

## Manual Flush Bolts

BY LORI ANNE GREENE, AHC/CDC, CCPR



From the well-known blog [idighardware.com](http://idighardware.com) by Lori Greene, *D&H* is pleased to bring you a new column on codes—DECODED!

One of the gray areas the door and hardware industry has struggled with is the use of manual flush bolts on pairs of doors in a means of egress. The language in NFPA 101—The Life Safety Code prohibiting manual flush bolts—applies to openings that are **REQUIRED** to be pairs—i.e., the occupant load is more than a single door can accommodate. **The International Building Code (IBC)** has always stated that manual flush bolts are not permitted except for very limited exceptions. The IBC doesn't clearly define whether this applies to all pairs, or only pairs where the inactive leaf is required for egress width. I have seen code officials interpret this to mean no manual flush bolts—period.

Pairs of doors are often used when a single door would provide sufficient egress width, possibly for aesthetics, traffic flow, or the movement of large equipment. Manual flush bolts are often the preferred method of locking the inactive leaf on those pairs, rather than panic hardware on both leaves or automatic flush bolts and a coordinator. The 2009 edition of the IBC includes some new exceptions which clarify the intent of this requirement.

In Business, Factory, and Storage occupancies, manual flush bolts are allowed on the inactive leaf when the doors are serving fewer than 50 people, or when the building is sprinklered and the inactive leaf is not needed for egress width.

According to these exceptions, the inactive leaf can not have a doorknob, panic device, or anything that looks like operable hardware. Other exceptions include individual dwelling units, storage or equipment rooms, and patient rooms in I-2 occupancies. Please note that these exceptions do not apply to fire-rated doors that require positive latching. For fire-rated doors, consult **NFPA 80**.

Technically, this requirement doesn't apply until the 2009 edition is adopted by the jurisdiction where a project is located, but I consider this more of a clarification than a change. Clarifications like this can often be used to show intent of the code when there are questions.

Here is the text from the **2009 IBC: 1008.1.9.4 Bolt locks**. *Manually operated flush bolts or surface bolts are not permitted.*

Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.
2. Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf.
3. Where a pair of doors serves an occupant load of fewer than 50 persons in a Group B, F or S occupancy, manually operated edge- or surface-mounted bolts are permitted on the



Manual flush bolts must be projected and retracted manually, so there are limitations regarding their use on fire doors and egress doors.

inactive leaf. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.

4. Where a pair of doors serves a Group B, F or S occupancy, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf provided such inactive leaf is not needed to meet egress width requirements and the building is equipped throughout with an automatic sprinkler system in accordance with **Section 903.3.1.1**. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.
5. Where a pair of doors serves patient care rooms in Group I-2 occupancies, self-latching edge or surface-mounted bolts are permitted on the inactive leaf provided that the inactive leaf is not needed to meet egress width requirements and the inactive leaf contains

no doorknobs, panic bars or similar operating hardware.

And here is the text from the **2009 edition of NFPA 101: 7.2.1.5.10** *Where pairs of door leaves are required in a means of egress, one of the following criteria shall be met:*


1. Each leaf of the pair shall be provided with a releasing device that does not depend on the release of one leaf before the other.
2. Approved automatic flush bolts shall be used and arranged such that the following criteria are met:
  - (a) The door leaf equipped with the automatic flush bolts shall have no doorknob or surface-mounted hardware.
  - (b) Unlatching of any leaf shall not require more than one operation. 

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