

Q&A from Webinar 1 – Code Changes Affecting Classroom Security
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What would you recommend as a retrofit to add a classroom security function to a cylindrical lock - i.e. some kind of added deadbolt.

With the approval of TIA 1436, NFPA 101-2018 allows some types of secondary locking devices on existing schools – including deadbolts – as long as all of the requirements of the code are met. I was not in favor of the change to the code, because I believe that a single operation to unlatch a door is an important part of safe egress. Conversion kits are available for some locks, which would allow an existing lock to be changed to a classroom security function. Locksets have proven sufficient in past school shootings. In addition to code-compliant locks, I would highly recommend increasing the impact-resistance of glazing next to the hardware.

More info: <https://idighardware.com/2019/10/decoded-two-releasing-operations-for-egress-december-2019/>
<https://idighardware.com/2018/02/decoded-code-requirements-for-classroom-security-video-2/>

You mentioned panic hardware is required for classrooms with an occupant load of 50 or more – does this only apply to E occupancy/K-12 or also apply to Group B/higher ed?

Panic hardware is required by the IBC for doors which lock or latch, serving assembly and educational occupancies with an occupant load of 50 people or more (also high hazard occupancies of any occupant load). NFPA 101 requires panic hardware for doors which lock or latch, serving assembly, educational, and day care occupancies with an occupant load of 100 people or more (also areas of high hazard contents with an occupant load of >5 people). Panic hardware is also required for some rooms housing electrical equipment. Panic hardware would not be required for a business/Group B occupancy, but if a university classroom building contains lecture halls which seat 50+ (IBC) or 100+ (NFPA 101), those rooms would typically be considered assembly occupancies and would require panic hardware if the doors lock or latch.

More info: <https://idighardware.com/2015/08/where-is-panic-hardware-required-by-code-video/>
<https://idighardware.com/2017/04/decoded-panic-hardware-refresher-may-2017/>

Isn't it more accurate to say that it's the fire alarm systems rather than the sprinkler systems that save lives? Insurance companies want the sprinklers to save the property, but fire marshals prefer the alarms for evacuation.

I think this question was in reference to the sprinkler statistic from the NFPA report “Structure Fires in Schools.” My intent was not to say that that one type of system was more valuable than another. My point was that some proponents of relaxing the codes incorrectly state that all schools have sprinkler systems to control fire growth, so egress is less important. According to the NFPA report, only 39% of the schools where fires occurred during the period of the study were equipped with sprinkler systems. We cannot rely only on active fire protection systems to ensure life safety.

For classroom security function installed in early childhood, a client requested all locks keyed the same for ease of teacher rotation - is this a good policy?

I think it makes sense to at least key the inside cylinders so that any teacher's key can be used to lock the door.

With regard to the Highlands Ranch shooting how is pulling the magnet from the door frame any different than locking a door from the inside? The ability for responders to enter should not be any different.

In my opinion, the student's removal of the magnet illustrates two things. First, students are aware of the security devices and methods used in classrooms and could use them to secure a room. Second, if a school has storeroom locks (always locked), for example, the teachers carry keys and use them regularly. If a school uses magnets to cover the strikes, the doors are never actually locked, and the teachers may not be accustomed to carrying keys. In this situation during an unauthorized lockdown, it may take more time to locate keys and access the room.

Are they considering the amendment (TIA 1436) for higher education classrooms?

Whether or not to allow a second releasing operation for classrooms in existing higher ed facilities is currently being discussed for the 2021 edition of NFPA 101.

For existing classroom function mortise locks it is easy enough to add a cylinder to the inside to control the function of the outside lever and still allow free egress. Is there an indicator that can be added to the inside along with the mortise cylinder so it can be seen from the inside whether the door is locked without having to approach the door?

It depends on the lock manufacturer, but some have conversion kits to change the function and also add an indicator. <https://idighardware.com/2019/08/lock-function-conversion-kits/>

Can schools use a storeroom lock and just keep the doors locked all of the time?

In most states that would be acceptable, but there may be state requirements or standards that require or prohibit a specific lock function.

Have there been any lawsuits as a result of the deployment of barricade devices?

So far, the one that I have heard of involved the use of a fire hose on the closer arm: <https://idighardware.com/2019/04/teacher-confined-fire-hose/>. There have been at least 3 school shootings where the assailants barricaded doors to delay law enforcement response – Virginia Tech, Platte Canyon High School, and West Nickel Mines Amish Schoolhouse. There is a study of 19 school barricaded captive events here: https://www.researchgate.net/publication/226050904_Barricaded_Captive_Situations_in_Schools_Mitigation_and_Response.

I thought that the 2018 TIA (NFPA 101) was only in effect for existing school buildings?

Yes, that is correct – existing school buildings, and only where NFPA 101-2018 has been adopted.

Has there been any consideration of using "man-trap" methods?

I have seen some discussion of “man-traps” but in most cases it turned out that they were referring to security vestibules which allow free egress and not to security interlocks. I am not in favor of trying to trap an active shooter in a school.

Can a convenience door have delayed egress regardless of number of occupants?

The IBC requires doors to meet the egress requirements if they are required for egress, or if they are provided for egress purposes. This means that even if a door is not required because of the required egress capacity, if it is used for egress it has to comply with the code. In addition, delayed egress locks are not allowed by the IBC in assembly occupancies, so I would get approval from the AHJ before installing them on doors serving a large number of occupants.

Any comment on NFPA 3000? It is an ANSI approved Best Practice for ASHE.

There is more information about NFPA 3000 here: <https://idighardware.com/2018/06/decoded-nfpa-3000-august-2018/>

Is there a database of requirements by state?

I have not seen one. I have compiled information from some states in the school security and safety section of iDigHardware, but I rely on readers to help me keep it up to date. <https://idighardware.com/schools/>

Are you aware of any reports that analyze specifics of how (exactly) an intruder moved through the building? Examples of questions include: were the doors locked or unlocked? Were they propped? If so how? What hardware was used? How was he able to move the building? Did occupants have training? If so, did it work?

There are detailed reports on some of the school shootings and some of the information you’re asking about can be pieced together from these reports. There was an animation of the shooting at Marjory Stoneman Douglas High School that really helped to illustrate what happened: <https://idighardware.com/2018/04/msd-commission/>

Do you think that the door operation should be fool proof for the substitute teacher that has not been trained on the function of the lock?

Yes, I think substitute teachers must be able to lock their doors and should not need a lot of training to do so.

Given that the hardware functions as designed and the problem boils down to people (loss of fine motor skill, left key in classroom, forgot code, locked door but got confused because it still opens from the inside), how do we minimize people activities in these situations?

Locking the doors and operating the hardware for egress should be as simple as possible, and the procedures must be reinforced with drills.

Any recommendations for classrooms that have storefront type doors? Our school has some special classrooms with traditional storefront doors. The doors have classroom intruder locks, but a shooter could easily just shoot the glass out.

I think the key there is to address the glass – either by replacing it with glazing that has more impact-resistance, or by adding a film to the existing glass.

Are deadbolts paired with classroom locks code compliant?

The IBC and IFC do not allow separate deadbolts, because those codes require doors to unlatch with one operation. With the approval of TIA 1436, NFPA 101-2018 would allow a separate deadbolt along with a lockset on existing schools, as long as the other criteria are met. A retrofit deadbolt that is attached to the existing hardware so that both the deadbolt and latchbolt unlatch with one operation would be code-compliant.

More info: <https://idighardware.com/2019/10/decoded-two-releasing-operations-for-egress-december-2019/>
<https://idighardware.com/2019/08/nfpa-101-tia-1436/>

We hear about the local jurisdiction or state jurisdiction. What is the difference between a 3rd grade class in Wyoming or Florida? Shouldn't it be a nationwide jurisdiction?

The main difference is response time, which can be longer in a rural setting. But I do agree that one set of best practices could apply to most schools. With that said, the codes and laws vary by state or even by county or city.

I have noted 5 active shooter cases (that I know of) where the fire alarm was activated either by gun smoke, the shooter himself, or by a well-meaning person to warn occupants. The ONLY way I found out about this is by watching available video, TV interviews or by means other than the actual report of findings. This fact often informs my design by limiting doors that must release on active fire alarm. What changes to the code eliminates or changes the need to release doors on fire alarm?

This is a topic of conversation right now among fire officials and legislators. NFPA 72 outlines the requirements for a positive alarm sequence, which requires acknowledgement of a fire alarm signal within 15 seconds, then up to a 180 second delay before automatic activation of the notification appliances. There are several bills going through state legislatures which allow schools to delay evacuation by up to 3 minutes if there is an unplanned fire alarm.