

An informed decision:

Specifying textile composite
flooring for education applications



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INTRODUCTION

Good design of educational spaces can have a major positive impact on childrens' development and wellbeing.¹ Studies have found that classroom design can affect a student's cognitive and emotional engagement with subject matter, as well as processes of comprehension and reflection - all essential aspects for learning.² It is widely accepted that from a pedagogical standpoint, good design is one of the most important aspects to creating a beneficial learning environment for children,³ although the benefits are not only for students. Creating a well-designed and pleasing educational environment has been proven to increase teacher job satisfaction and engagement as well.⁴ With research proving that the teacher-student dynamic is a crucial part of improved learning outcomes,⁵ it can be seen that the positive effects of good design on teachers will also flow through to the students.

There are numerous factors that contribute to good design of educational spaces. Among them are good air quality, good acoustic performance, adequate natural lighting and suitable heating/cooling.⁶ The NSW State Environment Planning Policy Design Quality Principles are mandatory guidelines for the design of new and update of existing educational facilities in NSW, but are shared across similar design guides from the other State-based planning bodies nationwide. They set out that (amongst other things), the design of educational facilities must be sustainable and durable, accessible, health and safety conscious and take a whole-of-lifecycle approach.⁷ One of the key aspects of design in any space is the interior linings and these are crucial to creating the best possible environment to further educational outcomes and increase the wellbeing of teachers and students alike.

Choice of flooring material is a key decision for specifiers. Because in most cases the flooring material will cover the full area of the learning space, it can have drastic effects on thermal performance, acoustic performance, air quality and even light diffusion around the space. Specifiers must be cognisant of the material properties of the flooring they specify and opt for something that delivers the best possible outcomes across the board. Textile Composite Flooring is an ideal specification for flooring in educational applications. It is durable and cost effective while providing excellent acoustic and thermal performance, and improved health outcomes. It comfortably outperforms common hard surface floors such as PVC Flooring that can be found in many educational institutions.

This whitepaper will take a detailed look at the benefits of specifying Textile Composite Flooring. It will begin with a comparison against PVC Flooring and then examine in depth the features that make Textile Composite Flooring an ideal material.



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THE DISADVANTAGES OF PVC FLOORING

PVC flooring is a hard surface flooring that is also commonly specified in educational applications. Despite its popularity, it can provide substandard performance in a number of areas that are crucial to providing the best possible outcomes for teachers and students. As a hard surface, PVC flooring does little to absorb additional sound and reduce Reverb Times (RTs) in classrooms. Whilst PVC flooring can be installed with an additional soundproofing layer on top of the substrate, this can be costly and time consuming. PVC can also be easily damaged. From holes caused by sharp or heavy falling objects, to scratches from the continuous walking of sand and grit onto the hard surface, preserving the integrity of a PVC floor can be difficult. Because of this, PVC

floors require constant cleaning to prolong their lifespan, frequently involving both vacuuming and mopping which is inefficient and labour-intensive. When it comes to health outcomes, PVC flooring is known to emit Volatile Organic Compounds (VOCs) due to its complex material composition and the potentially dangerous chemicals used in production.⁹ In some circumstances, these can cause respiratory issues, headaches and nausea.⁹

These factors raise questions around the suitability and performance of PVC flooring in educational applications. Textile Composite Flooring, however, can provide superior performance in line with beneficial design principles for educational spaces in Australia

TEXTILE COMPOSITE FLOORING: A SMART CHOICE FOR EDUCATION

DURABILITY

There are a number of factors that speak to the durability of textile composite flooring. It has outstanding dimensional stability, meaning it is not subject to swelling or shrinking due to changes in temperature or humidity. Concrete subfloors can release excessive moisture which can only be mitigated through costly treatments. Textile composite flooring has a breathable backing design which allows moisture to permeate throughout, rather than being trapped underneath. Similarly, textile composite provides excellent crush resistance and is able to withstand upwards of 5 million foot traffic events, a desirable material property in highly trafficked applications such as schools. The combination of these properties means that textile composite floors display incredible functional and aesthetic performance for years after being laid.

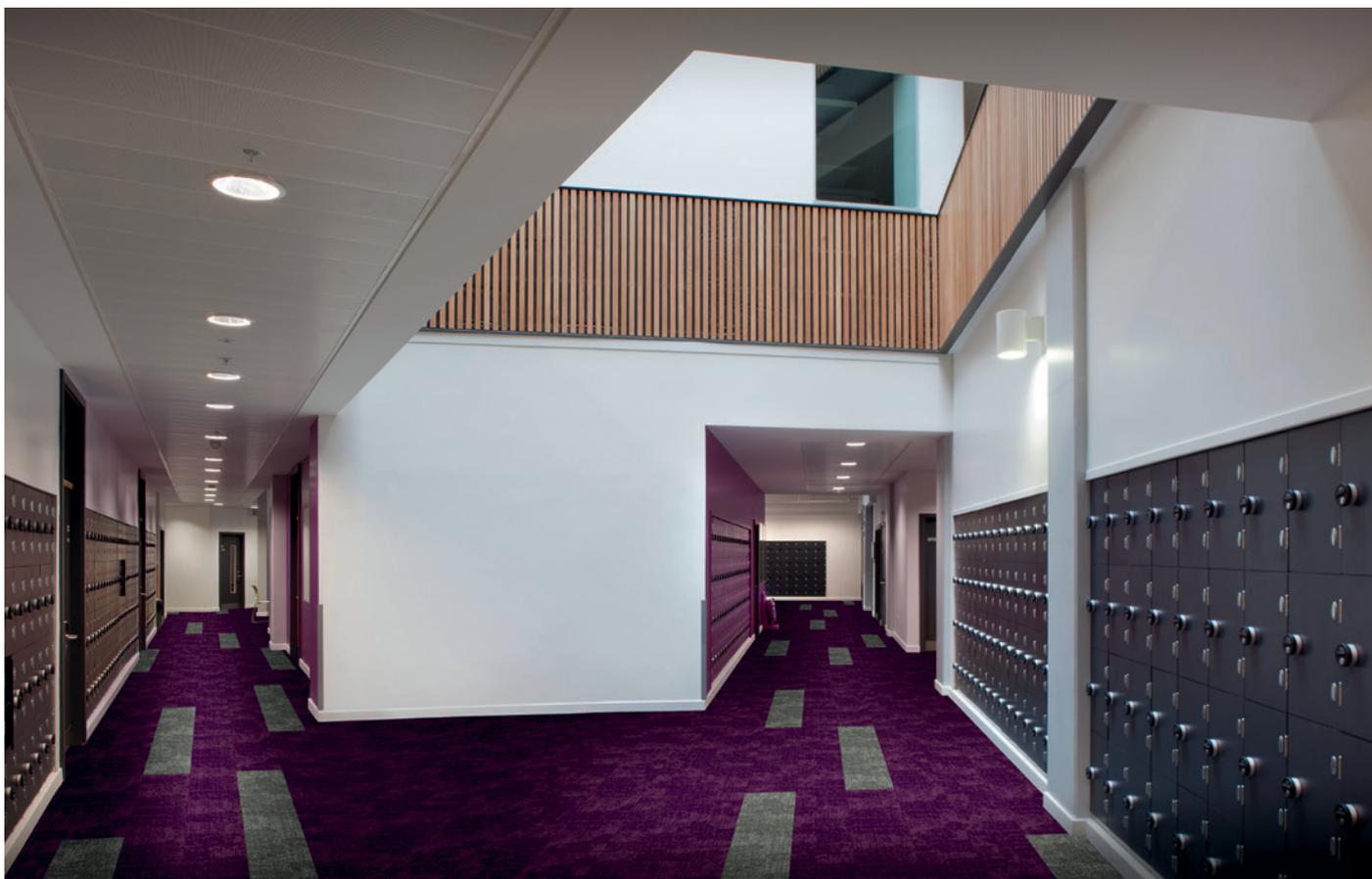
SAFETY

Textile composite flooring is fully compliant with *AS/NZS 4586:2013 - Slip Resistance Classification of New Pedestrian Surface Materials*, as is the requirement for all flooring products as per the National Construction Code.¹⁰ Certain products may also be certified by third-party bodies such as the National Floor Safety Institute, which has a "High-Traction" designation for products at the top of the scale of slip resistance.¹¹ Specifiers should opt for these products where possible. Materially, textile composite is soft yet firm. This makes it easy to walk on, yet it will still minimise injuries from falls - highly desirable in school applications, particularly with younger children. It also offers minimal rolling resistance, meaning that caster-mounted furniture can be easily maneuvered around the space, reducing the risk of push-and-pull related injury.

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“Textile composite flooring is made of up to 45% post-consumer recycled content, making it a highly sustainable material and contributor to the circular economy. Every box of textile composite flooring contains an equivalent of 492 recycled PET bottles. Specifiers should also be aware of the credentials of the specific suppliers in the market and always ensure they choose sustainable suppliers.”





MAINTENANCE

Textile composite flooring dries faster than carpet and retains less water, meaning that even large spills can be quickly absorbed and dried. Additionally, it is easy to clean - it can be easily sanitised and is highly stain resistant, meaning that with simple cleaning it will maintain its appearance for many years. The ease of maintaining textile composite floors is highly advantageous in Australian educational applications where a whole-of-lifecycle approach to cost is essential.¹² The vast majority of ongoing costs related to flooring are maintenance costs. Textile composite is easy to clean and, as referenced in the 'Durability' section above, tough and long lasting. The combination of these factors means that labour and equipment costs for cleaning are drastically reduced, as are repair or replacement costs throughout the floor's long lifespan.

ACOUSTICS

With research showing that a high percentage of Australian classrooms have sub-standard acoustic performance, it's imperative that specifiers opt for a flooring material that will contribute to overall noise reduction in educational applications.¹³ Textile composite flooring has an incredibly high Noise Reduction Coefficient of .30 and an Impact Insulation Classification of 64, meaning it drastically reduces both airborne noise and structure borne noise. This helps to reduce Reverb Time (RT) and create a better signal-to-noise ratio within the space, resulting in better speech recognition and

improved learning outcomes for students, along with less vocal strain and the associated health impediments for teachers.

SUSTAINABILITY

Textile composite flooring is made of up to 45% post-consumer recycled content, making it a highly sustainable material and contributor to the circular economy. Every box of textile composite flooring contains an equivalent of 492 recycled PET bottles. Specifiers should also be aware of the credentials of the specific suppliers in the market and always ensure they choose sustainable suppliers. International certifications such as NSF/ANSI 140 - Sustainability Assessment for Carpet can provide peace of mind to specifiers and guarantee that the product contributes to positive environmental outcomes. Similarly, suppliers should have clearly communicated waste minimisation strategies - again, ideally with third party certification to back up any claims.

HEALTH

Textile composite flooring is low-VOC. This means that it is hypoallergenic and safe for use for people with respiratory issues and around children. Its easy-to-clean, low maintenance construction eliminates the need for cleaning with harsh chemicals that can also release VOCs into the air - something which can be an issue for hard surface flooring. Similarly, textile composite flooring traps fine dust and other allergens, thereby reducing the prevalence of airborne particulates that can cause sickness.



VISIONARY LIVING COMMERCIAL FLOORS & WALLS

Visionary Living provides innovative flooring and wall solutions to the Australian market. The company distributes forward-thinking and exclusive brands that offer the highest performance and best aesthetics to fit with the specific needs of any project. Visionary Living's ranges cover residential, commercial, public, healthcare and educational design segments.

Kinetex is an advanced textile composite flooring that combines key attributes of soft-surface floor covering with the long-wearing performance characteristics of hard-surface flooring.

Created as a unique alternative to hard surface products, Kinetex has an unprecedented range of performance attributes for education, corporate, public space and healthcare environments.

DURABILITY

One of the most thoroughly tested flooring products on the market, it has outstanding dimensional stability and unparalleled crush resistance— and has withstood more than 5 million foot traffic events.

MAINTENANCE

It is easily sanitized and resists the most challenging staining agents, including beverages, condiments, oily food, biological spills and most other common stains—which means splashes and spills are no match for Kinetex.

MOISTURE TOLERANCE

Moisture mitigation isn't necessary with Kinetex; its breathable nature allows moisture to pass through its backing, instead of trapping it underneath. Kinetex textile composite flooring will perform in elevated RH slabs up to 100%.

HEALTH

Kinetex minimizes air particulates that trigger allergies and cause infection. It's easily sanitized and quick to dry, so cleaning Kinetex is fast and effective.

SAFETY

Kinetex is the only wall-to-wall textile floor covering certified as High-Traction by the National Floor Safety Institute. Its innovative construction creates one of the most slip-resistant flooring surfaces ever tested— wet or dry—to prevent falls before they happen.

ACOUSTICS

Kinetex delivers unparalleled acoustic performance, with one of the highest Noise Reduction Coefficients (NRC) and Impact Insulation Classifications (IIC) ratings of any commercial flooring product.

COMFORT

Kinetex, a soft textile surface with a high-density backing, has exceptional anti-fatigue properties and minimal rolling resistance. With its thermal insulation properties, Kinetex also provides a warmer indoor environment.

SUSTAINABILITY

Made with 45% post-consumer recycled content, each Kinetex tile contains the equivalent of 27 used water bottles. This dematerialized flooring product and its longer life mean that Kinetex has a much smaller environmental footprint than other commercial flooring options. Furthermore, Kinetex is NSF/ANSI-140 Platinum certified (the industry-leading standard for sustainability) and has a Red List Free DECLARE label.

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