Glasshape®

Cyclone Resistant Window Solutions

Complete certified glass solutions designed for your application

www.glasshape.com

Storm Shield®
CYCLONE RESISTANT GLASS - BY GLASSHAPE

Complete Cyclone Glass Solutions

When it comes to glass, Glasshape® understand that quality, performance, durability and safety standards are paramount, especially in Cyclone Risk Areas.

Combining nearly 30 years of industry knowledge and technical capability, Glasshape® have developed unique proprietary manufacturing processes addressing the specific needs of cyclonic regions with certified impact resistant glass solutions.

At Glasshape® we take a customised approach. We work with clients to confirm their needs and establish the appropriate glass solutions. Our complete service includes consultation, CAD design, testing, certification, manufacturing and review audit. With Glasshape's tailored approach, clients are assured their glass solutions are fulfilled.

"Providing a Client centric approach, ensures worry free results."

Overview

Protecting your family, staff and property during cyclones, hurricanes and severe storm conditions means resisting excessive wind speeds and penetration from flying debris. In the event the glass is damaged by flying storm debris, windows need to remain weather tight without a breach or the buildings structural integrity could be compromised.

StormShield® uses specially formulated ultra-high grade laminate in the manufacturing process, engineered so the glass can expand and contract up to five times its normal rate before breaking providing protection from wind born debris.

E-zone® Glass is a Thermal Resistant Cyclone Rated Glass, boasting the same ultra-high grade laminate with additional thermal advantages and flood resistance.

Fully certified for use in Regions C and D in Australia and the Pacific Islands, StormShield® has been extensively tested at our IPENZ certified in-house testing facility as well as other NATA accredited testing facilities.

Flag Ship Storm Glass Projects:

- MHCC Shopping Mall: Suva Fiji Islands: 650m^2 StormShield® Glass
- ANZ Tower: Suva Fiji Islands: 600m^2 StormShield® Glass
- ICON Apartments: Port Hedland, Western Australia: 1200m^2 StormShield® Glass
- Baynton Apartments: Karratha, Western Australia: 1000m^2 StormShield® Glass
- Shreedhar Motors Building: Suva, Fiji Islands: 200m^2 StormShield® Glass
- Westpac Bank: Suva, Fiji Islands: 200m^2 StormShield® Glass
- The Denarau Yacht Club: Denarau, Fiji Islands: 200m^2 StormShield® Glass
- Townsville Apartments: Townsville Queensland, Australia: 800m^2 StormShield® Glass
- Darwin Medical Centre: Darwin, Northern Territory, Australia: 200m^2 StormShield® Glass IGU
- Lizard Island Resort: Queensland, Australia: 360m^2 StormShield® Glass

ANZ Tower - Suva, Fiji

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Cyclone Debris Impact Resistance & Wind Loading

Wind born debris is a major threat in extreme cyclone conditions. These missiles can be anything from branches to parts of other damaged buildings! If these penetrate the envelope of the building including the windows the risk of injury to occupants or damage to contents is extremely high.

In the event of a breach of the buildings envelope during a storm the likelihood of complete destruction is greatly increased. When subjected to high wind loads buildings which are adequately sealed develop a negative internal pressure which helps to counteract the wind pressures acting on the roof and walls of the building. If the building envelope is penetrated in these conditions the sudden change to a positive internal pressure can result in the failure of the roof or in the worst case the whole building structure.

Negative Internal Pressure - Windows intact, building remains structurally safe.

Positive Internal Pressure - Windows breached, structural integrity compromised.

Debris Impact Testing

StormShield® has been designed to resist the impact of flying debris without any penetration or perforation of the laminated interlayer protecting buildings and the occupants from the risk of injury or damage. This means the window isn't compromised which keeps the structural integrity of the building intact.

StormShield® has been tested by a fully accredited third party cyclone testing station and has exceeded the test described in AS/NZS1170.2:2011, clause 5.3.2. This test involved a 4kg piece of timber (100mm x 50mm cross section) projected at up to 45m/sec (162km/h).

Storm Shutters

Traditional structures have required secondary protection such as storm shutters or storm screens to meet the required impact standards. These additions obscure vision and compromise the design aesthetics.

StormShield® when installed in a certified framing system provides a complete solution which meets the demands of AS/NZS1170.2:2011 without the need of any additional protective measures.

Wind Speed, Wind Loading and Standards

Although the impact resistances of the glass used in windows and doors is critical to ensuring a building is safe during a storm, the thickness of the glass is also of equal importance. If the glass is not glazed to the correct thickness required under the AS1288 standard, the risk is the entire glass panel will deflect under wind loads to a point that it pulls completely out of the window frame. Glasshape® have online calculators that architects and engineers are able to simply input window dimensions and ULS wind loads to calculate the required minimum thickness glass to comply with the codes.

StormShield® Wind Loading Testing

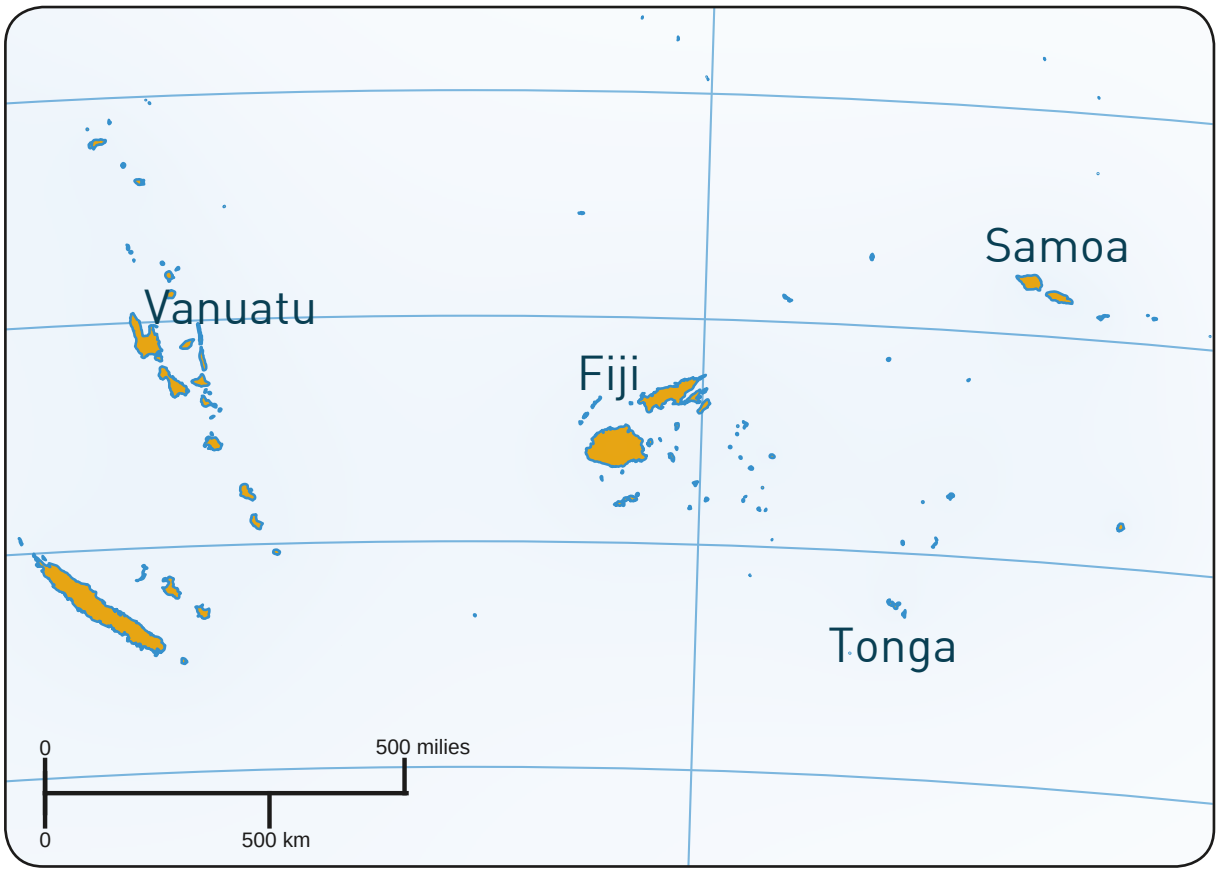
The thinnest panel in the StormShield® range (7.88mm thick) has been cyclic tested in accordance with AS4040.3 and has a rating of 5.75kPa! This equates to a wind speed of approx. 350km/hr. The 10mm StormShield® panel has a strength limit state design wind capacity of 6.74kPa (approx 380km/hr wind speeds), which is a huge result for relatively thin cyclone rated glass. While Glasshape® technicians are willing to advise on the appropriate glass specification for your projects, we recommend using specialist structural engineers with experience in cyclonic wind loadings to help with specific design for buildings in cyclone areas.

Pacific Islands Wind Speed Region

The Pacific Islands align themselves with Australian Standards and fall under Region C with wind born debris impact ratings of up to 32m/s

Region C

Cyclonic Area - The building envelope requires cyclone debris impact resistance between 28m/s and 32m/s.



Australian Wind Speed Regions

Building wind loadings and debris impact loadings are determined by the regional wind speeds specified in the AS/NZS1170.2:2011 standard. The standard has four wind regions in Australia of which regions C and D are classified as cyclonic regions where protection from wind born debris is required.

The building must be engineered to also withstand full negative internal pressure regardless of the glazing system used.

Region D

Cyclonic Area - The building envelope requires cyclone debris impact resistance between 34m/s and 44m/s.

Region C

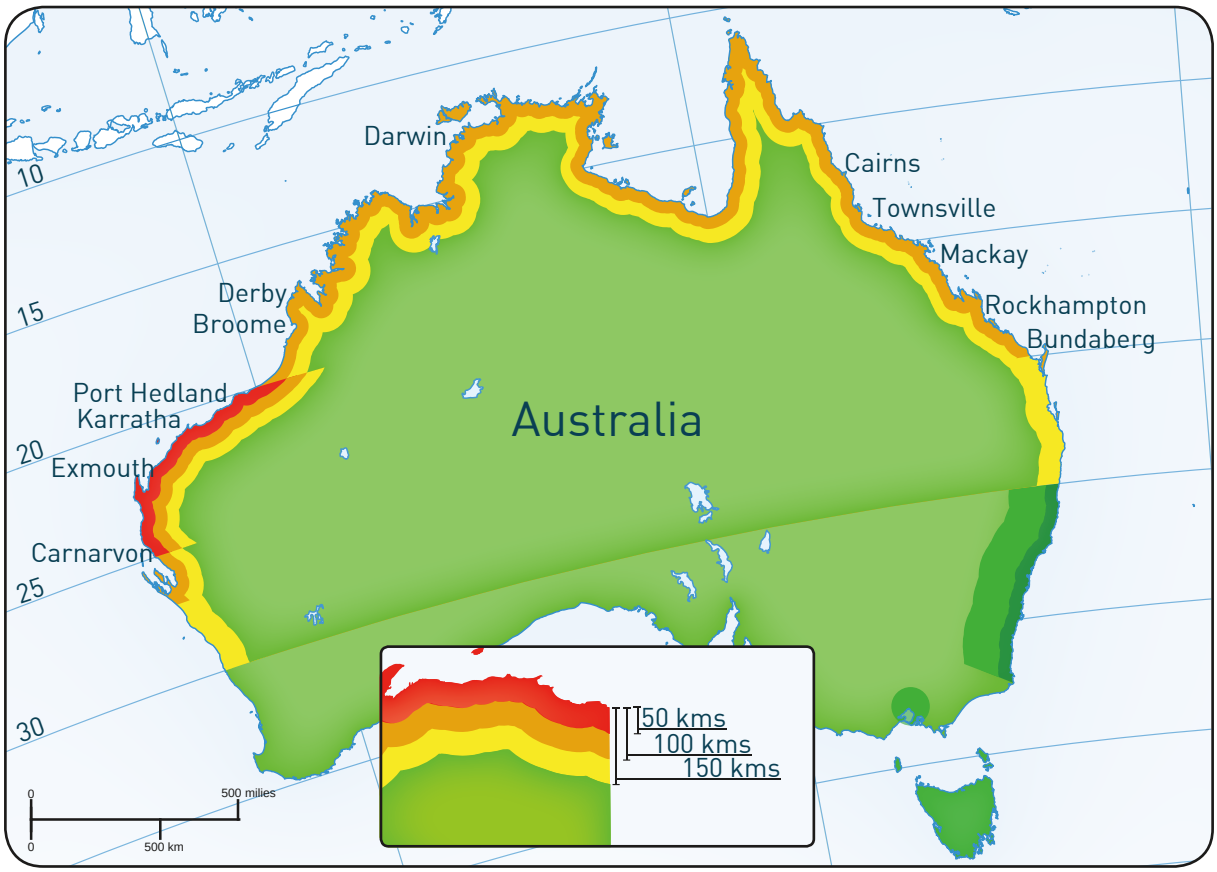
Cyclonic Area - The building envelope requires cyclone debris impact resistance between 28m/s and 32m/s.

Region B

Non-Cyclonic Area - Doesn't require specific Cyclonic rated glass.

Region A

Non-Cyclonic Area - Doesn't require specific Cyclonic rated glass.



StormShield®
CYCLONE RESISTANT GLASS - BY GLASSHAPE

Certified Cyclone Resistant Glass Solutions

Specifically developed to resist excessive wind speeds and penetration from flying debris, StormShield® is a certified debris impact resistant glass ideal for protecting your family, staff and property during cyclones.

The secret is the specially formulated ultra-high grade laminate used in the manufacturing process, which absorbs the impact of the debris without tearing or breaching the window envelope. This means even in the event the glass is damaged by flying storm debris, StormShield® remains weather-tight to protect the structural integrity of the building and ensure the safety of the occupants.

Testing & Certification

Major insurance companies and Local Shire Councils have approved StormShield® for use in North Western Australia, Queensland, Fiji and other Pacific regions.

Certified to AS/NZS1170.2:2011 (Cyclone Impact Resistance), AS4040.2:1992, AS4040.3:1992 (Static & Cyclic Wind loading) and AS/NZS2208:1996 (Safety glazing materials in buildings), StormShield® ticks all the boxes for compliance and certification.

Benefits

- Protects your family, staff and property from cyclone and hurricane winds and debris penetration
- Proven to withstand extreme test pressures of more than 12kPa, which equates to wind gusts in excess of 500km/h (10mm StormShield)
- No need for secondary protection such as storm shutters or screens, allowing excellent clear vision
- No perforation; resists impact from 4kg piece of timber 100 x 50mm at over 44mtr/sec (160km/h) travelling lengthways with no perforation
- Fully certified for use in Regions C & D in Australia and the Pacific Islands
- Excellent noise reduction
- Increased Security - impact resistant interlayer provides increased resistance to intruders

Features

- Grade A Safety Glass conforming to all Human Impact Safety requirements
- Available in many types of high performance Low E glass and tints to enhance thermal and solar performance characteristics
- Available cut to size or in stock sheets
- Range of thicknesses available enabling full compliance with wind loadings and deflection standards as in AS1288 glass selection and installation, regardless of window size

The Pearl Resort - Fiji

StormShield® Range

StormShield® is available in a range of thicknesses to satisfy wind loading and deflection requirements. The Australian standard AS1288 normally determines the minimum thickness of glass allowed in cyclonic areas.

StormShield® can be manufactured to incorporate tinted glass and high performance Low E coated glass such as Solar E and Planibel to boost thermal and solar performance characteristics. Specialty make-ups of StormShield® tints are recommended to have a Thermal Safety Assessment for the specific application.

Heat Strengthened Options

For dark tints and Low E products where an increased risk of thermal stress is present we recommend heat strengthened StormShield®.

Heat Strengthened StormShield® can also be used to reduce the glass thickness particularly in applications where extreme wind loads and large windows demand thicker glass, which can become an issue when glazing.

StormShield® Thickness Calculator

Glasshape® have an E-calculator available for your convenience, it has an AS1288 formulae embedded for a very quick assessment of the thickness required.

Login at - http://glasshape.com.au/stormshield-calculator

The Pearl Resort - Fiji

E-zone Glass®
THERMAL RESISTANT CYCLONE RATED GLASS - BY GLASSHAPE

Thermal Efficient Cyclone Rated Glass Solutions

Specifically developed for thermal performance, energy efficiency and durability, E-zone® Glass is engineered to perform in the most challenging storm conditions.

In the event the glass is damaged by flying storm debris, E-zone® Glass remains weather-tight without tearing or breaching the window envelope.

The pyrolytic process used in the manufacture of E-zone® Glass embeds invisible heat-reflective materials to the glass. This allows light to enter, but reflects much of the inbound heat, increasing comfort. Conversely in cool climates we can configure E-zone® Glass to maximize heat retention.

Additionally E-zone® Glass has been subjected to a series of hydrostatic pressure tests - taking cyclone resistant glass to a completely new level, setting yet another benchmark as an industry leader. E-zone® Glass is not only serious protection from wind and storm damage but is also flood resistant.

Benefits

- Decreased solar heat gain providing a cooler environment for improved working conditions and comfort levels
- Retains high levels of visual light transmission
- Can reduce HVAC requirements with positive impact on systems size requirements for cooling and heating
- No need for secondary protection such as storm shutters or screens, allowing excellent clear vision
- Protects your family, staff and property from cyclone and hurricane winds and debris penetration
- Customised solution with certified glass tailored for your individual project

Features

- Grade A Safety Glass conforming to all Human Impact Safety requirements
- Available in a range of high performance Low E glass and tints to enhance thermal and solar performance characteristics
- Available cut to size or in stock sheets
- Range of thicknesses available enabling full compliance with wind loadings and deflection standards as in AS1288 glass selection and installation, regardless of window size

Flood Resistance

Taking cyclone resistant glass to a completely new level, E-zone® Glass has been tested for performance in flood conditions. E-zone® Glass has been hydrostatically tested and certified for resistance against rising flood waters which are prevalent in cyclonic weather. Wind is only one factor that causes extensive damage to buildings and property throughout fierce storms. Rising flood waters up against windows (especially in a shop front) can cause extensive water damage if the window fails. E-zone® Glass is designed to handle water pressures well beyond what is normal for its thickness due to the ultra-robust laminate interlayer between the glass sheets.

Testing & Certification

Glasshape® have a policy of continuous improvement and development, and conduct an ongoing test program involving our own IPENZ certified in-house test laboratory, certified air cannon and also third party independent NATA accredited certifiers.

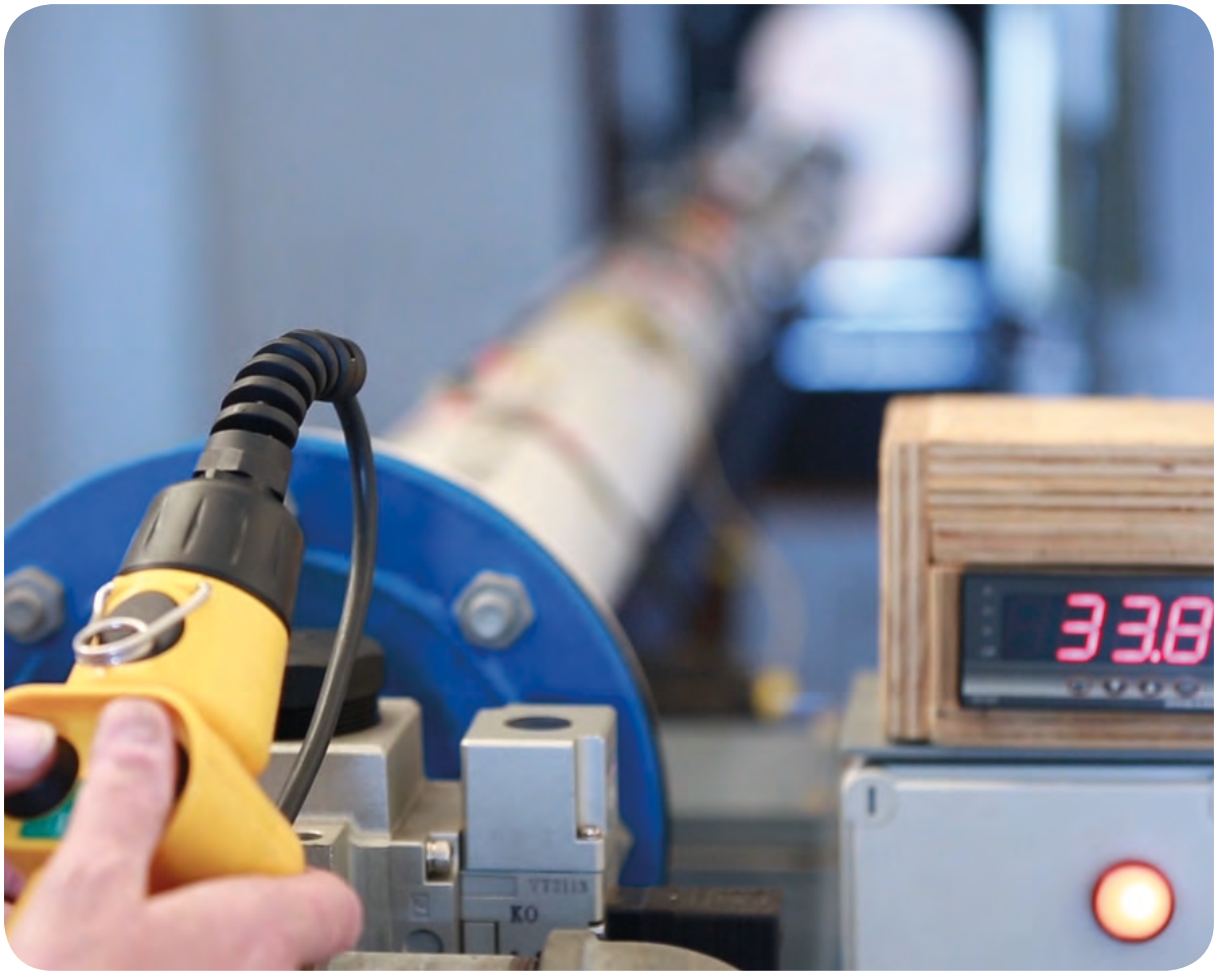
Standards

Standards affecting window openings that are commonly referred to in the Australian building code for the purposes of cyclone protection include, but are not limited to;

- AS/NZS 1170.2:2011 - Part 2: Wind Actions
- AS2047-1999 Windows in Buildings
- AS4055-2006 Wind Loads for Housing
- AS1288-2006 Glass in Buildings
- AS4040.3:1992 - Part 3: Resistance to Wind Pressures in Cyclone Regions

Testing - To AS/NZS1170.2:2011

StormShield® Generation II has been developed and certified to AS/NZS1170.2:2011. The impact loadings specified in this standard range from 28m/s for region C through to 44m/s for region D. StormShield® Generation III resists impact speeds of over 45m/s without perforation (162km/h!).



Testing Cannon

Window Systems

The glazing frame that StormShield® is glazed into is just as important as the glass itself. A weak frame will dramatically affect the performance of the glass.

StormShield® has been tested and certified in a large range of framing suites available in Australia and the Pacific Islands. A list of fully certified window suites are available on request.

Glasshape® recommend full window suites be live tested to prove their compliance to the AS/NZS1170.2:2011 impact requirements, as performance varies depending on the window system, the sealant, edge cover of glass into the frame and the beading system being used. Fixing details of the frame to the building are equally important, and are clearly noted on StormShield® test reports.

Glasshape® offer full testing and certification to customers using StormShield® in their own aluminium window systems. Fully documented test reports are provided with high speed video files for further R&D requirements if needed.

Window System being Tested

Glazing and Installation

StormShield® must be glazed correctly and in accordance with how it was tested to guarantee performance in cyclonic conditions.

StormShield® must be fully glazed on all four sides. Glazing adhesives are not essential but if used, they must be non-acidic cure, non-solvent based sealants, approved by Glasshape® such as Dow Corning 995 or 795 as a structural sealant. A list of compatible sealants are available on request.

For more extreme applications, Aluminium clad steel frames or Aluminium frames with strong steel inserts are recommended with a minimum edge cover equal to the thickness of the glass.

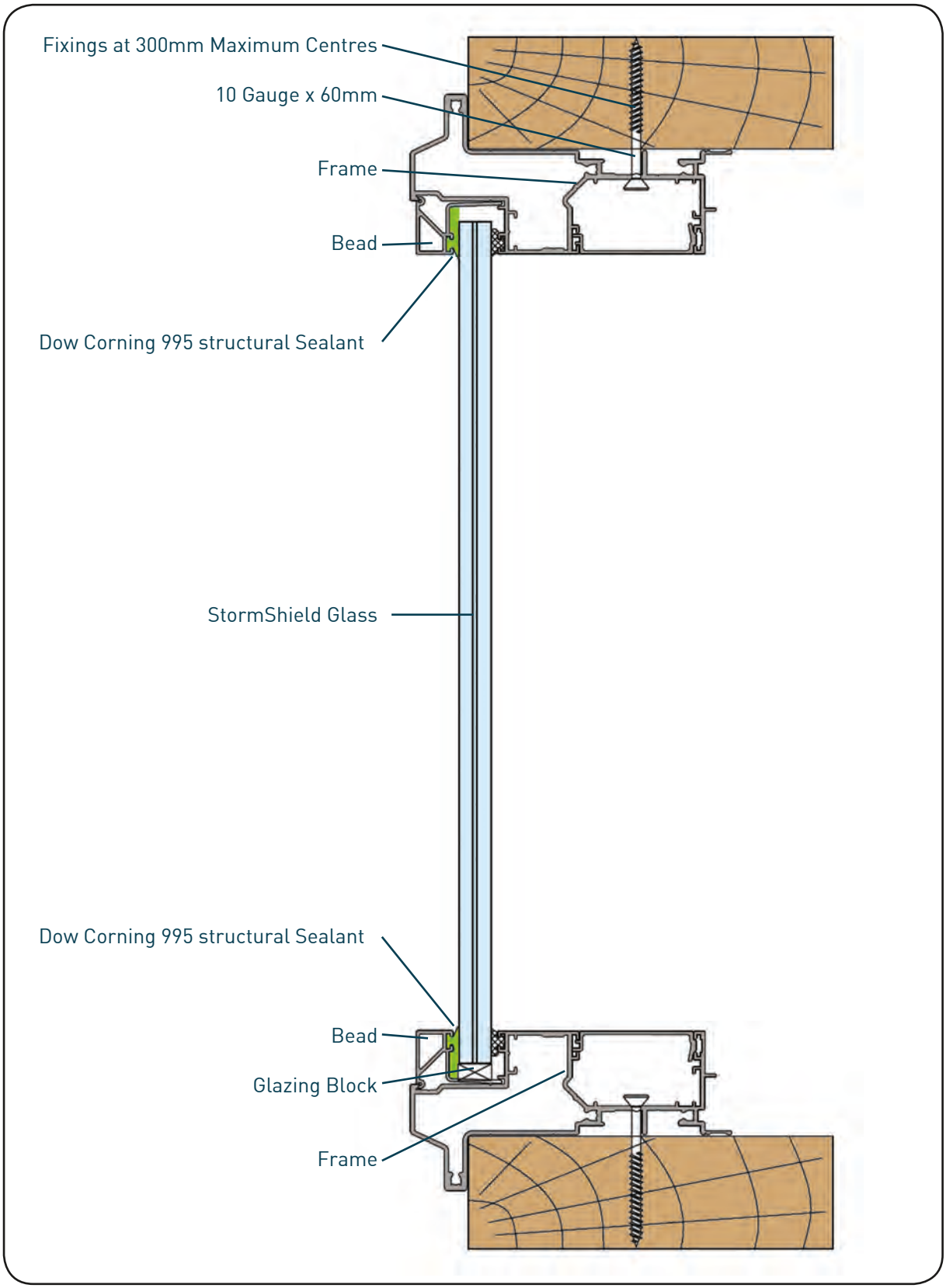
For full height shop-fronts or façades where minimal framing is desired glass fins may be used in lieu of centre mullions. Specific tested and certified designs are available upon request.

As shown below, edge engagement and correct glazing methods are extremely important to ensure the window does not breach upon impact. The StormShield® panel does not perforate, however on the left hand side image, the entire side of the glass has dislodged from the frame, causing a serious breach in the system, due to insufficient edge engagement.

Window System Failure

Window System Performance

Typical Glazing for StormShield®



StormShield®
CYCLONE RESISTANT GLASS - BY GLASSHAPE

"Region D" - 44 m/s Impact Resistance

AS/NZS1170.2.2011 Cyclone Impact Resistance

Product Name	Product Code	Total Panel Thickness	Weight/m2	Light Trans %	Reflect (out) %	Reflect (in) %	Solar Trans %	Solar Reflect%	SC	SHGC	U Value-Summer
				LIGHT			SOLAR		THERMAL		
StormShield® Gen 3 Clear	SSCL141D	14.1mm	31kg	87	7	7	65	6	0.85	0.74	5.28
	SSCL161D	16.1mm	36kg	85	7	7	61	6	0.82	0.71	5.22

"Region D" - 39 m/s Impact Resistance

AS/NZS1170.2.2011 Cyclone Impact Resistance

StormShield® Gen2 - Clear	SSCL124D	12.4mm	25kg	87	7	7	65	6	0.85	0.74	5.40
	SSCL144D	14.4mm	30kg	85	7	7	61	6	0.82	0.71	5.34
	SSCL164D	16.4mm	35kg	84	7	7	58	6	0.80	0.69	5.28
	SSCL184D	18.4mm	40kg	83	7	7	54	6	0.77	0.67	5.22
StormShield® Gen2 - Grey	SSGR124D	12.4mm	25kg	42	5	5	41	5	0.67	0.58	5.40
	SSGR144D	14.4mm	30kg	41	5	5	38	5	0.65	0.56	5.34
	SSGR164D	16.4mm	35kg	40	5	5	36	5	0.63	0.54	5.28
	SSGR184D	18.4mm	40kg	39	5	5	34	5	0.61	0.52	5.22
StormShield® Gen2 Obscure Arctic	SSOB124D	12.4mm	25kg	66	6	6	50	5	0.74	0.64	5.40
	SSOB144D	14.4mm	30kg	66	6	6	45	5	0.71	0.61	5.37
	SSOB164D	16.4mm	35kg	66	6	6	41	5	0.68	0.58	5.34
	SSOB184D	18.4mm	40kg	66	6	6	38	5	0.65	0.56	5.31

- Custom Options available on all products for tints or additional features or specifications.
- Thermal ratings stated are for glass only and will vary depending on the window suite being used.
- Conditions and calculation of the above optical and solar performance data are based on ASHRAE Standard.
- Performance data is based on representative value from software tabulation and information available at the time of preparation of this document which is subject to changes without notice. Actual value may vary slightly due to variations in the production process. Other glass manufacturers and coaters may use different instruments and measurement techniques. Therefore, reported performance values may vary on identical products by others.

Get It Right!

- Confirm Cyclonic region of your project
- Confirm the Ultimate Limit State (ULS) for your project
- Use the online StormShield® Calculator to confirm thicknesses requirements based on window sizes and ULS
- Reference these tables to confirm specifications for the correct StormShield® or E-zone® Product for your project
- Specify using the correct product code
- Have the peace of mind that your project will perform in the demanding conditions of cyclonic activity.

"Region C" - 30 m/s Impact Resistance

AS/NZS1170.2.2011 Cyclone Impact Resistance

Product Name	Product Code	Total Panel Thickness	Weight/m2	Light Trans %	Reflect (out) %	Reflect (in) %	Solar Trans %	Solar Reflect%	SC	SHGC	U Value-Summer
				LIGHT			SOLAR		THERMAL		
StormShield® Gen 2 Clear	SSCL114C	11.4mm	24kg	87	7	7	65	6	0.85	0.74	5.46
	SSCL134C	13.4mm	29kg	85	7	7	61	6	0.82	0.71	5.40
	SSCL154C	15.4mm	34kg	84	7	7	58	6	0.80	0.69	5.34
	SSCL174C	17.4mm	39kg	83	7	7	54	6	0.77	0.67	5.28
StormShield® Gen 2 Grey	SSGR114C	11.4mm	24kg	42	5	5	41	5	0.67	0.58	5.46
	SSGR134C	13.4mm	29kg	41	5	5	38	5	0.65	0.56	5.40
	SSGR154C	15.4mm	34kg	40	5	5	36	5	0.63	0.54	5.34
	SSGR174C	17.4mm	39kg	39	5	5	34	5	0.61	0.52	5.28
StormShield® Gen 2 Obscure Arctic	SSOB114C	11.4mm	24kg	66	6	6	50	5	0.74	0.64	5.46
	SSOB134C	13.4mm	29kg	66	6	6	45	5	0.71	0.61	5.43
	SSOB154C	15.4mm	34kg	66	6	6	41	5	0.68	0.58	5.4
	SSOB174C	17.4mm	39kg	66	6	6	38	5	0.65	0.56	5.37

15 m/s Impact Resistance

AS/NZS1170.2.2003 Cyclone Impact Resistance

StormShield® Gen 1 Clear	SSCL08	8mm	22kg	88	8	8	70	7	0.89	0.77	5.52
	SSCL10	10mm	27kg	87	7	7	65	6	0.85	0.74	5.46
	SSCL12	12mm	32kg	85	7	7	61	6	0.82	0.71	5.40
	SSCL14	14mm	37kg	84	7	7	58	6	0.80	0.69	5.34
	SSCL16	16mm	42kg	83	7	7	54	6	0.77	0.67	5.28
StormShield® Gen 1 Grey	SSGR08	8mm	22kg	42	5	5	45	5	0.70	0.61	5.52
	SSGR10	10mm	27kg	42	5	5	41	5	0.67	0.58	5.46
	SSGR12	12mm	32kg	41	5	5	38	5	0.65	0.56	5.40
StormShield® Gen 1 Arctic Obscure	SSOB08	8mm	22kg	66	6	6	55	6	0.77	0.67	5.52
	SSOB10	10mm	27kg	66	6	6	50	5	0.74	0.64	5.46

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"Region D" - 39 m/s Impact Resistance

AS/NZS1170.2.2011 Cyclone Impact Resistance

Product Name	Product Code	Total Panel Thickness	Weight/m2	LIGHT: Light Trans %	LIGHT: Reflect (out) %	LIGHT: Reflect (in) %	SOLAR: Solar Trans %	SOLAR: Solar Reflect%	THERMAL: SC	THERMAL: SHGC	THERMAL: U Value-Summer
StormShield® Gen 2 Ezone® Netural	EZNCP124D	12.4mm	25kg	59	7	9	38	6	0.59	0.50	3.36
	EZNCP144D	14.4mm	30kg	58	7	9	36	6	0.57	0.49	3.34
	EZNCP164D	16.4mm	35kg	57	7	9	35	6	0.56	0.48	3.31
	EZNCP184D	18.4mm	40kg	57	7	9	34	6	0.55	0.47	3.28
StormShield® Gen 2 Ezone® Grey	EZGRCP124D	12.4mm	25kg	39	6	9	39	6	0.59	0.51	3.36
	EZGRCP144D	14.4mm	30kg	39	5	9	36	6	0.57	0.49	3.34
	EZGRCP164D	16.4mm	35kg	38	6	9	32	5	0.53	0.46	3.31
	EZGRCP184D	18.4mm	40kg	38	5	8	30	5	0.52	0.45	3.28

"Region C" - 30 m/s Impact Resistance

AS/NZS1170.2.2011 Cyclone Impact Resistance

StormShield® Gen 2 Ezone® Netural	EZNCP114C	11.4mm	24kg	59	7	9	38	6	0.59	0.50	3.42
	EZNCP134C	13.4mm	29kg	58	7	9	36	6	0.57	0.49	3.40
	EZNCP154C	15.4mm	34kg	57	7	9	35	6	0.56	0.48	3.37
	EZNCP174C	17.4mm	39kg	57	7	9	34	6	0.55	0.47	3.34
StormShield® Gen 2 Ezone® Grey	EZGRCP114C	11.4mm	24kg	39	6	9	39	6	0.59	0.51	3.42
	EZGRCP134C	13.4mm	29kg	39	5	9	36	6	0.57	0.49	3.40
	EZGRCP154C	15.4mm	34kg	38	6	9	32	5	0.53	0.46	3.37
	EZGRCP174C	17.4mm	39kg	38	5	8	30	5	0.52	0.45	3.34

15 m/s Impact Resistance

AS/NZS1170.2.2003 Cyclone Impact Resistance

StormShield® Gen 1 Ezone® Clear	EZCL10	10mm	27kg	80	11	9	61	9	0.76	0.51	3.51
	EZCL12	12mm	32kg	81	10	9	59	9	0.75	0.47	3.48
	EZCL14	14mm	37kg	81	9	9	57	9	0.75	0.44	3.45
StormShield® Gen 1 Ezone® Neutral	EZNCP08	8mm	22kg	59	7	9	40	6	0.59	0.50	3.54
	EZNCP10	10mm	27kg	58	7	9	38	6	0.57	0.49	3.52
	EZNCP12	12mm	32kg	57	7	9	37	6	0.56	0.48	3.49
	EZNCP14	14mm	37kg	57	7	9	36	6	0.55	0.47	3.46
StormShield® Gen 1 Ezone® Grey	EZGRCP08	8mm	22kg	39	6	9	41	6	0.59	0.51	3.54
	EZGRCP10	10mm	27kg	39	5	9	38	6	0.57	0.49	3.51
	EZGRCP12	12mm	32kg	38	6	9	34	5	0.53	0.46	3.47
	EZGRCP14	14mm	37kg	38	5	8	32	5	0.52	0.45	3.44

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About Us

Glasshape® provide customised glass solutions offering a full range of certified specialist glass products. Our proven global success is backed by comprehensive warranties and validated by international accreditation.

Our service and specifically engineered glass solutions aim to exceed our clients design and performance requirements. We work with our clients to confirm their needs and establish the appropriate glass solutions. The Glasshape® package from consultation through to installation is available to help ensure a worry-free and successful project is delivered every time.

Our full range of specialist products are tailored to suit industries operating in demanding conditions and requiring high performance standards. Industries include architectural, marine, machinery, transportation, storm, security and ballistic.

Glasshape® have customers around the globe with Glasshape® locations in New Zealand, Australia and USA.

Our Vision

To become a world leader in the manufacture and supply of innovative, certified glass solutions tailored to meet the demanding requirements of highly specialised industries by differentiating on product quality, customer service and distribution excellence.

Our Mission

Offer our customers a uniquely specialised glass solution that works for them every time.

Our Values

- Treat customers, suppliers, and the community like we would our own family
- Tirelessly focus on brand, process improvement and delivery excellence by having a culture of continuous improvement
- Invest in the development of a great team, producing great products that completely satisfy the needs and desires of our diverse range of customers

Founded in 1986, Glasshape® has mastered and refined the science of Curved and Bent Glass, Toughened Glass, Laminated Glass and Double Glazed Glass, with uncompromising quality and service. The Glasshape® Group is one of Australasia's leading specialist processing, bending, toughening and laminating glass companies.

Glasshape® is a successful company with double digit growth. We are a 100% customer focused company. To meet the increasing demand from architects, designers and their respective, highly discerning clients, Glasshape® have a commitment to continuous innovation and technology investment. Our customers understand that with our expertise, their designs can be transformed into sensational glass realities.

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