

International Building Code: Power-Operated Doors (IBC Section 1008.1.4.2) and Horizontal Sliding Doors (IBC Section 1008.1.4.3)

INTRODUCTION

Two long-standing sections of the International Building Code (IBC) addressing requirements for doors in the means of egress are resulting in too many “scratch your head” situations. This BHMA Technical Bulletin attempts to illustrate the types of doors addressed by IBC Section 1008.1.4.2 Power-operated doors, and to differentiate these from the type of doors addressed by IBC Section 1008.1.4.3. Horizontal sliding doors.

DISCUSSION

Perhaps the most direct explanation is take a look at the text of the upcoming 2015 IBC in Sections 1008.1.4.2 and 1008.1.4.3, with revisions as approved during the International Code Council’s 2012 code development cycle¹.

2015 IBC Section 1008.1.4.2 Power-operated doors.

This section of the 2015 IBC will be revised to better explain the types of doors within the scope of the requirements of this section of the code. Specifically, the last two sentences of Section 1008.1.4.2 describe the doors consistent with their referenced standards.

Section 1008.1.4.2 of the 2015 IBC will be revised to read:

1008.1.4.2 Power-operated doors. Where *means of egress* doors are operated or assisted by power, the design shall be such that in the event of power failure the door is capable of being opened manually to permit *means of egress* travel or closed where necessary to safeguard *means of egress*. The forces required to open these doors manually shall not exceed those specified in Section 1008.1.3, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of swinging open from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. Power-operated swinging doors, power-operated sliding doors, and power-operated folding doors shall comply with BHMA A156.10. Power-assisted swinging doors and low energy power-operated swinging doors shall comply with BHMA A156.19.

¹ Revisions to the 2015 IBC reflect code change proposals E54-I2 and E57-I2, both approved “as modified by public comment” during the International Code Council’s 2012 ICC code development cycle.

In addition, three new complementary definitions will be added to the definition section of Chapter 2 of the 2015 IBC:

SECTION 202 DEFINITIONS

LOW ENERGY POWER-OPERATED DOOR. Swinging door which opens automatically upon an action by a pedestrian, such as pressing a push plate or waving a hand in front of a sensor. The door closes automatically, and operates with decreased forces and decreased speeds. See also POWER-ASSISTED DOOR and POWER-OPERATED DOOR.

POWER-OPERATED DOOR. Swinging, sliding, or folding door which opens automatically when approached by a pedestrian or opens automatically upon an action by a pedestrian. The door closes automatically, and includes provisions such as presence sensors to prevent entrapment. See also LOW ENERGY POWER-OPERATED DOOR and POWER-ASSISTED DOOR.

POWER-ASSISTED DOOR. Swinging door which opens by reduced pushing or pulling force on the door operating hardware. The door closes automatically after the pushing or pulling force is released, and functions with decreased forces. See also LOW ENERGY POWER-OPERATED DOOR and POWER-OPERATED DOOR.

Examples of power-operated doors include:



IBC Section 1008.1.4.2 also applies to low energy power-operated doors. Low energy power-operated doors are commonly installed to assist accessibility in public buildings. Notice the activating push plate on the post in the first example, below, and the activating push plate on the wall in the second example.



IBC Section 1008.1.4.2 also applies to power-assisted doors, which are relatively uncommon.

2015 IBC Section 1008.1.4.3. Special purpose horizontal sliding, accordion, or folding doors.

No, that's not a typo; the name of this section of the upcoming 2015 IBC, along with the describing text of the first paragraph of this section, will be revised to more clearly differentiate the type of doors included within the scope of the requirements of this section of the code. Section 1008.1.4.3 of the IBC, which is titled "Horizontal sliding doors" in the 2012 IBC and prior editions, will read as follows in the 2015 IBC:

1008.1.4.3 Special purpose horizontal sliding, accordion, or folding doors. In other than Group H occupancies, special purpose horizontal sliding, accordion, or folding door assemblies permitted to be a component of a *means of egress* in accordance with Exception 6 to Section 1008.1.2 shall comply with all of the following criteria:

1. The doors shall be power operated and shall be capable of being operated manually in the event of power failure.
2. The doors shall be openable by a simple method from both sides without special knowledge or effort.
3. The force required to operate the door shall not exceed 30 pounds (133 N) to set the door in motion and 15 pounds (67 N) to close the door or open it to the minimum required width.
4. The door shall be openable with a force not to exceed 15 pounds (67 N) when a force of 250 pounds (1100 N) is applied perpendicular to the door adjacent to the operating device.
5. The door assembly shall comply with the applicable *fire protection rating* and, where rated, shall be self-closing or automatic closing by smoke detection in accordance with Section 716.5.9.3, shall be installed in accordance with NFPA 80 and shall comply with Section 716.

6. The door assembly shall have an integrated standby power supply.
7. The door assembly power supply shall be electrically supervised.
8. The door shall open to the minimum required width within 10 seconds after activation of the operating device.

The type of doors addressed by IBC Section 1008.1.4.3 are commonly in a normally-open position and hidden in an enclosure built into a wall of the building. In the event of fire or smoke, where these doors are installed in the means of egress, this section of the code requires the doors to be self-closing or automatically powered closed. In addition, they are to be openable manually to the required minimum egress width. Won-Door Corporation (www.wondoors.com) is one of the manufacturers of the type of doors within the scope of IBC Section 1008.1.4.3. In addition, McKeon Door Company (www.mckeondoors.com) and Cornell Iron Works (www.cornelliron.com) manufacture these special purpose horizontal sliding, accordion, or folding doors.

The requirements of Items 1 through 8 of IBC Section 1008.1.4.3, when taken together, provide a unique set of requirements that apply only to doors of this type of configuration.

CONCLUSION

IBC Sections 1008.1.4.2 and 1008.1.4.3 are requirements for very distinct types of doors.

IBC Section 1008.1.4.2 includes requirements for the familiar power-operated doors commonly encountered in public and commercial buildings.

IBC Section 1008.1.4.3 addresses a type of door that is less common and normally fairly well hidden when in the open position, and not ordinarily activated to move to a closed position unless there's fire or smoke. The requirements of IBC Section 1008.1.4.3 are a unique set of criteria applicable only to special purpose horizontal sliding, accordion, or folding doors.

The Builders Hardware Manufacturers Association (BHMA) represents commercial door hardware manufacturers in North America. Our members are responsible for the design and production of builders hardware offering safety and security along with compliance to building and fire codes throughout the United States and Canada. Questions may be addressed to John Woestman (515-422-6027) or Michael Tierney (860-533-9382).