Fletcher Insulation

Building Better, Together

Primary, secondary and tertiary education buildings

EDUCATION

Building better places for learning, together

FLETCHER INSULATION SUPPORTS AUSTRALIA'S LEADING ARCHITECTS AND BUILDERS IN THE DESIGN OF SUSTAINABLE, HEALTHY AND POSITIVE LEARNING ENVIRONMENTS.

Good design creates healthy, human-centred buildings.

In education environments, designing for thermal comfort supports better learning outcomes for both students and teachers. Well-insulated buildings help control noise as well as temperature. Long-lasting, sustainable insulation materials contain energy costs through passive cooling and warming. They also support healthier indoor air quality by providing effective condensation management solutions.

Fletcher Insulation specialises in developing industry-leading insulation solutions. Our technical and service teams support architects and specifiers to design best-practice schools, universities and colleges.

CREATING SUSTAINABLE, HEALTHY AND COMFORTABLE ENVIRONMENTS FOR PEOPLE TO LEARN AND THRIVE

Australian students deserve the best learning environments. They need places that provide thermal and acoustic comfort as the building blocks of great learning outcomes.

Fletcher Insulation works with architects and specifiers to create ideal learning environments for students and teachers in schools, TAFE colleges or universities.

Using our range of sustainable insulation materials in walls and ceilings, under floors and roofs, around building services and in and around the HVAC, we help designers create more comfortable places to learn, teach, and work.

HOW A BUILDING CAN IMPACT LEARNING OUTCOMES

Researchers from Australia and overseas have found that the quality of indoor thermal and acoustic comfort and indoor air quality have a direct impact on the health, learning and productivity of students and teachers.

A field study conducted in secondary school classrooms in Sydney during 2018 and 2019 found that both indoor temperature and CO2 concentration increases students' feeling of fatigue and decreases their ability to concentrate.[1]

A study performed in Australian primary and secondary school classrooms found that children feel comfortable at cooler temperatures compared to adults.[2]

Research shows that classrooms with poor acoustics can mean many students are unable to clearly understand speech in the classroom. They lose concentration and become disconnected from their learning environment. Children who continually miss words, phrases and concepts in the classroom are significantly disadvantaged.[3]

Other research shows that in a noisy environment, teachers' health and wellbeing may suffer as they need to constantly raise their voice to be heard.[4]

At Fletcher Insulation we'll help you specify the optimal insulation materials for use in your educational building projects.

Our aim is to support better design of educational facilities by providing solutions that significantly contribute to:

- an optimum environment in which to study and learn
- a healthier indoor environment for all students, teachers and staff
- reduced energy usage to control costs and environmental impact
- higher Green-Star ratings and WELL certification
- safe, fire-resistant construction systems.

A HOLISTIC APPROACH TO CREATING POSITIVE LEARNING ENVIRONMENTS

Better building design can lead to improved learning outcomes. We take an integrated approach to building insulation through critical thinking and a technically sound understanding of acoustics, indoor thermal comfort, air quality, and fire safety requirements.

MINIMISING UNWANTED NOISE

Hearing and listening are essential for learning. In primary school, children spend around 45 to 75% of their time in the classroom listening to their teacher and interacting with their classmates.[5]

But noisy classrooms can be a problem for both students and teachers.

- One New Zealand survey of teachers found that noise generated within a classroom is a problem.
- High ambient noise levels and reverberation can reduce listening comprehension, speech intelligibility, and language development. Children miss out on words, phrases and concepts. This can lead to real disadvantage, particularly where English is a second language. Kids often fall behind.
- For older students, where collaborative projects, open-plan classroom layouts, and a high level of interaction is standard, excessive noise can interfere with concentration, learning and academic progress[5].

And while the National Construction Code (NCC 2019) includes minimum sound insulation requirements for walls and ceilings, these guidelines do not specify detailed acoustic standards for educational facilities. Designers also need to be mindful that acoustic standards vary between Australian states.

Fletcher Insulation products are designed on the principle that quality acoustic design gives students the best opportunity to listen and learn.

CONTROLLING INDOOR THERMAL COMFORT, AIR QUALITY AND BUILDING CONDENSATION

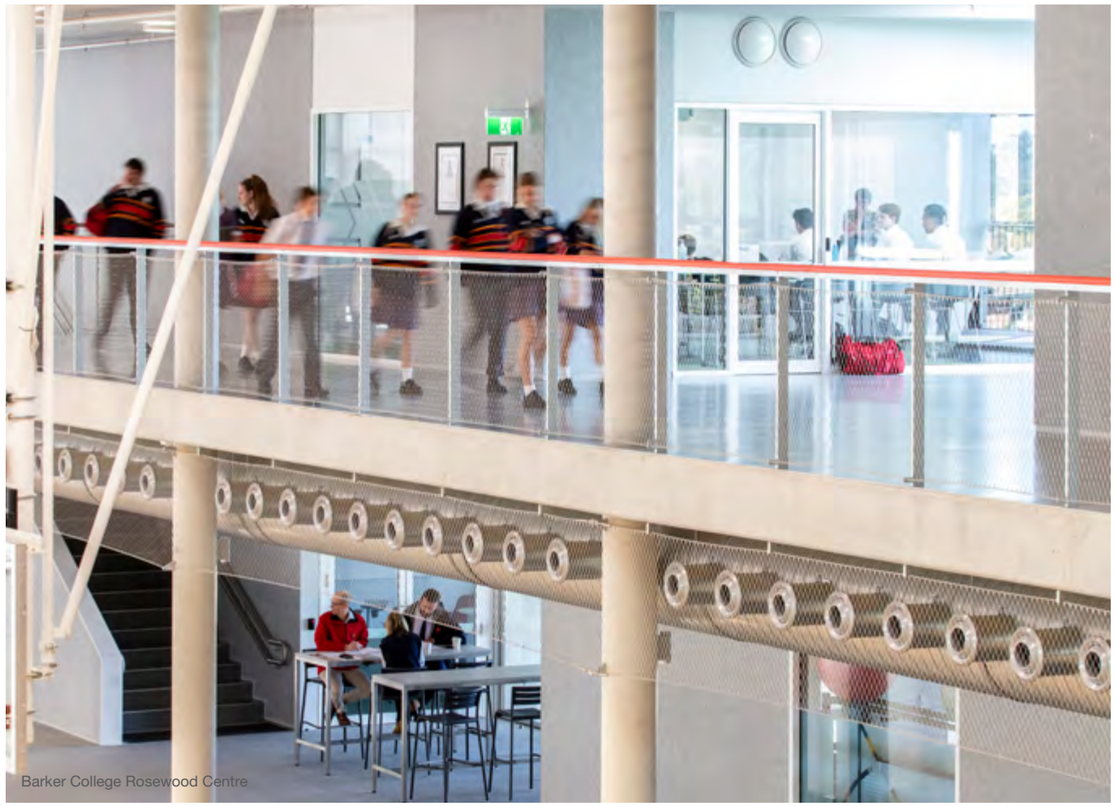
Effective learning happens when students and teachers are comfortable with their surroundings.

A classroom environment that's too hot or cold, has inadequate ventilation and poor air quality is uncomfortable, can interfere with a student's concentration, cause fatigue, and result in serious damage to their health and wellbeing.

There's some evidence that, unlike adults, younger children learn better in classrooms with cooler temperatures[6]. According to one UNSW researcher: "Improving indoor thermal and environmental quality is as important as improving the teaching material in the classroom[7]."

We'll identify which systems work best in different climates, avoiding interstitial condensation – which can damage the building fabric and structure.

Fletcher Insulation provides product solutions to optimise your project's thermal comfort, condensation management, and indoor air quality requirements.



Barker College Rosewood Centre

PROTECTING PEOPLE AND BUILDINGS FROM FIRE

A building that's designed to be fire-safe uses passive fire protection strategies to prevent a fire starting and to slow its progress. In case of fire, they're essential to protect both property and people.

Insulation installed in external and internal walls, floors, ceilings, roofs, and around HVAC applications, is an integral part of fire safety control.

Ensuring National Construction Code (NCC 2019) compliance is non-negotiable. But building owners also need to consider standards and minimum requirements imposed by insurers. Choosing insulation that fails to fit these specifications could mean higher insurance premiums.

In all education facilities it's essential designers specify insulation that's made of sustainable, non-combustible, fire-resistant materials.

Fletcher Insulation has developed fire-resistant insulation products that are rigorously tested to keep people and buildings safe.

Fletcher Insulation's glasswool products are deemed non-combustible when tested to AS 1530.1, offering compliance for use in external cladding and internal partition applications, providing peace of mind.

EDUCATION

SUSTAINABLE
Made up of up to **80% recycled** content that might otherwise be destined for landfill.

Around 80% of the glass used in our glasswool insulation production is recycled.

FOR THE GOOD OF THE PLANET

Fletcher Insulation's commitment to sustainability and protecting the environment does not begin and end with supplying energy efficient products. It begins with our manufacturing processes.

Fletcher Insulation products:

- are ODP-free, in both the finished product and in the manufacturing process.
- contain no harmful Volatile Organic Compounds (VOCs), helping to maintain indoor air quality.
- are manufactured using recycled materials wherever possible – up to 80% of the glass used in our glasswool insulation production is recycled, transforming a waste product destined for landfill into an environmental defender!

BUILDING ENVELOPE APPLICATIONS

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In developing our product range for education buildings, Fletcher Insulation always takes a systems approach. We consider a range of performance parameters including energy efficiency, thermal bridging, fire resistance, internal comfort, acoustics, moisture, air tightness, and durability. We examine how they interact and work both within the building envelope and beyond.

ROOFING

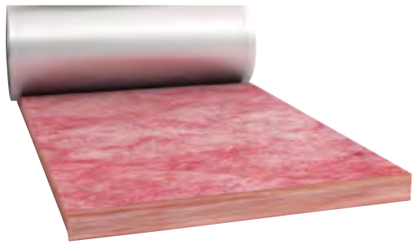
Design decisions for roofing systems can be complex. Designers must be confident that the products they specify address thermal performance, fire resistance, and condensation control. Plus, they need to provide adequate acoustic insulation to meet the needs of different types of learning spaces.

Fletcher Insulation has a comprehensive range of insulation solutions to meet the most demanding environments and performance requirements. One of our most effective insulation solutions is our Permastop® Building Blanket range:

- The Permastop range of building blankets feature effective thermal and acoustic properties to reduce heat transfer and minimise the internal reverberation and flow of distracting noise, such as rain on a metal roof.
- The Permastop range also enables architects and specifiers to optimise building space. Exclusive to Fletcher Insulation, our R3.6 Permastop Building Blanket, for example, offers the highest thermal performance for a 130mm blanket on the market.

To reduce thermal bridging, we recommend using Roof Razor® combined with Permastop Building Blanket. With minimised thermal bridging foot print, Roof Razor allows full recovery of the insulation blanket between the safety wire mesh and metal cladding. By combining these products, a building designer will achieve optimum thermal performance, meeting or exceeding NCC requirements.

As demand for better condensation management increases, the properties of Permastop Building Blankets help minimise condensation that can form under metal cladding.



EDUCATION

EXTERNAL WALLS

External wall insulation is central to managing energy efficiency, regulating thermal conditions within the building, and meeting fire performance regulations. It must also meet the varying acoustic needs of different learning spaces within the building envelope.

Fletcher Insulation's Pink® Partition range of glasswool insulation features outstanding performance capabilities. With proven non-combustibility and acoustic performance, the product also features a comprehensive range of R-values, densities and thicknesses.

FletcherSpec pro®

When selecting the ideal insulation products for your design, we recommend using the FletcherSpec Pro® design specification tool. It quickly calculates Total System R-values to meet all National Construction Code (Section J) requirements. With outstanding data integrity and calculation accuracy, this handy tool is kept up-to-date with the latest NCC criteria, giving architects and specifiers complete confidence when specifying insulation products.

Download FletcherSpec Pro® at the App Store.

FITOUT APPLICATIONS

Insulation in internal walls, floors, and ceilings helps manage a building's acoustic environment, energy efficiency, and thermal comfort for its occupants. We've designed our range of fitout solutions to deliver long-lasting, exceptional performance under varying environmental conditions.

CEILINGS, PARTITIONS AND SERVICES

Fire protection, thermal performance and acoustic performance. These are the three major considerations for designers when selecting ceiling and partition wall insulation. Fletcher Insulation's Pink Partition range is ideal for all types of learning spaces.

- Like all Fletcher Insulation glasswool insulation products, Pink Partition is non-combustible. Not only does it protect lives, but it also helps reduce the damage should a fire break out. This also means there's less disruption to education and significantly lower costs following a fire.
- Pink Partition insulation provides excellent thermal insulation properties, with R-values ranging from R1.2 to R3.5. By keeping buildings cooler in summer and warmer in winter, it helps meet the thermal comfort needs of students and teachers.
- Acoustic design guidelines from the Association of Australasian Acoustical Consultants (AAAC) recommend internal noise levels, reverberation times, and airborne and impact sound insulation for different learning spaces. These guidelines cover all types of spaces – from atria to open plan teaching spaces, for primary and secondary schools, for indoor swimming pool areas, and spaces to support the hearing impaired. Fletcher Insulation provides the required insulation for all of these learning spaces outlined in this guideline.

EDUCATION

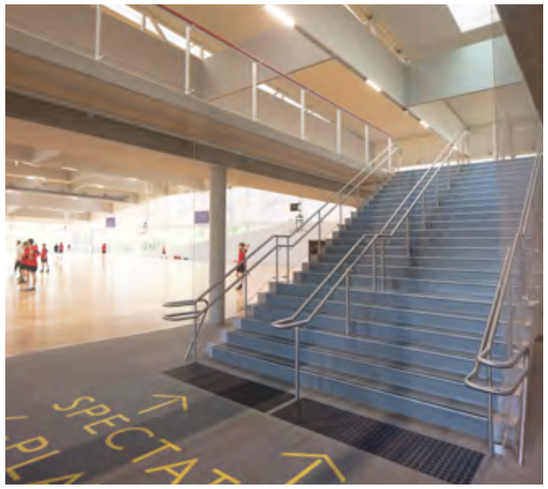
Made in Australia from up to 80% recycled content, the Pink Partition range is designed to meet AAAC recommendations – from low to high ratings. It's another example of how Fletcher Insulation provides architects and specifiers with the products they need to deliver optimum acoustic performance in all learning spaces.

Thickness mm	Density kg/m³	Material R-value	Sound Absorption Coefficients at Frequencies (Hz) of:										
			100	125	250	500	1000	2000	3150	4000	5000	NRC	α_w
50	11	R1.2	0.15	0.16	0.63	0.88	0.98	0.99	1.00	1.01	1.06	0.85	0.85 (H)
50	14	R1.3	0.14	0.12	0.30	0.86	1.00	1.02	1.02	0.99	1.04	0.85	0.85 (H)
50	24	R1.4	0.16	0.17	0.69	1.02	1.09	1.03	1.07	1.04	1.06	0.95	0.95
50	32	R1.5	0.08	0.16	0.66	1.04	1.10	1.02	1.03	1.05	1.03	0.95	1.00
75	11	R1.8	0.26	0.27	0.91	0.99	1.04	1.00	1.06	1.05	1.11	1.00	1.00
75	14	R1.9	0.24	0.24	0.91	1.01	1.03	1.00	1.08	1.03	1.06	1.00	1.00
75	32	R2.2	0.24	0.24	0.91	1.01	1.03	1.00	1.08	1.03	1.06	1.05	1.00
90	24	R2.5	0.36	0.43	1.16	1.11	1.05	1.07	1.04	1.07	1.06	1.10	1.00
90	32	R2.7	0.32	0.58	1.14	1.05	1.05	0.99	1.05	1.04	1.03	1.05	1.00
110	11	R2.5	0.40	0.42	1.08	1.10	1.02	1.09	1.09	1.06	1.06	1.05	1.00

HVAC

Fletcher Insulation's ductwork sound attenuation products complete our holistic systems approach. The thermal properties of our HVAC products offer both efficient temperature control and safe indoor air quality, while minimising noise when the HVAC is operating.

Non-combustible and safe to use, our HVAC range is flexible, lightweight and strong, making it ideal for specifying in schools, colleges and universities.



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SINIAT

When choosing building insulation materials, designers can rely on the Siniat systems, certified using insulation products by Fletcher Insulation. The Siniat range of selection tools are robust, save time and effort and include:

- **Siniat Blueprint** a handy technical manual for lightweight steel and timber frame construction; includes complete wall and ceiling insulation solutions for commercial and multi-residential projects.
- **Siniat System Selector** is an online tool that enables selection of the most appropriate and cost-effective wall and ceiling systems.
- **Siniat's library of BIM and CAD files** for all types of systems. Handy to confirm which Fletcher Insulation product is best to use in your design.

KINDERGARTEN – YEAR 12

FITOUT: CEILINGS AND INTERNAL PARTIIONS

Pink® Partition

BUILDING ENVELOPE: ROOFING

Permastop® Building Blanket with Roof Razor®

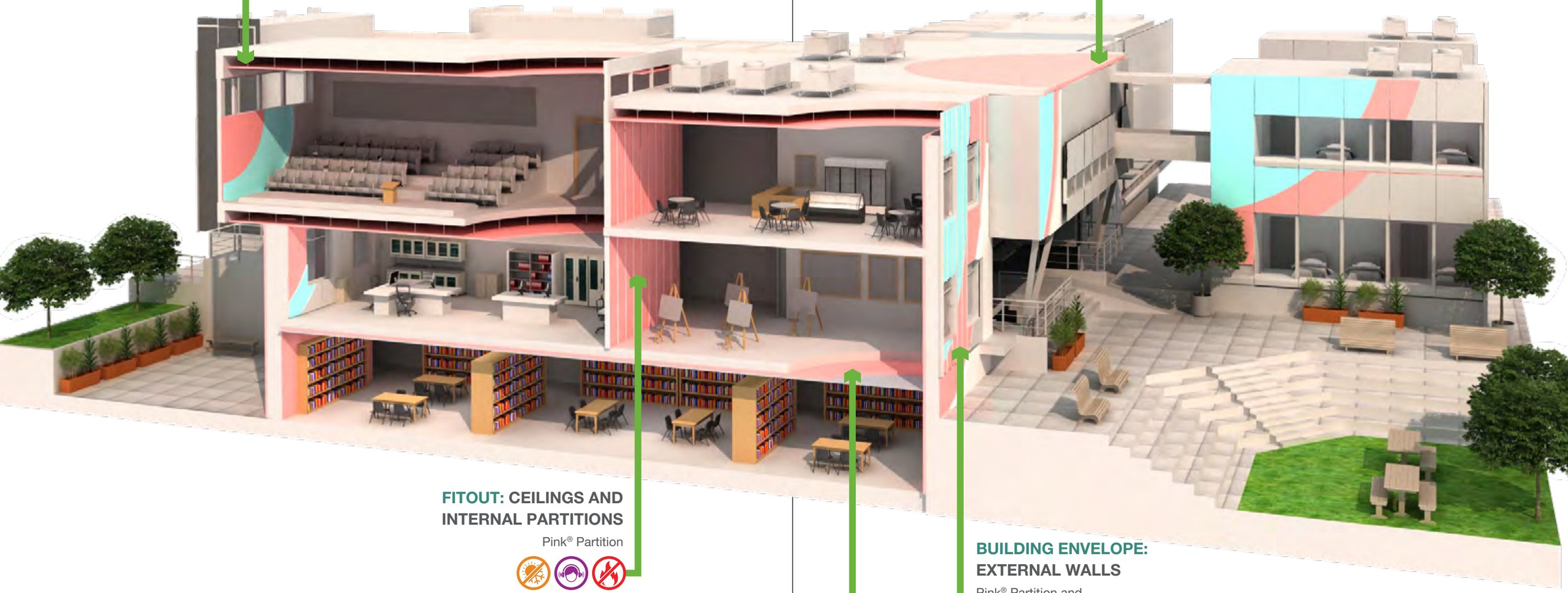
BUILDING ENVELOPE: EXTERNAL WALLS

Pink® Partition and
Sisalation® Vapawrap®
Vapour Permeable Membranes

TERTIARY

FITOUT: CEILINGS
Pink® Partition

BUILDING ENVELOPE: ROOFING
Permastop® Building Blanket with Roof Razor®



FITOUT: CEILINGS AND INTERNAL PARTITIONS
Pink® Partition

BUILDING ENVELOPE: EXTERNAL WALLS
Pink® Partition and
Sisalation® Building Membranes

FITOUT: BETWEEN FLOORS & UNDERSLAB
Pink® Thermal Slab

SPECIAL FACILITIES

FITOUT: INTERNAL PARTITIONS

Pink® Partition or Pink® Partition HD Panels

FITOUT: CEILINGS

Pink® Sonomatt Blanket

BUILDING ENVELOPE: EXTERNAL WALLS

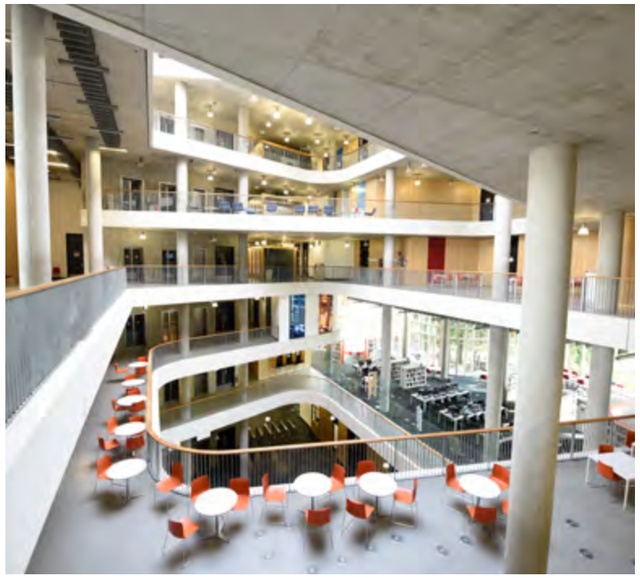
Fi32 Semi Rigid or FI48 Rigid Board

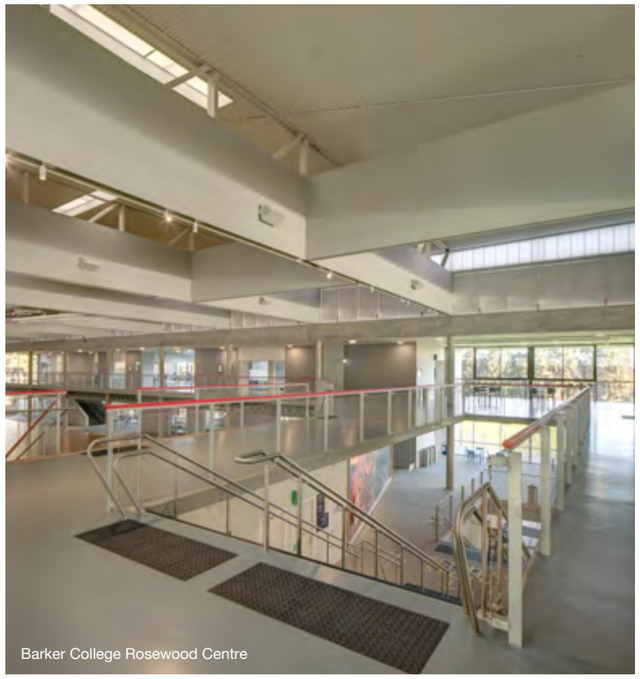
BUILDING ENVELOPE: ROOFING

Permastop® Building Blanket with Roof Razor®

SELECTING FLETCHER INSULATION PRODUCTS FOR EDUCATION BUILDINGS

Product selection	Product description	Roofing	External walls	Internal walls	Ceilings, partitions and services	Slabs and soffits	HVAC
Roof Razor®	An insulation spacer specifically designed for metal roof construction. It sits between the roof structure and the external cladding, creating a space for insulation to recover to its full nominal thickness, reducing thermal bridging. **Roof Razor** is a spacer solution to meet the Section J requirement of the National Construction Code (NCC) where insulation must maintain its position and thickness between purlins forming a continuous thermal barrier.	✓					
Roof Safety Mesh	**Roof Safety Mesh** keeps the insulation blanket in place, provides fall protection for roofing installers and offers long-term fall protection for maintenance and repair workers. Complies with the requirements of Australian Standard AS/NZS 4389 for safety mesh and with all Australian State and Territory Codes of Practice (Safe Work on Roofs Part 1: Commercial and Industrial Buildings).	✓					
Pink® Building Blanket (unfaced)	Suitable for use in metal roof and wall applications, **Pink Building Blanket** is commonly installed in conjunction with a Sisalation® facing foil membrane which works to minimise the risk of condensation. **Pink Building Blanket** provides the added benefit of being an effective sound absorber and is thereby an excellent solution for the acoustic treatment of metal clad buildings.	✓	✓		✓		
Permastop® Building Blanket	Suitable for use in both metal roof and wall applications, as well as under slab concrete soffit applications. Provides effective thermal and acoustic performance by reducing heat transfer and minimising the internal reverberation and flow of unwanted nuisance noise generated from adjacent buildings/rooms and/or the external environment. Additionally, **Permastop Building Blanket** aids in minimising the risk of condensation that can form with metal cladding.	✓	✓			✓	
Permastop® Tropic Building Blanket	Specifically designed for use in Australia's hot and humid tropical regions to provide increased condensation protection to buildings. In these regions, it is customary to install the vapour barrier on the upper side of the building blanket which faces the roof sheet. This ensures the vapour barrier is installed on the warm side of the building to provide greater protection against the risk of condensation.	✓	✓				
Pink® Partition	Designed for use in commercial metal framed partitions, wall systems and ceilings, **Pink Partition** insulation delivers exceptional thermal and acoustic performance, contributing to the effective construction of comfortable, energy efficient commercial buildings. It is typically used in partition walls of low and high rise buildings and commercial fit-out education projects such schools and universities where acoustic control is essential. **Pink Partition** may also be used as a ceiling overlay for enhanced thermal and acoustic performance. The range encompasses multiple densities, thicknesses and dimensions to suit commercial steel framed studs and to satisfy a broad spectrum of building requirements. Specification and installation of Australian made **Pink Partition** insulation enables designers and builders to satisfy National Construction Code (NCC) requirements pertaining to Energy Efficiency, Sound Insulation Provisions and Fire Resistance Performance.		✓	✓	✓		
Pink® Partition HD Panels	These ultra high density **Pink Partition** panels (96kg/m^3 and 168kg/m^3) are designed to reduce sound transmission between rooms in commercial building applications and perform as isolating mediums between adjoining rooms. Suitable for use in concrete floor systems to create a sound barrier between floors (when installed between the floor membrane and the underside of the concrete slab). Sanded on one side to provide a smooth aesthetic finish when a textile fabric is adhered to its surface.		✓	✓	✓		
Pink® SonoMatt Blanket®	Suitable for applications such as partitions, screens and baffles. The black tissue facing makes it ideal for installation behind perforated linings to improve the overall acoustic properties of the internal lining. In addition to providing exceptional acoustic performance, **Pink SonoMatt Blanket** provides the added benefit of thermal insulation and increases the overall Total R-value of a building envelope, thus improving the energy efficiency of a building. This allows architects and specifiers to satisfy both thermal and acoustic design requirements with the specification and installation of a single product.				✓		
Pink® Thermal Slab	Suitable for use in commercial under slab soffit applications where thermal and acoustic properties are pivotal in controlling noise levels and temperature fluctuations of concrete roofs, floors and walls. **Pink Thermal Slab** provides excellent fire performance for ceiling lining applications achieving a AS 5637.1 Group 1 NCC fire classification, and delivers excellent thermal performance, which in turn improves the energy efficiency of a building. It also provides the added benefit of exceptional acoustic absorption, which allows architects, specifiers and builders to satisfy both thermal and acoustic design requirements through the specification and installation of a single product.				✓	✓	





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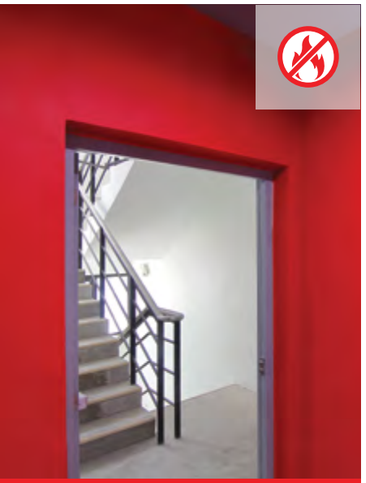
SELECTING FLETCHER INSULATION PRODUCTS FOR EDUCATION BUILDINGS

Product selection	Product description	Roofing	External walls	Internal walls	Ceilings, partitions and services	Slabs and soffits	HVAC
FI32 Semi-Rigid	The medium density specification of **FI32** boards and blanket (32kg) provides excellent thermal properties and NRC acoustic values making it suitable for internal and external walls, and roofing systems where a high degree of acoustic performance is required. Available in both roll or board form to allow for greater design flexibility in commercial building applications including HVAC ducting applications. Also suitable for insulating storage tanks, process vessels, appliance cabinets, electrostatic precipitators, plant rooms and for use in the manufacture of acoustic baffles.		✓	✓		✓	✓
FI48 Rigid Board	The higher density specification of **FI48** boards (48kg) provides greater thermal properties and NRC acoustic values making it suitable for internal and external walls, and roofing systems where the highest degree of acoustic performance is required for the building's design. Also suitable for HVAC ducting applications, insulating storage tanks, process vessels, appliance cabinets, plant rooms and for use in the manufacture of acoustic baffles.		✓	✓			✓
Sisalation® Foam Cell Multipurpose	Designed for use in wall and roof applications, **Sisalation Foam Cell Multipurpose** is an extra heavy duty 3-in-1 multipurpose sarking solution: insulation + thermal break + vapour barrier with a Group 2 fire hazard property rating. Ideal for use in NCC Building Classifications 2 to 9, it can reduce up to 95% of the sun's radiant heat, minimises the risk of condensation and acts as an effective water and vapour barrier when installed according to AS/NZS 4200.2.	✓	✓				
Sisalation® Metal Roof MD (433) and HD (453)	Suitable for use as non-vapour permeable sarking solutions in commercial and residential metal roof and wall applications, where the metal roof span does not exceed 900mm unsupported or is 1200mm or less supported. Designed to provide an effective approach to managing condensation in the roof space by creating a vapour barrier and assist in minimising draughts, enabling bulk insulation to perform more effectively. Additionally, they provide an effective secondary skin against moisture, vapour, wind, heat and dust penetration.	✓					
Sisalation® Vapawrap™ Vapour Permeable Metal Roof	Suitable for use as a vapour permeable roof sarking solution in commercial and residential metal roof applications in Australia's colder climate zones, where the metal roof span does not exceed 900mm unsupported or is 1200mm or less supported. Provides an effective approach to managing condensation in the roof space by allowing the controlled escape of moisture from within the building. It also restricts the ingress of liquid water and dust from the outside environment and assists in minimising draughts, enabling bulk insulation to perform more effectively.	✓					
Sisalation® Vapawrap™ Vapour Permeable Residential Wall Wrap	Suitable for use as a vapour permeable wall wrap solution in low rise commercial and residential applications in Australia's colder climate zones. Designed for walls and gable applications in brick veneer and behind fibre cement cladding. Provides an effective approach to managing condensation in walls by allowing for moisture vapour inside the structure to escape, and assists in minimising draughts, enabling bulk insulation to perform more effectively.		✓				
Sisalation® Tuff Wrap™ Wall Wrap (497)	Suitable for use as a non-vapour permeable wall wrap solution in commercial and residential brick veneer wall applications. Designed to act as a barrier that helps prevent water vapour from entering the building, as well as restricting the ingress of liquid water and dust from the outside environment, and assisting in minimising draughts for more effective bulk insulation performance.		✓				
Quadzero Loaded Vinyl Barrier	A foil faced flexible acoustic barrier highly suitable for inside cavities or over lightweight wall, ceiling and floor constructions. Ideal for auditorium theatres, partitions and meeting rooms.				✓		✓

For information on HVAC products, please contact Fletcher Insulation.

SUPERIOR BUILDING PERFORMANCE

Fletcher Insulation conducts extensive research and product testing ensuring all our products and solutions are compliant with the latest standards and building code requirements.



FIRE

Safety is paramount in building design, with the reduction of fire hazards and prevention of spread of fire considered critically important for designers of education buildings, especially considering the risk of evacuating students and staff in the event of a fire.

Our specialists will advise you on passive fire prevention requirements for roofs, external wall construction, internal wall systems and HVAC services, including:

- **AS 1530.1** Combustibility (NCC Vol 1 C1.9)
- **AS 1530.2** Flammability of materials (NCC Vol 1 C1.9, C1.10 & Spec C1.10)
- **AS/NZS 1530.3** Fire Hazard Properties (NCC Vol 1 C1.10 & Spec C1.10)
- **AS 1530.4** Fire resistant construction (NCC Vol 1 Spec C1.1)
- **AS 5637.1** Fire hazard properties (Group No) for wall and ceiling lining materials (NCC Vol 1 C1.10 & Spec C1.10)
- **AS 3959** Bushfire Construction up to BAL–FZ

Our products and solutions are compliant to the above relevant standards and safe for use in external cladding and internal partition applications, offering peace of mind and permitting architects to express design freedom in selecting cladding and partition materials.

THERMAL PERFORMANCE

It is well established that thermal comfort contributes enormously to the well-being of building occupants, which is most critical in educational environments. With the breadth of climate zones across Australia we make sure your design works whether in the extreme heat, extreme cold, or somewhere in between.

We also offer advice on NCC Class 9b thermal compliance, upgrade specifications and for general installation to deliver healthier and more sustainable outcomes.

Our Bulk Insulation products comply with:

- **AS/NZS 4859.1** Materials for the thermal insulation of buildings
- **AS 3999** Thermal Insulation of dwellings – Bulk insulation – Installation requirements
- **AS 4254** Part 1 and Part 2 Ductwork for air-handling systems in buildings
- **AS 4508** Thermal resistance of insulation for ductwork used in building air-conditioning
- **NCC Vol 1** Part J1.1-J1.3, J1.5-J1.6, and J5.5

Building membranes/wraps specification and installation compliance with:

- **AS/NZS 4200.1** Pliable building membranes and underlays – materials
- **AS 4200.2** Pliable building membranes and underlays – Installation requirements
- **NCC Vol 1** F1.6

ACOUSTICS

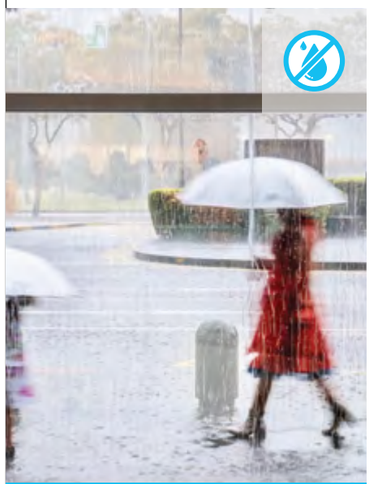
Education has its own set of demands when it comes to the acoustic treatment of walls, ceilings, and services. Our solutions deliver peaceful environs for students and teachers.

Our products assist in reducing airborne sound through ductwork, and wall and floor construction, in accordance with:

- **AS/NZS ISO717.1** Acoustics – Rating of sound insulation in buildings and of building elements
- **AS/ISO 11654** Acoustics – Rating of sound absorption – Materials and systems
- Project specific high-performance acoustics

Our high density acoustic insulation helps target broad spectrum frequency bands for all round acoustic attenuation in:

- Specialised performing arts centres and auditoriums
- Open learning environments
- HVAC ductwork



CONDENSATION AND MOISTURE MANAGEMENT

With the vast contrasts in climates and myriad construction systems available, specifying the correct material layers can be very challenging.

We help identify which systems work best in different climates to avoid interstitial condensation – leaving the worry and specification details to us.

We can assist in compliance with:

- **AS/NZS 4200.1** Pliable building membranes and underlays – materials
- **AS 4200.2** Pliable building membranes and underlays – Installation requirements
- Moisture control membranes tested to **ASTM-E96** (Vapour control) and compliant with **AS 4201.4** (Water control)
- **NCC Vol 1** Part F6.2
- Project specific humidity control

Our membranes and insulation systems can be tailored for vapour permeable or barrier construction, with nominated air control layers and air-tight tapes, so you don't have to worry about matching project specific climatic and/or humidity control requirements.

COMPLIANCE AND DESIGN ASSISTANCE

Fletcher Insulation is an active member of the **Green Building Council of Australia (GBCA)**, exceeding 10 years of recognition for our commitment to providing energy efficient insulation and acoustic solutions to the residential, commercial and HVAC markets.

As a long-term member of the GBCA, we are upholding our commitment to providing products for a sustainable built environment. As a GBCA member it enables us to contribute our technical and commercial expertise to the development of new Green Star rating tools and obtain access to all Green Star information. This information includes project directories, technical guidelines to support and/or assist our customers with Green Star project submissions and example submissions. The benefit to architects and specifiers, is that they can meet and raise the Green Star rating of their building projects by incorporating our range of Fletcher Insulation products.

WELL is the leading tool for advancing health and well-being in buildings globally. Fletcher Insulation can provide you with advice and solutions to help you deliver improved results in the areas of air quality, thermal comfort and sound.

FletcherSpec Pro® is a Fletcher Insulation app developed to overcome many traditional issues architects and builders face when specifying insulation. The app provides a near complete support structure, guiding users through the entire insulation specification process.

FletcherSpec Pro® delivers centralisation of the multitude of tasks associated with typical System R-value calculations including but not limited to; determining the relevant climate zone, referencing applicable energy efficiency requirements, considering solar absorption values of roof cladding and selecting the correct insulation products for the application. This drastically minimises the need to manually cross reference inconsistent or out-dated handbooks, technical data sheets and so on. Instead, users simply answer a series of targeted questions which the app uses to determine relevant energy efficiency requirements as outlined in the National Construction Code Deemed to Satisfy provisions. The app then progresses to calculate the Total R-value of the design based on the inputs entered by the user.

EDUCATION

TECHNICAL DATA SHEETS AND INSTALLATION GUIDELINES

Visit **insulation.com.au** to discover the excellent array of technical information available to download, whether you need to get into the product details yourself, or reassure the project team that our products are compliant, and safe and easy to install.

TECHNICAL SUPPORT

Fletcher Insulation's Technical Service is an invaluable resource for architects and specifiers. Our insulation experts understand what's needed to satisfy a diverse range of building applications, including the complex requirements of the education and health sectors. Providing the right advice when you need it, our technical service team has quality solutions to help solve your building insulation challenges. Contact Fletcher Insulation on 1300 654 444 or email technical@insulation.com.au

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Barker College Rosewood Centre
Architects: Neeson Murcutt + Neille
Photography: Brett Boardman

Barker College
Rosewood Centre

ADDENDUM:

EDUCATIONAL FACILITIES ACOUSTIC REQUIREMENTS

Extract from Association of Australasian Acoustical Consultants Guideline for Educational Facilities V2.0.

Table 1: Airborne and impact sound insulation requirements

Room	Sound Isolation		
	Source room impact noise generation	Source room airborne noise generation	Receiving room noise tolerance
Atria (for circulation, not teaching	Medium	Average	High
Art/craft studios	Medium	Average	Medium
Assembly halls up to 250 seats	High	Very High	Low
Assembly halls over 250 seats	High	Very High	Low
Audio-visual areas	Low	High	Low
Cafeterias	High	Very High	High
Computer rooms – Teaching	Low	Average	Medium
Computer rooms – Laboratories	Low	Average	Medium
Conference room	Low	High	Very Low
Corridors and lobbies	Medium	Average	High
Drama Studios	Medium	High	Low
Dance Studios	High	Very High	Medium
Engineering workshops – Teaching	High	High	High
Engineering workshops – Non-teaching	High	High	High
Gymnasia/indoor sports	High	Very High	Medium
Weight training/fitness room	High	High	Medium
Interview/counselling rooms	Low	Low	Medium
Laboratories – Teaching	Low	Average	Medium
Laboratories – Working	Low	Average	Medium
Lecture rooms – up to 50 seats	Low	Average	Medium
Lecture theatres – without speech reinforcement and >50 seats	Low	Average	Low
Lecture theatres – with speech reinforcement	Low	High	Medium
Libraries – General areas	Medium	Average	Medium
Libraries – Reading areas	Low	Low	Low
Manual arts workshops	Medium	Average	Medium
Medical rooms (First aid)	Low	Low	Medium
Music practice rooms	Low	Very high	Low
Music studios	Low	Very high	Very Low
Nursery school – Play rooms	Medium	Average	Medium
Nursery school – Quiet rooms	Low	Low	Low

Airborne and impact sound insulation requirements (cont.)

Room	Sound Isolation		
	Source room impact noise generation	Source room airborne noise generation	Receiving room noise tolerance
Office areas	Low	Average	Medium
Professional and administrative offices	Low	Average	Medium
Teaching spaces – Open plan	Low	Average	Low
Teaching spaces – Primary schools	Low	Average	Low
Teaching spaces – Secondary schools	Low	Average	Low
Teaching spaces – Hearing impaired	Low	Average	Low
Staff common rooms	Low	Low	Medium
Staff studies/collegiate	Low	Low	Low
Toilet/change/showers	Medium	Average	High
Swimming pools	Medium	High	High
Plant rooms	Low	High	High

Table 2: Sound insulation ratings for interfaces without pass doors (D_W dB)

Noise tolerance in receiving room (min. D_W)	Activity noise in source room			
	Low	Average	High	Very high
High	30	35	40	45
Medium	35	40	45	50
Low	40	45	50	55
Very Low	45	50	55	60

Note: Where doors are proposed between spaces consideration must be given to the placement and performance requirements of the door since ratings for doors with no acoustic treatment are not likely to exceed D_W 20 dB while standard solid core doors with full perimeter acoustic seals could achieve a rating up to D_W 30 dB.

Table 3: Impact isolation ratings for floor/ceiling between vertically separated spaces (LnT_WdB)

Noise tolerance in receiving room (min. LnT_W)	Impact generation in source room		
	Low	Medium	High
High	70	65	60
Medium	65	60	55
Low	60	55	50*
Very Low	55	50*	45*

*Where high impact generating activities are to be located above spaces with low noise tolerance, consideration should be given to the relocating of one of the spaces. Specialist advice should be sought where very high impact activities, such gymnasia, are to occur above a sensitive space.

GET IN TOUCH WITH US

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