



Life Safety Code Interpretations For Fire Door Armor

Second Single-motion for Egress

In the context of installing door barricade devices on existing classroom doors, pending changes in **Chapter 15 Existing Educational Occupancies** of the 2018 edition of NFPA 101, *Life Safety Code*, recognize that use of such devices needs to be addressed separately (and differently) from new doors. (See Attachment C for NFPA 101's excerpted requirements.) Specifically, item 3 under **Section 15.2.2.2.4, Classroom Door Locking to Prevent Unwanted Entry**, permits two distinctly separate releasing operations from the egress-side (the classroom side) of the door, provided that no keys, tools, or special knowledge or effort is needed to open the door. **The Fire Door Armor® door-mounted barricade requires a second single-motion for egress, requiring no special keys, tools, or special knowledge. This has been proven by demonstrations with uninformed kindergarteners.**

Height of Mounted Barricade

Item 4 under 15.2.2.2.4 requires the releasing mechanism to be located no lower than 34 inches and no higher than 48 inches above the finished floor. While that requirement is clearly stated, it conflicts with the requirements of **Chapter 7 Means of Egress, Section 7.2.1.5.10.1**, which states: "The releasing mechanism for any latch shall be located as follows: (1) Not less than 34 in. (865 mm) above the finished floor *for other than existing installations.*" [Italics and underlining added for emphasis.] The phrase "...for other than existing installations" permits the releasing mechanisms on existing doors to be located lower than 34 inches above the finished floor.

A fair interpretation of 15.2.2.2.4 (4) is that it addresses the installation and use of locking and latching devices used for the normal operation of doors, not standalone auxiliary security devices that can be installed on existing doors to reinforce them against forced entry.

At this point, it is worth pointing out that the codes (e.g., IBC and the IFC) permit the installation locks that are used for security purposes to be installed at any location. **IBC Section 1010.1.9.2 Hardware Height** (see Attachment A) states: "...Locks used only for security purposes and not used for normal operation are permitted at any height." In the case of door barricade devices, they are only intended to be deployed/engaged during emergency conditions; they are not used under normal operating conditions. Similarly, the exception under section 404.2.6 Door Hardware, of ICC/ANSI A117.1 *Accessible and Usable Buildings and Facilities* (2009 edition), permit locks used only for security purposes to be installed at any location. **The Fire Door Armor® door-mounted barricade will be mounted on the egress-side of the door (either push or pull-side), just above the base of the door, in such a position that the barricade blade will register and enter the floor plate hole as designed.**

Opening a Door from Outside a Room

Items 1 and 2 under Section 15.2.2.2.4 of NFPA 101 require the locking devices to be lockable and releasable from the classroom side of the doors without any key, tool, or special knowledge and effort. Some auxiliary door barricade devices meet these requirements. The emphasis of these requirements is on the manipulation of the locking devices by people who are in the room.

Item 6 under Section 15.2.2.2.4 requires doors to be "...capable of being unlocked and opened from outside the room by staff with the necessary key or other credential." The phrase "...or other credential" is subjective, leaving interpretation to AHJs and other users of the code. "Other credential" could be interpreted to be proprietary releasing devices used by staff (and first responders) to open doors from outside of the rooms.

Similarly, item 1 under **Section 1010.1.4.4, Locking Arrangements in Educational Occupancies** (see Attachment B) of the pending 2018 edition of the IBC requires: "The door shall be capable of being unlocked from outside the room with a key or other approved means." In this case, the phrase "...other approved means" permits AHJs to determine what means of releasing devices are acceptable in their jurisdiction. **The Fire Door Armor® door-mounted barricade can be released from the side opposite the barricade mounting using a proprietary Fire Door Armor® breach tool to be approved and distributed by local AHJ's.**

The installation of the door-mounted barricade will be preceded with an NFPA 80 fire door inspection to ensure compliance pre-installation, and will be followed by a post-installation inspection to ensure post-installation compliance with NFPA 80. Additional periodic inspections will be required and the door-mounted barricade is supplemented with an overall plan to ensure proper response and actuation during active shooter drills, consistent with other fire and life safety drills.

Attachment A

The following is excerpted from 2015 edition of the International Building Code (IBC):

1010.1.9 Door operations.

Except as specifically permitted by this section, egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1010.1.9.1 Hardware.

Door handles, pulls, latches, locks and other operating devices on doors required to be *accessible* by Chapter 11 shall not require tight grasping, tight pinching or twisting of the wrist to operate.

1010.1.9.2 Hardware height.

Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.

1010.1.9.3 Locks and latches.

Locks and latches shall be permitted to prevent operation of doors where any of the following exist:

1. Places of detention or restraint.
2. In buildings in occupancy Group A having an *occupant load* of 300 or less, Groups B, F, M and S, and in *places of religious worship*, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
 - 2.1. The locking device is readily distinguishable as locked.
 - 2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.
 - 2.3. The use of the key-operated locking device is revocable by the *building official* for due cause.
3. Where egress doors are used in pairs, *approved* automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface-mounted hardware.
4. Doors from individual *dwelling* or *sleeping units* of Group R occupancies having an *occupant load* of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.
5. *Fire doors* after the minimum elevated temperature has disabled the unlatching mechanism in accordance with *listed fire door* test procedures.

Attachment A

1010.1.9.4 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 less than 50 persons in a Group B, F or S occupancy, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf. The inactive leaf shall not contain doorknobs, panic bars [or fire exit hardware] 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 capacity requirements and the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1. The inactive leaf shall not contain doorknobs, panic bars [or fire exit hardware] 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 capacity requirements and the inactive leaf shall not contain doorknobs, panic bars [or fire exit hardware] or similar operating hardware.

1010.1.9.5 Unlatching.

The unlatching of any door or leaf shall not require more than one operation.

Exceptions:

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1010.1.9.4.
3. Doors with automatic flush bolts as permitted by Section 1010.1.9.3, Item 3.
4. Doors from individual *dwelling units* and *sleeping units* of Group R occupancies as permitted by Section 1010.1.9.3, Item 4.

Attachment B

The following is excerpted from the pending changes that will appear in the pending 2018 edition of the International Building Code (IBC):

1010.1.4.4 Locking arrangements in educational occupancies. In Group E and Group B educational occupancies, egress doors from classrooms, offices and other occupied rooms shall be permitted to be provided with locking arrangements designed to keep intruders from entering the room where all of the following conditions are met:

1. The door shall be capable of being unlocked from outside the room with a key or other approved means.
2. The door shall be openable from within the room in accordance with Section 1010.1.9.
3. Modifications shall not be made to listed panic hardware, fire door hardware or door closers.

1010.1.4.4.1 Remote operation of locks. Remote operation of locks complying with Section 1010.1.4.4 shall be permitted.

Attachment C

The following code requirements are excerpted from Chapter 14 New Educational Occupancies of the 2018 edition of NFPA 101, Life Safety Code, which will be issued and published in September 2017:

14.2.2.2.4* Classroom Door Locking to Prevent Unwanted Entry.

Classroom doors shall be permitted to be locked to prevent unwanted entry provided that the locking means is approved and all of the following conditions are met:

- (1) The locking means shall be capable of being engaged without opening the door.
- (2) The unlocking and unlatching from the classroom side of the door can be accomplished without the use of a key, tool, or special knowledge or effort.
- (3) The releasing mechanism shall open the door leaf with not more than one releasing operations.
- (4) The unlocking and unlatching means are mounted at a height not less than 34 in. (865 mm) and not exceeding 48 in. (1220 mm) above the finished floor.
- (5) Locks, if remotely engaged, can be unlocked from the classroom side.
- (6) The door is capable of being unlocked and opened from outside the room by staff with the necessary key or other credential.
- (7) The locking means does not modify the door closer, panic hardware, or fire exit hardware.
- (8) Modifications to fire door assemblies, including door hardware, shall be in accordance with NFPA 80.
- (9) The emergency action plan, required by 14.7.1, addresses the use of the locking and unlocking means from within and outside the room.
- (10) Staff is drilled in the engagement and release of the locking means, from within and outside the room, as part of the emergency egress drills required by 14.7.2.

The following code requirements are excerpted from Chapter 15 Existing Educational Occupancies of the 2018 edition of NFPA 101, Life Safety Code, which will be issued and published in September 2017:

15.2.2.2.4* Classroom Door Locking to Prevent Unwanted Entry.

Classroom doors shall be permitted to be locked to prevent unwanted entry provided that the locking means is approved and all of the following conditions are met:

- (1) *The locking means shall be capable of being engaged without opening the door.*
- (2) *The unlocking and unlatching from the classroom side of the door can be accomplished without the use of a key, tool, or special knowledge or effort.*
- (3) The releasing mechanism shall open the door leaf with not more than *two releasing operations.*
- (4) The releasing mechanism for unlocking and unlatching shall be located not less than 34 in. (865 mm) and not exceeding 48 in. (1220 mm) above the finished floor.
- (5) Locks, if remotely engaged, can be unlocked from the classroom side.
- (6) *The door is capable of being unlocked and opened from outside the room by staff with the necessary key or other credential.*
- (7) The locking means does not modify the door closer, panic hardware, or fire exit hardware.
- (8) Modifications to fire door assemblies, including door hardware, shall be in accordance with NFPA 80.
- (9) *The emergency action plan, required by 14.7.1, addresses the use of the locking and unlocking means from within and outside the room.*
- (10) *Staff is drilled in the engagement and release of the locking means, from within and outside the room, as part of the emergency egress drills required by 14.7.2.*

[Note: Underlining, italics, and coloring added for emphasis.]

Attachment C

The following excerpts are extracted from the 2015 edition of NFPA 101, Life Safety Code—they are unchanged in the soon-to-published 2018 edition:

4.7* Fire Drills.

4.7.1 Where Required. Emergency egress and relocation drills conforming to the provisions of this Code shall be conducted as specified by the provisions of Chapters 11 through 43, or by appropriate action of the authority having jurisdiction. Drills shall be designed in cooperation with the local authorities.

4.7.2* Drill Frequency. Emergency egress and relocation drills, where required by Chapters 11 through 43 or the authority having jurisdiction, shall be held with sufficient frequency to familiarize occupants with the drill procedure and to establish conduct of the drill as a matter of routine. Drills shall include suitable procedures to ensure that all persons subject to the drill participate.

4.7.3 Orderly Evacuation. When conducting drills, emphasis shall be placed on orderly evacuation rather than on speed.

4.7.4* Simulated Conditions. Drills shall be held at expected and unexpected times and under varying conditions to simulate the unusual conditions that can occur in an actual emergency.

4.7.5 Relocation Area. Drill participants shall relocate to a predetermined location and remain at such location until a recall or dismissal signal is given.

4.7.6* A written record of each drill shall be completed by the person responsible for conducting the drill and maintained in an approved manner.

4.8 Emergency Action Plan.

4.8.1 Where Required. Emergency action plans shall be provided as follows:

- (1) Where required by the provisions of Chapters 11 through 42
- (2) Where required by action of the authority having jurisdiction

4.8.2 Plan Requirements.

4.8.2.1* Emergency action plans shall include the following:

- (1) Procedures for reporting of emergencies
- (2) Occupant and staff response to emergencies
- (3)* Evacuation, relocation, and shelter-in-place procedures appropriate to the building, its occupancy, emergencies, and hazards
- (4) Appropriateness of the use of elevators
- (5) Design and conduct of fire drills
- (6) Type and coverage of building fire protection systems
- (7) Other items required by the authority having jurisdiction

4.8.2.2 Required emergency action plans shall be submitted to the authority having jurisdiction for review.

4.8.2.3* Emergency action plans shall be reviewed and updated as required by the authority having jurisdiction.

7.2.1.5.10* A latch or other fastening device on a door leaf shall be provided with a releasing device that has an obvious method of operation and that is readily operated under all lighting conditions.

7.2.1.5.10.1 The releasing mechanism for any latch shall be located as follows:

- (1) Not less than 34 in. (865 mm) above the finished floor *for other than existing installations*
- (2) Not more than 48 in. (1220 mm) above the finished floor

7.2.1.5.10.2 The releasing mechanism shall open the door leaf with not more than one releasing operation, unless otherwise specified in 7.2.1.5.10.3, 7.2.1.5.10.4, or 7.2.1.5.10.6.

7.2.1.5.10.3* Egress door assemblies from individual living units and guest rooms of residential occupancies shall be permitted to be provided with devices, including automatic latching devices, that require not more than one additional releasing operation, provided that such device is operable from the

Attachment C

inside without the use of a key or tool and is mounted at a height not exceeding 48 in. (1220 mm) above the finished floor.

7.2.1.5.10.4 Existing security devices permitted by 7.2.1.5.10.3 shall be permitted to have two additional releasing operations.

7.2.1.5.10.5 Existing security devices permitted by 7.2.1.5.10.3, other than automatic latching devices, shall be located not more than 60 in. (1525 mm) above the finished floor.

[Note: Underlining, italics, and coloring added for emphasis.]