

Underfoot safety considerations in commercial buildings for designers and end user clients

Duty of care responsibilities for occupants underfoot safety in the workplace are deemed the building designers responsibility under OH&S legislation and safety aspects are an integral part of the design process. End user clients have a responsibility to maintain the premises in a safe condition.

Given the litigious times in which we all operate, what resources are available in Australia to assist building designer's make valued duty of care decisions on appropriate flooring material selection for underfoot safety on behalf of their clients?

Whilst the BCA sets some very clear fire safety performance guidelines through a range of building classes, there are no similar guidelines for underfoot safety. This leaves only the following documents:

- AS/NZS 4586-2004 – this standard sets out the various testing processes to establish a products initial slip resistance classification in both dry and wet areas. There is however, no sustainability requirement of that initial slip resistance requirement in the standard. This is most concerning given CSIRO's notation in their test certificates that "slip test results on new materials may not be applicable in service where contamination, wear and subsequent cleaning processes all influence the behaviour of a pedestrian surface".

- HB197 – 1999.

A guidance document to be used in conjunction with AS/NZS 4586-2004.

Experience from a manufacturer's perspective, is that both these documents seem to have unwittingly influenced specifiers to use the Ramp test in preference to the pendulum test. Designers and end user clients need to be aware that the ramp test can only be performed in a laboratory, testing of in situ installations is carried out by means of a pendulum test, and there is no correlation between the two measures. For this reason, caution from a duty of care perspective needs to be applied when using the Ramp Test as a single slip measurement.

Whilst the ramp test follows German protocol, in the UK the Government Health and Safety Executive (HSE), responsible for underfoot safety of pedestrian surfaces, have developed a slip potential model and slip assessment tool (SAT) to guide both designers and end user clients. The methodology is based on two instruments, the pendulum test and a surface micro roughness meter, and is ideally suited to both laboratory and in situ assessments. The SAT tool can be viewed on the HSE website www.hse.gov.uk

AS/NZS 4586 will not include a sustainability of slip resistance requirement in the short/medium term. Proposed amendments to the standard to be introduced later this year, will see the current pendulum preparation procedures changed to be in accordance with BS 7976-2002, aligning Australia closer to the UK system. As an interim measure, we would recommend designers consider the following proposals when



specifying enhanced slip resistance flooring in wet area applications, based on current Australian and European best practice.

- Specify resilient sheet vinyl flooring materials containing frictional qualities throughout the total thickness to deliver sustainable slip resistant qualities.
- Seek test certification compliance to AS/NZS 4586 Appendix A Wet Pendulum Test and Appendix D Oil Wet Ramp Test.
- Seek compliance to EN 13845 – Resilient Floor coverings with particle based enhanced slip resistance qualities.
- Material must have an Rz surface roughness measure greater than 20 micron (HSE protocol).
- Consult Handbook 197 and HSE Guideline documents.
- Add the following sustainability clause to your wet area specifications.

"The manufacturer of the enhanced slip resistance flooring conforming to this specification, shall warrant that the products

initial slip classification shall be sustained at that level for the guaranteed life of the product, subject to the manufacturer's maintenance recommendations being followed".

Polyflor will offer this sustainability warranty, for its Polysafe family of enhanced slip resistance floor coverings and this will afford some interim assistance to building designers. To hasten the introduction of a sustainability component in the Australian Standard, requires the people ultimately responsible for designing safe workplaces, the building designers, to lobby directly the appropriate legislative authority, which Polyflor as a manufacturer would fully endorse and support.

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