

CYCLONIC COMPLIANCE

Solutions for Commercial and Residential Applications

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Alspec Cyclonic Solutions

Affecting the eastern, northern and western coastlines of Australia, and characterised by strong winds and large volumes of moisture, tropical cyclones place enormous stress on the building envelope. The use of windows and doors designed and manufactured to meet the highest pressure, impact and water performance requirements will minimise the possible damage that cyclones can cause.

Alspec Cyclonic Window, Door and Screening Systems have undergone extensive independent NATA accredited testing to provide assurance that they exceed all structural, water and debris impact performance requirements for cyclone regions C and D. The systems listed in the accompanying pages provide superior functionality and style along with the performance demanded by the extreme weather conditions encountered in cyclonic regions.



Look for this symbol in our range of commercial, residential and screening products to ensure they have been tested to meet and exceed Australian Standards for Cyclonic Compliance in Regions C & D.

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Hunter Evo[®]

Flush Glazed Commercial Framing System



The Hunter Evo Flush Glazed Framing System has been designed for the most challenging projects requiring structural performance. This system offers design choice of two frame widths, mullion and transom glazing options suitable for all types of modern performance and Cyclonic Impact Glass.

Cyclonic Compliance Features:

- Suitable glass thicknesses to 14mm single and up to 40mm double glazed
- Frame widths of 101.6mm and 150mm
- Mullion and transom options for designer choice
- Interaction with other Cyclonic Alspec Framing systems
- Successful Compliant Testing to AS2047 and AS1170.2 (2002 & 2011)

HUNTER EVO®

"The Hunter Evo is in itself an evolution of design, allowing architects the flexibility of design whilst exceeding the standards of Cyclonic Compliance"

Technical Specifications

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact (m/sec)	Region
101.6mm with transom	Gen II 11.4 (Stormshield)	2400	2400	3500	8900	450	30	C V1000
101.6mm with transom	Gen II 12.4 (Stormshield)	2400	2400	3500	8900	450	39	D V1000
150mm without transom	12.08 (Ultra Forza)	2400	1130	3500	8900	450	36	D V1000
150mm without transom	12.84 (Ultra Forza)	2400	1130	3500	8900	450	39	D V1000
100mm without transom	Gen II 12.4 (Stormshield)	2400	2000	3500	8900	450	39	D V1000

Flushed Glazed Framing System available in 101.6mm and 150mm frame width. Suitable glass thicknesses up to 14mm single and 40mm double glazed.



PROGLIDE®

"The ProGlide High Performance Sliding Door offers the ideal solution for Cyclonic Regions without compromising on architectural style"

ProGlide®



High Performance Commercial Sliding Door

The ProGlide High Performance Sliding Door has been designed with Australia's unique architecture and climate in mind. This design allows architects and designers the freedom to achieve large openings without the need to compromise on performance, whilst exceeding the demands of Cyclonic Regions C & D.



Cyclonic Compliance Features:

- Suitable glass thicknesses to 12.4mm single and up to 28mm double glazed
- Architecturally designed heavy duty mullions
- Unique roller system rated up to 200kg per panel
- Successful Compliant Testing to AS2047 and AS1170.2 (2002 & 2011)
- Interaction with other Cyclonic Alspec Framing Systems

Technical Specifications

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact (m/sec)	Region
XO	Gen II 12.4 (Stormshield)	2100	2000	3500	8900	600	39	D V1000

PROTILT®

*"The ProTilt High Performance
Awning / Casement Window
strikes the perfect balance
between form and function
for Cyclonic Regions"*



High Performance Awning/Casement Window

The ProTilt High Performance Awning/Casement Window is the preferred choice where superior weather performance is required. Featuring overlapping internal and external seals as well as multipoint locks, the ProTilt can be configured to cover large openings while meeting the requirements of Cyclonic Regions C & D.



Cyclonic Compliance Features:

- Suitable for glass thicknesses up to 14mm single and up to 28mm double glazed
- Multi-point locking options and proprietary winder
- Successful Compliant Testing to AS2047 and AS1170.2 (2002 & 2011)
- Interaction with other Cyclonic Alspec Framing Systems

Technical Specifications

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact (m/sec)	Region
Awning	Gen II 12.4 (Stormshield)	1200	1200	3500	8900	1000	38	D V1000

High Performance Stainless Steel Security

Alspec is pleased to announce the addition of Invisi-Maxx Screens as an integral part of the suite of products meeting the extreme compliance requirements for windborne debris impacts particularly for cyclonic regions.

The Australian Standard for Wind Loads AS1170.2 has been updated as a result of better understanding of cyclonic events both here and overseas, such as cyclone Yasi, and hurricane Katrina. The resulting impact loads from windborne debris have increased dramatically. Screening products are now more critical than ever before to prevent damage to property and injury.

AS1170.2-2011 Clause 2.5.7 Impact from Windborne Debris, where applicable, now requires building envelopes including windows and doors to be able to resist an impact based on their geographical location, the event's annual probability of exceedance, and the importance level associated with that building. For residential construction in Cyclonic Region D, the regional wind gust is 88 m/s (317km/hr) and the window system is required to resist an impact from a 4kg piece of hardwood debris travelling at a velocity of 35.2m/s (127km/hr) additionally followed by a ballistic impact from an 8mm steel ball travelling at the same speed. The system is required to keep both the hardwood and steel ball debris from passing through the building element.

Clearly, the required performance level is extreme, and Invisi-Maxx rises to this challenge. The heavy duty frame and mesh retention system are balanced in design, such that the entire screen system acts in concert to dissipate energy and prevent the debris from entering the building. The mesh retention system utilises a pressure wedge and adhesive combination, isolating dissimilar metals from each other, and eliminating the need for screws or fasteners to retain the mesh. This in turn means that the corrosion resistance of the system and the speed of manufacture are not compromised.

Residential debris protection can be achieved using 0.8mm stainless steel mesh ensuring the product's good looks and uncompromised view. For commercial applications or extreme cyclonic locations mesh is upgraded to 1.2mm. Refer to the table (on the following page) for screen and glass combinations appropriate to the region and application.



INVISI-MAXX®

*"A revolution in the Invisi-Gard EGP
Extreme Grip Protection patented design"*

Regional Wind Speed to Impact Requirements

Region C: Cyclonic Area

Importance Level	Incidence	Wind Speed (m/sec)	Wind Speed (km/h)	Impact Speed (m/s)	Invisi-Maxx Mesh Size* (mm)	Pass
1	V200	61	219.6	25.6	0.8	✓
2	V500	66	237.6	27.7	0.8	✓
3	V1000	70	252	29.4	0.8	✓
4	V2000	73	262.8	30.7	0.8	✓
5	V10000	81	291.6	34.0	0.8	✓

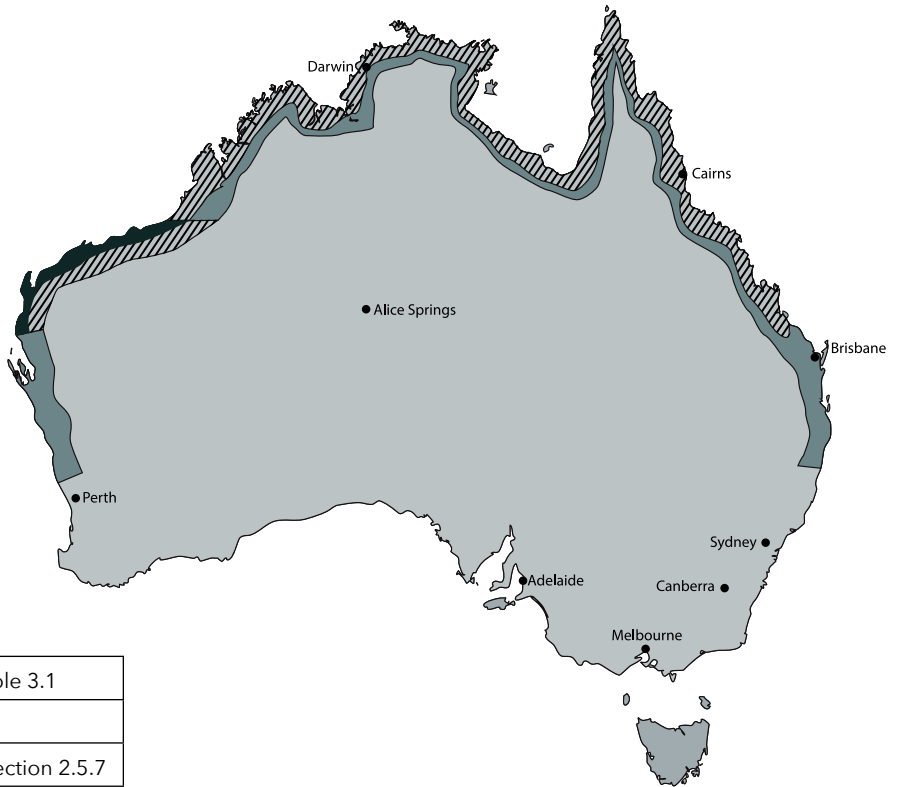
Importance Level	Incidence	Wind Speed (m/sec)	Wind Speed (km/h)	Impact Speed (m/s)	Invisi-Maxx Mesh Size* (mm)	Pass
1	V200	72	259.2	31.7	0.8	✓
2	V500	80	288	35.2	0.8	✓
3	V1000	85	306	37.4	1.2	✓
4	V2000	90	324	39.6	1.2	✓
5	V10000	99	356.4	43.6	1.2	✓

*All Invisi-Maxx screens have been tested successfully and passed. Refer to cyclonic compliance brochure for details.



For importance levels of buildings and structures refer to NCC Volume 1 B1.2a, B1.2b

Level 1	Building or structures presenting a low degree of hazard to life and other property in the case of failure. E.g: Sheds or Barns.
Level 2	Building or structures not included in importance levels 1,3 and 4. E.g: Housing, Apartments, Commercial and Industrial Buildings.
Level 3	Building or structures that are designed to contain a large number of people. E.g: Schools or Age Care Facilities
Level 4	Building or structures that are essential to post-disaster recovery or associated with hazardous facilities. E.g: Hospitals, Emergency Shelters
Level 5	Building or structures that have special functions or whose failure poses catastrophic risk to a large area or number of people. E.g: Major Dams or Extreme Hazard Facilities.



Regional Wind Speed is from AS1170.2 Section 3 table 3.1
Factors for Regions C and D AS1170 Section 3.4
Impact loading from wind borne debris AS1170.2, Section 2.5.7

	REGION A NORMAL		REGION B INTERMEDIATE		REGION C TROPICAL CYCLONE		REGION D SEVERE TROPICAL CYCLONES	
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Carinya

Classic Sliding Door

With a design pedigree established in the demanding commercial window and door market, the new Carinya residential sliding door has been created by commercial window powerhouse Alspec to be the leader in its class.

This commercial background has allowed the design and compliant testing to suit the most demanding areas of residential construction, including compliance to Cyclonic Regions C & D. Every aspect of the Carinya Classic has been thoroughly thought-out to create the ultimate residential sliding door, but at an affordable price.



Cyclonic Compliance Features:

- Suitable glass thicknesses from 10.38-18mm
- Commercial grade 5 pin locking system
- Unique roller system rated up to 160kg per panel
- Infills, end caps and weather flaps guard against air, water, grit and insect penetration
- Successful Compliant Testing to AS2047 and AS1170.2 (2002 & 2011)
- Allows integrated screen doors for security or insect protection
- Tested in XO and OXXO configuration for larger openings

Carinya Sliding Door Technical Specifications

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact (m/sec)	Region
XO	Gen II 12.4 (Stormshield)	2100	1800	3300	6000	450	39	D V2000



CARINYA CLASSIC SLIDING DOOR

"Every aspect of the Carinya Classic has been thoroughly thought-out to create the ultimate residential sliding door, but at an affordable price"

CARINYA

CLASSIC SLIDING WINDOW

"...a modern classic in the residential window market."



Carinya Classic Sliding Window



The Carinya Classic Sliding Window has been created by Alspec to be the ideal selection for regions requiring Cyclonic Compliance. As a residential window, this is suitable for all housing construction, including portable buildings and other accommodation requirements.

High Performance has been part of the Carinya design from the start, whereas others may require additional stiffeners or unsightly add-ons to meet new standards.

Carinya's commercial pedigree means the strength, finish and function associated with more expensive commercial windows are embedded in what has instantly become a modern classic in the residential window market.

50mm Cyclonic Compliance Features:

- Cost effective solution
- Unique roller system rated up to 40kg per panel
- Infills, end caps and weather flaps guard against air, water, grit and insect penetration
- Successful Compliant Testing to AS2047 and AS1170.2 (2002 & 2011)
- Allows varying build outs for protection from flying debris, depending on glass option
- Allows integrated screens for security or insect protection
- Tested in XO and XO over fixed with transom
- Options for face fix suitable for the portable building and camp accommodation markets

92mm Cyclonic Compliance Features:

- Unique roller system rated up to 160kg per panel
- Successful Compliant Testing to AS2047 and AS1170.2 (2002 & 2011)
- Allows Integrated screens for security or insect protection
- Smooth effortless sliding
- Options for face fix suitable for the portable building and camp accommodation markets
- Premium window option



Carinya 50mm Sliding Window Technical Specifications

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Build Out	Impact (m/sec)	Region
XO	8.0 (Stormshield)	2100	1690	3300	6000	450	INVISI-GARD + 75mm build out	30	C V1000
XO	8.0 (Stormshield)	2100	1690	3000	6000	450	INVISI-MAXX + CSB2	36	D V500
XO	6.38 Std Laminate	2100	1690	3000	6000	450	INVISI-MAXX Escape + CSB2	30	C V1000
XO	6.38 Std Laminate	2100	1690	3000	6000	450	INVISI-MAXX + 165mm build out	36	D V500

Carinya 92mm High Performance Sliding Window Technical Specifications

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact (m/sec)	Region
XO	12.4 (Stormshield)	1500	1900	3000	6800	450	36	D V500
XO	12.84 (Ultra Forza)	1500	1900	3000	6800	450	36	D V500

Cyclonic Testing Summary



Hunter Evo

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact Result (m/sec)	Test Report Number
150mm without transom (F)	12.08 (Ultra Forza)	2400	1130	3500	8900	450	36	AS1170: AS2047:
101.6mm with transom (F/F)	Gen II 12.4 (Stormshield)	2400	2400	3500	8900	450	39	
150mm without transom (F)	12.84 (Ultra Forza)	2400	1130	3500	8900	450	39	
101.6mm without transom (F)	Gen II 12.4 (Stormshield)	2400	2000	3500	8900	450	39	



ProGlide

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact Result (m/sec)	Test Report Number
XO	Gen II 12.4 (Stormshield)	2100	2000	3500	8900	600	39	AS1170: AS2047:



ProTilt

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact Result (m/sec)	Test Report Number
Awning	Gen II 12.4 (Stormshield)	1200	1200	3500	8900	1000	38	AS1170: AS2047:

INVISI-MAXX



Config	Buildout* (mm)	Impact Speed Result (m/sec)	Impact Test Report No.
INVISI-MAXX 0.8mm mesh	120	36	
INVISI-MAXX ESCAPE 0.8mm mesh	120	36	

Config	Buildout* (mm)	Impact Speed Result (m/sec)	Impact Test Report No.
INVISI-MAXX 1.2mm mesh	120	44	
INVISI-MAXX ESCAPE 1,2mm mesh	160 (CSB2)	44	

* Minimum buildout distance from glass to screen mesh.

Carinya Sliding Door

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact Result (m/sec)	Test Report Number
XO	Gen II 12.4 (Stormshield)	2100	1800	3300	6000	450	39	AS1170: AS2047:

Carinya Sliding Window

Carinya 50mm Sliding Window Technical Specifications

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Build Out	Impact Result (m/sec)	Test Report Number
XO	8.0 (Stormshield)	2100	1690	3300	6000	450	INVISI-GARD + 75mm build out	30	
XO	8.0 (Stormshield)	2100	1690	3000	6000	450	INVISI-MAXX + CSB2	36	
XO	6.38 Std Laminare	2100	1690	3000	6000	450	INVISI-MAXX Escape + CSB2	30	
XO	6.38 Std Laminare	2100	1690	3000	6000	450	INVISI-MAXX + 165mm build out	36	

Carinya 92mm High Performance Sliding Window Technical Specifications

Config	Glass (mm)	Max Height (mm)	Max Width (mm)	SLS (Pa)	ULS +/- (Pa)	Water (Pa)	Impact Result (m/sec)	Test Report Number
XO	12.4 (Stormshield)	1500	1900	3000	6800	450	36	
XO	12.84 (Ultra Forza)	1500	1900	3000	6800	450	36	

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