CHAPTER 1 - CONSERVATION AND EFFICIENCY: BUILDING ENVELOPE

501.05 AIR LEAKAGE

Silver Sa'fa

INTENT

To save energy and to provide better thermal comfort for the building occupants by controlling air leakages in building.

REQUIREMENT

All new air conditioned buildings with a cooling load of 1 MW or greater must be tested to demonstrate that air leakage does not exceed 10 $m^3/hr/m^2$ into or out of the building, at an applied pressure difference of 50 Pa.

Testing must be carried out in accordance with the methodology approved by Dubai Municipality (DM).

For Golden and Platinum Sa'fa, whatever the required cooling load, air leakage test shall be conducted by following the previously specified values.

SIGNIFICANCE

Air leakage or air infiltration is the unintentional, uncontrolled flow of air into the building. This may happen due to gaps or cracks in the building envelope that are not easily visible. Leaks in building fabric occur for a number of reasons like structural stress, poor workmanship and components and misalignment of designed building elements.

Due to air leakage energy is wasted. Whenever there is infiltration of air, there is corresponding exfiltration elsewhere in the building. While conditioned air is lost on one hand, additional energy is required for cooling the air to compensate lost volume of air. Air leakage also affects the building's performance and occupant comfort.

Controlling air leakage is important to reduce energy bills, reduced condensation, reduce the chance of mold and rot (because moisture is less likely to enter), better performing ventilation system and optimum sizing of cooling equipment.

APPLICABILITY

This regulation is applicable to all building types. Refer to Table 101.07(1) in Section One - Administration for detailed applicability levels.