Appendix X: CSA B52-13 Code Rules Relating to Doors and Ventilation

6.2.2 Doors

Each machinery room shall have a door or doors that open outward, are self-closing (and tight fitting if they open into the building), and are of a number large enough to ensure that persons can escape in an emergency. The door(s) shall not open to a public corridor or any room used for assembly. With the exception of access doors and panels in air ducts and air handler units complying with Clause 6.2.5.8, there shall be no openings that will permit passage of escaping refrigerant to other parts of the building.

Tight-fitting door — a door that is sealed in a way that prevents the free flow of escaping refrigerant from one space to another.

6.3 Class T machinery rooms

b) The room shall have at least one exit door that opens directly to the outer air. Other exits communicating with the building shall be permitted, but shall be through a vestibule equipped with approved self-closing, tight-fitting fire doors.

6.2.5.3 Location of air inlets and the provision of makeup air

The air inlets to the exhaust ventilation system shall be located near the machinery, suitably guarded, and at an elevation where refrigerant from a leak is most likely to concentrate. Provision shall be made for outdoor makeup air to replace that being exhausted. Openings for makeup air shall be positioned to avoid intake of discharge air. The air shall be discharged to the outdoors in a manner that does not cause inconvenience or danger. The air supply for and exhaust ducts to a machinery room shall serve no other area.

6.2.5.5 Mechanical ventilation

6.2.5.5.1 Leaks or ruptures calculation

The mechanical ventilation required to exhaust a potential accumulation of refrigerant due to leaks or a rupture of the system shall be capable of removing air from the machinery room in the following amounts:

For system refrigerant charges of 7000 kg (15 400 lb) or less:

$Q = 70 \times G^{0.5}$ ($Q = 100 \times G^{0.5}$)

6.2.5.5.2 Minimum ventilation

Whenever the refrigeration system is operating or whenever the room is occupied, a sufficient part of the mechanical ventilation shall be operated to provide normal volumes equal to the greater of the following:

a) 2.54 L/s/m² (0.5 cfm/ft²) of machinery room area; or
b) the volume required to prevent a maximum temperature rise above ambient greater than 10 °C (18° F), based on all of the heat-producing machinery in the room.