Q&A from Live With Lori Session 2 – Sensor Release and Door Hardware Release Locking Systems, September 15th, 2026

Note: This is an edited transcript of the Q&A from the live session, including some additional questions that were submitted but not answered due to time constraints. Questions that were not related to the session topic or that were specific to a certain jurisdiction are not included in this transcript. The local ACE (Allegion Code Expert) can be consulted for local code questions.

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Q&A

1. When is a push button required for these systems? (Don)

Lori did a really nice job in her portion of the presentation, but this area is critical for both life safety and code compliance, so a detailed review is a great idea. The model codes are really clear – any time a motion or presence sensor is the primary means to unlock a magnetic lock; a button is mandated. There are some really important details called out in the code that we need to review.

The button has to be located within five feet of the door and must be labelled "Push To Exit". Interestingly, the codes don't stipulate latch edge or lead edge of the door, so some leeway there is offered. The button also must be located between and 40 and 48 inches above the finished floor.

The way the button is wired is really important. Pressing the button must mechanically break power to the magnetic lock for 30 seconds. The button can use an additional set of contacts to signal a building security system that this action has taken place, but use of the button has to physically open the circuit to the mag lock, not send a signal to a controller to release the mag lock.

Per the model codes, the button also must be independent of system electronics. The button timing mechanism for the 30 second delay could be pneumatic or electronic, but that 30 second timing cannot rely on another portion of the system, it's got to be part of the button.

It’s worth noting that even in applications where a door hardware release is used instead of a motion or presence sensor, many integrators will still add a button following the same guidelines I just reviewed. These firms don’t want to rely solely on the switch built into the door hardware. There’s nothing in any code that prohibits redundant unlocking mechanisms.

2. In lieu of a manual button, can you use a wave to open button that does everything a push button would do? NFPA 101 has added this allowance to the new code. (Lori)

For now, the wave to open button is not specifically addressed in the IBC. So one thing to think about is that the field of a wave to open button could be large enough that someone could accidentally trigger it by getting too close when they're going by. And that might not seem like a big deal, but remember that button has to unlock the door for 30 seconds which is a long time when you’re thinking about security. You don't necessarily want that happening all the time. But right now it's a little bit up in the air whether the IBC would permit that type of button or not. It does have to be the type that can unlock the door for 30 seconds independent of the other electronics. And it's not going to say push to exit as the code requires - it might say wave to open or something like that. You can use the wave button in if the AHJ permits it – in my opinion it does meet the intent of the code as long as the 30-second timer is within the button, but if someone's really sticking to exactly what the code text says, it has to say push to exit. And then there's also the possibility that it could be inadvertently triggered if someone gets too close to the button, but that is not a code issue.

3. When is a REX required required per code? I have been told many different requirements. (Mark)

A lot of people think that the RX switch is controlling egress and therefore a code requirement, but in most cases, this is not true…in fact there are only two cases where the RX switch controls egress, and these are the two code sections that Lori covered today:

1) Sensor Release - Where the RX switch is the “sensor”, typically mounted above the opening and unlocks the locking device (usually a mag lock) when someone approaches the door to egress.
2) Door Hardware Release - Where the RX switch in located in the hardware that’s mounted to the door so that the egress motion, in the case of a panic bar…the act of pushing in the panic bar triggers the RX switch and releases the locking device (again typically a mag lock)

In most other types of openings, the RX switch is for monitoring the door and works in conjunction with the DPS but does not control egress.

4. Does the switch or rex sensor need to be listed to UL 294/UL 1034? (Lori)

This has been clarified in the 2024 edition of the model codes - only the electromechanical or electromagnetic locks require the UL 294 or UL 1034 listing. BUT - prior to the 2024 editions, these requirements were more vague - it would say something like the locking system units need to be listed but there was no real clarification on what qualified as a locking system unit. For locations where the 2024 editions of the model codes have been adopted, this should be clear, but in locations where an older edition has been adopted it depends on how the AHJ interprets the requirement - they may require things like power supplies, readers, sensors and switches or even power transfers to be listed. In the future we should see that shift to just the locks, although there are some products that because of their listings (not because of the codes) do require a listed power supply. We did talk about these listings quite a bit in the first session if you want to go back and listen to the recording which is on the Live page of iDigHardware.

5. Is battery back-up of the individual lock power supply permitted? (Don)

The answer here is frankly a little gray. The model codes note that the opening must unlock upon loss of power. Whether that loss of power occurs solely from a loss of street feed power or when battery power runs out is interpreted very differently in various jurisdictions.

The advice I'd offer anyone considering use of sensor release of magnetic locks is to contact the AHJs in the area. Today's power supplies make use of batteries where allowed a fairly straightforward task even if batteries need to be added after substantial completion of a project.

Conversely, if the opening or openings in question directly affect the safety of occupants, such as controlled egress in I-1 or I-2, or delayed egress in a classroom, then it's a pretty easy case to make that battery back up is an important part of the safety and security system for the very people the system is designed to protect.

Unless all the system components are running on true UPS, and would instead rely on standby generation, that absolutely brings up the need to protect the function of that opening during the switchover time between street feed power and full operational output of the building's emergency generation system.

6. What resources or training would you recommend for a newer commercial security business looking to strengthen its knowledge of door hardware, electrified hardware, access control, and code compliance? (Mark)

This is a great question because I get to talk about one of my favorite subjects… Education!

If you work for Allegion…we have lots of resources you can turn to, from internal classes where we teach codes and product application to reaching out to a mentor who can help you negotiate this complicated subject…I know that other manufactures also offer this sort of internal instruction as well.

I have also spent many years as a DHI instructor, and we hold several classes every year to help educate the next generation of commercial door and hardware professionals.

As far as the specific subject of electronic hardware there is an in-person class COR133 that is typically held twice a year. The COR133 Class "Electrified Architectural Hardware" Takes you through the entire electrified hardware process from theory, to products, to the hands-on wiring of the hardware.

7. Do the codes apply if the door does not have an exit sign? (Lori)

The short answer would be yes, usually, and I say that for a couple of reasons. The first is that not all doors that are part of a means of egress are required to have an exit sign, so it is very common to have a door without an exit sign that is part of a means of egress. And two, the IBC requirements apply to doors that are required for egress and also to doors that are provided for egress purposes, so there are very few doors that don't fall into one of those categories. With that said, it is possible that a door is not required for egress and is not provided for egress purposes, and in that case the code requirements may not apply. It's mostly a question of whether the AHJ agrees that the doors are not required for egress or provided for egress purposes - sometimes they will require a sign stating Not an Exit.

8. Can mag locks be used for stairwell reentry doors? (Don)

A magnetic lock can be used on a stairwell door application, but not in all cases. Since IBC is now prohibiting use of mag locks unlocked by sensors on doors equipped with panic hardware, there's a built in exclusion on door requiring panic hardware.

Additionally, every stairwell door, by definition is a fire rated opening. If a magnetic lock is used, a fire rated mechanical latch would be needed as well. Since that opening would also be an egress door, you're looking at a sensor, an auxiliary button and a fire alarm connection anyway. Your hardware selection may be further complicated if the end user's requirements include key ingress during secure times.

When you start comparing the cost of hardware sets with fail safe electrified trim versus a magnetic lock, along with the added access control connections and keying requirements, a mag lock may rule itself out of practical consideration.

9. Can you clarify the required components when you have an auto-operator with wave activation devices and also the requirements when the auto-operator is only active upon activation by a card reader? Are PIR sensors allowed to trigger a door operator? (Mark)

When it comes to auto operators the BHMA puts them into two categories:

- ANSI/BHMA A156.10 Full-Powered Operated, which means the doors open automatically when someone approaches the opening. They require safety sensors and guide rails to protect building occupants passing through the opening, because the doors are allowed to open more quickly and with more force than a door with a low energy operator.
- ANSI/BHMA A156.19 Low – Energy Operator, which must be actuated with a "Knowing Act" Switch and do not require all of the safety equipment to protect building occupants.

So back to your question…If an auto operator is actuated with any kind of "knowing act" switch (card reader, waveless actuator, touch actuator, ETC.) it falls into the category of A156.19 and the code doesn't require any additional safety equipment…however many end users, especially hospitals may require it.

But if you actuate the door with a PIR then you move into ANSI A156.10 and then you are required to have all the safety protocols called out in that section.

10. What are the advantages and disadvantages of shear locks? (Don)

…Ahhh, shear locks. I've been selling mag locks since 1992, and I'll be the first one to state, or even put in writing that use of a shear lock sits in a very narrow window.

If that term isn't super familiar to you, a shear lock instead of holding 'face to face' if you will, has match milling on the coil and armature and the coil pulls the armature to it with magnetic force. The original basis of design for a shear lock was to have the coil in the head of the jamb and the armature mortised into the top of the door, thus offering a fully concealed assembly when the door is closed. Visually, this is an extremely clean look.

Shear locks have tremendous holding force, up to 3000 pounds, so properly operating shear locks have that in the 'pro' column. Additionally, in a typical application where the coil (the electrified magnetic portion of the lock) is in the door jamb and the armature The

attracted steel block) is mortised into he top of a door, shear locks are fully concealed when the door is closed.

However, there are two really important points about the way shear locks operate that must be considered. First, those match milled mating surfaces on the coil and armature mean door and frame alignment and gaps must be held within specified tolerances, or holding force can be reduced to almost nothing. The second point about shear lock operation is the noise that is produced when the armature pulls the coil into the locked position and when the armature is released on removal of power. Especially on locking, shear locks make a very loud snap. This can be extremely disruptive or unnerving for occupants in an area, especially if they're either around the noise all the time, or completely unfamiliar with the space. I've described the noise as sounding like a small caliber pistol is being fired in the next room. Given that the fully concealed visual effect of shear locks means they're often used in spaces with lots of glass, hard ceiling and high levels of floor finish, those sounds can be really noticeable. On doors that will be locked and unlocked a lot, the operating noise of that shear lock is going to cause complaints early on.

The high holding force of shear locks kind of leads into an additional point.

We often get questions on how much holding force is needed from a magnetic lock. We kind of divide mag locks into two categories, traffic control and security. Traffic control magnetics are a solid choice for smaller doors like pass through sample doors for lab spaces in health care. If we're looking at door in interlocks where all staffers know that the doors may be locked frequently when its mate is open, a 500 or 600 pound mag may be just fine. For true security applications, we want to use magnetic locks that have at least 1000 pounds of holding force.

11. What is the typical/FAA/Code required security hardware configurations/specifications at secure-side exit discharge gate at door openings to Airside (AOA) area(s) of evacuation. // If delayed egress is allowed - why? (Lori)

I'm not positive that I'm imagining the correct doors in an airport, but I do see a lot of delayed egress locks in airports so that does seem to be the most common type of system when the door is required to provide egress but also has to provide security. Years ago I spoke to an airport architect about this because delayed egress locks are not permitted by the IBC for assembly occupancies like an airport terminal. The architect told that the Department of Homeland Security requires delayed egress locks for certain locations in airports, even though they are not permitted by the building code. This means that the code official would need to approve a code modification each time this application is used in an airport terminal. We will have a live session on delayed egress in this series so we can talk more about the requirements then.