Hospitals

SPEEDPANEL
FIRE AND ACOUSTIC RATED WALL SYSTEMS

Speedpanel® are an Australian owned and operated company which manufactures and markets cutting edge fire and acoustic rated wall systems.

Invented in Australia; the lightweight composition, ease of installation and superior fire and acoustic performance of Speedpanel has seen its broad acceptance throughout the building industry.

The innovative "click together" technology makes Speedpanel Systems a fast and easy method to construct walls in various building applications. Our systems replace traditional methods of partition systems because they save time and eliminate unnecessary costs to your projects.

Our team has many years of experience in the construction industry. We combine an eye for innovation with practical real world knowledge of the realities faced by builders, contractors, architects and engineers. We work proactively to develop the right solution for your project and are determined to make it a success.

Product development is one of our key passions. Our systems are tested at independent laboratories constructed as they would be on-site, ensuring that you can rest easy knowing that your building is safe and sound.

We are proud of our green initiatives and dedication to sustainable practices. Whether it be creating products that use recycled components, developing construction systems that reduce wastage, or refining manufacturing practices; we maintain an eco-friendly ethos.

At Speedpanel, our purpose is simple; combine high end service with practical solutions and certified quality systems that will add value to your project.

We add value to your project.

Save time.

- "Click together" technology means fast installation and no specialist trades due to its simplicity
- Speedpanel is made-to-measure, reducing cutting time and costs on site
- Lightweight material decreases the chance of workplace injury
- Removal of wet, messy materials makes for cleaner work areas that can be occupied by multiple trades

Save money.

- Weather resistant material means high wind loading capabilities, so you can install sooner
- Lightweight composition and large spans result in less structural members and lighter footings
- No need for slow, expensive scaffolding
- Reduce costly structures including lintels

Improve performance.

- Ensure peace of mind knowing Speedpanel products are thoroughly certified by independent testing bodies
- Superior fire and acoustic performance will ensure you meet and exceed building code requirements

Build sustainably.

- Durable up to 100 years in certain environments
- Easily dismantle and re-use Speedpanel several times during its lifespan
- Made-to-measure means heavily reduced wastage
- Speedpanel components are 100% recyclable
- Speedpanel is manufactured from 29.5% recycled materials
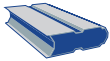
SPEEDPANEL BENEFITS

ACOUSTIC RATED
Speedpanel Systems are tested and certified to meet or exceed certain BCA standards for sound piece of mind.

SUSTAINABLE
Made from 29.5% recycled materials, Speedpanel can be dismantled, reused, and is 100% recyclable.

CUSTOM LENGTHS AND COLOURS
We can manufacture or cut to length custom sizes, reducing on site labour, and utilise the full colour steel range for pleasing aesthetics.

LIGHTWEIGHT
Speedpanel product range begins at 7.5kg/lm. The primary materials used in composition of Speedpanel include aerated cement and light gauge steel.

FIRE RATED
Speedpanel Systems are tested and certified, and may provide up to a -/240/240 FRL.

100 YEAR LIFESPAN
Installed in appropriate conditions, Speedpanel can last up to 100 years from date of manufacture.

TONGUE AND GROOVE SIMPLICITY
"Click together" technology which allows simple and fast construction to reduce your critical path.

ZERO WET TRADES
We don't need to wait for anything to dry, so we are faster and cleaner than our competitors.
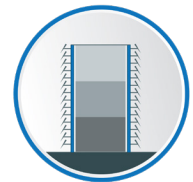
SPEEDPANEL APPLICATIONS

Shafts & Risers

Stair Wall Systems
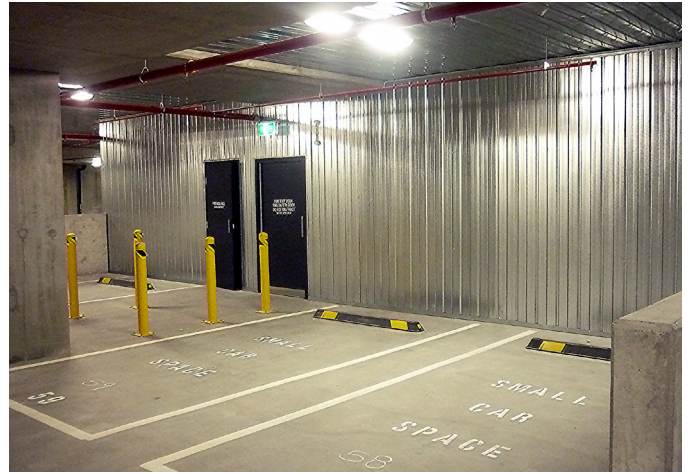
Car Parks & Plant Rooms
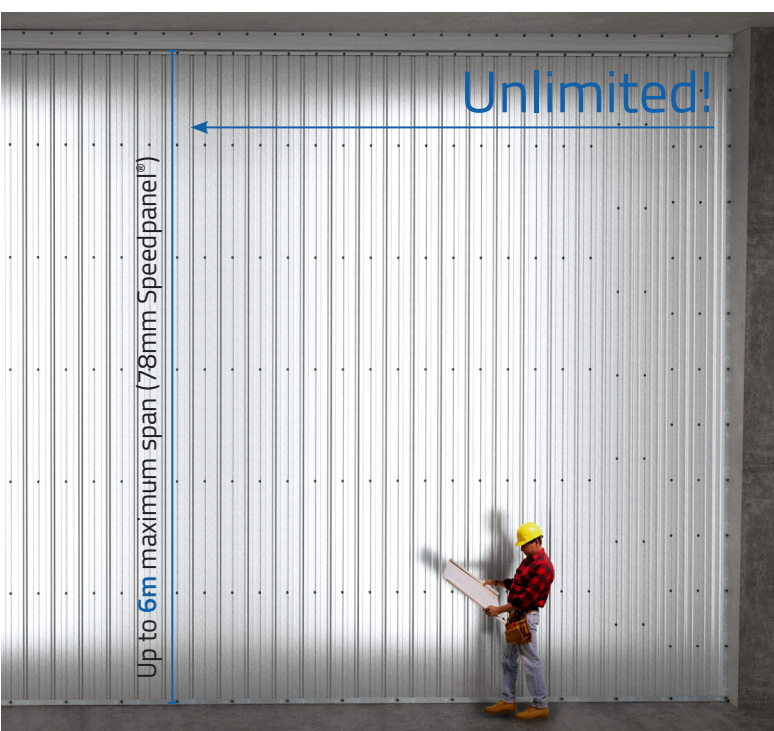
Intertenancy & Corridors

External & Facade Substrate

FOR MORE INFORMATION ON HIGH-RISE AND INFRASTRUCTURE APPLICATIONS
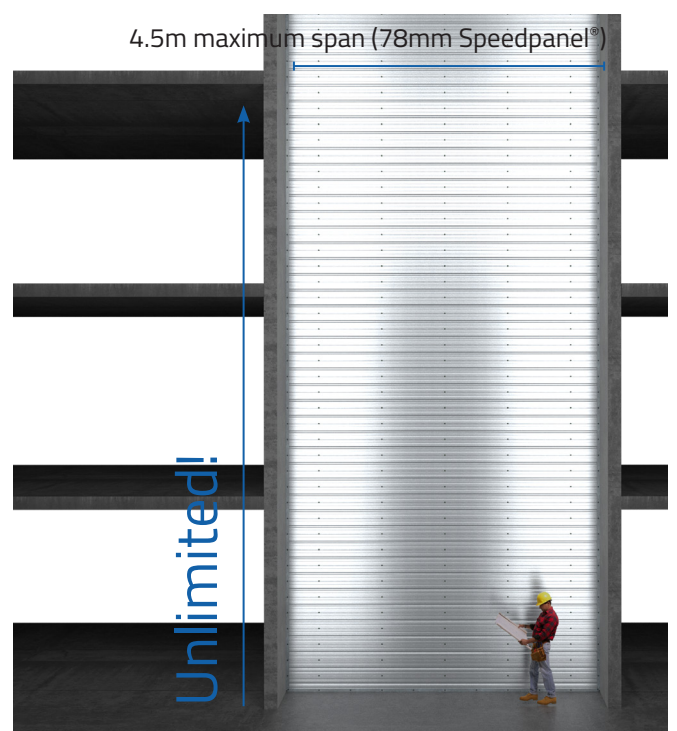CONTACT US ON +61 3 9115 6666

Joints can be sealed to pressurise walls and remove ductwork

Reduce structural requirements with large 6m vertical spans.

Up to **6m** maximum span (78mm Speedpanel®)

Unlimited!

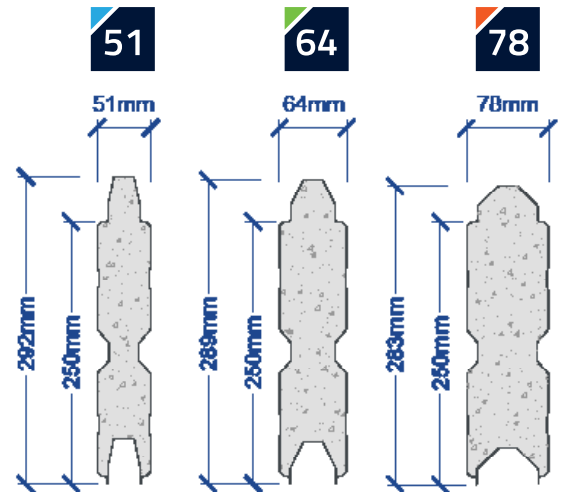4.5m maximum span (78mm Speedpanel®)

Unlimited!

Specifications

SPEEDPANEL PROPERTIES

Table 1 below illustrates Speedpanel properties for all three panel sizes. For more information regarding other Speedpanel densities please contact our office on +61 3 9115 6666.

TABLE 1: PANEL PROPERTIES	51			64			78		
Panel profile									
Density (kg/m³)	435	600	750	435	600	750	435	600	750
Weight per lm (kg)	7.7	9.6	11.3	9.1	11.5	13.7	10.6	13.6	16.3
Weight per m² (kg)	30.8	38.4	45.3	36.5	46.2	55.1	42.6	54.6	65.5
Shell material	0.4 BMT galvanised steel								
Core material	Lightweight cement								

SPEEDPANEL FRL AND ASSOCIATED SPANS - WALL SYSTEMS

Table 2 below illustrates Speedpanel FRL and associated spans in Speedpanel Wall Systems. Please read these tables in conjunction with the relevant brochure and fire assessment for each specific system.

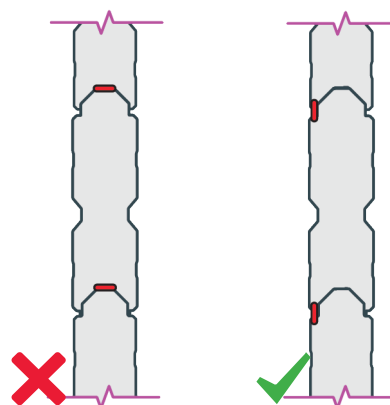| TABLE 2: SPEEDPANEL WALL SYSTEM	51		64		78		
Panel profile							
Fire rating	-/60/60		-/90/90		-/120/120		
Direction of fire rating	Both Ways		Both Ways		Both Ways		
Panel orientation	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal — All other applications	Horizontal — Scissor Stair application only
Max. span between structural connections	5.0m	3.0m	5.0m	3.0m	6.0m	4.5m	5.0m
Max. wall length (Single span)	Unlimited	3.0m	Unlimited	3.0m	Unlimited	4.5m	5.0m
Max. wall height (Single span)	5.0m	5.0m	5.0m	5.0m	6.0m	Unlimited	Unlimited
Max. wall length (Multiple structural connections)*	N/A	Unlimited	N/A	Unlimited	N/A	Unlimited	N/A
Max. wall height (Multiple structural connections)**	14.0m	N/A	14.0m	N/A	14.0m	N/A	N/A

* Intermediate fire rated structure between "Max. wall length" panel dimensions.

** Based on 600 kg/m3 density panel core. Reduced density may result in reduced height. For more information please contact our office on +61 3 9115 6666.
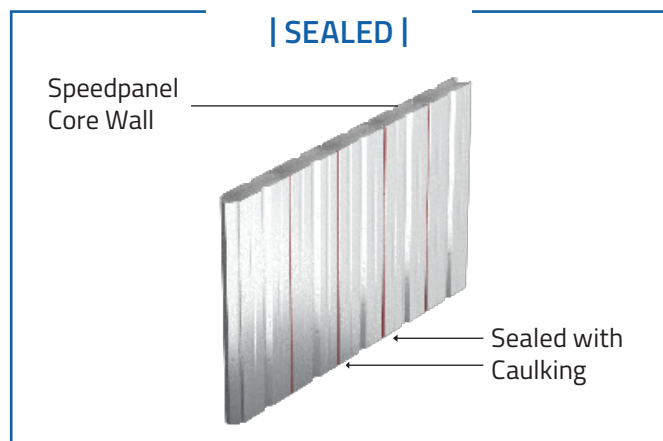
SPEEDPANEL AIR INFILTRATION DATA

Table 3 below illustrates air infiltration data for sealed and unsealed Speedpanel shafts.

TABLE 3: SPEEDPANEL AIR INFILTRATION		
Pressure (pa)	Unsealed (l/m².s)	Sealed (l/m².s)
+300	0.81	<0.1
-300	-0.85	<-0.1
+750	N/A	+0.1
-750	N/A	-0.1
+1000	N/A	+0.1
-1000	N/A	-0.2
+1500	N/A	+0.2
-1500	N/A	-0.3

SPEEDPANEL | SEALED |

Speedpanel Core Wall

Sealed with Caulking

SPEEDPANEL | UNSEALED |

Speedpanel Core Wall

SPEEDPANEL WIND LOADING DATA

Tables 4 and 5 below illustrate wind loading data for 51, 64 and 78mm Speedpanel with 435kg/m³ density.

51 64 51 & 64mm SPEEDPANEL
TABLE 4: WIND LOADING TABLE

Span (m)	ULS	L/150 (kpa)	L/200 (kpa)	L/250 (kpa)	L/300 (kpa)
2.0	7.66	7.66	6.20	4.96	4.13
2.5	4.90	4.12	3.18	2.54	2.12
3.0	3.40	2.41	1.84	1.47	1.22
3.5	2.49	1.53	1.16	0.92	0.77
4.0	1.91	1.03	0.77	0.62	0.51
4.5	1.50	0.73	0.54	0.43	0.36
5.0	1.22	0.53	0.39	0.31	0.26

78 78mm SPEEDPANEL
TABLE 5: WIND LOADING TABLE

Span (m)	ULS	L/150 (kpa)	L/200 (kpa)	L/250 (kpa)	L/300 (kpa)
2.0	10.69	10.69	9.37	8.03	7.10
2.5	6.87	6.04	4.96	4.21	3.66
3.0	4.79	3.63	2.95	2.48	2.13
3.5	3.53	2.36	1.90	1.58	1.35
4.0	2.71	1.62	1.30	1.07	0.91
4.5	2.14	1.17	0.92	0.76	0.64
5.0	1.74	0.87	0.68	0.56	0.46
5.5	1.44	0.66	0.52	0.42	0.35
6.0	1.21	0.52	0.40	0.33	0.27
6.5	1.03	0.41	0.32	0.26	0.21
7.0	0.89	0.34	0.26	0.21	0.17
8.0	0.68	0.23	0.18	0.14	0.11

ST JOHN OF GOD MIDLAND
PUBLIC & PRIVATE HOSPITALS

For this 307 public bed and 60 private bed hospital in the heart of Midland town centre, Speedpanel was used for many external walls to provide fire rating with an engineered substrate to support the facade.

Builder: Brookfield Multiplex

Performance:
- Fire Rating FRL -/120/120
- Wind loading compliant
- Window penetrations up to 4m^2

Applications:
- Shafts and Risers
- External facade substrate

NEW ROYAL
ADELAIDE HOSPITAL (nRAH)

Speedpanel was used to meet strict seismic and heave requirements incorporating shafts, risers and plant areas for this project - the largest hospital ever built in Australia, containing 800 beds and 40 operating theatres.
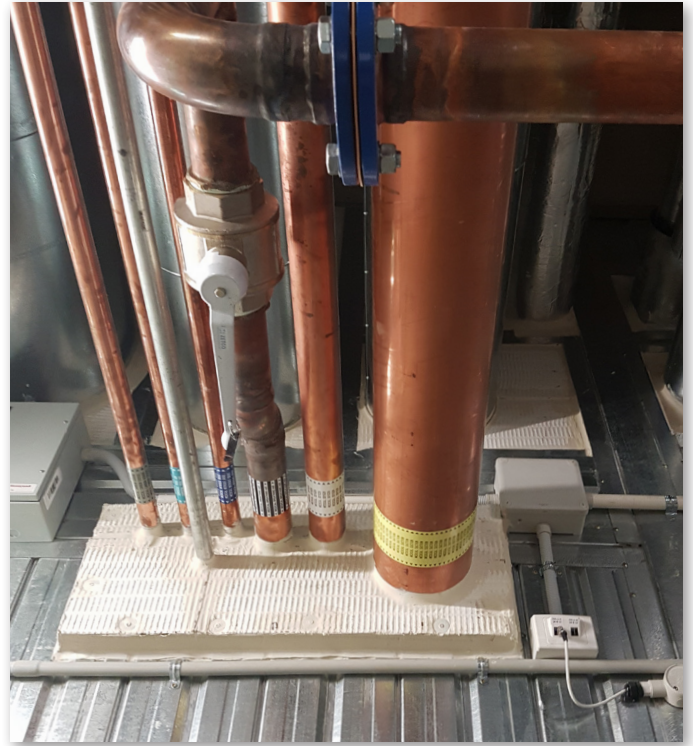
Builder: Hansen Yuncken Leightons Contractors (Joint Venture)

Performance:
- Fire ratings up to FRL -/180/180
- Seismic 1:1500 Year Earthquake | 60mm Seismic Racking
- Heave and Deflection Movement up to 75mm
- High acoustic performance gained using Speedpanel helicopter ceiling system
- Service penetrations up to 4m^2

Applications:
- Shafts and Risers
- Plant rooms

VICTORIAN COMPREHENSIVE CANCER CENTRE (VCCC)

Constructed for cancer research, treatment and care, this world class facility was built faster using Speedpanel within fire stairwells, plant rooms, shafts and other back of house areas.
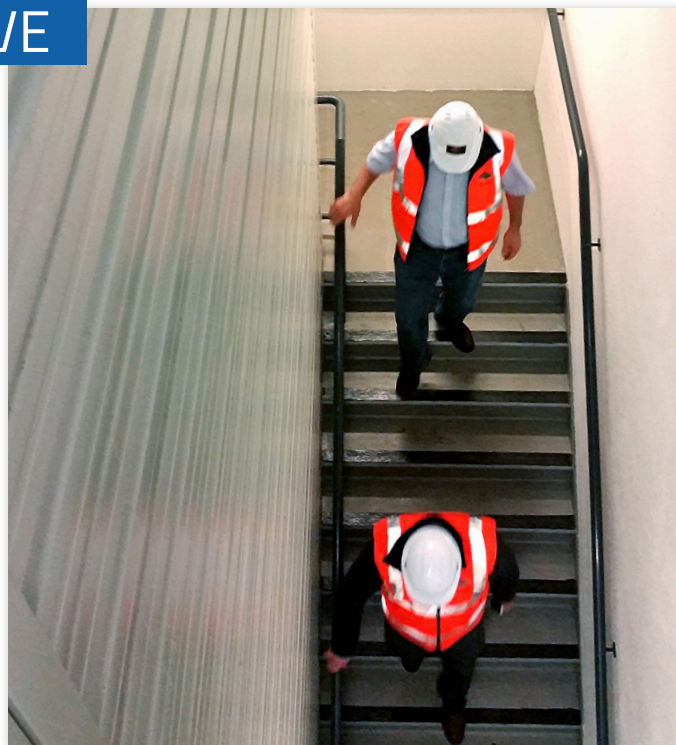
Builder: Grocon / PCL

Performance:
- Fire Ratings FRL -/120/120
- Acoustics to meet or exceed BCA
- Wind loading compliant

Applications:
- Shafts and Risers
- Plant room walls
- Fire stairwells
- Pressurised walls
- Car park walls
- Communication rooms
- Electrical cupboards

GOLD COAST & SUNSHINE COAST UNIVERSITY HOSPITALS

These dedicated teaching hospitals provide 750 and 450 patient beds respectively. Both projects have special Speedpanel features; GCUH has a Speedpanel fire-rated facade substrate, whilst the SCUH had pre-fabricated crane-in Speedpanel clad service risers.
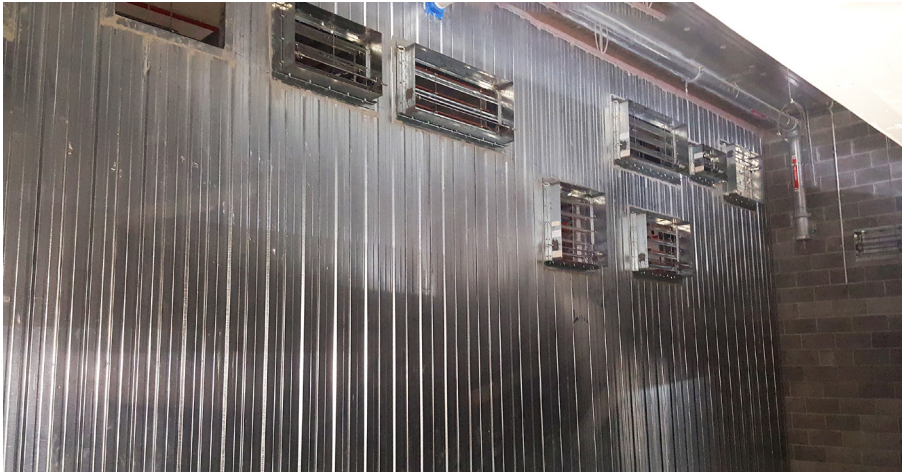
Builder: Lend Lease

Performance:
- Fire ratings up to FRL -/120/120
- Large glass atrium engineered to hang off Speedpanel wall system
- Pre-attached Speedpanel crane-in service risers

Applications:
- Shafts and Risers
- Plant room walls
- Fire stairwells
- Pressurised walls
- Facade substrate

- "Click together" technology!
- Multiple penetrations with no extra steel required
- Apertures up to 4m^2
- 6m vertical spans
- 1 x 6m Speedpanel is equivalent to 30 x 190mm blocks in height
- Up to 5x faster installation
- Stop and start walls to leave access areas free during construction

- Certified services including pipes, cables etc.
- Lightweight composition reduces footings
- No mess!
- Colour or galvanised options
- Made to order
- Up to 80% less quarry materials
- Can be re-used

Speedpanel *vs* Non-Load Bearing Blockwork

- Requires additional structural steel supports for large spans
- Sand and mortar is messy and slow
- Scaffolding is time consuming and expensive
- Apertures require planning and additional supports
- Heavy composition means large footings
- Cannot be reused easily

Read more about the benefits of Speedpanel in the new *High-Rise & Commercial Systems Guide*, available for download now.

General Penetrations

C-TRACK

C-track is to be notched out as shown 55mm into each end of the C-track. Once all C-tracks are notched, the C-tracks can be placed into an aperture and fixed at each corner diagonally and at 500mm centres around the perimeter fixing to the Speedpanel.
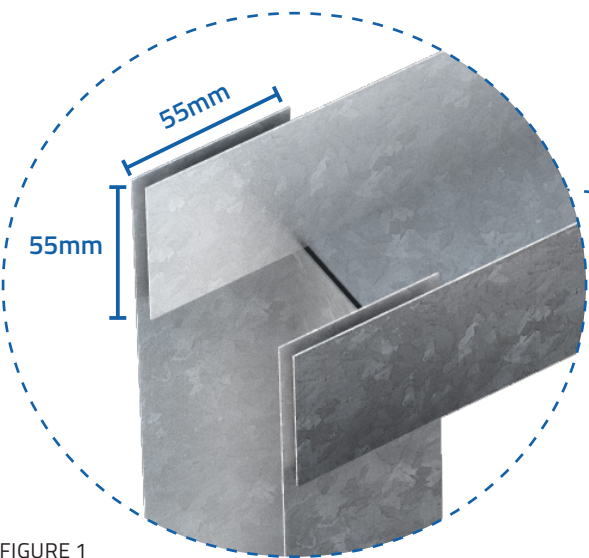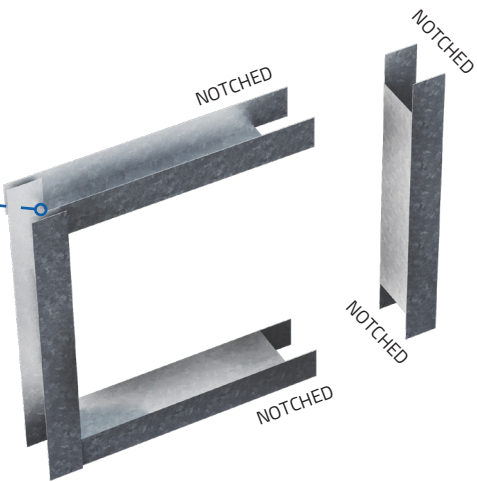
55mm

55mm

NOTCHED

NOTCHED

NOTCHED

NOTCHED

FIGURE 1

FIGURE 1A

PENETRATION CORNER FIXING

Use 10 gauge self drilling screws and fix around the perimeter as shown.
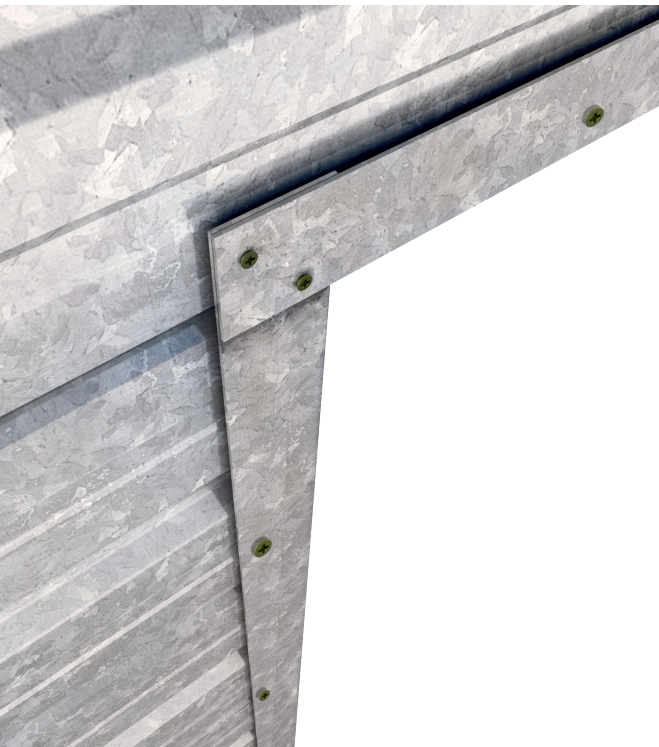
FIGURE 2

FIRE-RATED PENETRATIONS

Penetrations are easily cut directly through Speedpanel using a hole saw, reciprocating saw or diamond blade. Various brands and types of passive fire products have also been certified and tested to fire-rate many forms of service penetrations commonly required.
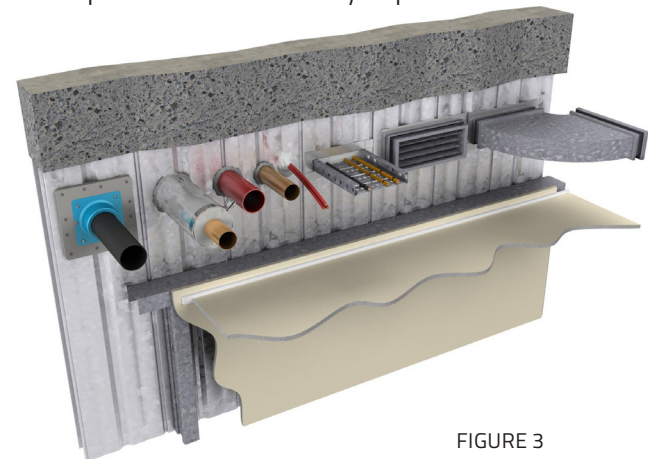
FIGURE 3

Remember: Consult fire certification assessments as each service is unique. Scan the QR code to access all Speedpanel fire assessments.

VERTICAL SPEEDPANEL SYSTEMS SINGLE PENETRATION

Vertical Speedpanel Systems can have rectangular or square penetrations up to 4m². Refer to table and illustration below for full details.
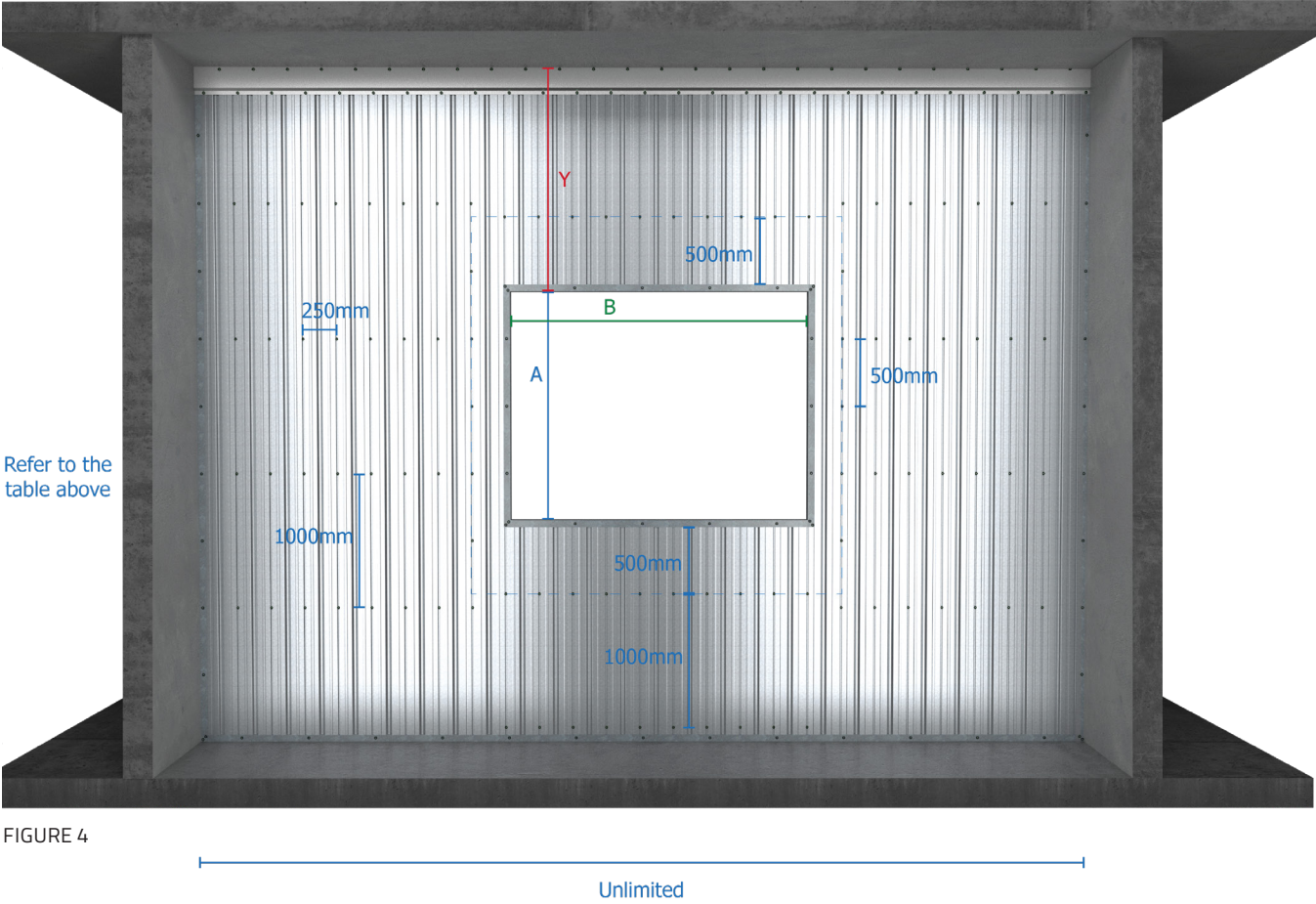

FIGURE 4

| 51 | 64 | 78 |

Wall height (mm)			Max. area A x B	Bmax (mm)	Ymax (mm)	Head detail*
3000	-	-	4m²	2000		
-	5000	-	4m²	2200	35-1000	Standard head detail required
-	-	5000	4m²	2400		
5000	-	-				
-	5000	-	4m²	2400	>1000	Suspended head detail required
-	-	6000				

For further information regarding head details please refer to the Speedpanel Installation Guide.

VERTICAL SPEEDPANEL SYSTEMS SERVICE PENETRATIONS

Various services are able to penetrate Speedpanel walls including: ducts, dampers, cable trays and existing pipes in the building. Where multiple small services run through a wall, these can be considered to be grouped into a rectangle with a total area not exceeding 4m². Refer to table and illustration below for full details.
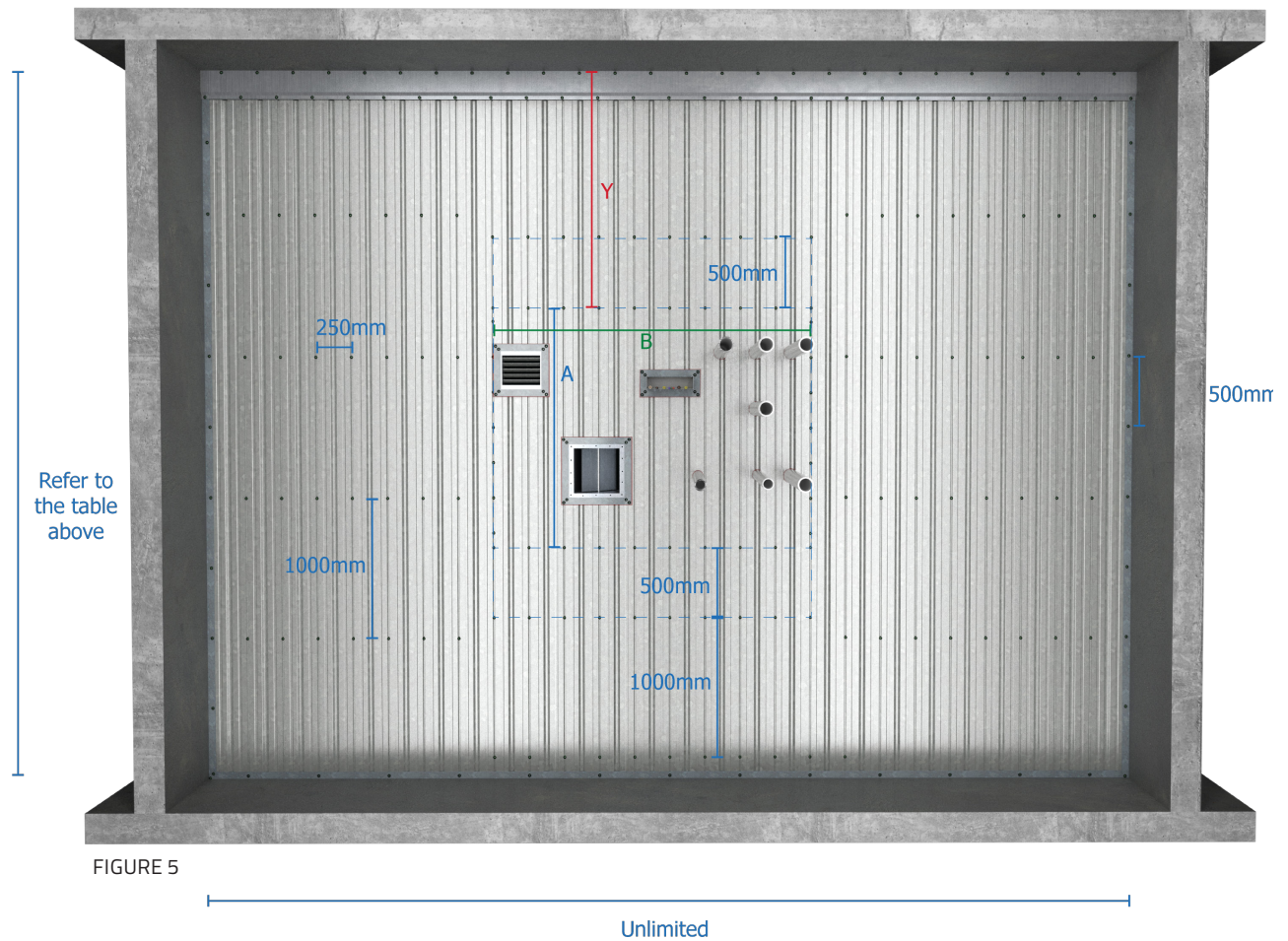

FIGURE 5

51	64	78

Wall height (mm)			Max. area A x B	Bmax (mm)	Ymax (mm)	Head detail*
3000	-	-	4m²	2000	35-1000	Standard head detail required
-	5000	-	4m²	2200		
-	-	5000	4m²	2400		
5000	-	-	4m²	2400	>1000	Suspended head detail required
-	5000	-				
-	-	6000				

For further information regarding head details please refer to the Speedpanel Installation Guide.

VERTICAL SPEEDPANEL SYSTEMS MULTIPLE PENETRATIONS

Vertical Speedpanel Systems can have multiple apertures. Refer to table and illustration below for full details.
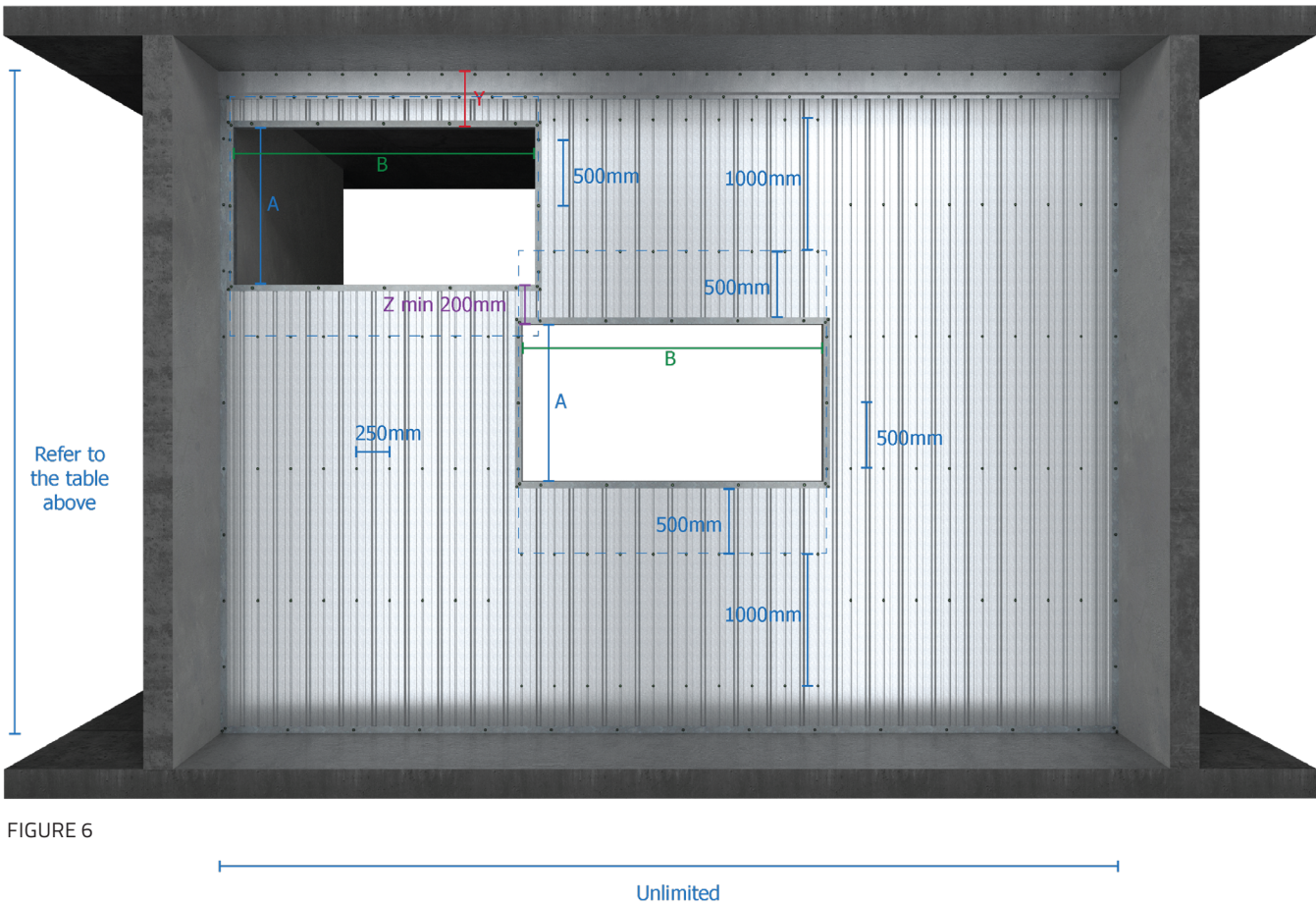

FIGURE 6

Unlimited

	Wall height (mm)		Max. area A x B	Bmax (mm)	Ymax (mm)	Zmin (mm)	Head detail*
3000	-	-	4m²	2000			Standard head detail required
-	5000	-	4m²	2200	35-1000	200	Standard head detail required
-	-	5000	4m²	2400			Standard head detail required
5000	-	-					Suspended head detail required
-	5000	-	4m²	2400	>1000	200	Suspended head detail required
-	-	6000					Suspended head detail required

For further information regarding head details please refer to the Speedpanel Installation Guide.

VERTICAL AND HORIZONTAL SPEEDPANEL SYSTEMS COMBINATION PENETRATIONS

Vertical and horizontal Speedpanel orientation can be adopted so that the wall application can have multiple apertures. Refer to table and illustration below for full details.
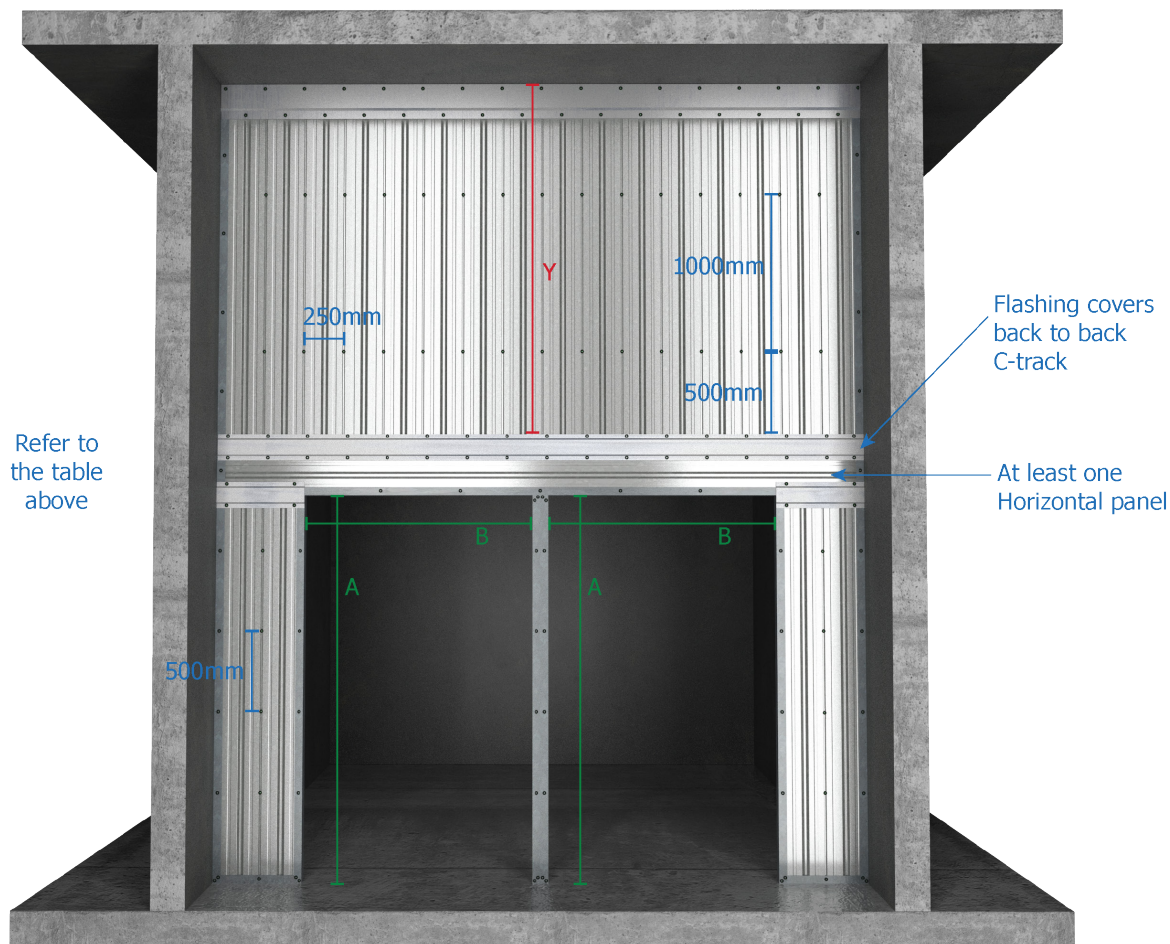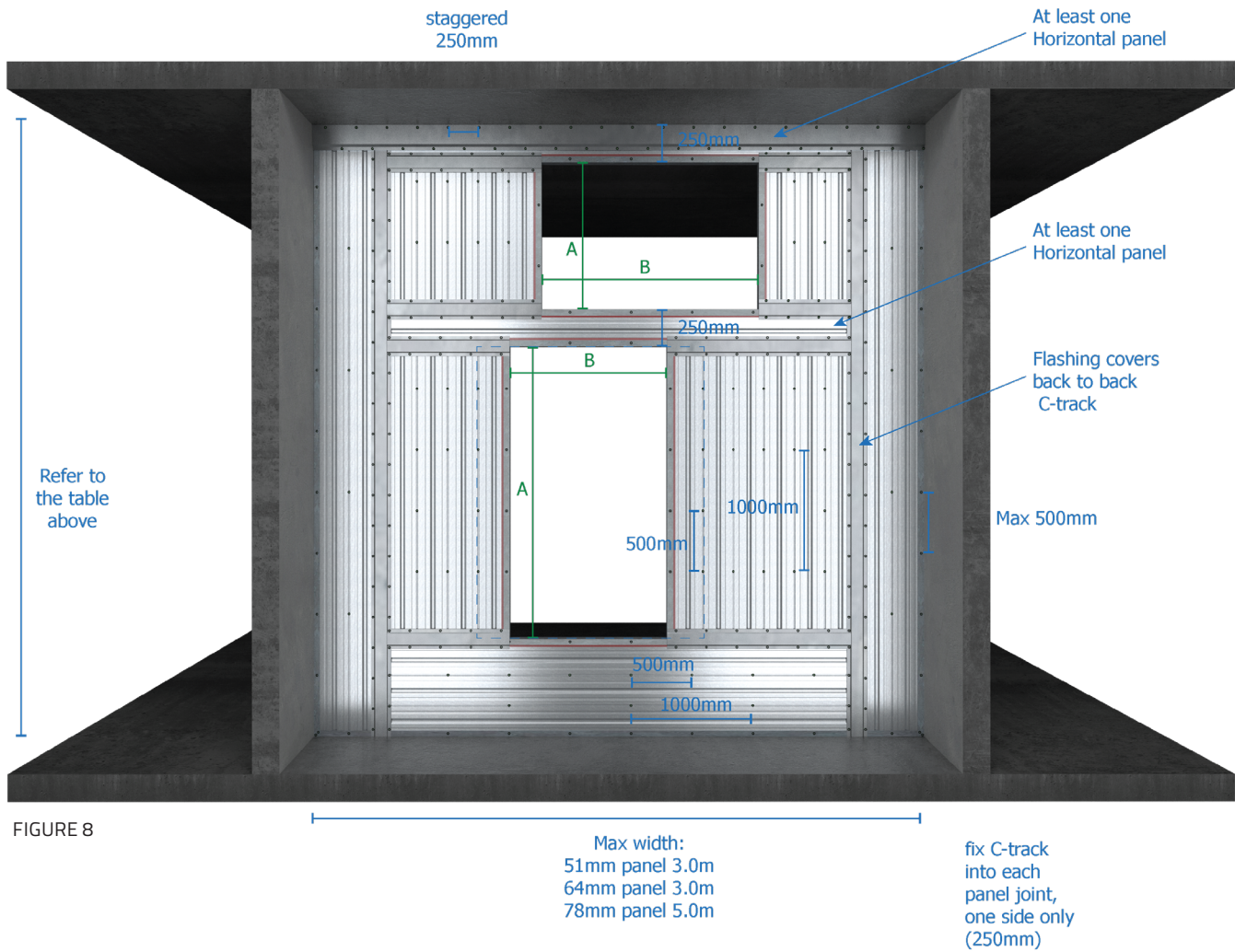

FIGURE 7

	Wall height (mm)		Max. area A x B	Bmax (mm)	Ymax (mm)	Head detail*
3000	-	-	4m²	2000		
-	5000	-	4m²	2200	35–1000	Standard head detail required
-	-	5000	4m²	2400		
5000	-	-				
-	5000	-	4m²	2400	>1000	Suspended head detail required
-	-	6000				

*For further information regarding head details please refer to the Speedpanel Installation Guide.

VERTICAL AND HORIZONTAL SPEEDPANEL SYSTEMS COMBINATION PENETRATIONS

A combination of vertical and horizontal Speedpanel Systems can be adopted so that the wall can handle multiple apertures. Refer to table and illustration below for full details.

FIGURE 8

	Wall height (mm)		Max. area A x B	Bmax (mm)	Head detail*
3000	-	-			Standard head detail required
-	5000	-			
-	-	5000	4m²	2444	
5000	-	-			Suspended head detail required
-	5000	-			
-	-	6000			

For further information regarding head details please refer to the Speedpanel Installation Guide.

Certification you can trust.

Speedpanel systems are tested and certified by NATA accredited and recognised independent laboratories including: Warringtonfire, Branz, ViPAC, RMIT and Ian Bennie & Assoiciates.

Fire

- FRL from -/60/60 to -/240/240
- Various wall configurations
- Unlimited height walls
- Unlimited length walls
- Ceilings
- Bulkheads
- Service penetrations up to 4m^2
- Various services:
  - Doors
    - Plastic pipes
    - Metal pipes
    - Cables
    - Cable trays
    - Ducts and dampers
    - Movement joints
    -

Acoustics - Rw32 up to Rw80

- Intertenancy systems
- Corridor systems
- Shaft and Riser systems
- Car park and plant rooms
- Impact protection
- Cinema quality systems
- Ceiling systems

Seismic movement

Cyclonic regions

Air infiltration for pressurised walls

Wind loading / Deflection data

Combustibility

Scan the QR code to access Speedpanel assessments.

Speedpanel has also been used throughout the following hospital projects:

New South Wales

Bega Hospital (Brookfield Hospital)

Charles Perkins Hospital (Brookfield Multiplex)

HSS Norwest - Hospital Specialist Surgery (Cockram)

Northern Beaches Hospital (CPB Contractors)

Prince of Wales Hospital (AW Edwards)

Royal North Shore Hospital (Baulderstone)

St George Hospital (Brookfield Multiplex)

Northern Territory

Palmerston Hospital (Lend Lease)

Queensland

Cairns Base Hospital (Abi Group)

Gold Coast University Hospital (Lend Lease)

Mater Hospital (Abi Group)

Queensland Children's Hospital (Abi Group)

Sunshine Coast University Hospital (Lend Lease)

Sunshine Coast Private Hospital (John Holland)

South Australia

nRAH new Royal Adelaide Hospital (Hansen Yuncken / Leightons Contractors JV)
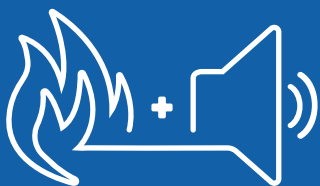
Tasmania

Royal Hobart Hospital (John Holland / Fairbrother JV)

Victoria

Bendigo Hospital (Lend Lease)

Box Hill Hospital (Baulderstone)

Cabrini Hospital (Adco Constructions Vic)

Epworth Hospital Geelong (Brookfield Multiplex)

Frankston Hospital (Cockram)

Peter Doherty Institute (Brookfield Multiplex)

Royal Children's Hospital (Lend Lease)

Royal Women's Hospital (Grocon)

VCCC - Victorian Comprehensive Cancer Centre (Grocon / PCL)

Western Australia

Fiona Stanley Hospital (Brookfield Multiplex)

St John of God Midland Public and Private Hospitals (Brookfield Multiplex)

Speedpanel Systems Pty Ltd

421 Dorset Road, Bayswater   VIC   3153

P: +61 3 9115 6666

E: enquiries@speedpanel.com.au

W: speedpanel.com.au