All air conditioning equipment and ventilation units must be switched off and temporarily sealed before test. Doors and windows on the exterior of the air test envelope should be closed and all internal doors must be kept open to allow pressure to equalise fully around the enclosure. Drainage traps in toilets, sinks, showers and wet rooms must be filled with water.

Electrical sockets, downlights, access panels and shower trays should not be sealed during testing. Compartmentalised buildings which are divided into separate units having no internal openings to link them such as residential buildings, may have difficulties to carryout whole building pressurisation tests. In such cases, separate pressurisation tests should be carried out on each self-contained compartment. For high rise building, if it is difficult to achieve equal pressure across the whole building, multiple fans at different points within the building can be used. Lifts or riser shafts could be used by opening of doors at various levels, to ensure equal pressure is achieved in the building. Adequate safety precautions must be followed for carrying out air leakage tests.

It is recommended that site inspections should be carried out at the completion of building envelope and at MEP fit-out stages. Any identified issues and rectification work carried out, should be recorded in the final air tightness test report. For multiple villa complex and apartments with multiple dwelling units, testing a single representative unit at first can help to identify any leakage and highlight areas where additional sealing is likely to be required for other units. Project team can use these test results to improve the construction process so that the remaining units can pass the test.

Guidance on testing are available in ASTM E779-03, CIBSE TM 23 and ATTMA TSL1 & TSL2 standards. Testing must be carried out in accordance with these standards.

COMPLIANCE DOCUMENTATION

Table 501.05(1): Documents Required

Project Stages	Submittal Documents
Design Permit Application	1. DM BLDG Al Sa'fat declaration.
Construction Completion Application	1. Air leakage test report (must include executive summary, test procedures, equipment list, test locations, test dates and test results & calibration certificate).
After Completion	Not applicable.

REFERENCES AND ADDITIONAL INFORMATION

The Air Tightness and Measuring Association. (2016). Technical Standard L1: Measuring Air Permeability in the Envelopes of Dwellings.

The Chartered Institution of Building Services Engineers. (2000). ATM23: Testing Buildings for Air Leakage.

ASTM International. (2019). ASTM E779-19, Standard Test Method for Determining Air Leakage Rate by Fan Pressurization.