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Cyclone Rated Stormshield Shutter.



In Australia we have specific Australian Standards that govern the testing procedures and product requirements for any product to be classified as "Cyclone Rated". OZ Roll is pleased to advise that the testing is complete (results detailed in Information Bulletin 036) and the Stormshield (formerly Super Shutter) has been approved for "Cyclone Rating".

The OZ Roll Super Shutter, incorporating the AR400 HDF slat, restrained slat insert and heavy-duty guides underwent cyclone tests at the Cyclone Testing Station, School of Engineering, James Cook University, Townsville, Queensland. The test involves fitting the Super Shutter (using on wall installation techniques) to an Air box facility, which can then simulate the enormous loads that can be encountered under tropical cyclone conditions.

There are two appropriate Australian Standards that have been satisfied:

1. Australian Standard AS / NZS 1170.2 - 2002 Structural Design Action Part 2: Wind Actions was used to determine the cyclonic wind loading for roller shutters fitted to a suburban house with an average roof height of 5 m located in a sheltered Terrain Category 3 Region C cyclonic location. The design wind speed is calculated to be 47 metres per second (169.2 k/h).
2. The Australian Standard AS 4040. 3 – 1992 Methods of Testing Sheet Roof and Wall Cladding, Method 3: Resistance to Wind Pressures for Cyclone Regions was used to an ultimate load pressure of 2. 50 kPa, which is needed to fulfil the requirements.

The Shutter Details.

- Nominal overall shutter width: 2000mm (overall the guides).
- Nominal aluminium slat width: 1840 mm (slat cut size).
- Nominal clear opening between guides: 1805 mm.
- Nominal Overall Shutter height: 2000mm (overall the box).
- The shutter must be fitted with a Bottom Guide to the full width of the exposed curtain, allowing the curtain bottom bar section to close down into the bottom guide section.
- For the test the shutter was attached to the air box testing jig by fastening to Z 150x15 purlin supports running across the air box using '14 – 10 x 42mm, self drilling screws at 450 mm centres.

The Test Results.

Cyclic test sequences showed the OZ Roll Stormshield PASSED cyclic fatigue loads of 10,200 cycles at incremental increases to the final load. The tested shutter supported the final single cycle pressure of 2.5 kPa for 1 minute, which represents a PASS. The shutter deflection increased to a nominal distance of 82 mm from the standard rest position during the tests.

For a shutter to have a valid cyclone rating as per the above, the following conditions must be met.

1. The window of the dwelling is closed and remains UNBROKEN during a wind storm event.
2. The curtain size of the OZ Roll Super Shutter is smaller then or equal to the above shutter details.
3. The OZ Roll Super Shutter is fitted to a dwelling with an average roof height of 5m located in a sheltered Terrain Category 3 Cyclonic region C.
4. The OZ Roll Super Shutter is fitted using an On Wall installation method incorporating a Standard 53 mm bottom guide the heavy duty guides supplied with the product.
5. The shutter is fitted to a standard whereby the fixings shall not fail prior to the failure point of the shutter.
6. The installation of the shutter ensures that maximum deflection of the curtain does not break the closed window. Deflection tests carried out indicate that a minimum distance of 85mm to 90 mm between the curtain and the window would be required.

