

Overview of 2006 IECC Vestibule Requirements

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Vestibules

- Review IECC and ASHRAE/IESNA 90.1-2004 Vestibule Requirements
- Purpose Behind the Vestibule Requirement
- Basic Vestibule Requirements
- Definition of Space
- Which Doors Must Comply with the Vestibule Requirement
- Complying with the Building Envelope Requirements for Portions of the Vestibule
- Additional Vestibule Considerations

2006 IECC Vestibule Requirement

502.4.6 Vestibules. A door that separates conditioned space from the exterior shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time.

Exceptions:

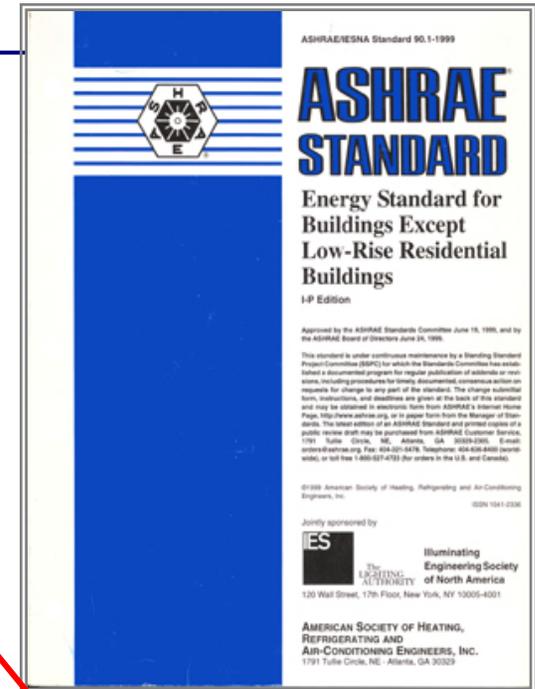
1. Buildings in Climate Zones 1 and 2 as indicated in Table 301.1.
2. Doors not intended to be used as a building entrance door, such as doors to mechanical or electrical equipment rooms.
3. Doors opening directly from a guestroom or dwelling unit.
4. Doors that open directly from a space less than 3,000 square feet (298 m²) in area.
5. Revolving doors.
6. Doors used primarily to facilitate vehicular movement or material handling and adjacent personnel doors.

2004 ASHRAE/IESNA 90.1-2004 Vestibule Requirement

Section 5.4.3.4 Vestibules. A door that separates conditioned space from the exterior shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time. Interior and exterior doors shall have a minimum distance between them of not less than 7 ft when in the closed position.

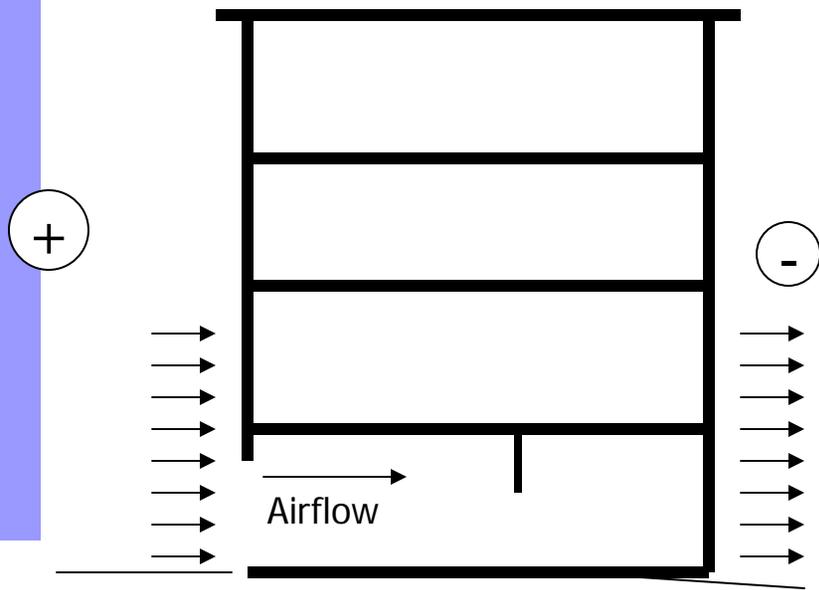
Exception to 5.5.3.4:

- (a) Doors in buildings in climate zones 1 and 2
- (b) Doors in buildings less than four stories above grade
- (c) Doors not intended to be used as a building entrance door, such as mechanical or electrical equipment rooms,
- (d) Doors opening directly from a dwelling unit
- (e) Doors that open directly from a space less than 3000 ft² in area
- (f) Doors in building entrances with revolving doors
- (g) Doors used primarily to facilitate vehicular movement or material handling and adjacent personnel doors.

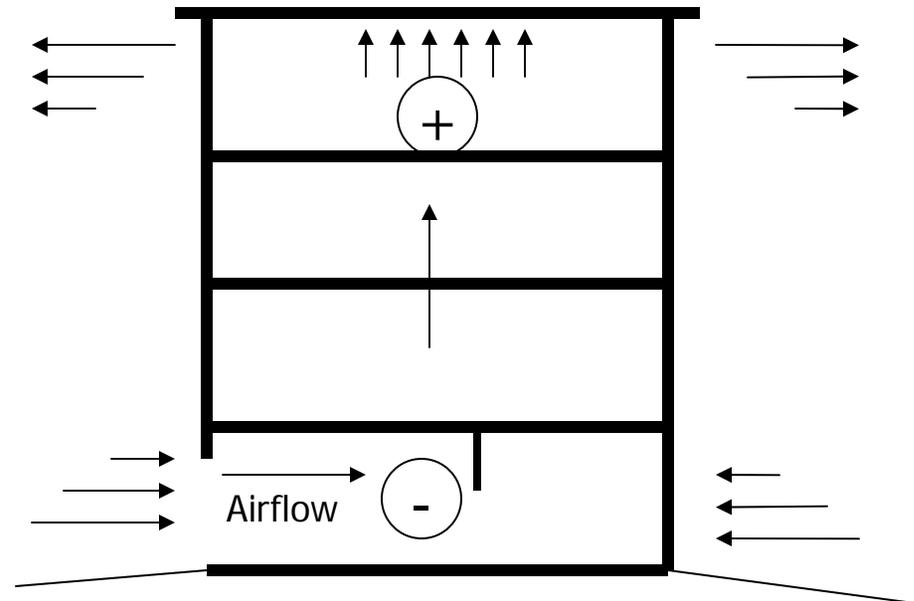


Major Difference

What is the Code Trying to Accomplish?



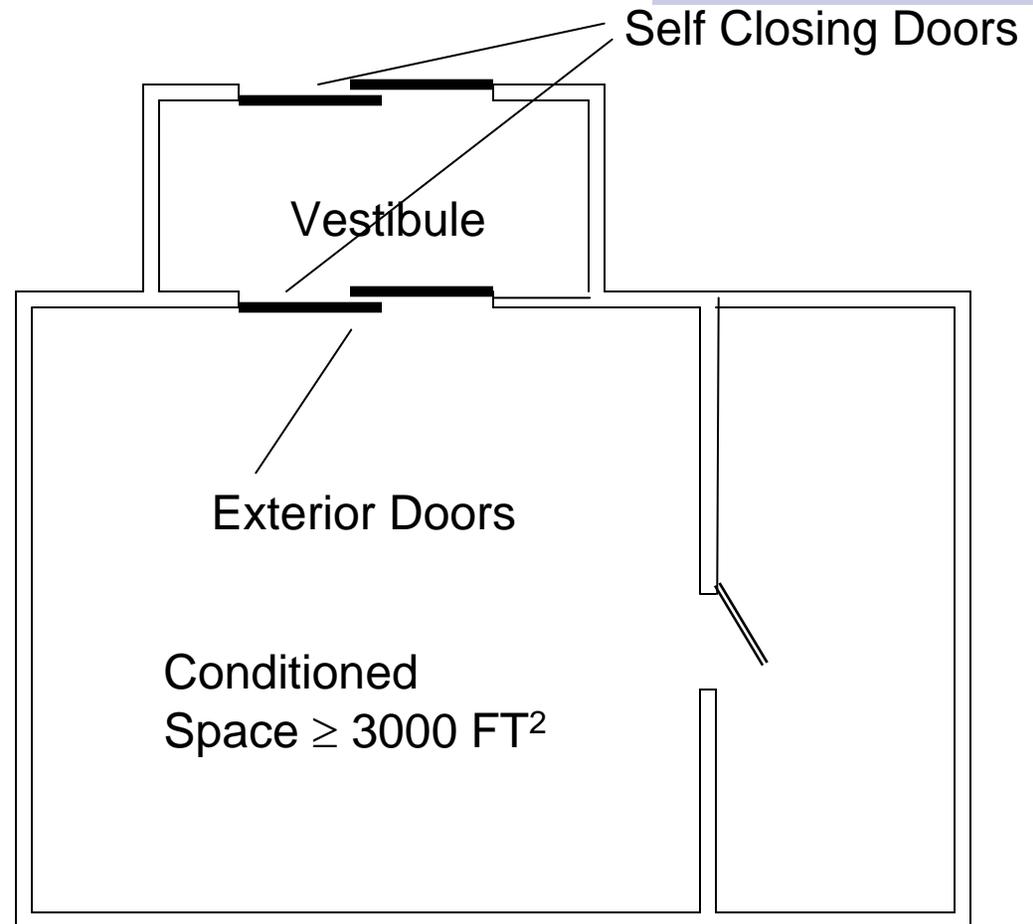
Wind



Stack

Basic Vestibule Requirements

- Entrance doors on spaces $\geq 3,000$ ft²
- Must have self-closing devices
- Must be able to pass through doors without needing to open doors at the same time

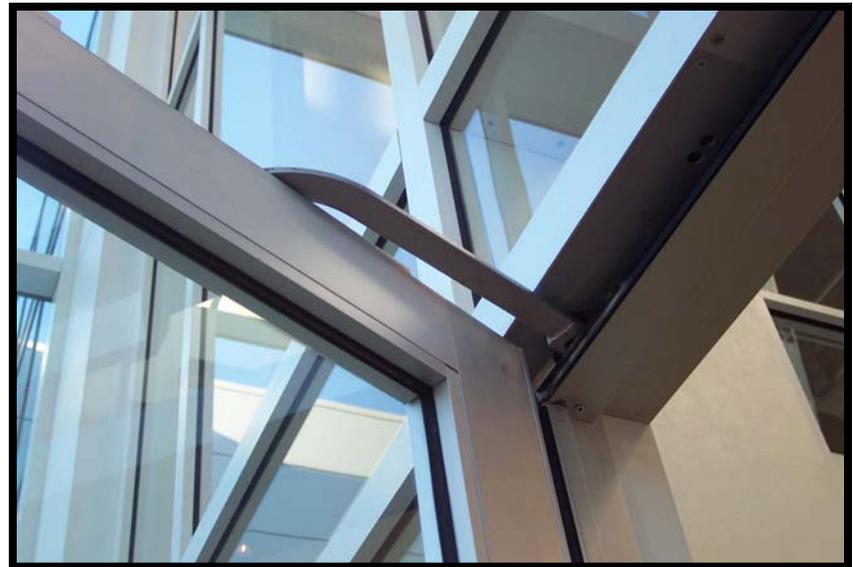


Basic Vestibule Requirement



- Enclosed vestibule
- Ability to pass through without needing to open both doors at the same time

- Self closing device



Door Requirements

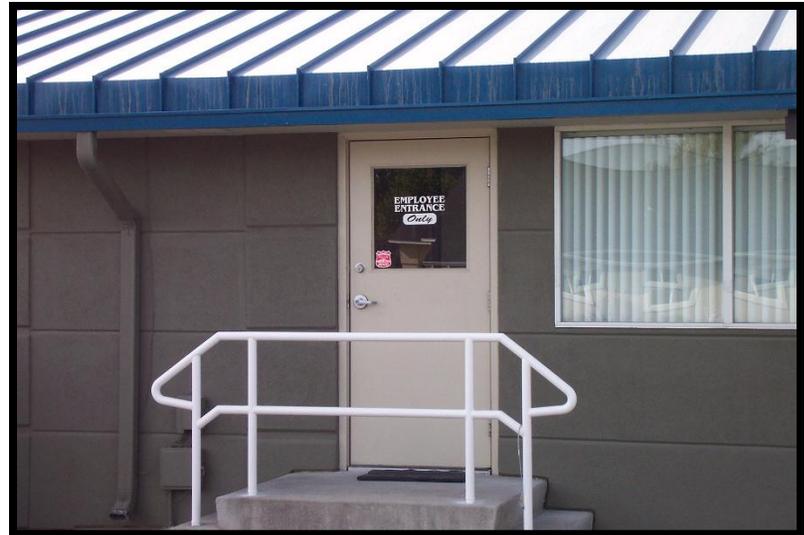


- Ability to pass through without needing to open both doors at the same time
- Self closing devices

Exceptions



Doors used primarily to facilitate vehicular movement or material handling and adjacent personnel doors.

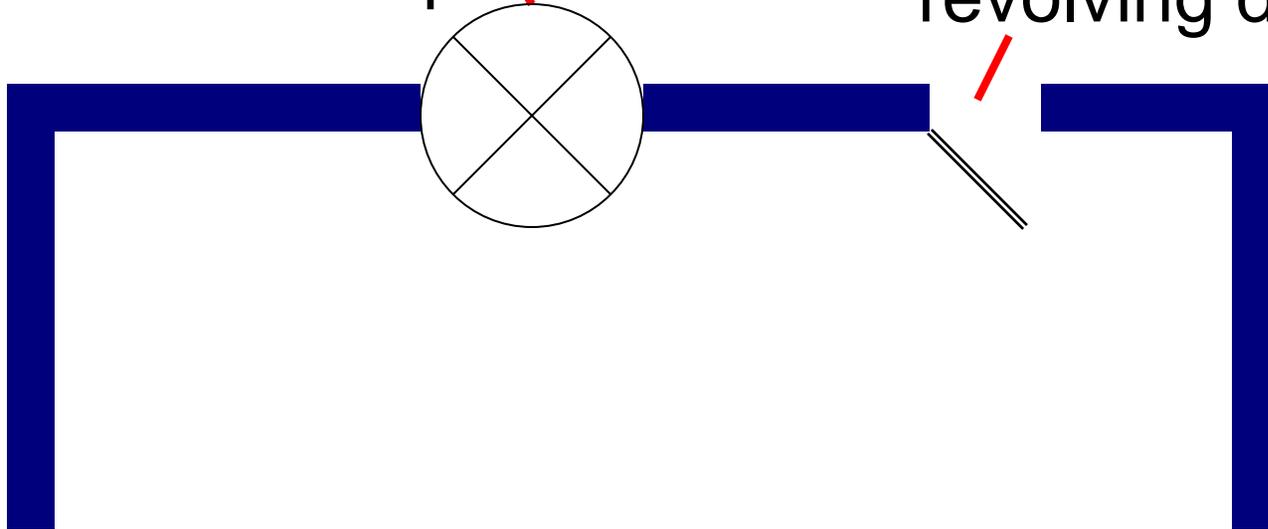


Which Doors Must Comply?

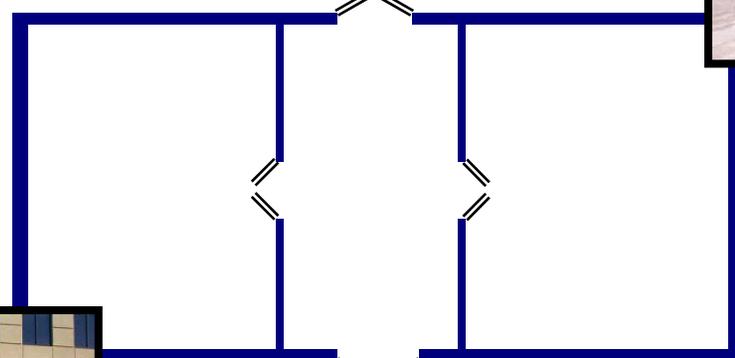
Revolving
Doors
Exempt

IBC 1008.1.3.1

Side-hinged swinging
door ≤ 10 ft from
revolving door



Basic Vestibule Requirement



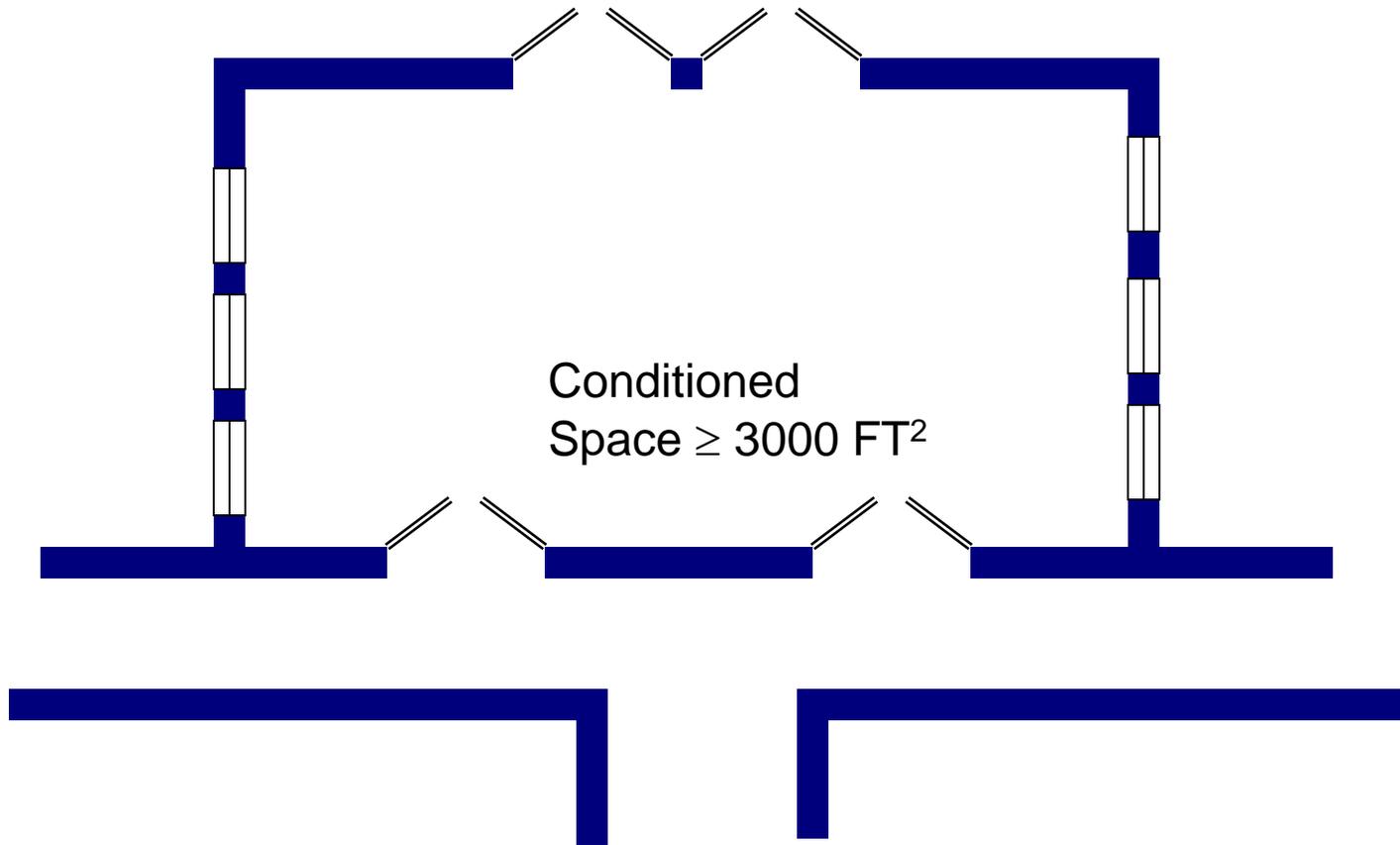
Two Entrances to Space

What is a Space?

ASHRAE/IESNA 90.1-2004 Definition

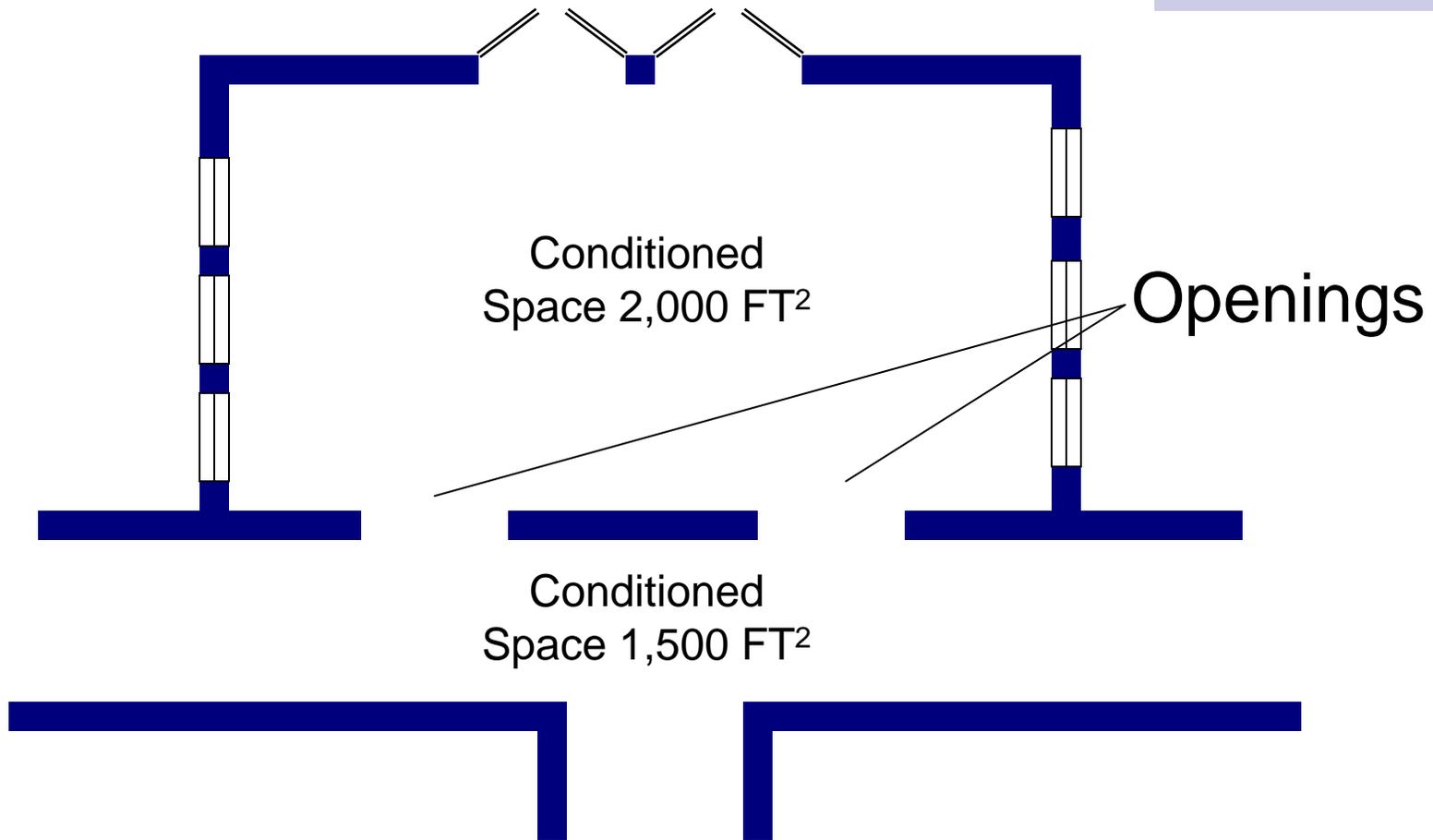
enclosed space: a volume substantially surrounded by solid surfaces such as walls, floors, roofs, and operable devices such as doors and operable windows

What is a Space?



Example 1

What is a Space?

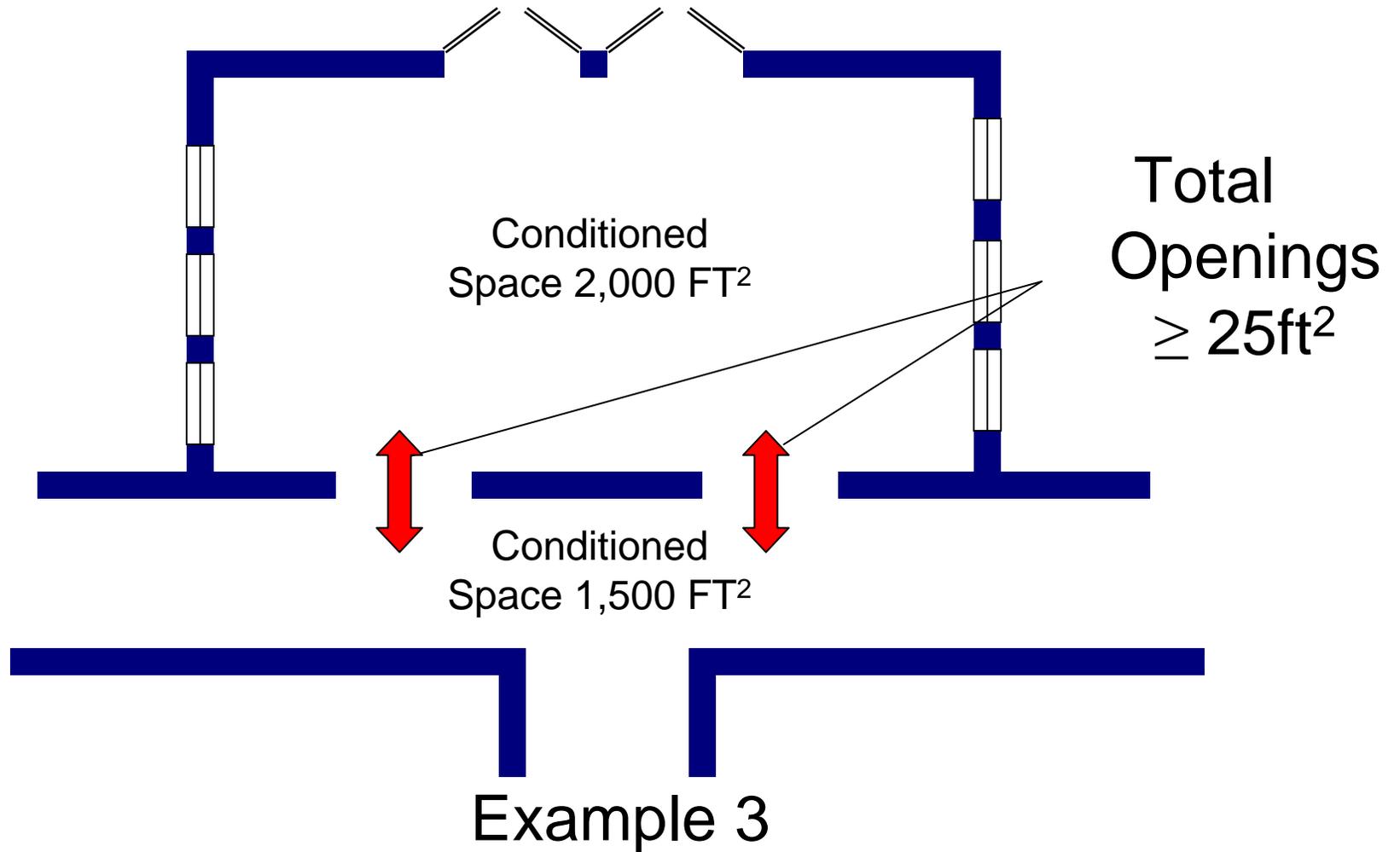


Example 2

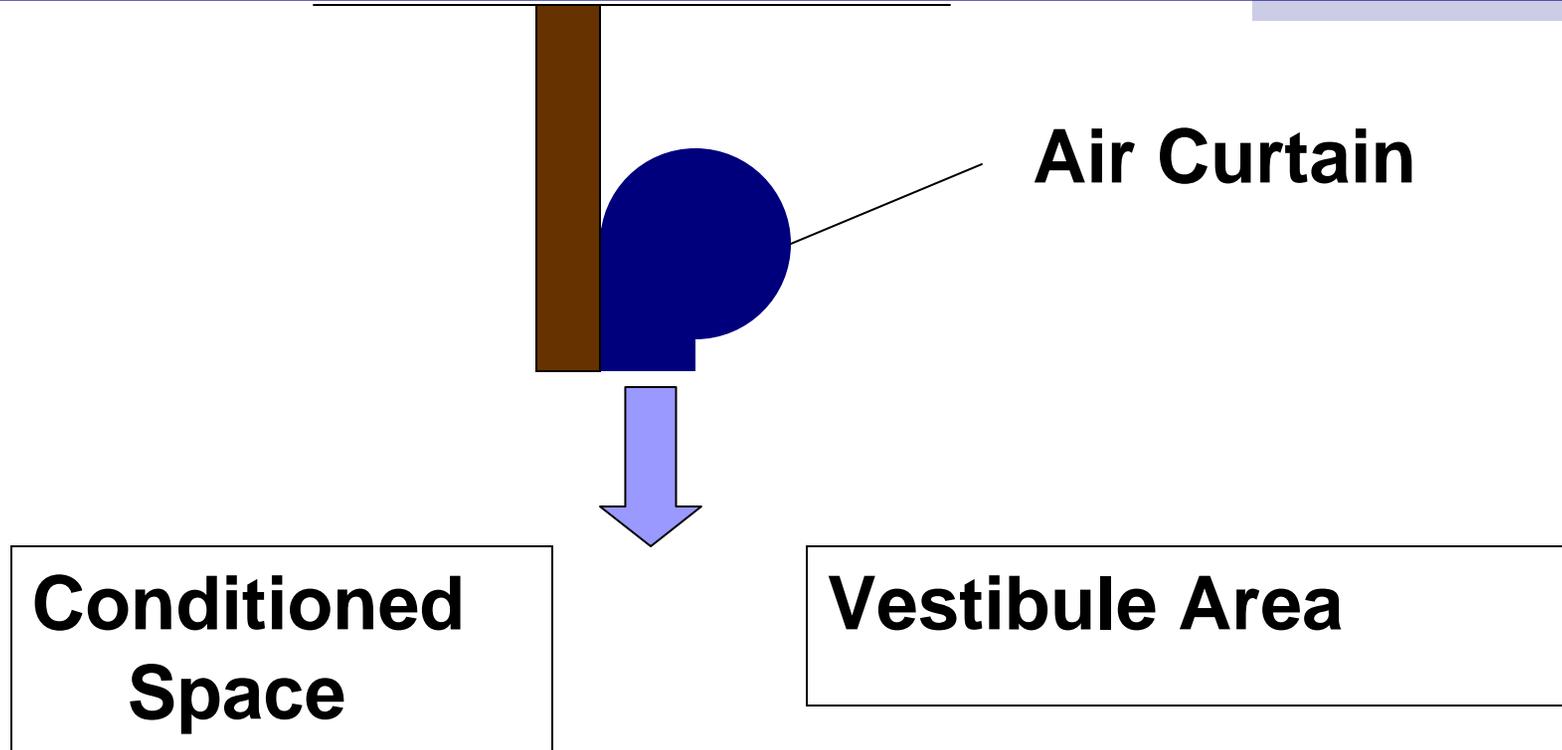
2006 IBC Ventilation Requirement

Section 1203.4.1.1 Adjoining spaces. Where rooms and spaces without openings to the outdoors are ventilated through an adjoining room, the opening to the adjoining rooms shall be unobstructed and shall have an area not less than 8 percent of the floor area of the interior room or space, but not less than 25 square feet (2.3 m²). The minimum openable area to the outdoors shall be based on the total floor area being ventilated.

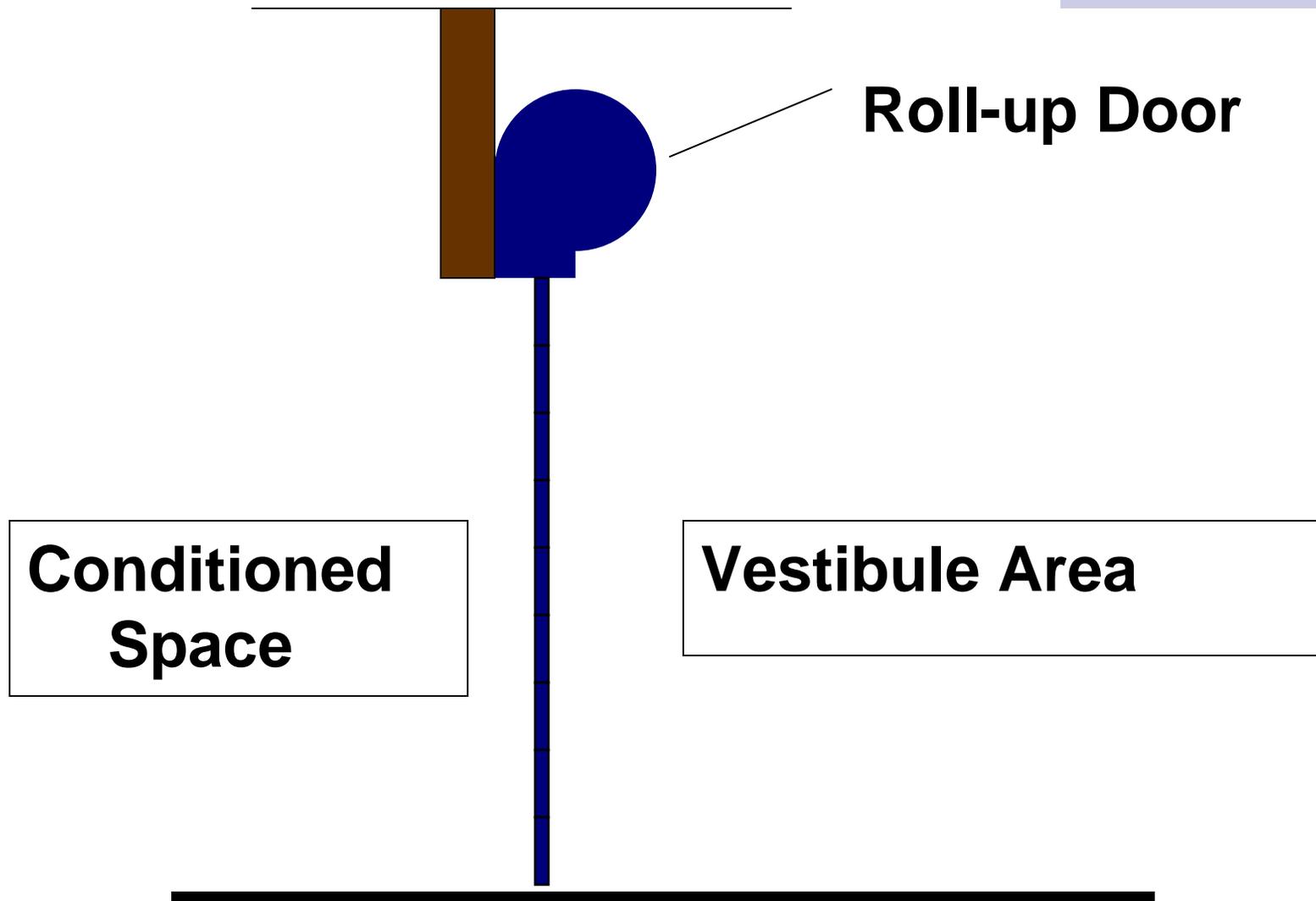
Combine to Form One Space



Noncompliant Doors



Noncompliant Doors



Noncompliant Doors



Which Doors Must Comply?

Must Comply

Exempt



Other Vestibule Considerations

Minimum Depth

- ICC/ANSI A117.1-2003 - Two Doors In Series
 - 48" minimum from door swing
 - 60" minimum diameter for turning
- ASHRAE/IESNA 90.1-2004
 - 7 ft minimum

