

# TECHNICAL SPECIFICATION 3 - EXTERIOR DOORS, ROLLER DOORS AND WINDOW PROTECTION

## CYCLONE SEROJA RECOVERY AND RESILIENCE GRANTS PROGRAM

**The Recovery and Resilience Grants Program offers grants of up to \$20,000 to help insured residents impacted by Severe Tropical Cyclone Seroja build back better against future cyclones.**

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This technical specification provides information for insured property owners, suppliers and contractors to understand the minimum requirements for upgrades to external doors, garage doors and window protections under the Resilience Grant. Non-compliance with the requirements may deem the grant application ineligible.

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Fact sheets and technical specifications are also available for structural upgrades of roofs under the Recovery and Resilience Grant Program.

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### **IMPORTANT NOTE FOR CONTRACTORS – EVIDENCE REQUIREMENTS**

The Resilience Grant will only be paid when the required evidence is provided as described in this specification.

Failure to provide the required evidence will result in the grant application being ineligible.

## 1. External Doors

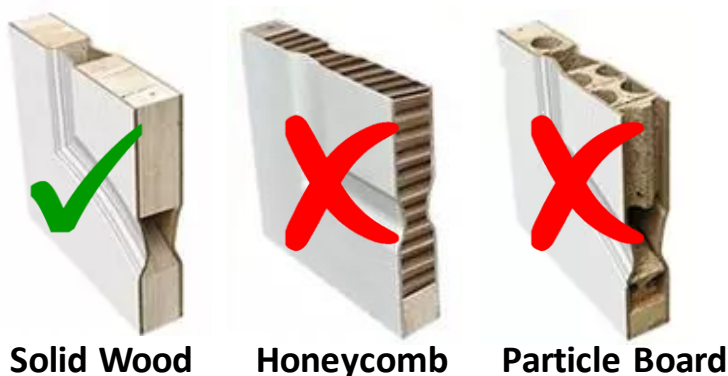
External doors should be of solid construction to withstand debris and wind pressure. A reimbursement grant is available to cover the costs incurred to replace existing external doors that are of hollow core, semi-solid or semi-glazed construction with a solid core door.

### 1.1 Minimum compliance requirements

- Replace existing doors, not a newly created doorway.
- A new solid core door rated for external use.
- If doors include a glazed panel, the panel shall be not more than 0.27m<sup>2</sup> in area.
- The doors must be fitted with a quality lock set including a bolt rather than latch.
- Solid core doors must be fitted with 3 hinges, one each at top and bottom and a third hinge located centrally or between the mid-point of the door and the top hinge

### 1.2 Evidence Requirements

- Receipt, label, or Tech Data Sheet detailing that the external solid core door meets the relevant standards.
- Photos of:
  - the existing door(s),
  - the new door(s) installed on site with hardware
  - the product label identifying the door type
  - the striker plates / bolts into frames / structures.
- A copy or image of the manufacturers label on the door.
- A Resilience Grant Completion Form (Form R&R 1) signed by the installer.
- Evidence of payment, including tax invoice and/or receipt.



*Only solid wood doors are eligible for grant funding.*

*Semi-solid doors are sold as an alternative to solid core doors but are filled with composite materials and are not solid enough to withstand debris. They are not eligible for the grant.*

*Similarly, hollow core doors, as the name suggests, have little or no filling in the core.*

## 2. Garage Doors

Garage doors that are not rated to withstand the wind pressures of a severe weather event are a common point of failure leading to internal damage and roof failure. A reimbursement grant is available to cover costs incurred to replace existing garage doors with new garage doors that are certified to the appropriate C Wind Classification under **AS 4505:2012 Garage doors**, rather than the existing N wind classification.

Refer Table 1 to identify the applicable category based on the existing wind classification.

*Table 1.1 – Applicable C Wind Classification for Resilience Upgrades*

Current 'N' Wind Classification	Recommended 'C' Wind Classification
N2	C1
N3	
N4	C2

The installation of wind-rated garage doors may require repair or upgrades to the structural framing or materials to which the door is fixed. Refer to the manufacturer's recommendations for minimum structural requirements for installation of the door. These works can also be claimed under the Resilience Grant.

### 2.1 Minimum requirements

- The garage door must replace an existing garage door, not be an additional door.
- The existing wind classification must be determined by a qualified engineer with reference to **AS 4055** or **AS/NZS 1170.2** as appropriate.
- The product must comply with **AS 4505:2012 Garage doors** and the supplier must provide evidence of compliance/product certification and wind rating.
- The product must be installed in line with the manufacturers installation requirements to meet **AS 4505:2012 Wind rated garage doors**, including structural upgrades if required.

### 2.2 Evidence Requirements

- A quote outlining the works to be undertaken, including structural upgrades where required, with the installers registered business details.
- Product certification or test certificate demonstrating that the garage door complies with **AS 4505:2012 Garage doors and other large access doors**. Labels showing the wind rating should be kept on the door and shown in the photographs.
- Photos of:
  - the existing door(s),
  - the new door(s) installed on site
  - garage door to garage wall connections, including any upgrades undertaken in association with the install.
- A Resilience Grant Completion Form (Form R&R 1) signed by the installer.
- Evidence of payment, tax invoice and/or receipt.

## 3. Window Protection

The following window protection options are eligible for reimbursement through the Resilience Grant:

- Cyclone wind-rated (non-porous) roller shutters installed over windows.
- Cyclone debris-rated screens for windows.

### 3.1 Minimum requirements

- Roller shutters – certified to resist cyclone wind pressures based on testing to AS4040.3.
- Cyclone debris-rated screens rated for wind region B or C as applicable in AS/NZS 1170.2:2011 or AS/NZS 1170.2:2021.
- Installation complies with manufacturer's specification.
- The existing wind classification must be determined by a qualified engineer with reference to **AS 4055** or **AS/NZS 1170.2** as appropriate.

### 3.2 Evidence Requirements

- Quote outlining the works to be undertaken, including framing upgrades where required, with the installers registered business details
- Product certification or test certificate demonstrating the product is tested to at least C1, in accordance the relevant standard.
- Photos of the window protection installed on site including from all relevant elevations where screens are fitted.
- A Resilience Grant Completion Form (Form R&R 1) signed by the installer.
- Evidence of payment, tax invoice and/or receipt.

## 4. Requirements for Photographic Evidence

Photographic evidence must clearly show the works in context and include global positioning system (GPS) coordinates and date information so that grant assessors can verify the location of the works. Most, but not all, electronic devices include GPS and date metadata with photos. Contractors should submit a photo to the Grants team of the front of the dwelling when works are commencing on site to enable the metadata / location of the works to be verified.

Photos should be taken regularly as works proceed to provide a record of the works as a whole. In particular any fixings that will be concealed by later works should be photographed prior to concealment.

**Contractors are encouraged to speak regularly with the Recovery and Resilience Grants team to ensure their photos comply with the evidence requirements.**

## Appendix A: Wind Classifications and Internal Pressure

### Wind Regions

AS 4055 (the Australian wind loading Standard for houses) divides Australia into four Wind Regions: A, B, C and D. Wind Regions A and B have N (non-cyclonic) wind classifications and Wind Regions C and D have C (cyclonic) wind classifications.

- Wind region A design winds are associated with severe thunderstorms, large frontal systems or significantly weakened tropical cyclones.
- **Wind region B design winds are associated with severe thunderstorms, or tropical cyclones.**
- Wind region C design winds are associated with severe tropical cyclones as they cross the coast.
- Wind region D design winds are associated with the most severe tropical cyclones.

The design wind speeds are different for each wind region.

Strong winds can be generated by severe thunderstorms in any part of Australia. Tropical cyclones develop in northern coastal areas of Australia but can travel further south into non-cyclonic areas as they weaken. Climate change modelling suggests that tropical cyclones may have a more southerly impact. Severe Tropical Cyclone Seroja crossed the coast in Wind Region B.

Wind Region B in WA (red shaded area on the map below) is located:

- between 30° south and 27° south extending 100 km inland from the coast, and
- between 27° south and the WA/NT border extending 50 km inland from the Wind Region C boundary.



**Wind Regions (source National Construction Code Figure 3.1(A))**

Within each Wind Region, different wind classifications are applied based on the size and exposure of the building. AS 4055 is used by designers to determine the wind classification for most houses. Wind loads for larger houses must be evaluated using AS/NZS 1170.2. Wind classifications/wind loadings are used to design and specify the tie-downs required in the roof structure and walls, roof cladding and fixing details, bracing details, and windows and wall cladding.

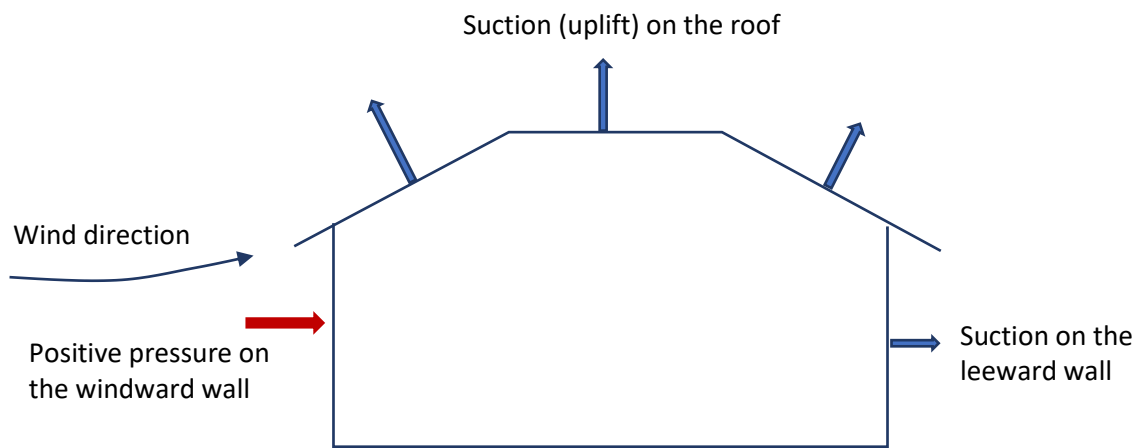
- Many houses in Wind Region B will be assigned an N3 wind classification.
- Only houses surrounded by many other houses and not on a hill can have an N2 wind classification.
- Houses in a more exposed location with a good view may be classified as N4.

To be eligible for the Resilience grant, the construction details have to comply with the relevant C wind classification – see Table 1.1.

## Internal pressure

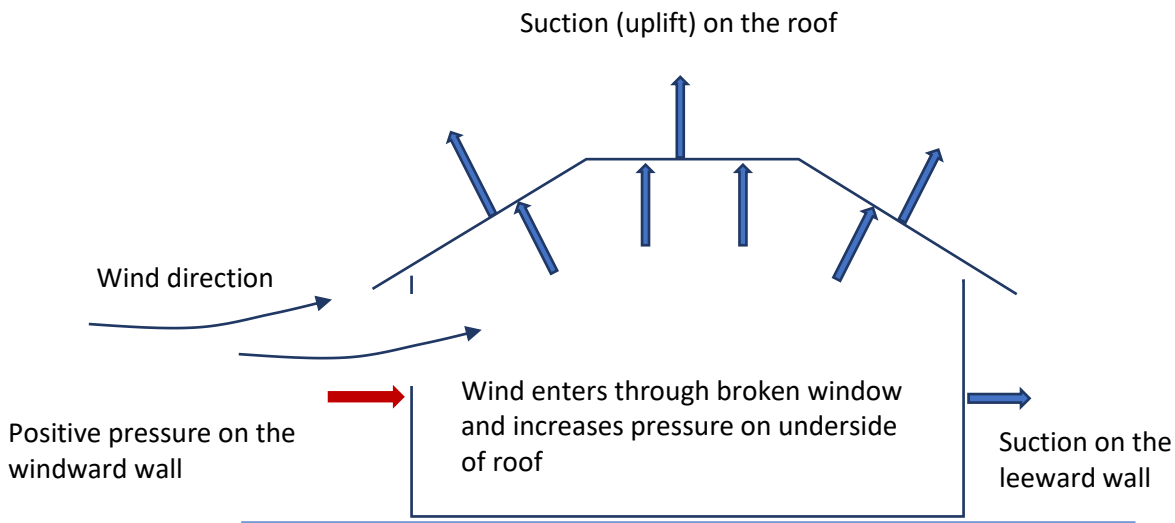
The wind loads and pressures applied to the roof, walls, structural and cladding components of a house during a cyclone are a combination of internal and external pressures.

The external pressures are represented in Figure 1 with arrows away from the surface – showing suction. Suction pressures on the roof apply upward forces that will lift the roof if it isn't tied down properly. The windward wall has pressures towards the surface, tending to push the wall into the building. Figure 1 shows a sealed building; there are no openings that would allow air into the internal spaces.



**Figure 1 Typical external pressures on a building**

If an opening is created in the house during a cyclone, such as when wind-borne debris breaks a window, the pressure inside the house increases. This is illustrated in Figure 2, which shows that the pressure across the roof is the upward pressure on the underside of the roof plus the upward suction on the upper side of the roof. The combined pressure is much higher than the pressure on the roof shown in Figure 1. Therefore, the tie-downs need to be stronger to resist the higher wind forces.



**Figure 2** Typical internal pressures on a building with an opening on a windward wall

Houses in Wind Region B are typically designed for low internal pressure. As a result, many roof tie-downs were not strong enough to resist the high internal pressures created when a door or window was broken by wind-borne debris or wind pressure during TC Seroja, and many roofs were lost. The purpose of the grant program is to upgrade houses so they are stronger for future storms.