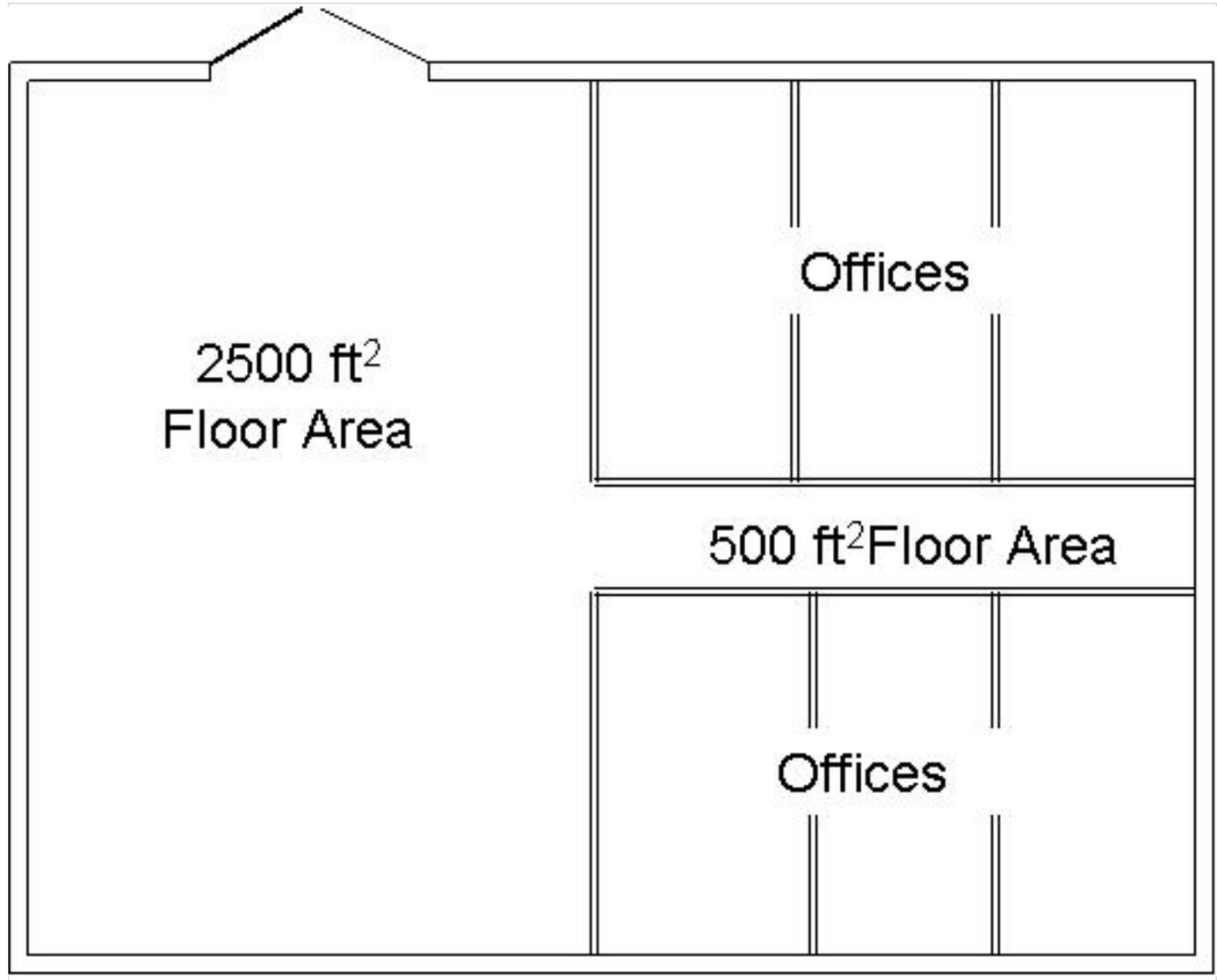




## Vestibule Requirements in Commercial Buildings - Code Notes

[2009 IECC and 2009 IBC]

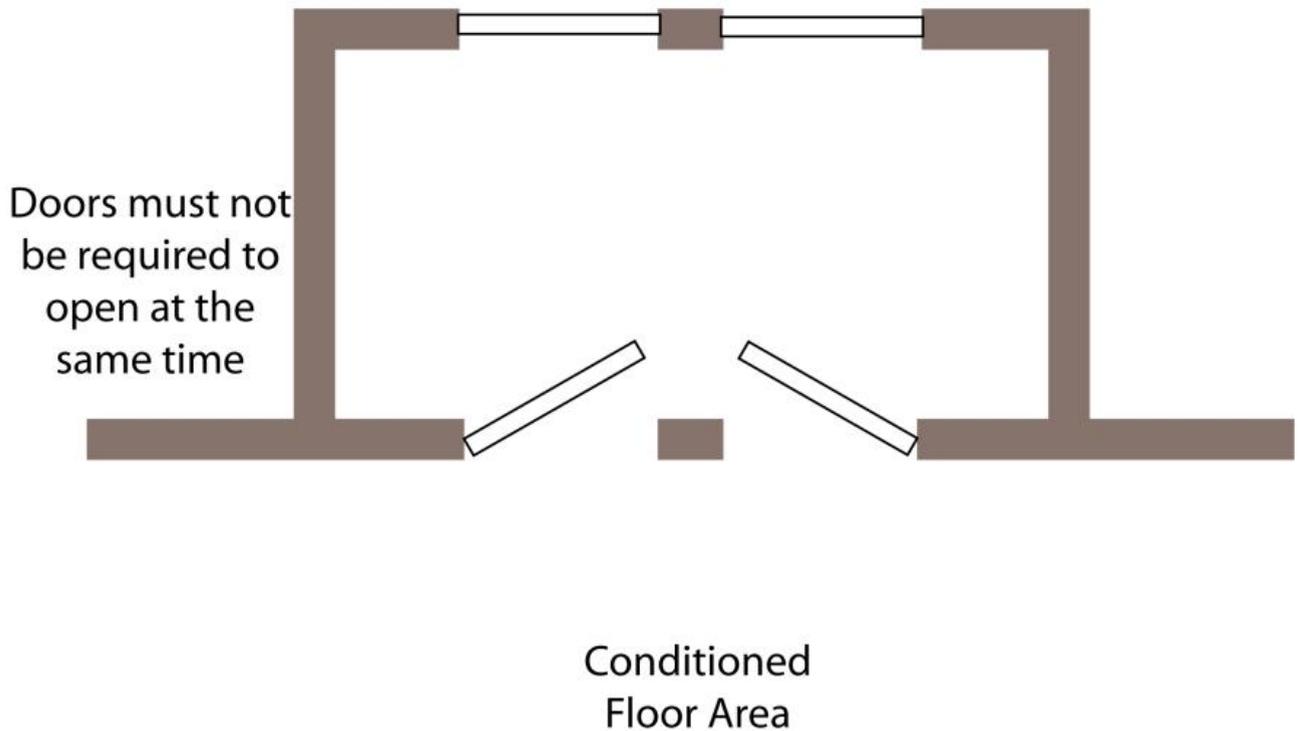


Commercial building designers are required to install vestibules on the primary entrance doors leading from spaces greater than or equal to 3,000 square feet (298 m<sup>2</sup>) in all buildings. Designers are unclear on what is included in determining the 3,000 ft<sup>2</sup> floor area that defines a space. For example, it is unclear if an entrance door leading from a lobby that is attached to a corridor which has a total area of 3,000 ft<sup>2</sup> must meet the vestibule requirement. There is also confusion as to which doors must have vestibules when several doors leave a space greater than or equal to 3,000 ft<sup>2</sup>.

The 2009 IECC requires that the primary entrance doors leaving from spaces 3,000 ft<sup>2</sup> or greater have vestibules. The vestibules reduce the infiltration load on the space by creating an air lock. This requirement typically applies to large "box" stores where the building entrance is directly into the resale area or other occupancies with large lobbies, like a hotel.



## Exterior



## Plan Review

1. Verify that doors separating conditioned space from the exterior that do not have vestibules are exempt from the requirement.
2. Verify that doors separating conditioned space from the exterior leading to spaces 3,000 ft<sup>2</sup> or greater contain a vestibule, unless an exception applies.
3. Verify that the doors leading into and out of the vestibule are designed so that, in passing through the vestibule, it is not necessary for the interior and exterior doors to open at the same time. Also, verify that the doors meet the requirement for means of egress doors as stated in 2009 IBC Section 1008.
4. Verify that the building assemblies between the conditioned space and the vestibule meet the envelope requirements of Section 502 of the 2009 IECC.

## Inspection

1. Verify that the vestibule has been constructed per the approved building plans and specifications.
2. Verify that the doors leading into and out of the vestibule include self-closing devices.



## Code Citations\*

### IECC 2009 Section 502.4.7 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 Figure 301.1 and 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 sleeping unit or dwelling unit
4. doors that open directly from a space less than 3,000 ft<sup>2</sup> in area
5. revolving doors
6. doors used primarily to facilitate vehicular movement or material handling and adjacent personnel doors.

### 2009 IBC Section 1027.1 General Exception 2

A maximum of 50 percent of the number and capacity of the exit enclosures are permitted through a vestibule provided all of the following are met:

1. the entire area of the vestibule is separated from the areas below by construction conforming to the fire-resistance rating for the exit enclosure
2. the depth from the exterior of the building is not greater than 10 ft (3048 mm), and the length is not greater than 30 ft (9144 mm)
3. the area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent to the approved wired glass in steel frames
4. the area is used only for means of egress, and exits directly to the outside.

## References

\*Copyright, 2009, [International Code Council](http://www.internationalcodecouncil.org/), Inc. Falls Church, Virginia. 2009 International Energy Conservation Code; 2009 International Building Code. Reproduced with permission. All rights reserved.

PNNL-SA-48710  
2011-06-22 08:59:21.0