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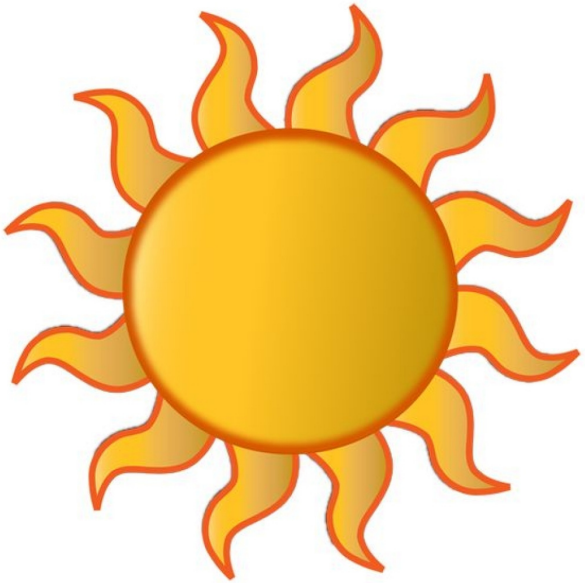
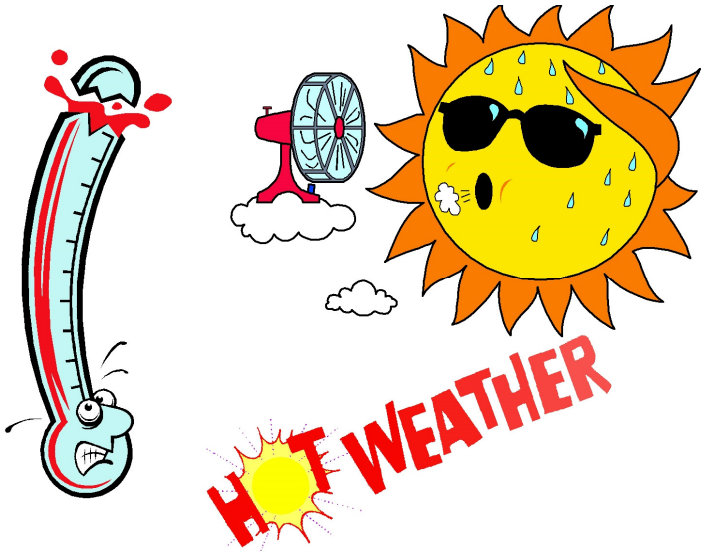
Little Rock Chapter - Chartered November 1965 August 2024





In This Issue

Dear friends and fellow CSI members. I have assumed the mantle of President one more time and am coming to you as the humble servant to you and CSI. I have explained what CSI means to me and how it has helped my career. I have also asked the newsletter editor (me) to include some stories of how CSI membership has helped others in their careers. All of this is to let you know that CSI is not just another organization you join to add additional alphabet to your signature block. CSI is there for you when you need them. Members of CSI routinely get in touch with other members across this great country and even in some foreign countries. This gives you a plethora of both experts and mentors to draw on to resolve some challenges you may have. I have used it many times to help overcome challenges we have encountered in another state or region.

This brings me to the real need of the Little Rock Chapter, people. We need people to assume the mantle of leadership, we need people to help us bring the Little Rock Chapter back to the active life we had in the past but with new ideas, new philosophies, and new outlooks on just how the Chapter should run and what we should be providing our members. Yes, you are our customers too. You are the lifeblood that this Chapter needs to provide these services, and you are the very reason that we exist. I know not everyone wants to be a leader, however, every set of leaders needs people to work with them to get things accomplished. You will notice I did say “Work With” and not “Work For” as a good leader is willing to get out there and roll up their sleeves with those doing the grunt work. Don’t want to be a leader, how about an event chair, a worker for a golf tournament or some other fundraising event. Like to work with Colleges, then we always need someone to interact with the local colleges providing construction related courses. More of an introvert who can write, we need people to work on documents, award nominations, etc. You will notice I did say “Work With” and not “Work For” as a good leader is willing to get out there and roll up their sleeves with those doing the grunt work.

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Don’t want to be a leader, how about an event chair, a worker for a golf tournament or some other fundraising event. Like to work with Colleges, then we always need someone to interact with the local colleges providing construction related courses. More of an introvert who can write, we need people to work on documents, award nominations, etc. Like to talk in front of people, we need people to coordinate monthly meetings, assessing presenters and presentations, and introducing them to the attendees at our Monthly Chapter meetings. Do you know anyone like that, invite them to talk with one of the existing leaders. We love to talk CSI.

In case you don’t know, CSI is broken down into Regions. Our Region is the Gulf States Region and consists of Chapters in Arkansas, Louisiana, Mississippi, Alabama and the Panhandle of Florida. We meet once a year in a location sponsored by one of the Chapters. We most recently met in Pearl, Mississippi (just outside of Jackson). Our meetings are intended to provide new leaders and new members with information, direction, and most of all introduce them to the various mentors available throughout the Region. Coming to the Region Conference is often the highlight of the year for many people. By the same token, the Institute has started organizing and presenting an Annual Institute Conference (long story, call me some time and I will fill you in). This is where people from all over the Country and even some foreign countries come together for training, education, and awards. As with the Region Conference, it is also a time to get together with old and new friends from all around. There are other benefits, such as the Master Specifiers Retreat, access to and ability to contribute to various Online Communities and Blogs, keeping you up to date with many compelling topics and discussions. Finally, as I have addressed in previous articles, we have our Certifications that are available to everyone who desires to become an expert in their particular field. CSI has so much to offer, that I can’t put it into a single article. I will address individual benefits in upcoming letters. I hope you will consider CSI as valid and valuable membership option. If you have any questions, please contact me or any other member.

What I Learned From CSI - Don’t Blow It: Locating the Fire Sprinkler Valve Assembly

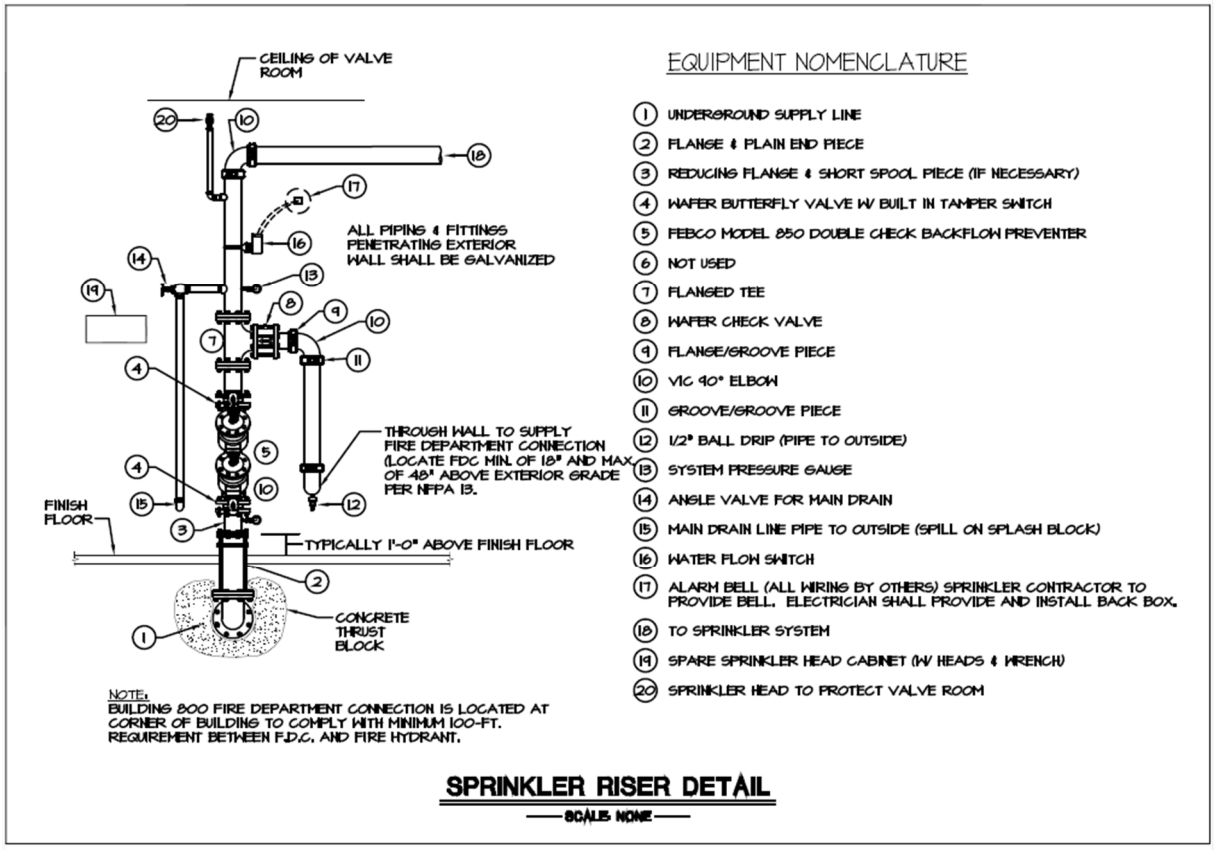
By: Gary Bergeron, CSI, CCS, GSR Technical Chair

Many of us in the construction industry have observed fire sprinklers in several buildings. But how many have noticed the valve assembly where the fire sprinkler piping enters the building? Mechanical engineers and sprinkler contractors refer to this as the "fire riser". The “riser” is an assembly of valves, alarm switches, gauges, and other devices which enable the system to work as designed to extinguish a fire in the early stages.

Two CSI friends and their spouses were recently out at a new restaurant and noticed the fire riser serving the building located in the corner of the room. They texted me a photo of the system and asked me what I observed. Being the technical geek that I am, I listed all the valves (OS&Y and BFP valves, waterflow switch, valve tamper switch, main drain valve, pressure gauges, spare sprinkler head cabinet, inspection tags, and hydraulic flow placard) and their purposes along with the adjacent equipment. I didn't see the "forest for the trees", for I didn’t notice a table and two chairs in the foreground of the photo adjacent to the fire riser. The lack of a secure closet for the fire riser equipment invites unauthorized personnel to manipulate the valves which will cause an unnecessary fire alarm to go off.

There are two buildings here in Knoxville, which will remain un-named, that have a similar installation with no closet. According to IBC code section 902.2: This room or closet should be large enough to allow access to all fire sprinkler and fire alarm valves and devices. It should also be accessible from the outside with a door or access panel that's large enough for maintenance and testing. The room should also maintain a temperature between 40° F and 100° F. Please see the attached diagram of a wet riser for the equipment identification on a fire riser.

Thanks to Whitney Kaul and Samer Shatara for providing inspiration for this technical article. If you want to learn more about this and other Construction issues, please or contact Gary Bergeron at Gary@Kelso-regen.com.



Licensing Boards: Entities That Govern the Design Professions Part 2 – Qualifications of Perspective Licensees and Licensing Exams

By: Kevin O'Beirne, PE, FCSI, CCS, CCCA, CDT

This is the second in a four-part series on this blog addressing licensing boards governing the design professions, comprised of: (a) Part 1 – Introduction to Licensing Boards and Revisions of Laws and Regulations; (b) Part 2 – Qualifications of Perspective Licensees and Licensing Exams; (c) Part 3 – Issuance of Licenses and Registrations; and (d) Part 4 - Enforcement.

This series of articles describes the basic functions of licensing boards governing the design professions and how their operations affect personnel engaged in architecture, engineering, and other design professions in the United States. In this series of articles, laws, rules, and regulations are referenced as either “laws and regulations” or “statutory requirements”.

Three basic actions are necessary for an individual to become a licensed design professional: (1) completing accredited education in the subject design profession, (2) obtaining appropriate experience in the practice of the design profession, and (3) passing exams required for licensure. Each of these is discussed below. In addition, applicants must be, “of good character” and furnish references from other design professionals licensed in that jurisdiction.

Education

Education must be obtained in the appropriate field from an institution of higher learning with appropriate accreditation. For example, education in architecture must be completed at an institution accredited by the National Architectural Accrediting Board (NAAB), and engineering education must be obtained from an institution accredited by the Engineering Accreditation Commission of ABET (EAC/ABET). ABET was originally the Accreditation Board for Engineering and Technology, but its name was changed to simply “ABET” in 2005. Applicants for licensure must submit to the licensing board evidence of their successful completion of education, typically including a transcript from the accredited college or university.

Engineering Qualifications and Exams

Engineering licensure requires the applicant to pass two, separate licensing exams: the “Fundamentals of Engineering” (FE) exam (sometimes known as the “Engineer in Training” or EIT exam) and the “Principles and Practice of Engineering” (PE) exam. Both exams are prepared and administered through the National Council of Examiners for Engineering and Surveying (NCEES).

The FE/EIT exam requires six hours, of which the exam proper occupies 5 hours, 20 minutes. Alternative versions of the FE/EIT exam are available for seven different, broad engineering disciplines: chemical, civil, electrical and computer, environmental, industrial and systems, mechanical, and “other disciplines”. An examinant needs to take and pass only one of these alternative exams. To be eligible for the FE/EIT exam, a person must be either in their senior year of undergraduate education in an EAC/ABET-accredited program, or have obtained either a bachelor of science or master’s degree from an EAC/ABET-accredited program.

In contrast, separate PE exams are available in 16 different engineering disciplines: Agricultural and Biological, Architectural, Chemical, Civil, Control Systems, Electrical and Computer, Environmental, Fire Protection, Industrial and Systems, Mechanical, Metallurgical and Materials, Mining and Mineral Processing, Naval Architecture and Marine, Nuclear, Petroleum, and Structural. An applicant needs to pass only one of these as part of the process of becoming a licensed professional engineer. The duration of the PE exam is typically about eight hours (plus one hour for an orientation tutorial and one 50-minute break), although the duration may be longer for certain types of engineering. For example, at the time of this writing, the PE exam for structural engineering was 10.5 hours, plus one hour for orientation plus a break.

To be eligible for the PE exam, an applicant must have demonstrated to the satisfaction of the licensing board one of the following: (1) a “specific record of four years of progressive engineering experience after a qualifying [bachelor of science] degree is conferred” (source: Section 130.10.2.a.3 of NCEES's Model Law (revised September 2021); bracketed text not present in the original); (2) three years of appropriate engineering experience after a qualifying master’s degree in engineering is conferred; or (3) two years of appropriate engineering experience after a qualifying doctorate in engineering is conferred. Laws and regulations in some jurisdictions may include other, more specific requirements, and may allow an individual to qualify for the licensing exams without an engineering bachelor of science degree from an EAC/ABET accredited college or university when a specific, greater extent of appropriate experience is documented and accepted by the licensing board.

Architecture Qualifications and Exams

To become a registered architect, an applicant must pass the Architect Registration Examination (ARE) administered by the National Council of Architecture Registration Boards (NCARB). Section R301.3.2 of NCARB’s Model Laws and Regulations (2022) requires, “2) To qualify for the Approved Examination, an Applicant shall present satisfactory evidence to the Board of one of the following: a. An architecture degree from an Approved Educational Program; or b. Active enrollment in a NCARB-accepted Integrated Path to Architectural Licensure (IPAL) option within an Approved Educational Program.” At the time of this writing, NCARB’s current exam is ARE 5.0, which includes six “divisions,” as indicated in Table 1, together with the exam duration for each.

Table 1: ARE 5.0 Divisions

Division	ARE 5.0 Maximum	NCARB AXP Experience
Practice Management	2 hours, 40 minutes	160 hours
Project Management	3 hours	360 hours
Programming & Analysis	3 hours	260 hours
Project Planning & Design	4 hours, 5 minutes	1,080 hours
Project Development &	4 hours, 5 minutes	1,520 hours
Construction & Evaluation	3 hours	360 hours
TOTALS	**19 hours, 50 minutes**	**3,740 hours**

Each Division of the ARE is a separate exam that may be taken in any order desired by the applicant, upon the licensing board's acceptance of the individual's application to take the exam. The various divisional exams need not be taken on consecutive days, although some licensing boards may establish that the exams all be taken within a stipulated period, such as five years. While NCARB presents no experience requirement for eligibility to take the exams, beyond graduating from an approved educational program, most state licensing boards' regulations establish a mandatory experience requirement as a precondition for examination. The experience requirement varies by jurisdiction. For example, New York requires four years of relevant, documented architecture experience prior to taking the ARE; Pennsylvania requires three years; and both Massachusetts and Nebraska require completion of NCARB's Architectural Experience Program (AXP) as indicated in Table 1, above.

Section R301.2 of NCARB's Model Laws and Regulations (2022) includes the following requirements for experience necessary for licensure: "An Applicant shall successfully complete the Approved Experience Program to obtain an initial License. An Approved Experience Program means the Architectural Experience Program (AXP) administered by NCARB." At the time of this writing, NCARB's AXP requires documentation of not less than the minimum experience indicated in Table 1, above.

State architecture boards may establish additional or alternative experience requirements, often as a precondition for examination. For example, Section 7304 of the New York State Education Law, governing the practice of architecture, requires documentation of not less than four years of appropriate, relevant architecture experience, together with a bachelor's degree in architecture from an accredited college or university, as a prerequisite for licensure. Section 7304 of the New York State Education Law further allows (bracketed text is not present in the original and is included here for clarity):

"In lieu of [bachelor's] degree and experience [four years] requirements specified in subparagraphs (2) and (3) of subdivision one of this section, twelve years of practical experience in architectural work of a grade and character satisfactory to the board may be accepted by the department, provided that each complete year of college study satisfactory to the department may at the discretion of the board be accepted in lieu of two years of experience but not to exceed nine years toward the required total of twelve years."

Common Elements for Qualifications and Exams

Regardless of whether one is applying to take the Architect Registration Examination or the "Principles and Practice of Engineering" (PE) exam, documenting compliance with experience requirements can be challenging and time-consuming. While working to accrue the necessary experience, applicants should keep appropriate records, including copies of timesheets, when available from their employer. Summaries of the applicant's experience must be written on the licensing board's application forms in sufficient detail to convince the licensing board that the experience is appropriate. The applicant must obtain from their supervisor, project manager, or other person supervising their work an endorsement that the applicant's summary of claimed experience is correct. It may be advisable to retain in the applicant's own file sufficient documentation to substantiate the experience claimed on the application submitted to the licensing board.

Experience summaries submitted to the licensing board should be focused on the types of experience necessary for the purpose. For example, an engineer's application to take the PE exam should typically document proper engineering experience. Including other types of experience, no matter how apparently desirable they may seem to the applicant, such as performing construction observation, land surveying, or architecture (of whatever minor nature), has potential to result in the licensing board deeming such experience inapplicable and perhaps delaying the applicant's ability to take the PE exam. Similarly, applicants for licensure as an architect must document not less than the minimum required experience established by their associated architecture licensing board. Including other types of experience, especially experience that does not properly constitute the statutory definition of architecture, for the associated

division (for jurisdictions requiring compliance with NCARB's AXP), has potential for the architecture licensing board to deem such experience as non-compliant relative to licensure eligibility.

It may be unwise to prepare and submit an application for examination or licensure documenting only the minimum experience necessary. Licensing boards may deem certain, claimed experience as insufficient. Thus, if the applicable experience requirement is four years, it may be advisable to document 4.5 or even 5 years of experience with an initial application.

Licensing exams are developed and administered by NCARB and NCEES, rather than the associated licensing board. Although the licensing board is responsible for determining an applicant's eligibility to take the associated exam, formal application for the exam is typically through NCEES or NCARB, as applicable. Exam fees are typically payable to NCARB or NCEES.

The architecture and engineering exams are each administered at third-party, commercial test centers. NCARB and NCEES each use a different test administrator, although each has hundreds of locations across the United States and, perhaps, in other nations, as well. The exams are closed-book, although a digital, searchable reference guide is available to all examinants for each exam. Because they are administered at third-party test centers, the ARE, FE/EIT, and PE exams may be taken on a date and time of the examinant's selection. In the past, the exams were administered only on a very limited number of days per year at very few locations in each state, whereas the current approach is much more convenient for examinants.

This article does not attempt to present complete, detailed information on the licensing exams and qualification requirements for any design profession. Readers considering applying for licensure and taking the exams should refer to official sources, including, as applicable, NCEES, NCARB, the applicable state licensing board website, and the website of the third-party exam administrator.

Conclusions

Licensing boards have the authority to establish suitable requirements for licensure and evaluate the qualifications of applicants. While requirements for licensure for architects and engineers vary somewhat, they include multiple, lengthy licensing exams and requirements for specific, progressive types of appropriate experience. Successfully documenting compliance with qualifications requirements can be challenging and time-consuming. Although the licensing board serves as the gatekeeper for who can be admitted for examination and licensure, NCEES and NCARB develop the applicable licensing exams and separately retain independent entities to administer the licensing exams. Prospective applicants for licensure should carefully read, understand, and comply with board requirements for licensure.

Acknowledgments: The author gratefully acknowledges the assistance of the following, who kindly reviewed and commented on drafts of this article: Jerry Cavaluzzi, Esq, of Westchester County, NY, who is Chief Risk Officer and General Counsel for Kennedy/Jenks Consultants, Inc.; and James K. Lowe, Jr., Esq., P.E. (VA, emeritus), who has more than 45 years' experience in the A/E industry. In addition, Deborah Seiner, RA, of Foit-Albert Associates in Buffalo, NY and Steve VanDyke, RA of Nault Architects in Worcester, MA, also provided advice useful in the preparation of this article. The author is solely responsible for the content of this article.

PSA: Decoded: Accessibility Standards – Keys and Credentials

By: Lori Greene / IDig Hardware

Although keys require tight grasping, pinching, and twisting of the wrist, they are not prohibited by the accessibility standards.

The accessibility standards that are commonly used across the United States are the ADA Standards for Accessible Design and ICC A117.1 – Accessible and Usable Buildings and Facilities. These standards state that door hardware must be operable without tight grasping, pinching, or twisting of the wrist. This requirement has raised this month's Decoded question:

If the accessibility standards require hardware to be operable without tight grasping, pinching, or twisting of the wrist, how are keys addressed?

The accessibility standards do not include very prescriptive requirements related to door hardware. In addition to the prohibition on tight grasping, pinching, and twisting of the wrist, both sets of standards require handles, pulls, latches, locks, and other operable parts of door and gate hardware to have a shape that is easy to grasp, and that is operable with one hand. Releasing hardware must be mounted between 34 inches and 48 inches above the floor, or as required by state or local standards.

Door hardware must also meet the operable force limitations stated in the applicable standard. ICC A117.1 is aligned with the International Building Code (IBC), limiting the operable force for door hardware to 15 pounds of forward pushing or pulling motion or 28 inch-pounds of rotational motion. The ADA standards limit operable force for operable parts to a maximum of 5 pounds.

Beyond these requirements, the standards do not address details such as the minimum length of a thumbturn, the required shape of a lever handle, or the clearance around the hardware, other than the somewhat vague prohibition on tight grasping, pinching, or twisting of the wrist. As keys require someone to not only grasp, pinch, and twist, but also to have the dexterity to insert the key into the cylinder, how is this compliant with the standards? This also applies to some types of electronic credentials.

This question is answered in the U.S. Access Board's Guide to the ADA Accessibility Standards. Keys are not prohibited by the accessibility standards; they are not addressed by the standards at all, because a key is not considered an operable part of the hardware. The ICC A117.1 Commentary confirms that non-fixed portions of door hardware, such as keys or access cards, are not required to comply.

Operable parts are defined by both accessibility standards as: ***A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element***. And what is an element? ***An architectural or mechanical component of a building, facility, space or site.***

Keys and electronic credentials are not addressed by the accessibility standards, but access control credentials that require less hand or finger dexterity may be provided as an accommodation.

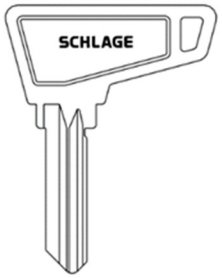
Although lever handles, thumbturns, or panic hardware touchpads would be considered operable parts subject to the requirements of the accessibility standards, components used to operate those parts – like keys and access control credentials – are not. With that said, some building occupants are unable to grasp and insert a key or a mag-stripe card. These users may need an accommodation to be made, such as electrified hardware with a proximity reader, which only requires the credential to be placed within the detection range.

To accommodate the widest range of building occupants, some of the key considerations are:

Hardware should be usable with a loose grip or closed fist, although the standards do not specifically require hardware to be operable with a closed fist in order to comply.

Sufficient knuckle clearance, 1-1/2 inches minimum, should be provided around and behind operable hardware such as levers, door pulls, and push bars.

Door hardware that requires hand or finger dexterity, simultaneous actions, or fine motor skills, should be avoided.



Keys with extended bows are not mandated by the accessibility standards, but may be helpful to some users.

While key blanks with extended bows may be easier to use, these keys are not specifically required by the accessibility standards. Some state or local codes or building standards might require this type of key, but the key would still require tight grasping, pinching, and twisting of the wrist. Keypads that accept access-control codes are not specifically addressed by the standards, but they are typically acceptable because they do not require tight grasping, pinching, or twisting of the wrist to operate. There are other types of electronic credentials, such as proximity fobs and mobile applications that could facilitate easier access, even though they are not required by the standards.

As with any code question related to door openings, it's best to check the adopted codes and standards for requirements specific to the location of the project. For further assistance, contact the Authority Having Jurisdiction (AHJ).

"Service to others is the rent you pay for your room here on Earth."

— Muhammad Ali

Wordless Wednesday: Unstaffed Facility

By: Lori Greene / IDig Hardware

Given the technology that can now be used for access, supervision, and security, I think we will be seeing more businesses that do not have staff onsite at all times. Imagine a gym or studio space where clients can use electronic credentials for access and work out on their own – these businesses already exist.

Today's Wordless Wednesday photos show the main entrance of exactly this type of facility – a gym that is open 24 hours/day, where there is no staff present. Members enter using their electronic fob – the question is…how do they exit after their workout?

For the readers who have asked for more explanation on my Wordless Wednesday posts – this is for you. What's wrong here?

These main entry doors have an electromagnetic lock. There are two ways the model codes would address this opening:

Option A – Sensor Release: The mag-lock is released by a sensor above the door that detects a building occupant approaching on the egress side, and unlocks the door for egress. The lock must also release upon power failure, activation of the fire alarm system (if present), and by an auxiliary switch beside the door. The door in today's photos has no sensor to release the mag-lock, so someone attempting to exit must know that they have to push the button (this is not code-compliant). And although this door has an auxiliary switch next to it, the fact that you have to push and hold the button for a few seconds leads me to believe that this switch is not the type required by the model codes – the switch must unlock the doors for 30 seconds – independent of the access control system electronics.

Option B – Door Hardware Release: The mag-lock is released by a switch in the hardware mounted on the door. This would typically be panic hardware, a sensor bar, or a lever handle with an integral switch. Operating the hardware would activate the switch and unlock the mag-lock – the doors pictured here do not have this hardware. With this option, the lock must also unlock upon power failure – it is not required to unlock via an auxiliary switch or fire alarm activation.

Wordless Wednesday: Missing Mullion

By: Lori Greene / IDig Hardware

Today's Wordless Wednesday photo was sent to me by Daryl Benish of TMP Architecture. This is a great reminder that no matter how hard we try, it's impossible to control what happens in the field.

If you're not sure what you're looking at, this is a pair of doors with a mullion designed to be temporarily removed to allow large equipment to pass through the opening. The mullion is missing, leaving the fire doors without the positive latching required by code.

Wordless Wednesday: Push to Lock

By: Lori Greene / IDig Hardware

Now that my kids are adults, they are sick and tired of my "teachable moments," but I can't let an opportunity pass!

Today's Wordless Wednesday photo is making the rounds on social media, so I don't know who to credit it to. I'm sure many people get a chuckle out of it, but all I can see is the incorrect lock function that was installed. When I say "incorrect," I mean that the lock doesn't function the way the end user wants it to, but maybe the person who selected it didn't know what the customer wanted.

The lock on this door has a turn button. When you PUSH the button, the outside lever is locked, and when you turn the lever to exit, the outside lever unlocks so the next person can access what I'm guessing is a restroom.

The problem that has led to the extreme signage is that when someone TURNS the button instead of just pushing it, the outside lever remains locked when someone exits the bathroom. I'm sure this causes problems for the staff, who then need to go and unlock the door after confirming that no one is inside (probably after a line has formed outside the door).

Beyond the confusion about pushing vs. turning, many AHJs consider small turn buttons to be non-compliant with the accessibility standards, as they require tight grasping, pinching, and twisting of the wrist. Efforts to point out that instead of turning the button someone could just push it (no tight grasping/pinching/twisting) have not convinced some of the AHJs to allow this function.

Be careful where you specify/install locks with turn buttons!

What's that? Rachet Release Assembly

By: Lori Greene / IDig Hardware

A few weeks ago, I saw a question in the Building Code Forum's Door & Hardware section asking about a piece of hardware that a member of the forum had seen on a fire door assembly. If you're not familiar with the Building Code Forum, it's a great place to ask code questions and have some code officials weigh in. I recognized the piece of hardware right away, and I think my answer surprised some of the other responders based on what they thought the purpose of the mysterious hardware item was.

Mark Kuhn and I spent last week in Denver with this year's cohort of the Allegion Early Careers Program. We headed out on a field trip and I said to Mark, "I'm looking for a rachet release assembly…let me know if you see one." If he thought it was a weird question, he didn't let it show.

Working with new members of the industry and seeing the question (and answers) on the forum gave me an idea for a new type of post. There are all kinds of parts and pieces that play important roles in the operation of door openings, so I'll be sharing some of them in future posts. If you have a favorite part or piece, or something you're wondering about, send it along!

So here it is…the part that was posted on the Building Code Forum…

This is a rachet release assembly. It is used with concealed vertical rod panic hardware or fire exit hardware. In the photo below, you can see two of them at the top of the doors, near the meeting stiles.

When the touchpad is used to retract the latch of the concealed vertical rod panic, the latch stays retracted until the door comes to a close. The rachet release plunger projects into a small hole in the face of the door (you can see the holes in the photo below), and projects the latch when the door reaches the closed position. There are shims provided to help position the plunger in the correct location on the door, and you can see the assembly on page 7 of the Von Duprin 98/9947 installation instructions.

The question about this part was posted on the Building Code Forum because the plunger was no longer correctly aligned with the hole in the fire door, and was preventing the door from closing. The hole had already been enlarged(!) but they were still misaligned – probably because the door was sagging. I recommended trying to address the door sag as a means of bringing everything back into the proper position.

Safety and Security Technologies to Consider for K-12 Schools in 2024

K-12 schools nationwide are facing the reality that they need more processes and tools to ensure safer campuses. For example, both Baltimore County Public Schools and Alexandria City Public Schools have turned to high-tech systems to enhance school safety and security. In May 2023, Alexandria City middle and high schools launched a Weapons Abatement Pilot program using sensors to identify and detect weapons, and this year, the majority voted to make it a permanent initiative. In Baltimore County, Superintendent Myriam Rogers announced that the new gun detection system was up and running, with the hope of deterring weapons on school property.

These technologies take a different approach to weapons detection and screening and are just a couple of the many technologies changing school safety and security. As technology evolves, K-12 schools must stay informed about the available options. We asked a few of our partners, experts in their fields, for their thoughts on a few of the latest safety and security technologies that bring peace of mind to school campuses.

Air Sensors

When we discuss “school safety and security,” it’s not solely about protecting students from the threat of violence. It also involves creating an environment within the school that is safe and conducive to learning and ensures students’ physical and emotional well-being. That’s where air sensors come in.

Locked classroom doors can be the difference between life and death in today’s schools and can significantly impact a situation if an active shooter event occurs. Locking doors is just one of several practices we recommend in the PASS Guidelines. However, while locked doors provide additional protection, some teachers contest the practice and worry that closed doors compromise indoor air quality (IAQ). Poor IAQ can lead to many health problems, affecting comfort, concentration, and staff/student performance.

The spread of disease and viruses, poor outdoor air quality due to the rise of wildfires in certain areas, and old and insufficient school buildings and HVAC systems have left schools searching for ways to monitor and improve IAQ. One solution that can help teachers and staff achieve a more favorable environment for themselves and students is air sensor technology.

Air quality sensors detect the presence and concentration of air pollutants, typically measuring two or more air quality indicators, such as humidity, temperature, carbon dioxide, ozone, and carbon monoxide. By monitoring indoor air quality, schools can ensure healthy air quality, ultimately improving the health and well-being of their students, reducing absenteeism due to illness, and more.

Smart Sensors

Smart sensor technology has now become an option to detect a wide range of threats, such as vaping, THC smoke, gunshots, aggression, and more. For example, HALO’s smart sensors use artificial intelligence (AI) to detect more than just air pollutants like carbon monoxide and dioxide; their devices also detect:

- Abnormal crowd sizes.
- Marijuana smoke.
- Vaping and masking.

Sophisticated technologies like these can play a crucial role in ensuring safer educational environments. Besides detecting prohibited activities, smart sensors like HALO can also alert school staff and security personnel to the presence of dangerous situations and banned items in real time. This alert system enables prompt intervention and de-escalation, ultimately making schools safer. Furthermore, HALO products are multipurpose, making them eligible for multiple funding sources, which can help make them more accessible to school districts through various health and safety grants.

Audio and Video Analytics

- Audio and video analytics leverage the power of AI and machine learning (ML) to identify, analyze, and report anomalies. Much like smart sensors, audio and video analytics can detect a variety of situations, including:
- Spoken keyword requests for help.
- Gunshots.
- Abnormal noise levels.
- Sounds of aggression.
- Bursts, blasts, and other explosions.
- Glass breaking.
- Car alarms.
- Crowd congestion.
- Weapons.
- Perimeter trespassing.

Audio and visual analytics technology are highly effective safety and security solutions. They can immediately detect potential threats, send real-time alerts, and help enable a quick response. This not only helps prevent incident escalation but also ensures a safer and more secure learning environment for everyone.

These technologies have also proven helpful in incident investigations. School and security personnel can review and analyze video footage to gather evidence and learn more about a sequence of events. Additionally, AI-powered video analytics, such as i-PRO Americas Inc., allow users to filter the footage and data to find specific details like clothing color, gender, and more.

Communication Systems

Today, school communication systems involve more than just two-way radios. For instance, solutions like Motorola’s MOTOTRBO radios allow teams to stay connected across networks and devices and integrate with the Motorola Solutions technology ecosystem, including video security and analytics. In addition to verbal communication, users can also send and stream photos and videos in case of an incident on the school premises. The company also offers solutions like WAVE PTX TLK, which enables communication via push-to-talk, text, video, photo, and file attachments. Rave Mobile Safety allows the communication of operational updates and alerts.

Multichannel communication platforms, such as apps and software, relay critical information among school employees, parents, and emergency responders in real time. These digital notification systems ensure that everyone can stay informed and updated during an emergency or incident.

Another common solution for managing students' emergency information is a digital emergency reunification system. Raptor Technologies provides this system as part of its Emergency Management System. In case of an emergency that requires student-parent reunification, Raptor Technologies' digital emergency reunification system can facilitate the process using its software. This eliminates the manual process of managing students' emergency information.

Invest in Today's Technology for a Safer Tomorrow

With the changing safety and security landscape, K-12 schools need to adapt and utilize advanced technologies to protect their students, staff, and visitors. By investing in these innovative technologies and integrating them into their existing security infrastructure, schools can more effectively detect, respond to, and mitigate various safety threats and emergencies.

Although no single solution can guarantee complete safety, combining multiple technologies and proactive strategies can significantly reduce risks and create a secure and supportive educational environment for everyone.

The Partner Alliance for Safer Schools (PASS) is a nonprofit 501(c)(3) bringing together expertise from the education, public safety, and industry communities to develop and support a coordinated approach to making effective and appropriate decisions with respect to safety and security investments. You can download the complete PASS Guidelines here, or check out our PASS Safety and Security Checklist for quick tips on how to get started. These resources—as well as white papers on various topics including barricade devices, lockdown drills, and more—are available at no cost.

High School Secure Entry Vestibule

On a recent field trip with the members of Allegion's Early Careers Program, I saw a fantastic example of a secure entry vestibule in a high school. After entering the vestibule from the exterior, visitors must check in with Security before being allowed to proceed through the interior doors into the school (or not). Although this type of vestibule is sometimes incorrectly called a "man-trap", it does not function like a sallyport or interlock because it allows free egress through the exterior doors at all times. These vestibules play a very important role in limiting unauthorized access to school buildings.



HEALTH CARE CORRIDOR DOORS AND SMOKE BARRIER DOORS – WHAT'S THE DIFFERENCE?

By Lori Greene, I Dig Hardware Blog / This article appeared in Life Safety Digest." (https://www.fcia.org/LIFE-SAFETY-DIGEST). For architects, code officials, others, a PDF Life Safety Digest subscription is free. Visit the aforementioned link to sign up.

Past fires in hospitals and nursing homes have illustrated the value of code-compliant door opening protective assemblies in health care occupancies. While the code requirements for these facilities go far beyond the doors, frames, and hardware, there are some important considerations for door opening assemblies to help ensure that they will provide the necessary protection from fire and smoke.

There are two types of door devices used within health care occupancies that often create confusion: "corridor doors" and "smoke barrier doors."

In health care occupancies, corridor doors leading to patient rooms are not required by current model codes to be fire door assemblies, but the model codes include specific requirements, including positive latching hardware on all door leaves. Allegion Photo

The requirements for these doors are addressed within the model codes, such as the International Building Code (IBC), International Fire Code (IFC), and codes from the National Fire Protection Association (NFPA), such as NFPA 101, Life Safety Code. These assemblies are not typically required to be fire-protection -rated, and are not required to comply with NFPA 80, Standard for Fire Doors and Other Opening Protectives.

HEALTH CARE CORRIDOR DOORS

When referring to the model code sections on health care corridor doors, it may not be immediately evident which doors are being addressed. These requirements typically apply to doors that lead from the corridors into patient rooms, exam rooms, offices, etc. Doors leading from main corridors to suites are also considered corridor doors. Although these doors are not typically required by today's codes to be fire door assemblies, they protect the openings in corridor walls to help provide a critical layer of protection for building occupants.

The purpose of these doors is to help create protected areas where people can shelter in place during a fire or to separate the room of fire origin from the corridor. Although past codes required corridor doors to be self-closing or automatic- closing, emergency protocols now rely on staff to close the doors manually, if a fire occurs. Doors that lead from a health care occupancy corridor to a room that is required to be separated by fire-resistance- rated walls and fire door assemblies (a stairwell or a hazardous area, for example) are subject to the requirements of NFPA 80. As such, the more restrictive requirements for fire doors apply.

The requirements of the model codes for health care occupancy corridor doors differ slightly, and in some cases the rules vary based on whether the building is considered new or existing. Below are the highlights from the model codes for non-fire-rated corridor doors in a health care facility.

INTERNATIONAL BUILDING CODE (IBC)

Chapter 4 of the IBC contains special requirements for certain occupancy types, including a section addressing Group I-2, which pertains to hospitals, nursing homes, detox facilities, and psychiatric hospitals. Section 407.3 (2024 and prior editions) requires corridor walls in I-2 occupancies to be constructed as smoke partitions. Although Section 710 of the IBC details requirements for doors in smoke partitions, Section 407.3.1 contains specific requirements for I-2 corridor doors, so those requirements would apply instead of Section 710.

Section 407.3.1 states that most health care corridor doors are not required to have a fire protection rating but must provide an effective barrier to limit the transfer of smoke. The IBC Commentary states, “This provision is primarily intended to apply to care recipient sleeping room corridor doors,” however, it may apply to other auxiliary rooms such as exam rooms and support spaces that are not separated by construction required to have a fire-resistance- rating. Non-rated corridor doors are not required to be self-closing or automatic closing, as the staff is expected to close the doors to patient rooms if there is a fire, or to evacuate patients to an adjacent smoke compartment via the corridor. Each corridor door must have positive-latching hardware – including automatic/constant-latching flush bolts on the inactive leaf if the assembly is a pair of doors – and roller latches are not permitted.

One question that comes up quite often with regard to the IBC requirements for corridor doors is whether gasketing is required in order to limit smoke infiltration. While there is a stated limit for air transmission for fire door assemblies in corridors and smoke barriers, patient room doors do not fall into that category. There is no mention in paragraph 407.3.1 of smoke infiltration or UL 1784 - Air Leakage Tests of Door Assemblies and Other Opening Protectives, so gasketing is not mandated by this section.

NFPA 101 – THE LIFE SAFETY CODE

Although NFPA 101 states that most corridor doors in a health care facility, including patient room doors, are not required to comply with NFPA 80, the code includes prescriptive requirements intended to help keep patients safe. The detailed requirements are found in the occupancy chapters - Chapter 18, New Healthcare Occupancies, and Chapter 19, Existing Health Care Occupancies.

For both new and existing facilities, corridor doors must be constructed to resist the passage of smoke, and the clearance between the bottom of the door and the floor covering must be no more than 1 inch (clearance at the bottom of a door protecting a pass-through opening is limited to 1/8-inch). For existing facilities, either 1 ¾-inch solid bonded-core wood doors, or materials that resist fire for at least 20 minutes, are required if the corridor is required to have a fire-resistance rating.

Positive latching hardware is mandated by the code for corridor doors, so that doors are self-latching when they are closed and will remain latched against the pressure created during a fire. Pairs of doors with an inactive leaf are required to have automatic/ constant-latching flush bolts. Louvers, also called transfer grilles, are not allowed in these doors. Protection plates are permitted, whether factory or field-applied, with no limit in size and no requirement for a label. Annex A of NFPA 101 states that gasketing should not be necessary in order to limit the passage of smoke to an acceptable level, as long as the door is relatively tight-fitting.

Roller latches – friction bolts designed to hold the door in the closed position, are not allowed by NFPA 101 for most patient room doors in new health care occupancies, except in acute psychiatric settings where the clinical needs of patients require protective measures for their safety. In this application, roller latches must keep the door closed if a force of 5 lbf is applied at the latch edge of the door.

Doors in existing facilities are required to have a means of keeping a door closed against a 5-lbf force, and the method of keeping the door closed must be acceptable to the AHJ. NFPA 101 allows roller latches to be used in existing health care occupancies if the building is equipped throughout with an automatic sprinkler system, however, this is not permitted by the Centers for Medicare and Medicaid Services (CMS). Facilities that receive funding from CMS must have corridor doors with positive-latching hardware – not roller latches.

Door closers are not required by the current codes for patient room doors that are not fire door assemblies. A self-closing door serving a patient room could lead to a delay in discovery of a fire within the room, so automatic smoke detectors that are part of the building's fire alarm system are recommended for rooms that have door closers. NFPA 101 restricts the use of hold-open devices on patient rooms to those that release when the door is pushed or pulled; doors should not be blocked by furniture, door stops, hooks, or plunger-type hold-opens.

Doors leading to rooms that do not contain flammable or combustible materials, such as toilet rooms, bathrooms, shower rooms, sink closets, and similar auxiliary spaces are not required by NFPA 101 to have doors that are constructed to resist the passage of smoke. These doors do not require positive latching hardware, and ventilating louvers or transfer grilles are allowed.

HEALTH CARE DOORS IN SMOKE BARRIERS

While corridor doors leading to patient rooms and other spaces are subject to the requirements above, “cross-corridor doors” are covered by another set of requirements. Cross-corridor doors in health care facilities are often – but not always – part of a smoke barrier wall. Smoke barriers are designed and constructed to restrict the movement of smoke and are used to subdivide a building into smaller smoke compartments. If there is a fire, patients can be moved from one smoke compartment to another to be protected by the smoke barrier until they are able to be evacuated. The doors in these walls protect the openings to help maintain that barrier.

Smoke barrier doors in health care occupancies are not required by current model codes to have positive-latching hardware or to comply with NFPA 80, although the codes include other prescriptive requirements. Allegion Photo

INTERNATIONAL BUILDING CODE (IBC)

Although the IBC requires most smoke barriers to have a 1-hour fire resistance rating with 20-minute- rated fire door assemblies, there is an exception to this requirement for smoke barrier doors in health care facilities. In the IBC 2024 edition, Section 709.5 Exception 1 exempts smoke barrier doors in some health care occupancies from the requirements that apply to smoke barriers in other locations. In these occupancy types, fire door assemblies are not mandated as opening protectives in the smoke barriers. This has been clarified over the past few editions of the code; doors covered by this exception are not required to comply with NFPA 80.

In the I-Codes, the exemption from the fire protection-rating applies to pairs of “opposite- swinging doors” installed across a corridor – commonly called double-egress pairs. If the doors include hold-open devices, they are required to be automatic-closing, actuated by smoke detection. Doors must be "close fitting within operational tolerances.” Louvers, grilles, and center mullions are not allowed, and undercuts are limited to 3/4-inch. The frame must have stops at the head and jambs, and the doors must have rabbeted meeting stiles or astragals at the meeting edges to help slow the spread of smoke. These doors are also required to have vision panels with fire-protection-rated glazing in fire-protection-rated frames. Protection plates are not required to be labeled.

NFPA 101, LIFE SAFETY CODE

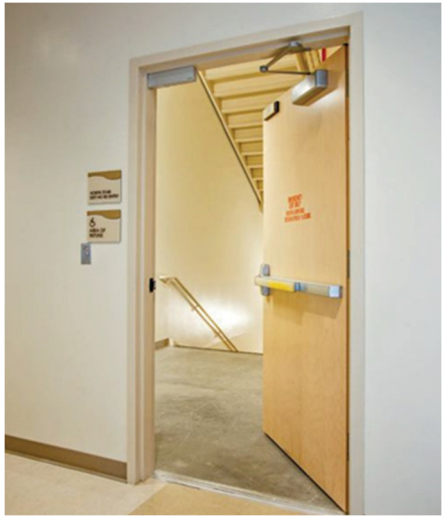
As in previous editions, the 2024 edition of NFPA 101 states that doors in health care smoke barriers must be: “substantial doors, such as nonrated 1¾-inch thick, solid-bonded wood-core doors, or shall be of construction that resists fire for a minimum of 20 minutes.” Similar to the I-Codes, this section requires cross-corridor swinging doors to be double egress pairs in most cases (refer to the code for exceptions), self-closing or automatic-closing, with a maximum clearance of ¾-inch at the bottom of the door. Positive-latching hardware is not required for any smoke barrier doors.

The door frame must have head and jamb stops, and in new construction, the meeting edges of the doors must be rabbeted, beveled, or equipped with astragals. Center mullions are prohibited. Protective plates of any size, without a listing, are permitted. Vision panels are required, consisting of fire-rated glazing in approved frames, with the bottom of at least one vision panel in each leaf at a maximum height of 43 inches above the floor.

CONCLUSION

The requirements of the model codes –which use passive fire protection, sprinklers, detection and alarm systems, have helped to reduce the frequency of fatal fires in hospitals and nursing homes, improving life safety for patients, residents, visitors, and staff. Properly designed, installed, inspected and maintained corridor doors and smoke barrier doors can help to protect building occupants who are sheltering in place during a fire.

For more information on the requirements for doors in a health care facility, refer to the codes and standards that have been adopted by the facility's jurisdiction. The AHJ is responsible for enforcing these requirements and has the final say



When doors in a health care facility serve stairwells or hazardous areas, the model codes typically require the assemblies to be fire door assemblies that comply with NFPA 80. Allegion Photo

Lori Greene, DAHC/CDC, FDAI, FDHI is the manager, codes and resources for Allegion. In this role she is responsible for training and support on requirements of the codes and standards related to door openings. She participates in the code development process as a member of the Builders Hardware Manufacturers Association (BHMA) Codes, Government, and Industry Affairs Committee (CGIA). Lori has worked in the door and hardware industry for more than 35 years, and shares information daily on her website, iDigHardware.com.

“If you want to touch the past, touch a rock.

If you want to touch the present, touch a flower.

If you want to touch the future, touch a life.”

– Author Unknown

Panic Hardware Styles – Push Pad vs. Crossbar

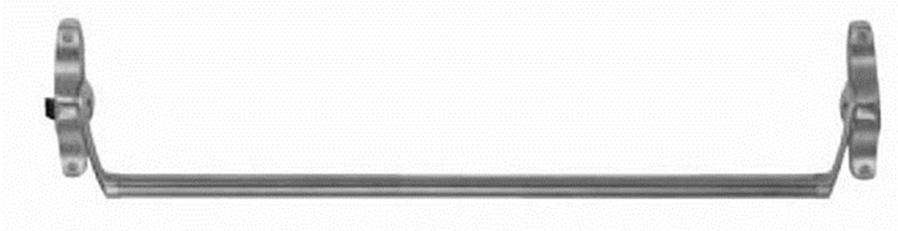
By Mark Kuhn, I Dig Hardware Blog

Mark Kuhn's latest post looks at the advantages of touchpad style panic hardware vs. crossbar style. Can you think of any other advantages or disadvantages to add?

I recently wrote a post about the IBC dropping the limitation on the maximum width of a door in a means of egress and how this could cause some issues in occupancies that require panic hardware. I offered up the crossbar style exit device as a possible solution for when the push pad/touchpad is not wide enough. Because the actuating portion of the panic hardware is required by code to measure at least half the width of the door, a door width greater than 48 inches causes problems for models with a maximum touchpad size of 24 inches.

As a follow-up, I thought I would offer some comparisons between push pad style panic hardware and the crossbar style, and why we prefer the push pad style device as the solution in most applications.

Advantages of a crossbar device:



The look…When I think of cross bar style panic hardware…I think, "Old." In fact, when I talk about this hardware, I often catch myself calling it the "old style crossbar type device," to which most architects and owners reply, "Do they still make them?" But "the look" is probably the main reason this type of panic hardware is still used. As you can imagine, if an owner/architect is designing a restaurant, lounge, club, etc. around a certain era, then the crossbar device gives them the look they want and still meets the code requirements.

The fit…The second most common application where I specify a crossbar panic is on doors that are not flush. Sometimes the face of a door may have either a vision light or a raised panel that will prevent a touchpad style panic from mounting on the door without a shim kit. This happens a lot when you are using either a wood stile and rail door or a fiberglass door. The design of the crossbar panic allows it to work on a door surface that may not be perfectly smooth, and some designers prefer this look for full-glass doors.

Wide actuating bar…As I discussed in my earlier post, crossbar panic hardware could become more common since the maximum width of an egress door is no longer limited by code.

Advantages of a push pad (AKA touchpad) style device:

Visual Indicators: Last month, I had a post about indicators and how important they have become in hardware. With a touchpad type device we have the ability to incorporate this feature into a panic. Whether you want to see if the panic is dogged or see if the outside trim is locked, we now can visually verify these things without having to physically check the door. I'm sure this feature has added a level of security and convenience in many educational occupancies as well as other use cases. I can tell you that I hardly ever specify panic hardware with the dogging option or trim that is capable of being locked from the inside, without also specifying a status indicator. #KnowItsLocked

Electronics: This is a Biggie! We often joke that every kind of hardware can be electrified nowadays, but nothing illustrates this more than a panic bar. As far as I know, there are only two electrical options available on a crossbar style device, a request-to-exit switch and outside trim that can be electrically locked or unlocked. But with a push pad device that's just the "tip of the iceberg." I can monitor whether the touchpad is depressed or if the latch bolt is retracted. I can retract the latch bolt without ever touching the device and I can unlock the outside trim to allow access. I can use the panic hardware to unlock an electromagnetic lock for egress, and I can incorporate an alarm to discourage people from using the device unless it's an emergency. I can even delay people from going through the door (for 15 or 30 seconds depending on the occupancy, the applicable code and the AHJ). We can also accomplish some of these functions pneumatically, just in case you're worried about an electrical spark. I'm sure I have left something off the list (and I'm also sure that you loyal iDH fans will let me know what it is). But you get the point, a push pad device means more options, especially when it comes to electronics.

More Functionality: I covered dogging when I addressed indicators, but it bears mentioning again in this section. With a push pad style device we can have cylinder dogging, a feature unavailable on a crossbar style device. In my career I've literally held thousands of keying meetings and I've always thought it was a little crazy to spend time worrying about how to lock the outside of a panic, when anyone with a 99¢ Allen wrench could unlock all the doors from the inside. So, you could call me a strong proponent of cylinder dogging. A more recent function, only available in a touchpad style device, is the ability to lock the outside trim from inside the room with the door closed. We need this for assembly spaces where we want to "shelter in place" and specifically when the door is fire rated. When we have a fire rated door, we can't use mechanical dogging because that would keep the door from positive latching. So, in order to lock the door from the inside, this new function allows an authorized person to lock the outside of the door from inside the room.

Harder to chain: I didn't say impossible to chain because Lori has literally hundreds of Wordless Wednesday and Fixed-it Friday pictures that prove that "where there's a will there's a way." With that said, crossbar style panic hardware can be very tempting to secure with chains, cable locks, or other creative means, and we want to avoid that to help ensure free egress.

Old Buildings, New Assembly Occupancies

Posted by Lori Greene, July 15th, 2024

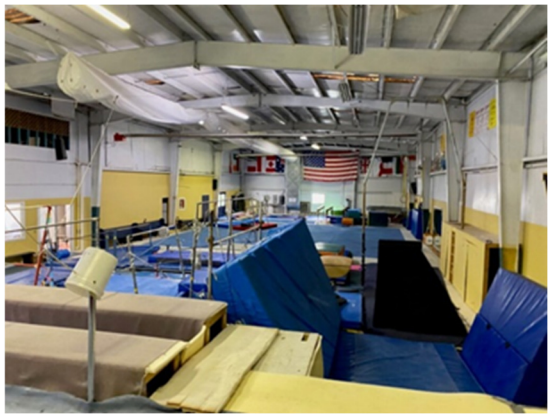
In keeping with the panic hardware theme of my last few posts, I want to talk about something that I see quite a bit, both in my personal life and in my day job. These are spaces that either are constructed with no occupancy type in mind, or areas that were originally built for one use but were later changed to another, specifically assembly occupancies.

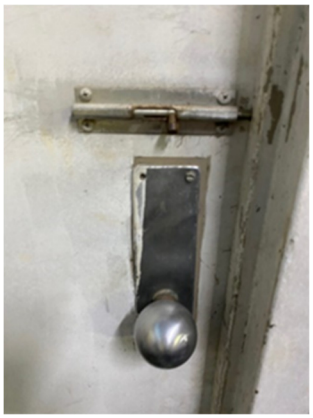
In new construction, I see this most often demonstrated in what we refer to as a mixed-use occupancy. Typically, these are projects with some sort of large vacant commercial storefront on the ground level and several stories of multifamily residential units above. For this post, I'm going to focus on the large vacant area on the ground level. A lot of developers would like to see the egress doors serving this undeveloped area installed with the most inexpensive hardware available – which typically would rule out panic hardware.

But wait! I would say that there could be a really good chance that this space ends up being an assembly occupancy with an occupant load of 50 people or more, often some sort of restaurant. I will normally specify panic hardware for these storefront openings with that expectation in mind…let's always remember that the code is the MINIMUM requirement. So even if the space ends up being a convenience store, I think the panics are still a great idea.

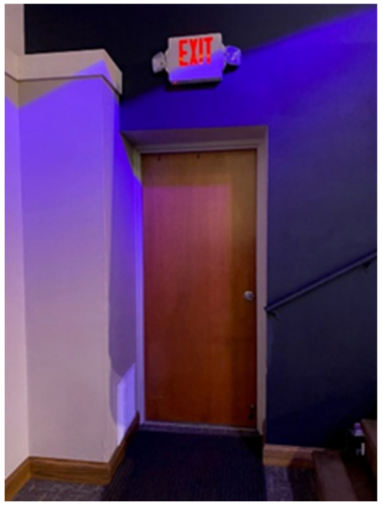
Now my second scenario is the building that started life as something else and is now an assembly occupancy. You see these all the time if you if you just pay attention. I saw two examples just recently.

The first building was a gymnasium. When the building was first constructed it was going to be used for storage, but then the building was sold and fit out as a sports facility. On occasion, this gym is filled with people watching practices and some small competitions. It's a pretty large space and now that it's a gym with an area for spectators and an occupant load far more than 50, it requires adequate egress with panic hardware. There were three doors exiting the gym. The main entry was a residential style sliding glass patio door, which separated a waiting room/lounge area from the gym floor. The other two doors were even worse. One was a pair with no inside operable trim and blocked by a tumbling mat. The second was a single door with a mortise lock but with an addition barrel bolt, and this door was also blocked by gym equipment.





The second building was a church. When the building was built it was a garage for large equipment and tractor trailers, but now it's a church. There were approximately 200 chairs set out for the service – well above 50 occupants. There were three doors exiting the sanctuary. The main entry was a pair of aluminum store front doors which were push/pull leading to a vestibule, and the vestibule did have panic hardware on the doors leading to the exterior. The other two egress doors are pictured below, and as you can see, neither of them have panic hardware.



In both cases, no one knew that they were doing anything wrong or that was contrary to the building codes. But when I see things like this, I wonder what the solution is. What do we have to do to ensure that we don't have more churches and other assembly spaces built without proper egress? I believe one answer maybe to do more door-related education for AHJs. But I think in many areas around the country buildings are being renovated without the involvement of architects, code officials, or others familiar with the code requirements.

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not."

– Dr. Seuss

The Comprehensive Blueprint: The Stages of Architectural Specifications

By: Ron Blank / Laura Elliott, Ron Blank and Associates

Developing architectural specifications is a critical component of the construction process, ensuring that all materials and products meet the design and regulatory requirements. For building product representatives, understanding each stage of this process and knowing what is expected can significantly enhance their chances of having their products specified. This detailed guide explores the stages of architectural specifications and outlines what building product representatives need to provide at each stage to support architects effectively.

Stage 1: Schematic Design (SD)

The schematic design stage is where the initial concepts of the project are developed. Design professionals focus on the overall layout, spatial relationships, and basic forms of the building. At this stage, preliminary decisions about building materials and systems begin to take shape, though detailed specifications are not yet required.

Expectations from Building Product Representatives

- **Introduction to Products**: At this early stage, product representatives should introduce their product lines to the architects. This includes providing an overview of key features, benefits, and potential applications of the products. The goal is to make the architects aware of the products that could be considered for the project.
- **Initial Consultation**: Engage in discussions with design professionals to understand their design vision and project requirements. This allows product reps to suggest products that align with the project's goals and constraints.
- **Provide Basic Product Literature**: Supply brochures, catalogs, and initial product data sheets. These materials should give a broad overview of the products, highlighting unique selling points and potential uses in the project.
- **Sustainability Information**: Given the increasing importance of sustainability in construction, provide information on the environmental benefits of your products. This includes details on LEED compatibility, environmental certifications, and sustainable manufacturing practices.

Stage 2: Design Development (DD)

During the design development stage, the initial design concepts are refined into more detailed plans. This stage involves making specific decisions about materials, systems, and products. Detailed drawings and specifications begin to take form, requiring more precise information from product representatives.

Expectations from Building Product Representatives

- **Detailed Product Information**: Provide comprehensive technical data sheets, performance data, and installation guides. This detailed information helps design professionals understand the capabilities and limitations of the products, enabling them to make informed decisions.
- **Samples and Mock-Ups**: Supply physical samples and mock-ups of your products. These allow architects to evaluate the appearance, texture, and compatibility of the products with other materials in the project. Mock-ups can also demonstrate how products will look and perform in a real-world setting.

- **Technical Support**: Offer technical assistance to address specific questions about product performance, compatibility, and installation. This support can involve providing detailed explanations, calculations, and comparisons with alternative products.
- **Compliance Information**: Ensure that design professionals have access to relevant compliance documentation. This includes fire ratings, structural certifications, environmental data, and any other regulatory requirements that your products meet.

Stage 3: Construction Documents (CD)

The construction documents stage is where the design is finalized, and detailed drawings and specifications are prepared. These documents are essential for bidding, permitting, and construction. Specifications at this stage are highly detailed, leaving no ambiguity about the materials and methods to be used.

Expectations from Building Product Representatives

- **3-Part CSI Specifications**: Provide detailed, project-specific 3-part CSI (Construction Specifications Institute) specifications, which include:

  Part 1: General – Administrative and procedural requirements related to the product.
  Part 2: Products – Detailed descriptions of the products, including performance criteria, quality standards, and technical specifications.
  Part 3: Execution – Guidelines for the proper installation and application of the products, including quality control measures.

- **BIM Objects and CAD Files**: Supply Building Information Modeling (BIM) objects and Computer-Aided Design (CAD) files to integrate your products into the architectural drawings. These digital resources help design professionals visualize and plan the incorporation of your products into the design.
- **Technical Presentations**: Conduct in-depth technical presentations or lunch-and-learn sessions to educate the design team about your products. These sessions should cover product features, benefits, installation procedures, and compliance information.
- **Support with Code Compliance**: Provide documentation and support to demonstrate that your products comply with relevant building codes and standards. This ensures that the specified products meet all legal and safety requirements.

Stage 4: Bidding and Negotiation

In the bidding and negotiation stage, the construction documents are used to solicit bids from contractors. The goal is to obtain competitive pricing and select a contractor who can deliver the project within the specified budget and timeline. This stage involves clarifying any ambiguities in the specifications and ensuring that all parties understand the project requirements.

Expectations from Building Product Representatives

- Clarification and Support: Be available to answer questions from architects, contractors, and bidders regarding your products. Clarify any ambiguities in the specifications and provide additional information as needed.
- Pricing Information: Offer accurate and competitive pricing for your products. Ensure that your pricing aligns with the project's budget and provide detailed cost breakdowns if necessary.
- Alternative Solutions: If there are concerns about cost or availability, propose alternative products or solutions that meet the project requirements. Be prepared to justify why your alternatives are suitable.
- Lead Times and Availability: Provide clear information about product availability and lead times. Ensure that design professionals and contractors are aware of any potential delays and suggest strategies to mitigate these risks.

Stage 5: Construction Administration (CA)

During the construction administration stage, the focus shifts to ensuring that the project is built according to the specifications and drawings. This involves site visits, inspections, and addressing any issues that arise during construction.

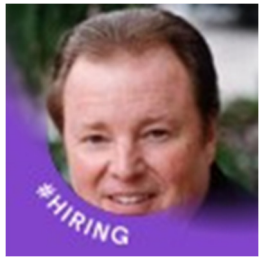
Expectations from Building Product Representatives

- On-Site Support: Provide on-site technical support and guidance to ensure correct product installation. This may involve training sessions, site visits, and direct consultation with installers and contractors.
- Troubleshooting: Assist in resolving any issues related to your products during construction. Be responsive to any problems or concerns that arise and provide prompt solutions.
- Installation Training: Offer training sessions for contractors and installers to ensure proper handling and installation of your products. This can prevent common installation errors and ensure optimal product performance.
- Warranty and Maintenance Information: Provide detailed warranty information and maintenance guidelines. Ensure that the construction team and the building owner understand the maintenance requirements and coverage terms of your products.

Wrap Up

Building product representatives play a vital role throughout the architectural specification process. By providing timely, accurate, and comprehensive information and support, they can significantly influence the success of a project. Understanding the expectations at each stage of the design and construction process allows product reps to better serve architects, ensuring their products are specified and used effectively. This collaboration helps achieve project goals, building lasting relationships with design professionals, ultimately contributing to the success and reputation of the building product manufacturer.

Ron Blank & Associates, Inc. (RBA) offers solutions with a comprehensive list of specification services and programs to build the bridge between building product manufacturers and the design community. For more information on building product manufacturers representation and how it leads to market exposure, tangible leads, and opportunities for products specification, please schedule a call.



Ron Blank

Ron Blank & Associates, Inc. (RBA) offers solutions with a comprehensive list of specification services and programs to build the bridge between building product manufacturers and the design community. For more information on building product manufacturers representation and how it leads to market exposure, tangible leads, and opportunities for products specification.

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As Editorial Director, Laura Elliott curates and oversees the creative direction of written content, ensuring a harmonious blend of style and substance. A champion of the industries at the heart of the built environment, she enjoys crafting compelling narratives that move those industries forward. Her commitment to spearheading precision, integrity and authenticity fuels a dynamic collection of memorable content that fosters the connection between ideas and expression.

Material Matters: The Design Professionals Method for Excellences

By: Ron Blank / Laura Elliott, Ron Blank and Associates

Selecting the best building products for construction projects is a critical task for design professionals. This decision-making process involves evaluating numerous factors related to chosen products to determine if they meet the design intent, comply with regulatory standards and fulfill the project's performance requirements. Building product manufacturers are partners in this process, presenting their products to design professionals with the hope that they will be specified in the project manual. Here’s a detailed look at how design professionals select the best building products for inclusion in their project specifications.

Understanding the Design Professional

Design professionals are responsible for the overall design and functionality of a building. Their primary goal is to create a space that is both aesthetically pleasing and structurally sound. This involves selecting building products that align with the project's design vision, budget, and performance requirements. To achieve this, design professional follow a systematic approach that involves several key steps:

1. Initial Research and Product Discovery

Identifying Project Needs

The first step in selecting building products is understanding the specific needs of the project. This includes identifying the project's goals, budget constraints, and any special requirements such as sustainability targets or specific aesthetic features. Design professionals will assess what types of materials and products are necessary to achieve these goals.

Exploring Available Products

Design professionals begin by researching available building products that could meet the project's requirements. This exploration involves reviewing product catalogs, researching online, attending industry trade shows, reading architectural publications, and engaging with building product representatives. The goal is to gather a broad understanding of the available options and the latest innovations in the market.

Engaging with Product Representatives

Building product representatives provide valuable information about their products. During initial meetings, representatives will present product features, benefits, and potential applications. They may also provide samples, technical data sheets, and case studies to demonstrate the product's performance and suitability for similar projects.

2. Evaluation of Product Performance

Technical Specifications

Design professionals meticulously review the technical specifications of potential products. This includes evaluating the material properties, performance data, and compliance with relevant standards and codes. Key performance indicators such as durability, strength, thermal performance, and fire resistance are assessed to ensure the product meets the project's technical requirements.

Sustainability and Environmental Impact

Sustainability is an integral consideration in modern construction. Design professionals must evaluate the environmental impact of building products by reviewing sustainability certifications such as LEED, BREEAM, or Green Seal. They also consider the product's life cycle assessment (LCA), recycled content, and potential for reuse or recycling at the end of its life.

Case Studies and Real-World Applications

Design professionals look for evidence of successful real-world applications of the product. Case studies and project references provided by manufacturers help architects understand how the product has performed in similar projects. Testimonials from other architects and builders can also provide insights into the product's reliability and suitability.

3. Compatibility and Integration

Compatibility with Other Building Systems

Design professionals must select products that are compatible with other building systems and materials. This involves evaluating how the product will interact with adjacent materials, structural components, and mechanical systems. For example, a waterproofing membrane must be compatible with the underlying substrate and any overlying finishes.

Ease of Installation

The ease of installation is another critical factor. Products that are difficult to install can lead to construction delays and increased labor costs. Design professionals assess the installation requirements and procedures, considering the skill level of the available workforce and the complexity of the installation process.

Maintenance and Durability

Long-term maintenance and durability are essential considerations. Design professionals prefer products that require minimal maintenance and have a long lifespan. They review maintenance guidelines provided by manufacturers to ensure that the product will not pose significant maintenance challenges for the building owner.

4. Cost Considerations

Initial Cost vs. Life Cycle Cost

While the initial cost of a product is important, Design professionals also consider the total cost of ownership, including maintenance, repair, and replacement costs. A product with a higher upfront cost may be more cost-effective in the long run if it offers superior durability and lower maintenance requirements.

Budget Constraints

Design professionals must work within the project's budget constraints. This involves balancing the desire for high-performance, innovative products with the need to stay within budget. They often work with manufacturers and suppliers to negotiate pricing and explore bulk purchasing options.

5. Compliance and Regulatory Requirements

Building Codes and Standards

Compliance with building codes and standards is non-negotiable. To be selected, all specified products must meet the relevant building codes and industry standards. This involves reviewing compliance documentation, test reports, and certifications provided by manufacturers.

Health and Safety Regulations

Health and safety considerations comprise the centerpiece of successful design. Products must not pose health risks to occupants, such as the release of harmful chemicals or poor indoor air quality. Design professionals are charged with reviewing safety data sheets (SDS) and material safety data sheets (MSDS) to assess potential health hazards.

6. Aesthetic Considerations

Design Vision and Aesthetics

Design professionals are responsible for harmonizing product selection. This means they must choose products that align with the design vision and enhance the overall aesthetic appeal of the project. This involves considering the color, texture, and finish of the materials, as well as how they complement other design elements.

Customization and Flexibility

When selecting just the right product, design professionals often seek products that offer customization options and flexibility in design. This allows them to tailor the product to meet specific design requirements and achieve a unique look for the project.

7. Final Selection and Specification

Collaboration and Decision-Making

The final selection of building products involves collaboration with various stakeholders, including project managers, engineers, contractors, and the building owner. Design professionals present their recommendations and work with the team to make informed decisions.

Documentation and Specification

Once the final selection is made, architects document the product specifications in the project manual. This includes detailed descriptions, performance criteria, installation guidelines, and compliance information. The specifications serve as a reference for contractors and ensure that the products are installed correctly and meet the project's requirements.

Wrap Up

Selecting the best building products for construction projects is a complex and multifaceted process. Design professionals must balance technical performance, sustainability, cost, compatibility, and aesthetics to make informed decisions. Building product manufacturers provide the necessary information, support, and documentation to help design professionals evaluate and specify their products. By understanding the decision-making process and key stakeholders, manufacturers can better position their products for inclusion in project specifications and ultimately, contribute to the success of construction projects.

If you are interested in following the Little Rock Chapter, our links are as follows (*for Facebook and LinkedIn look for the CSI Little Rock Chapter*):

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Chapter Info

Chapter Website:	**https://csilittlerock.org**
Chapter Newsletter:	**SpecWork**
Chapter Meeting Day and Time:	**2nd Wednesday of Each Month unless otherwise specified by the Chapter President**
Chapter Board Meeting Day and Time:	**1st Friday of each Month unless otherwise specified by Chapter President**

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