

## Test Certificate for GLIDEROL 6MX3M STORM SHUTTER

**Certificate Number:** WF072-01F03(rev1)- Wind Classification Certificate

**Date of Issue:** 12 May 2023

This is to certify that the Ultimate Wind Pressure Rating for the Garage Door manufactured by Gliderol described in Appendix 1 has been determined using Australian Standard "Wind Loads for Housing" (AS4055) – Australia Only for Wind Classifications N4 (Non-Cyclonic) and C1 (Cyclonic). Using the Ultimate Wind Pressure Rating as a benchmark, the Garage Door was then tested in accordance with Australian/New Zealand Standard "Garage Doors and Other Large Access Doors" (AS/NZS 4505:2012). All tests were performed on one sample, hence a minimum Coefficient of Variation of Structural Characteristics of 1.46 was assumed to account for statistical variability of nominally identical test specimens. This is consistent with testing a full-width garage door.

**Product Name:** Gliderol 6mx3m Storm Shutter

**Client:** Gliderol Doors (S) Pte Ltd: 86 International Road, Singapore 629176

**Product Manufacturer:** Gliderol Doors (S) Pte Ltd: 86 International Road, Singapore 629176

**Product Installer:** Gliderol Doors (S) Pte Ltd: 86 International Road, Singapore 629176

**Product Description:** The shutter curtain is formed by double-walled cavity slats. Each slat has a horizontal steel rod in its cavity, running across the entire length of the slat. The ends of each rod are fitted with steel double eyelets. A pair of steel cables are threaded through these eyelets, linking all the eyelets vertically on each side of the curtain. The top ends of these cables are secured to the door barrel while the bottom ends terminate securely into compression sleeves that are housed within the bottom shoes. These shoes are steel mouldings with recesses to engage the restraints that are located at the floor plates. Steel rods running through the bottom rail connects the pair of shoes to form the bottom chord of the lattice formation. The shutter curtain is guided to travel up and down in a straight line to ensure that the bottom shoes will positively engage the restraints at the floor plate when the shutter reaches the fully-closed position. Once engaged, the entire lattice formation becomes 'anchored' to the floor.

**Sample Tested:** 1 x 6mx3m Storm Shutter Roller Door.

**Drawings:** Refer to Appendix 1

**Modifications:** None

**Test Date(s):** Refer to Appendix 2

**Test Location:** Gliderol's Warehouse Facility: 86 International Road, Singapore 629176

**Details of Failure:** Passed without failure.

**Test Pressure Applied:**

Stage	Range			Calculated (kPa)			No. Cycles
<b>AS4055 Wind Classification N4 (Non-Cyclonic), <math>P_t = 3.24</math> kPa</b>							
Pre-load Test (1 minute hold)	0	to	$0.40P_t$	0	To	0.4	1
Test 1 (1 minute hold)	0	to	$1.00P_t$	0	To	3.3kPa	1
<b>AS4055 Wind Classification C1 (Cyclonic), <math>P_t = 2.98</math> kPa</b>							
Pre-load Test (1 minute hold)	0	to	$0.40P_t$	0	to	0.4	1
Test 1	0	to	$0.40P_t$	0	to	1.2kPa	800
Test 2	0	to	$0.50P_t$	0	to	1.5kPa	200
Test 3	0	to	$0.65P_t$	0	to	2.0kPa	20
Test 4	0	to	$1.00 P_t$	0	to	3.0kPa	1

## Notes:

- The test pressure ( $P_t$ ) was rounded up to the nearest tenth of a kPa in the test schedule.
- The minimum pressure achieved was as close to 0kPa as possible to ensure that the door system was subjected to close to full cyclic loading.

**Pressure Rating Achieved:**

Wind Classification up to:

- N4 (Non-Cyclonic) – Australia Only
- C1 (Cyclonic) – Australia Only

**Reference Standards:**

Australian Standards, AS4055:2021 "Wind Loads for Housing"

Australian/New Zealand Standards, AS/NZS4505:2012, "Garage Doors and Other Large Access Doors"

**Forces on Supporting Structure:**

<b>AS4055 Wind Classification N4 (Non-Cyclonic), <math>P_t = 3.24</math> kPa</b>	
AS/NZS 4505 Out-of-plane Forces ( $F_y$ )	10 kN/m
AS/NZS 4505 In-plane Forces ( $F_x$ )	69 kN/m
<b>AS4055 Wind Classification C1 (Cyclonic), <math>P_t = 2.98</math> kPa</b>	
AS/NZS 4505 Out-of-plane Forces ( $F_y$ )	9 kN/m
AS/NZS 4505 In-plane Forces ( $F_x$ )	64 kN/m


**Testing Engineer:**

Aaron Lefcovitch (Director, Windtech Consultants)


**Reviewed & Authorised By:**

Tony Rofail (Principal Director, Windtech Consultants)

**Notes:**

The Pressure Transducer (Model No. ZSE20AF-T-P-M5-JBK) used to measure the test pressure, has been calibrated against a Barometer (Model No. PACE1001). The details of this calibration can be found in Attachment 3.

**Appendix:**

- Appendix 1: Drawings
- Appendix 2: Test Dates
- Appendix 3: Inspection Certificate