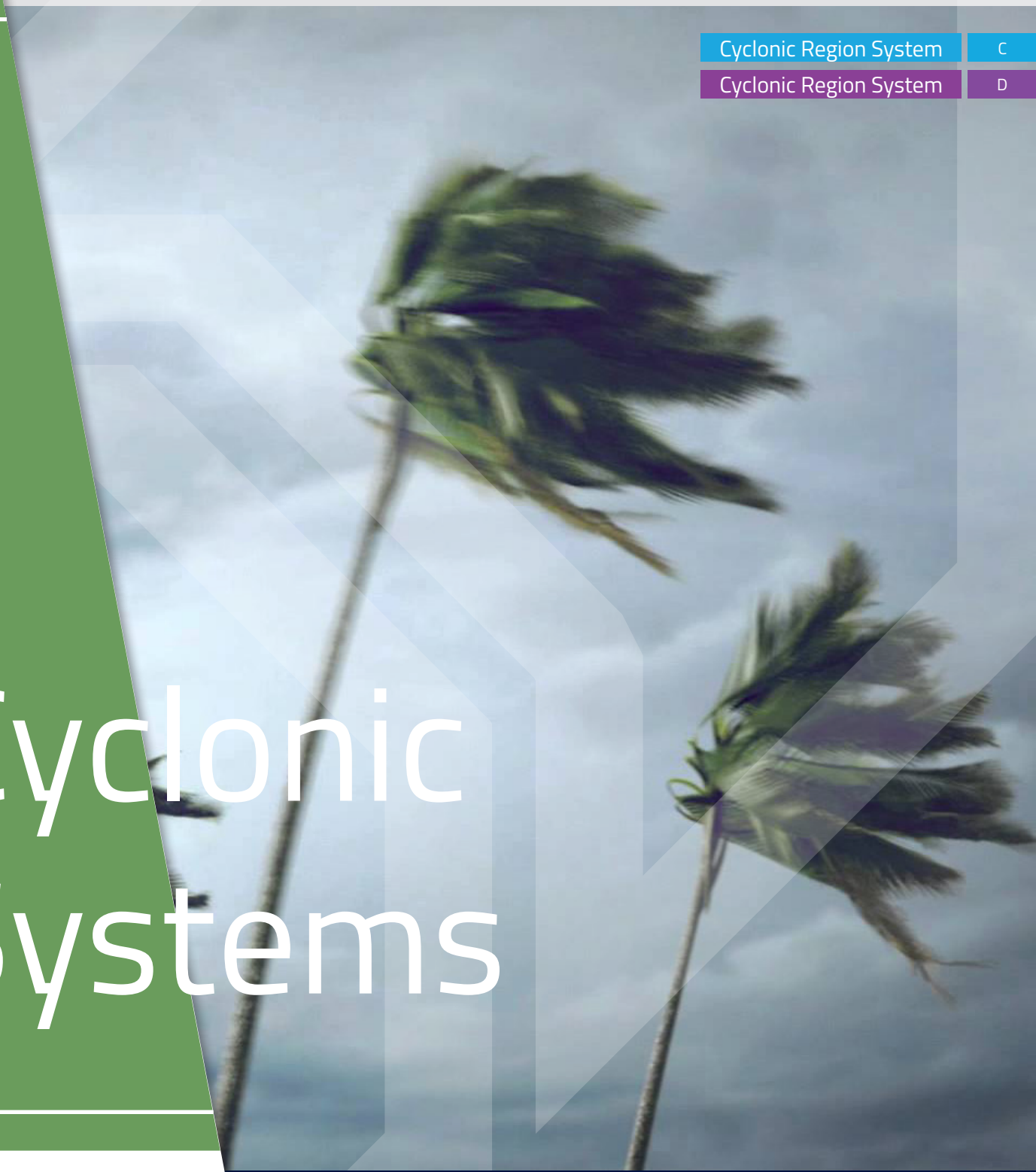
Cyclonic Region System C

Cyclonic Region System D



Cyclonic Systems

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 light weight 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 developing products that are created using 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.

- Weatherproof 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

Australian Regional Wind Speeds

WIND REGIONS IN ACCORDANCE WITH AS/NZ 1170.2:2011

The Australian and New Zealand Standard AS/NZS 1170.2 details wind actions by classifying Australia into five different regions comprising A (divided into subregions A1 to A7), W, B, C and D, (see Table A) and provides these regions with a wind speed value for each average recurrenceinterval. These regional wind speeds have been determined from an analysis of long-term observational records of daily maximum gust wind speeds.

TABLE A

Regional Wind Speed (m/s)	Regional Wind Speeds				
	Region				
	Non-Cyclonic			Cyclonic	
	Region A1-A7	Region W	Region B	Region C	Region D
V_{1}	30	34	26	23 x F_C	23 x F_D
V_{5}	32	39	28	33 x F_C	35 x F_D
V_{10}	34	41	33	39 x F_C	43 x F_D
V_{20}	37	43	38	45 x F_C	51 x F_D
V_{25}	37	43	39	47 x F_C	53 x F_D
V_{50}	39	45	44	52 x F_C	60 x F_D
V_{100}	41	47	48	56 x F_C	66 x F_D
V_{200}	43	49	52	61 x F_C	72 x F_D
V_{250}	43	49	53	62 x F_C	74 x F_D
V_{500}	45	51	57	66 x F_C	80 x F_D
$V_{1,000}$	46	53	60	70 x F_C	85 x F_D
$V_{2,000}$	48	54	63	73 x F_C	90 x F_D
$V_{2,500}$	48	55	64	74 x F_C	91 x F_D
$V_{5,000}$	50	56	67	78 x F_C	95 x F_D
$V_{10,000}$	51	58	69	81 x F_C	99 x F_D
V_R ($R \geq 5$ years)	$67-41R^{-0.1}$	$104-70R^{-0.045}$	$106-92R^{-0.1}$	F_C $(122-104R^{-0.1})$	F_D $(156-142R^{-0.1})$

Note: For ultlimate or serviceability limit states, refer to the Building Code of Australia or AS/NZS 1170.2 for design of structures.

Australian Wind Regions & Multipliers

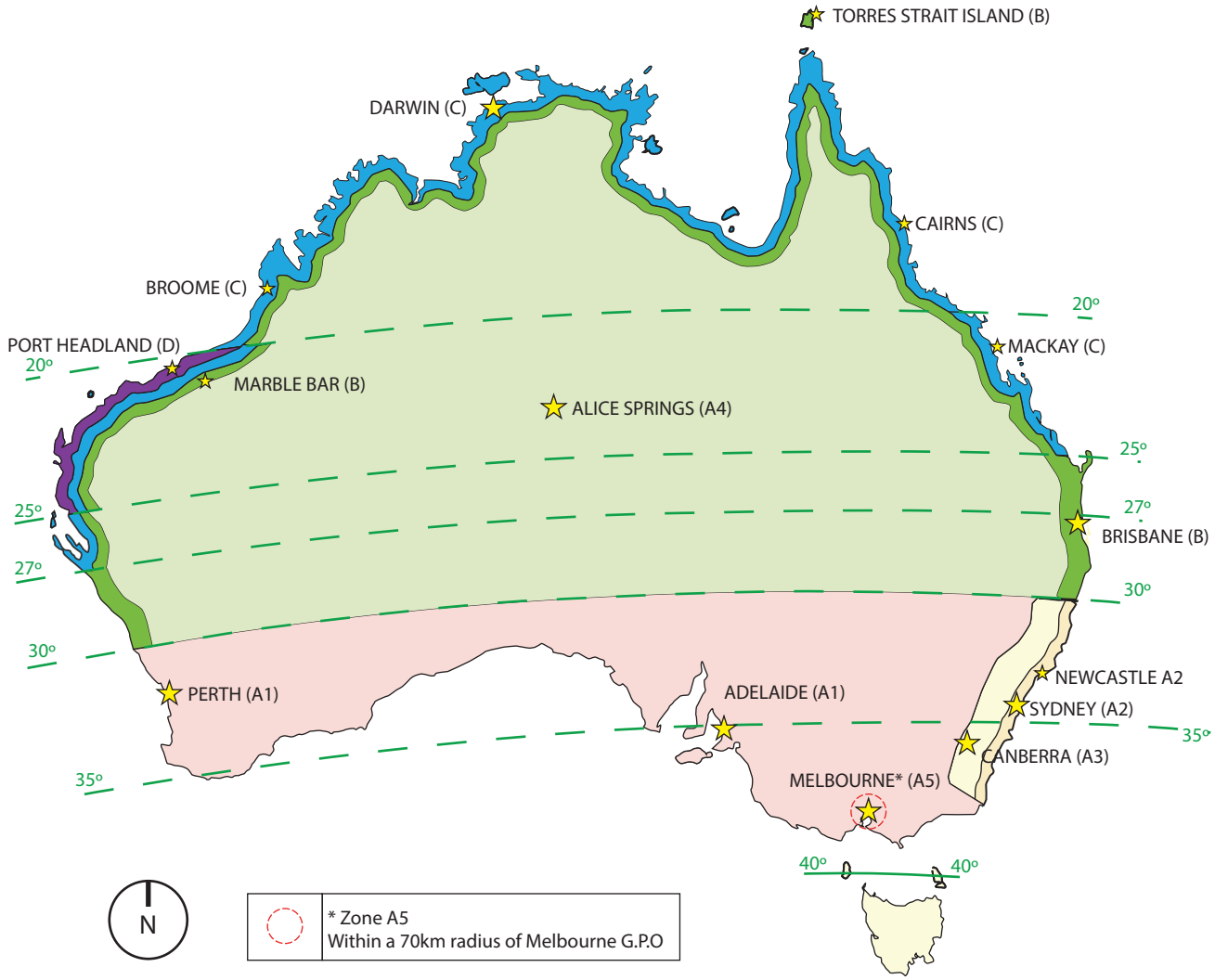


TABLE B	Wind Region Multipliers							
Cardinal Directions	Region A1	Region A2	Region A3	Region A4	Region A5	Region B	Region C	Region D
N	09.0	0.80	0.85	0.90	1.00	0.85	0.90	1.00
NW	0.80	0.80	0.80	0.85	0.90	0.95	0.90	0.95
E	0.80	0.80	0.80	0.90	0.90	1.00	0.80	0.80
SE	0.80	0.95	0.80	0.90	0.90	0.95	0.90	0.90
S	0.85	0.90	0.85	0.95	0.90	0.85	0.90	1.00
SW	0.95	0.95	0.90	0.95	0.90	0.95	0.90	1.00
W	1.00	1.00	0.85	0.95	0.90	1.00	1.00	0.90
NW	0.95	0.95	1.00	0.90	0.90	1.00	1.00	0.95
Any Direction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**For information relating to all New Zealand regions please refer to AS/NZS 1170.2*

Speedpanel 78mm System (Up to Cyclonic Region C)

APPLICATION

Speedpanel 78mm system (Cyclonic Region C) is suitable for most building applications such as an external façade element in either horizontal or vertical applications in standard or low wind regions of Australia and New Zealand up to the highest 'wind region' category as defined in AS/NZ 1170.2:2011.

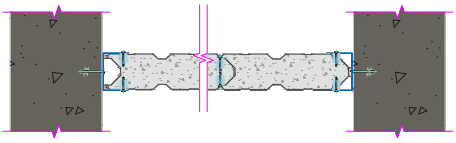


FIGURE 1.1 SYSTEM 'C' (PLAN VIEW)

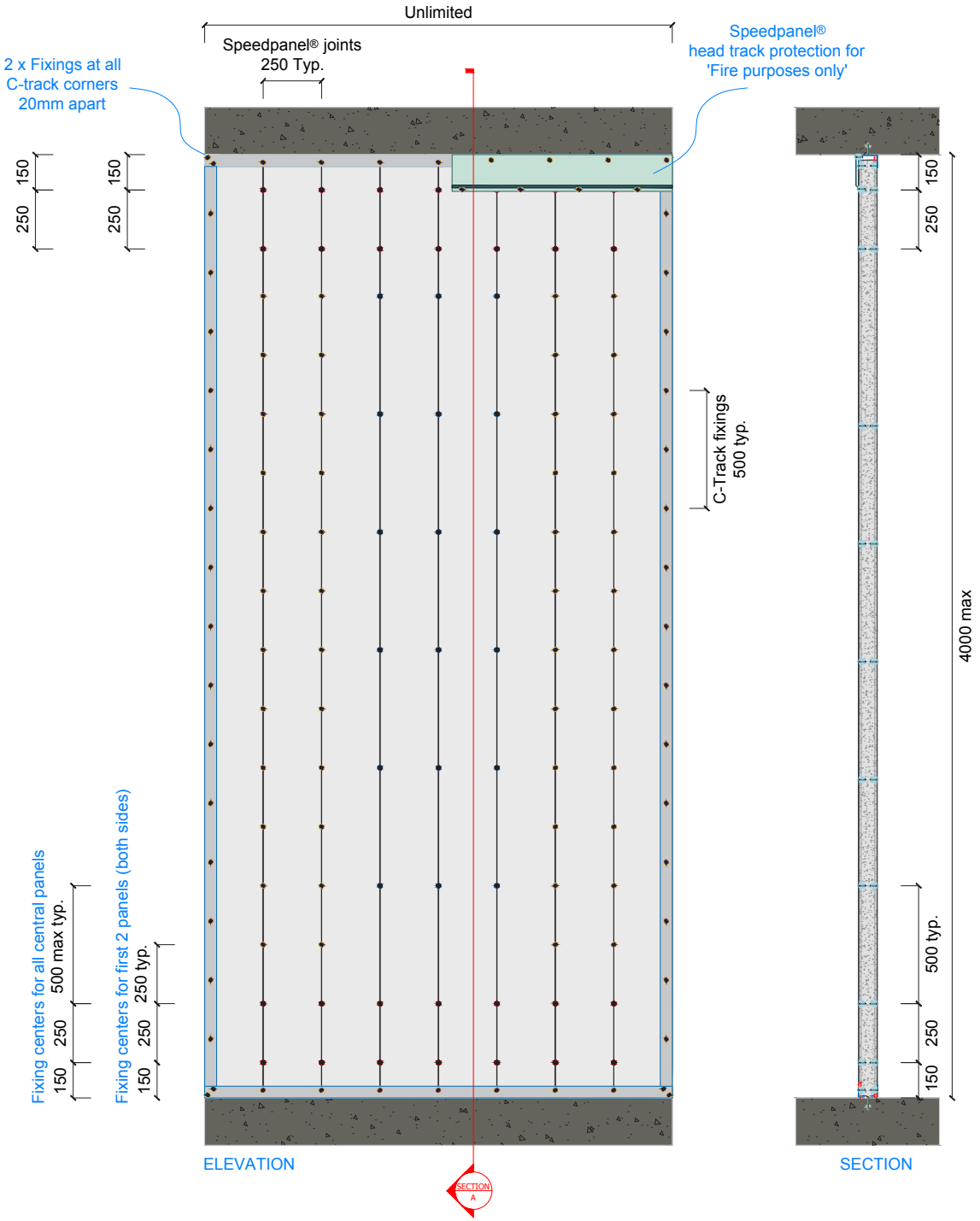


FIGURE 1.2 SYSTEM 'C' (ELEVATION & SECTION SYSTEM FIXING LOCATIONS & SPACINGS (CENTRE TO CENTRE)

Notes: Speedpanel System may be used in both vertical & horizontal orientations. Horizontal orientation may require lateral support for fire. Lateral support or additional structural steel will be required for high wind loads. Contact Speedpanel for futher information.

AUSTRALIAN WIND REGIONS

System performance in wind regions as set in AS/NZ 1170:2:2011.

TABLE 1.1	System performance in wind regions as set in AS/NZ 1170.2:2011										
Non-Cyclonic Regions									Cyclonic Regions	
A1	A2	A3	A4	A5	A6	A7	W	B	C	D
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓*

* Only up to V_{250} for Cyclonic region D

SYSTEM COMPONENTS

Table 1.2 highlights key information of each system component to assist correct system installation.

TABLE 1.2		Component Specification	Component Installation	Component Centres/Spacings
Panels		▪ Speedpanel 78mm Panels max. 4000mm long	▪ Fit each panel into the next - tongue and groove	▪ 250mm interlocked panel coverage (see Figure 1.2)
C-Track		▪ Speedpanel 78mm C-track	▪ Enclose perimeter of Speedpanel System	▪ See Figure 1.2
Option A	Fixings (Panel to Panel)	▪ Self Drilling Screws ▪ 115mm 14 gauge ▪ 14 Threads per inch	▪ Fix Into Speedpanel joints, single side fix	▪ Fixing locations and centres (see Figure 1.2)
Option B	Fixings (Panel to Panel)	▪ Self Drilling Screws 30mm 10 gauge	▪ Fix Into Speedpanel joints, fix to both sides	▪ Fixing locations and centres (see Figure 1.2)

SYSTEM SUMMARY

Table 1.3 shows a summary of the results of the James Cook University test of the Impact loading from windborne debris of the 78mm thick vertically installed Speedpanel wall panels with a density of 435kg/m³ (tested In accordance with AS/NZ 1170.2). The supporting test trials demonstrated no penetration of the simulated windborne debris through the Speedpanel wall.

TABLE 1.3	Speedpanel Cyclonic System (Region C) Performance	
Speedpanel System	Support Test Trials	Regional Wind Speed Application
▪ Speedpanel 78mm panels ▪ 435kg/m³ Minimum Density ▪ 0.4mm BMT Galvanised Steel Shell	▪ I1b-I5	▪ 34.05 m/s ▪ Regional wind speeds up to $V_{10,000}$ Region C

Speedpanel 78mm System (Up to Cyclonic Region D)

APPLICATION

Speedpanel 78mm system (Cyclonic Region D) is suitable for most building applications such as an external façade element in either horizontal or vertical applications in standard or low wind regions of Australia and New Zealand up to the highest 'wind region' category as defined in AS/NZ 1170.2:2011.

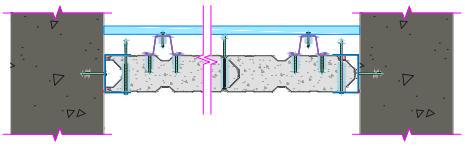


FIGURE 2.1 SYSTEM 'C' (PLAN VIEW)

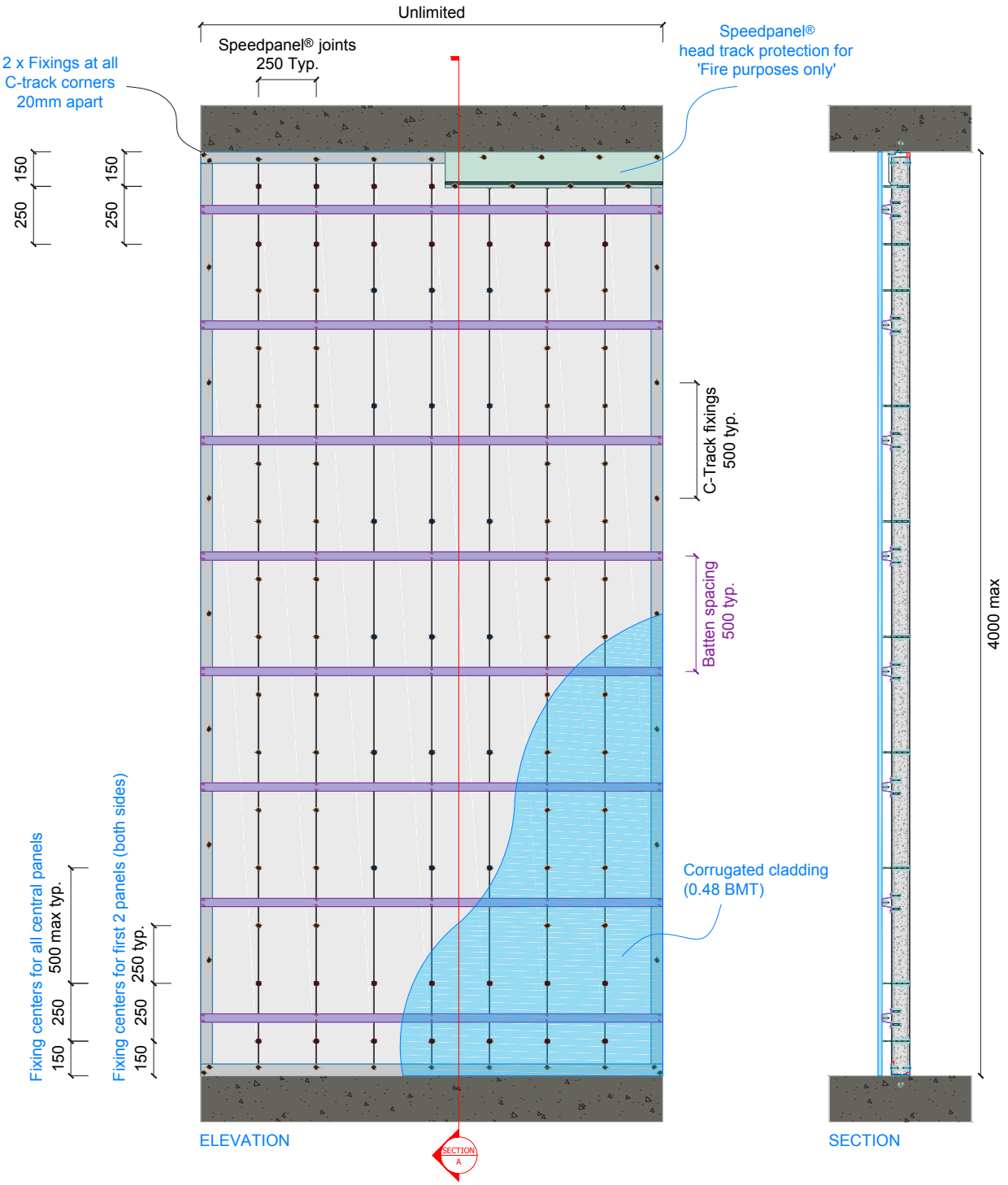


FIGURE 2.2 SYSTEM 'D' (ELEVATION & SECTION SYSTEM FIXING LOCATIONS & SPACINGS (CENTRE TO CENTRE)

**Speedpanel system may be used in both vertical & horizontal orientations.*
Notes: Horizontal orientation may require lateral support for fire. Lateral support or additional structural steel will be required for high wind loads. Contact Speedpanel for futher information: +61 3 9115 6666

AUSTRALIAN WIND REGIONS

System performance in wind regions as set in AS/NZ 1170:2:2011.

TABLE 2.1 — System performance in wind regions as set in AS/NZ 1170.2:2011

Non-Cyclonic Regions									Cyclonic Regions	
A1	A2	A3	A4	A5	A6	A7	W	B	C	D
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

SYSTEM COMPONENTS

Table 2.2 highlights key information of each system component to assist correct system installation.

TABLE 2.2		Component Specification	Component Installation	Component Centres/Spacings
Panels		▪ Speedpanel 78mm Panels max. 4000mm long	▪ Fit each Panel into the next - tongue and groove	▪ 250mm interlocked panel coverage
C-Track		▪ Speedpanel 78mm C-track	▪ Enclose perimeter of Speedpanel System	-
Battens		▪ Top Hat 75 x 40mm 0.75mm BMT	▪ Horizontally placed across Speedpanel wall	▪ 500mm centres (see Figure 2.2)
Cladding		▪ Corrugated profile 0.48BMT	▪ 'Valley fixed' into top hat battens	▪ Sheet overlap to manufacturers specification
Option A	Fixings (Panel to Panel)	▪ Self Drilling Screws 115mm 14 gauge at 14 Threads per inch	▪ Fix Into Speedpanel joints, single side fix	▪ Fixing locations and centres (see Figure 2.2)
Option B	Fixings (Panel to Panel)	▪ Self Drilling Screws 30mm 10 gauge	▪ Fix Into Speedpanel joints, fix to both sides	▪ Fixing locations and centres (see Figure 2.2)
Fixings (C-Track to Panel)		▪ Self Drilling Screws 115mm 14 gauge at 14 threads per Inch	▪ Must penetrate both Speedpanel ▪ 2x additional fixings at C-track corners diagonally positioned 20mm apart	▪ 250mm nominal centres (seee Figure 2.2)
Fixings (Batten to Panels)		▪ Self Drilling Screws 30mm 14 gauge at 10 threads per inch	▪ Fixings made into both batten feet into the Speedpanel system	▪ *500mm nominal spacing for length of batten (see Figure 2.2)
Fixings (Cladding to Battens)		▪ Self Drilling Screws 45mm 10 gauge at 16 threads per inch	▪ Fixings made into cladding through to batten	▪ *500mm nominal spacing into battens 'Valley fixed' into every 2nd valley

*Depending on the cladding system wind-load test, this value may vary, check with the cladding manufacturer for approriate windspeeds.

SYSTEM SUMMARY

Table 2.3 shows a summary of the results of the James Cook University test of the Impact loading from windborne debris of the 78mm thick vertically installed Speedpanel wall panels with a density of 435kg/m^3 (tested In accordance with AS/NZ 1170.2) The supporting test trials demonstrated no penetration of the simulated windborne debris through the Speedpanel wall.

TABLE 2.3 — Speedpanel Cyclonic System (Region D) Performance

Speedpanel System	Support Test Trials	Regional Wind Speed Application
▪ Speedpanel 78mm panels ▪ 435kg/m^3 Minimum Density ▪ 0.4mm BMT Galvanised Steel Shell ▪ 0.42mm BMT Corrugated cladding on external face of Speedpanel® with 40mm Top-hat batten.	▪ I5 & I11-I14	▪ 43.6 m/s ▪ Regional wind speeds up to $V_{10,000}$ Region D

Information Based upon Cyclonic Testing Station Report: TS1031 04 Feb 2016 James Cook University College of Science & Engineering .

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