

COMMERCIAL COLLECTION

ROAD & RAIL NOISE WALLS



MODULARWALLS®



With over 30 years manufacturing experience in composite panelling, we invented the modular wall 15 years ago. Since then, we have continued to innovate and expand our product range.

We continue to lead through innovation to produce cost-effective and acoustically proven solutions for our clients.

ModularWalls has a proven performance record across thousands of commercial noise abatement, security, privacy and architectural projects, having partnered with some of Australia's largest companies and government departments.

We are proudly Australian owned and manufactured with a reputation for quality and innovation.



WHY MODULAR WALLS?

As the leading manufacturer of cost-effective wall systems, ModularWalls can offer a solution to every challenge. Whether it be noise reduction, impact resistance, overcoming environmental hazards or difficult site access, customised design or rapid installation requirement, ModularWalls is able to deliver.





The ModularWalls advantage

A reputation for quality and innovation

As the inventor of the Modular Wall and trusted market leader, ModularWalls has delivered over 15,000 projects - some of which have been located in the harshest and most challenging climatic conditions.

Cost effective

There is a rapidly increasing trend of businesses looking to more cost-effective wall solutions that combine innovative technology with the durability of traditional materials. ModularWalls can deliver a more affordable, aesthetically superior alternative that matches traditional block or concrete solutions in durability and design life.

Strong and durable

Composite panel technology provides a panel that is strong, lightweight and will not rot, warp or corrode. Virtually maintenance-free and impact resistant, a modular wall displays amazing rigidity in any situation.

Designed and manufactured in Australia

The products are Australian designed and manufactured to strict international ISO 9001 quality standards. With 30 years proven performance, ModularWalls products are applied in a wide variety of industries and government departments both nationally and internationally.



APPROVALS AND COMPLIANCE

The EnduroMax panel range meets and exceeds all road and rail specification requirements.





QLD Department of Transport and Main Roads: MRTS15

The MRTS15 specification is known for its stringent impact & durability requirements, the toughest in Australia. During the pre-approval assessment the various EnduroMax panels were selected from the Manufacturing line and tested under supervision of independent and DTMR RPEQ Engineers in accordance with the testing procedures outlined as part of the specification. The EnduroMax panel met and exceeded all performance requirements and was granted approval by the department and listed on the approved products register for Noise Walls/Fences.



QLD Rail: Civil SR-014

Both EnduroMax and AcoustiMax panels have been approved by QR and previously utilised on numerous projects where the Civil SR-014 specification applied. Both panels comfortably exceeded the requirements of the specification.



NSW Roads & Maritime Service: R271

The EnduroMax panel was assessed against the R271 specification and comfortably exceeded the requirements. R271 has similar requirements for impact and durability to the QLD MRTS15 specification requiring detailed impact testing and documentation of results by suitably qualified engineers. AAC panels have been used for many years in NSW under this specification, however the EnduroMax panel proved to have superior impact and durability qualities when like for like tests were conducted.



VicRoads Bridge Technical Note: BTN 007/2018

Whilst VicRoads do not offer formal assessment for products, the noise walls specifications stipulated under note BTN 007/2018 set out requirements for composite panels all of which are exceeded by the EnduroMax panel.



Main Roads Western Australia: Specification 904

With no prescribed testing requirements set out in the specification, the EnduroMax test results from both RMS and QLD DTMR assessments were submitted to the Senior Bridge Engineer and Specification Custodians for assessment. All requirements were exceeded and the panel was advised to be acceptable.



Roe Highway - WA

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TECHNICAL INFORMATION

Carbon Emmissions

EnduroMax has a much smaller impact on the environment compared to precast concrete panels. ModularWalls conducted a comparative case study of the carbon footprint created by the installation of a noise wall running a distance of 1000 lineal metres.

The EnduroMax panel provided a massive 80% carbon reduction project-wide against concrete, dramatically reducing CO₂ emissions across the manufacture, transportation and installation of the panels.

The embodied CO₂ of the EnduroMax panel itself is just a third that of precast concrete noise wall panels measuring the same dimensions; this translates into savings of roughly 135.35 tonnes of embodied CO₂.

The low weight of EnduroMax, at 146kg as compared to 1440kg (for a 4 x 1.2 x 0.125m product) meant that transportation would incur only 9.58 tonnes of CO₂ emissions over a distance of 1000 kilometres, as compared to 74.52 tonnes for traditional concrete, achieving a savings of 66.9 tonnes of CO₂.

During installation, the modular design of EnduroMax also achieved major greenhouse gas reductions due to quicker and more convenient construction, with a CO₂ load of 6.3 tonnes as compared to 16.53 tonnes for precast concrete panels, or a savings of 10.05 tonnes.

In all aspects of the project, EnduroMax came out with the lowest carbon footprint. With a growing interest in sustainable and environmentally conscious opportunities, EnduroMax could assist your project in receiving that green tick of sustainability.





Princes Highway, Central Coast - NSW



Sandgate - NSW



Impact Resistance

One of the key advantages of EnduroMax is its high level of impact-resistance and durability, enabling it to successfully withstand the minor collisions and vandalism that so often affects road and rail infrastructure.

EnduroMax is approved by the Queensland Department of Transport and Main Roads, and has passed highly rigorous testing for impact resistance and strength. When Queensland engineers dropped a 4kg steel shot put ball onto the EnduroMax from a height of over 3 metres, the impact failed to leave a dent of more than 2mm, attesting to the sheer strength of the panel.

The EnduroMax panel approaches concrete in terms of durability, yet is far cheaper and easier to install because of its low weight and modular structure.

Compounded by its vandal resistant properties and is an ultra-resilient, high-performance modular noise wall panel that is designed specifically for the extreme conditions associated with road, rail and civil infrastructure environments.

The superior acoustic performance and impact resistance of the EnduroMax panel makes them ideal for the intense rigours of rail lines and highways.

Minimised Risk

Our lightweight materials offer the added benefit of minimising risk factors involved with transportation of materials and hazardous manual handling.

ModularWalls' products are packed to volume rather than weight, meaning that transportation of materials involves lighter loads and less transport vehicles on the road. This results in fewer chances for an unexpected incident to occur, such as breakdowns or accidents due to overloaded vehicles.

Additionally, the reduced weight of parts and the composite construction methodology minimise the risk of injury or material damage during installation. The chance of injury from incorrect or excessive manual handling of tradespersons onsite is far lower than on sites involving solid concrete materials, and ensures installers can work productively and efficiently, with less physical fatigue to hinder build schedules.

Design and Engineering

ModularWalls engineering designers will assist contractors in completing a project on time and on budget, using the latest and most up-to-date software programs to design and model your complete wall and footing solution.

Using leading edge structural analysis engineering software, we design and construct the most robust structures from the ground up to ensure your project is completed as cost effectively as possible.

The products are Australian designed and manufactured to strict international ISO 9001 quality standards. With over 15 years proven performance, ModularWalls products are employed in a wide variety of residential, commercial and infrastructure projects both nationally and internationally.



A large, illuminated sign for the SA Aquatic & Leisure Centre. The sign is white with blue and orange accents. At the top, there is a row of colored dots in shades of blue and orange. The text 'SA AQUATIC & LEISURE CENTRE' is prominently displayed in blue and grey. The sign is part of a modern building facade with curved panels and is illuminated from below, creating a bright glow. The background is dark, suggesting a night scene.

SA
AQUATIC
& LEISURE CENTRE



Sydney Desalination Plant - Kyeemagh, NSW

COMMERCIAL SOLUTIONS





Noise Absorption

A unique noise-abatement solution

The AcoustiSorb is a high-quality, aesthetically premium noise-absorbing wall panel custom-designed to meet some of the toughest acoustic pollution challenges in transportation and industry.

The robust, lightweight design of the AcoustiSorb makes it ideal for sound insulation purposes in noise-intensive environments such as road and rail corridors, as well as applications surrounding excessive use of loading docks, heavy machinery, HVAC units or large-scale generators.

Superior sound attenuation

The perforated aluminium face of the AcoustiSorb panel enhances the ability of the core material to absorb sound waves, enabling it to achieve an NRC rating in excess of 0.9. In addition to improving its noise abatement capability, the AcoustiSorb's pre-finished aluminium body also dramatically improves its resilience, giving it a design life of at least 50 years and removing the need for exterior rendering or finishes.

Sustainable

The cores themselves are comprised of recycled plastic waste, making the AcoustiSorb one of the most sustainable and environmentally friendly acoustic barrier systems on the market.

Customisable

The noise abatement capabilities of the product can be further improved via adjustments to the thickness of the cores, as well as the addition of acoustic planks that further raise their density. Because the panels are delivered as a modular unit, they are far easier to install than other perforated noise wall solutions that are constructed on site. Builders only need to screw the AcoustiSorb panels into ceiling or walls, or slot them in between posts, in order to create complete and effective noise barriers.

PANELS

EnduroMax[®]

Impact resistant panels

The EnduroMax is an ultra-resilient, high-performance modular noise wall panel that is designed specifically for the extreme conditions associated with road, rail and civil infrastructure environments.

The superior acoustic performance and strong fire resistance of the EnduroMax panel makes them ideal for the intense rigours of rail lines and highways.

The panel can reach 4.2 metres in width and have a density of around 30 kg per square metre, making them much lighter and more manoeuvrable than concrete walls conventionally employed to abate the noise pollution generated by transportation infrastructure.

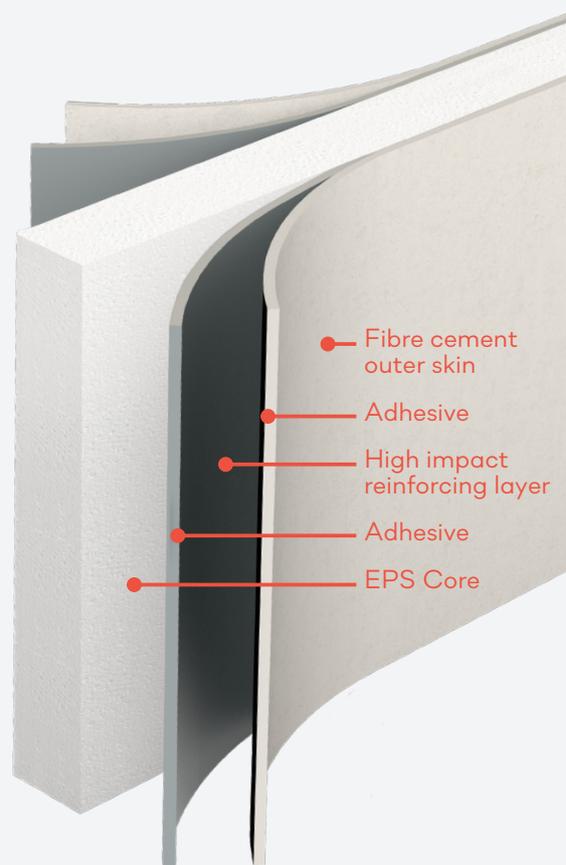
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- Roadway compliant
- Ultra-high impact resistance
- Fibre cement outer skin
- High impact reinforcing layer
- Vandal resistant
- Superior acoustic performance
- Panel span up to 4.2m

Applications

- Road and rail corridors
- Civil infrastructure environments
- High traffic areas
- Car parks



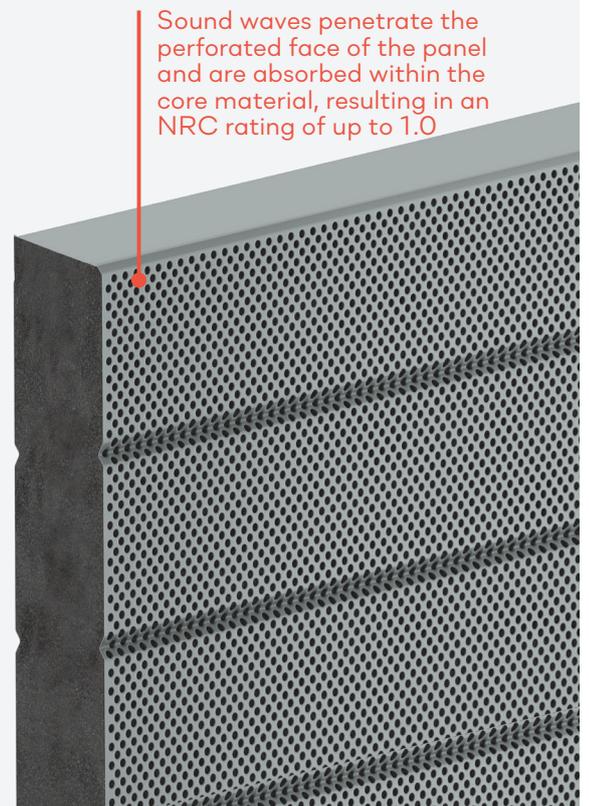
AcoustiSorb®

Sound absorbing panels

- Pre-coloured, perforated aluminium outer skin
- PET sound absorbing core
- Lightweight yet robust construction
- Panel span up to 4.0m
- Typical audible noise reduction of 30db to 40db and an NRC of up to 1.0

Applications

- Extreme acoustic attenuation requirements with tunable RW rating
- Loading docks
- Road and rail tunnels
- HVac units
- Acoustic enclosures (e.g. around generators)



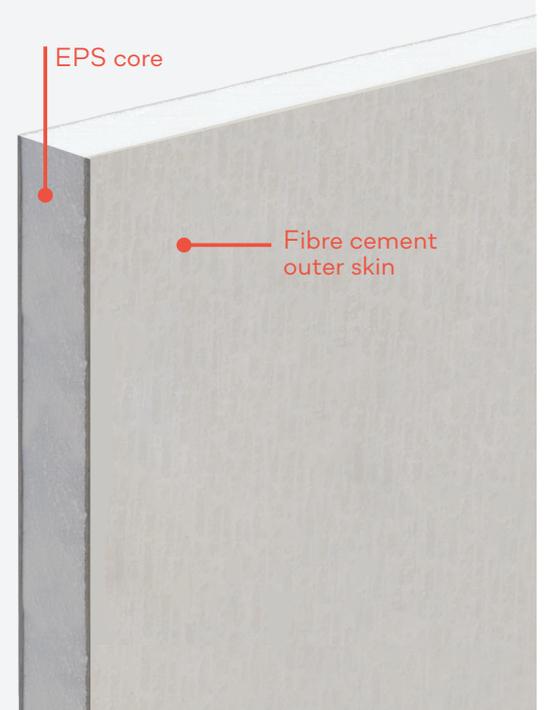
AcoustiMax®

Acoustic walls and panels

- Fibre cement/EPS composite construction
- Lightweight
- Panel spans up to 4.2m
- Custom manufactured posts or universal beams - subject to height and wind region

Applications

- Visual screening
- Security
- Boundary walls
- Acoustic fencing
- Housing developments



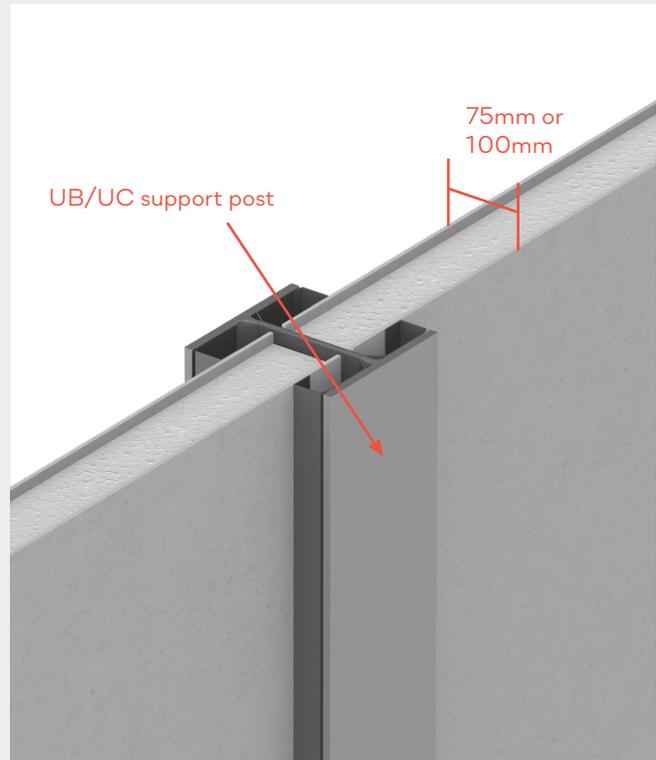
GUARDIANWALL™

OUR INFRASTRUCTURE-GRADE WALL STYLE



GuardianWall is designed to be a very aesthetically pleasing modular noise wall, offering privacy, security, noise abatement and rapid construction times compared to other industry noise wall alternatives. GuardianWall's most common application is as a noise attenuation wall, acoustic wall or fence, estate boundary or security wall.

- **High acoustic and visual benefits**
- **Wall heights up to 12m +**
- **Ideal for extended design life requirements (50 years+)**
- **Accepts all panel types**
- **Customised components and finishes**
- **Strong and durable**
- **Can retain up to 3000mm of soil (10 kPa surcharge live loads) when used with the TerraFirmXL retaining panel**

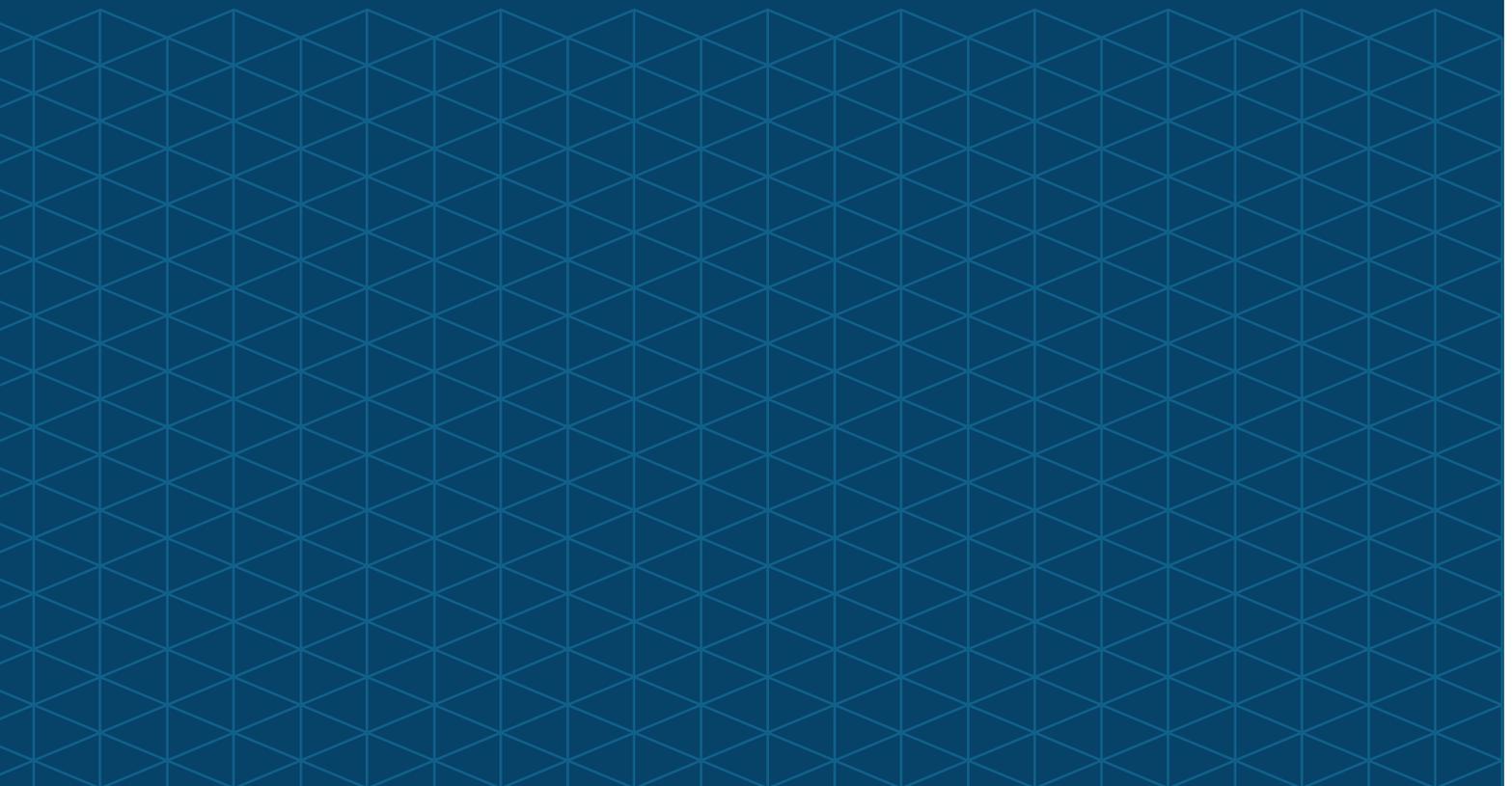


TECHNICAL SPECIFICATIONS

	Thickness	Post Type	Density	Rw	Fire Class†	Max Wall Height	Post Widths	Wind Regions
AcustiMax	75-150mm	Steel	15.49 kg/m ²	28	BAL29	12m+	2400 3000 4200	A, B & C
AcustiMax 6mm wallboard (non-compressed)	75-150mm	Steel	22.00 kg/m ²	29	BAL40	12m+	2400 3000	A, B & C
AcustiMax 9mm wallboard (non-compressed)	75-150mm	Steel	30.71 kg/m ²	30	BAL40	12m+	2400 3000	A, B & C
EnduroMax impact panel	75-150mm	Steel	30.50 kg/m ²	34	BAL29	12m+	2400 3000 4200	A, B & C
AcustiSorb sound absorbing panel	75-100mm	Steel	14.32 kg/m ²	29-34 (NRC 0.9 typical)	BAL40	12m+	2400 3000 4000	A, B & C



CASE STUDIES



EnduroMax[®]





Case Study 1

CAPTAIN COOK DRIVE, CARINGBAH NSW

Project Summary

- Sound barrier required to protect local residents from increasing semi-trailer traffic
- Demanded high levels of consultation between public services and local community
- Final design showcased EnduroMax barrier with custom engineered foundations

Background

ModularWalls was approached during the design stage to design and construct a noise wall that protected local residents from the ever-increasing traffic from residential developments within Shark Park, as well as regular semi-trailer activity to Kurnell and the desalination plant.

Solution

This project demanded high levels of consultation and synergy between public services and the local community to reach the final proposed solution.

Designing custom-engineered foundation solutions around underground high-pressure gas, water and sewer services required multiple meetings with Sydney Water, Jemena Gas and ModularWalls engineers. Additional group consultations with the RMS and the local communities spanned over 2 years to ensure the proposed design was in the best interests of all parties involved.

The final design specified a 2.4m high EnduroMax noise wall, with an additional 1200mm of clear acrylic on top, allowing light to pass through whilst still blocking the traffic noise. The wall was finished with Watty! Solagard, ensuring a highly durable, quality finish for years to come.



EnduroMax[®]



Case Study 2

BRUCE HIGHWAY - COOROY, QLD

Project Summary

- Noise barrier required to shield residential community along the busy Bruce Highway
- Uneven and unstable terrain added building complexities
- GuardianWall solution with EnduroMax impact resistant panels exceeded the QLD Department of Transport and Main Roads requirements (MRTS 15)

Background

This master-planned community in the Queensland town of Cooroy is situated adjacent to the Bruce Highway – the largest carrier of traffic in the Sunshine State. Its roadside location necessitated the erection of a highly effective noise barrier in order to insulate residents of the development from the constant drone of the highway. In addition to acoustic properties, the wall also had to satisfy the requirements of a civil infrastructure with impact resistant abilities. Installation itself posed a challenge given that the terrain of the development is not flat or level, and the noise barrier itself is situated on top of a sloping landscape mound.

Solution

The client opted to use the GuardianWall in combination with our EnduroMax panel to create a 300 metre long noise barrier that fully satisfies civil infrastructure requirements as well as protects residents from the traffic noise of the highway.

The EnduroMax panel, an impact resistant product which is approved by the Queensland Department of Transport and Main Roads, enhanced the durability of the wall by enabling it to better withstand any bumps or flying debris. The lightweight, modular nature of the product greatly facilitated the installation of the noise barrier, particularly given the variable terrain of the development.



AcoustiSorb®



Case Study 3

COLES - ASHMORE, QLD

Project Summary

- Acoustic solution required to protect residential neighbours from two separate noise sources
- Visual appeal a priority due to upcoming Commonwealth Games
- EnduroMax and AcoustiSorb combined in superior, customised solution

Background

The Coles Benowa Village Shopping Centre was developed as one part of major Gold Coast infrastructure changes and created a new urban heart, including Coles and 13 specialty stores. As with any development, there was

a responsibility to neighbouring residents with regards to acoustic abatement solutions. Coles Group Property were required by Council to provide an acoustically rated screen alongside the acceleration lane shielding neighbouring residents from traffic noise. In addition, a custom designed acoustic solution needed to shield residents in adjoining properties from the noise of a highly patronised Coles loading dock that operates late into the evening. Given the region was on show to the world whilst the Commonwealth countries toured the area, any acoustic barrier had to be of superior aesthetic quality.

Solution

It was a combination of two different noise abatement products that provided the perfect solution. For the Ashmore Road Acceleration Lane, 190 metres of GuardianWall standing 3 metres high deemed most suitable. When incorporated with AcoustiMax75 panels a noise reduction of 28Rw is comfortably achieved and ensured sufficient noise attenuation for neighbouring residents. The customised design, including a dynamic colour scheme of pre-coloured panels, meant that no painting post-installation was required and allowed for a faster and more cost effective installation.

A superior noise absorption solution was required for the Coles Loading Dock. ModularWalls' sound absorbing composite wall panel, AcoustiSorb, provided the perfect solution, with each panel's perforated face absorbing sound waves within its core material, resulting in an NRC rating > 0.9.



EnduroMax[®]



Case Study 4

BALLINA BYPASS (PACIFIC HIGHWAY) - NSW

Project Summary

- To NSW RMS R271 specification
- Acoustic and security barrier for a new bypass
- Had to be able to withstand an axe and hammer attack without penetration (site specific specification)

Background

A newly constructed bypass in Northern NSW required a dual-purpose wall that provided houses backing onto it with a high level of noise attenuation as well as a barrier to stop pedestrians wandering onto or near the road.

The wall was to be 2km long at 2.1m tall. Special consideration and design work had to be undertaken where the wall crossed culverts and bridges. Access to the line of the wall was very tight in places and heavy machinery wasn't allowed on the new road surface.

The completion was on a very tight timeline and had to be finished and painted in time for the road opening so the speed of supply along with the lightweight nature of the EnduroMax panels was a perfect match.

Solution

Modular Walls constructed a 2km long noise wall using our EnduroMax (R271) compliant panels. The lightweight nature of the panels meant they could be installed in most cases with only a hiab truck, negating the need for heavy machinery on the road surface as well as being able to navigate into tight spaces. The installation timeline was comfortably met and the road opened without delay.





MODULARWALLS®

15,000 SUCCESS STORIES AND COUNTING...

modularwalls.com.au

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