Test Report No. 7191241095-MEC20-LXR
dated 21 AUG 2020

PSB Singapore

Add value.
Inspire trust.

Note: This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.

PERFORMANCE TEST

OF

SLIDING DOOR SYSTEM

FOR

PROJECT: Patio 130 IW (INOWA)

TESTED FOR:

Roto Frank Asia-Pacific Pte. Ltd.
19 Joo Koon Road
Singapore 628978

Attn: Qi Wei Hong

PREPARED BY:

Lee Xi Ren
Associate Engineer

APPROVED BY:

Ng Yui Xiong
Assistant Manager, Product
Building Group
Real Estate and Infrastructure-Mechanical Centre

TÜV SÜD PSB

ilac-MRA

Accredited Laboratory SAC-SINGLAS

LA-2007-0380-A LA-2007-0386-C LA-2007-0381-F LA-2010-0464-D LA-2007-0382-B LA-2018-0702-B LA-2007-0383-G LA-2018-0703-G LA-2007-0384-G LA-2020-0747-L

The results reported herein have been performed in accordance with the terms of accreditation under the Singapore Accreditation Council. Inspections/Calibrations/Tests marked "Not SAC- SINGLAS Accredited" in this Report are not included in the SAC-

Laboratory:
TÜV SÜD PSB Pte. Ltd.
No.1 Science Park Drive Singapore 118221

Phone : +65-6885 1333
Fax : +65-6776 8670
E-mail: enquiries@tuvsud.com
https://www.tuvsud.com/en-sg Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
1 Science Park Drive, #02-01
Singapore 118221

PSB Singapore

SUMMARY OF TEST AND TEST RESULTS
PROJECT: PATIO 130 IW (INOWA)

Items	Project Test Parameters	Project Requirements	Results
Air Leakage Test	a. Preload 50% design load (1350Pa) b. Operate sliding door 5 cycles. c. Apply positive pressure of 600Pa and record the air infiltration rate with polyethylene sheet pasted to test for extraneous leakage, Q_e. d. Remove the polyethylene sheet. e. Apply positive pressure of 600Pa and record the specimen air leakage, Q_{ts}.	**Reference to ASTM E283-04 (2012)** Nil Area = 5.3m^2 Perimeter = 7m	Passed
Static Water Penetration Test	a. Operate sliding door 5 cycles. b. Positive pressure of 1000Pa is applied for duration of 15 minutes on surface area. c. Record all points of water leakages.	**Reference to ASTM E331-00 (2016)** No leakage is permitted onto the internal face of the sliding door system at a water spray of 3.4 L/m^2/min.	Passed
Cyclic Water Penetration Test	a. Operate sliding door 5 cycles b. Positive pressure of 600Pa is applied for duration of 5 minutes on surface area. c. Reduce pressure to 0Pa and maintain for 1 minute. d. Repeat b – c for pressure of 800, 1000, 1300Pa. e. Record all points of water leakages.	**Reference to ASTM E547-00 (2016)** No leakage is permitted onto the internal face of the sliding door system at a water spray of 3.4 L/m^2/min.	Passed
Structural Performance Test	a. Preload 50% design pressure 1350Pa and maintain for 10 seconds. b. Between 1 to 5 minutes, take residual reading and zero transducers. c. Apply up to 100% design pressure of 2700Pa in 5 equal steps (1350, 1800, 2100, 2400 and 2700Pa) each 10 seconds and record the maximum deflection readings. e. Between 1 to 5 minutes, take residual deflection after load is removed. f. To be repeated for negative pressure (-2700Pa).	**Reference to AAMA TIR-11** Mullion/ Transom: maximum deflection shall not exceed Span/175 mm or 20mm whichever is lesser for spans less than 13 feet 6 inches 1-2-3 | 2650/175 | 15.14 mm 4-5-6 | 2000/175 | 11.43 mm Glass panels: 7-8-9 | - | For info 10-11-12 | - | For info	Passed
Proof Load Test	a. Apply 150% design pressure i.e. 4050Pa and maintain for 10 seconds. b. Between 1 to 5 minutes, take residual reading and zero transducers. c. To be repeated for negative pressure (-4050Pa).	**Reference to ASTM E330/330M (2014)** No permanent distortion or glass breakage shall occur. Hardware shall remain operable.	Refer to pg.10 for more details

PSB Singapore