clean general traffic areas (e.g. corridors, classrooms, offices)
P3	Moderate	Wet or potentially wet areas with moderate pedestrian traffic (e.g. entrances, bathrooms)
P4–P5	High–Very High	High-risk wet areas such as showers, food prep, commercial kitchens or ramps

15. Why not always specify the highest slip rating?

Very high slip resistance surfaces can be more difficult to **clean, and less comfortable for mobility-challenged users**. Individuals who **shuffle, drag, or have limited foot lift**—such as elderly persons or those with mobility aids—may struggle to move across **coarse or highly textured safety floors**. Sudden **changes in texture** (e.g. soft carpet -> smooth vinyl -> rough safety floor) can also pose stability or balance issues.

Specify slip resistance appropriate to both **safety and accessibility** requirements.

16. How should slip resistance be documented in specifications?

State:

- The **AS 4586 classification** (e.g., P3 / R10 / C)
- The **test method** and **Standard reference**
- The **manufacturer's TDS** as the governing document
- A note acknowledging that **in-situ (AS 4663) results may vary**

Example note: "Slip resistance classification tested to AS 4586. In-service results measured to AS 4663 may vary due to wear, maintenance, or site conditions."

17. Should site testing to AS 4663 be conducted after installation?

Not mandatory, however on some projects the specification may request in-situ testing for **high-risk or compliance-critical areas**, or when certification or insurance verification is required.

During and post installation, always:

- **Protect floors** from contamination, damage or premature use prior to handover.
 - **Clean and neutralise surfaces** before testing to ensure results reflect installed condition.
- These steps will assist in **preventing false low readings** and preserve the **factory surface condition**.

20. What is the key message for specifiers and designers?

Slip resistance changes over time. Always **specify and approve flooring using the classification published in the Armstrong Flooring TDS**, not the highest laboratory result, to ensure safe and predictable outcomes.

Summary

Purpose	Relevant Standard	Application Stage
Classification of new products	AS 4586	Pre-installation (laboratory)
Measurement of installed surfaces	AS 4663	Post-installation (in-situ)
Design & specification guidance	HB 198:2014	During project design and selection
Regulatory framework	NCC	Mandatory only for stairs, nosing's & landings (Class 2–9)
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Design Intent

Armstrong Flooring supports the use of **conservative slip resistance classifications** to maintain alignment between design intent and real-world performance, ensuring safety, compliance, accessibility, and durability across a broad range of pedestrian environments.

AU: customerservices@armstrongflooring.au
NZ: customerservices@armstrongflooring.co.nz