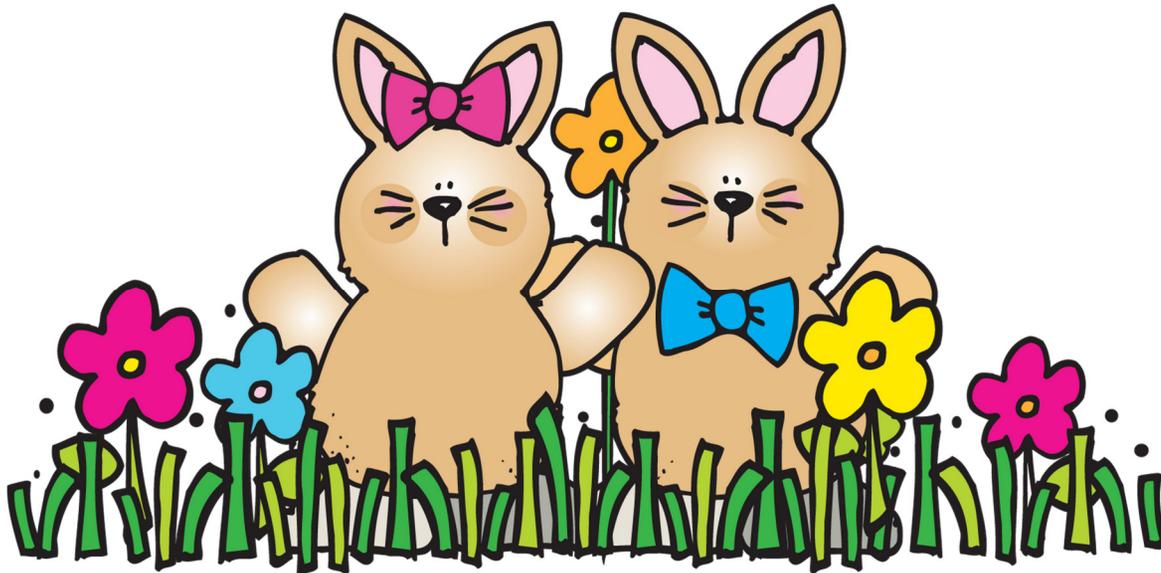


SPECWORK



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Lori Greene, I Dig Hardware Blog
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President's Thoughts

By Billy J. Mathis, FCSI, CDT

March is here. It did come in like a lion with winds and storms here in Arkansas. As far as going out like a lamb, that is yet to be seen. If the end is like the beginning, look out. Where are we as a Chapter. That is something I get asked from time to time. We are holding our own membership wise, but we are hurting leadership wise. I am going completing my 4th consecutive term as President of the Chapter and will most likely enter into my 5th consecutive term in July. What we need is new blood at the leadership level. Someone who can take what we have started and turn it up a notch. Someone with computer skills exceeding my meager set and get us on the map with the younger set. If you feel you would like to take on this challenge, let me know. We won't throw you into the deep end and expect you to swim, but we can start training and getting you into the CSI Leadership rotation. I would love to fill out a full board with five officers and at least 4 directors. Consider it, I guarantee you will learn a lot, make a lot of new connections all over the Gulf State Region and the US.

What is happening around CSI and the Gulf States Region.

Institute News

CSI National Conference - 2023 Conference will be in Minneapolis, MN, Oct 4-6, 2023.

Region News

There are committee chair positions open in the Region. Contact Jerry Curtis or Randall Lewis for more information.

GSR Conference is June 8-10 in Memphis. You can sign up for updates at this link: [2023 GSR Conference](#)

It is time to start prepping for Region Award submissions. The Bishop Award submissions due date has already passed, however, the due date for all other awards submissions are due midnight on April 28, 2023. Let's get those awards in.

Quotes for the Month:

“You teach me, I forget. You show me, I remember. You involve me, I understand.”

- Edward O. Wilson

“The difference between involvement and commitment is like ham and eggs. The chicken is involved; the pig is committed.”

- Martina Navratilova



Join the Little Rock CSI Chapter and SAFTI**FIRST** / O'Keefe's for a Webinar Lunch

Designing with Fire Rated Glass (1 AIA LU/HSW) Presenter: Mike Augustine, SAFTI**FIRST**

LEARNING OBJECTIVES

“Designing with Fire Rated Glass” by SAFTI FIRST® is a must-have for all design professionals. This program empowers you to choose the correct code compliant glazing product for every fire-rated application. We show you how to:

- Understand safety glazing requirements and how they apply to various fire rated glazing products;
- Identify the difference between fire protective vs. fire resistive glazing based on the code and performance requirements of the application, not the manufacturer's product testing;
- Choose the correct and code approved fire rated glazing products based on current IBC code requirements and applications;
- Learn how today's advanced fire rated glazing products can enhance a building's overall design and performance.

Wednesday - March 8, 2023 / 12:00 – 1:00 pm

Location Taggart Architects

600 Main Street, Suite 300

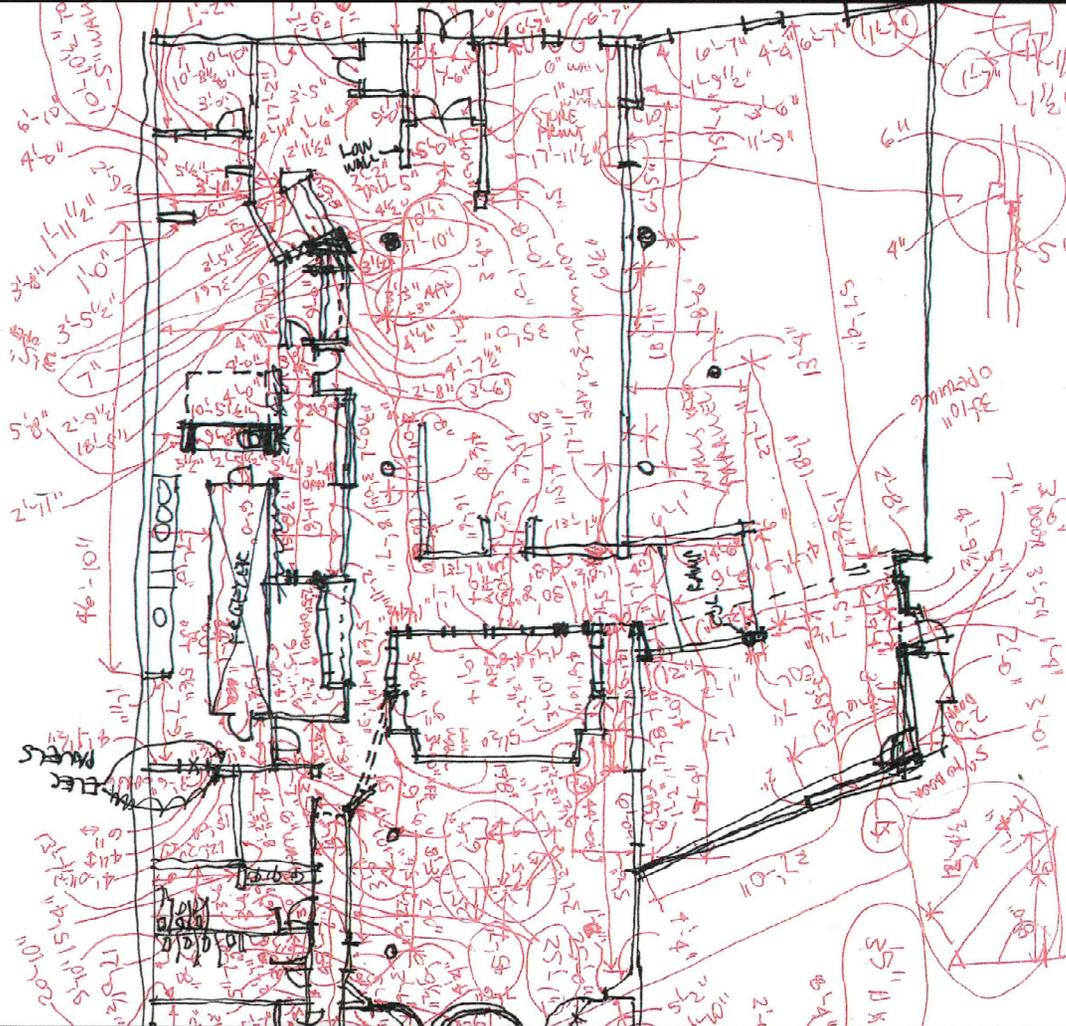
North Little Rock, Arkansas 72114

To Register, please email your Name, Organization/Firm, Email, Phone #, and AIA No. to

Bjmathis@Taggarch.com

Lunch will be provided for all attendees

IF YOU'RE HAVING A BAD DAY



JUST REMEMBER THAT YOU'RE NOT THE PERSON HAVING TO MODEL THIS IN REVIT.



What I Learned From CSI - Wall Hung Toilets

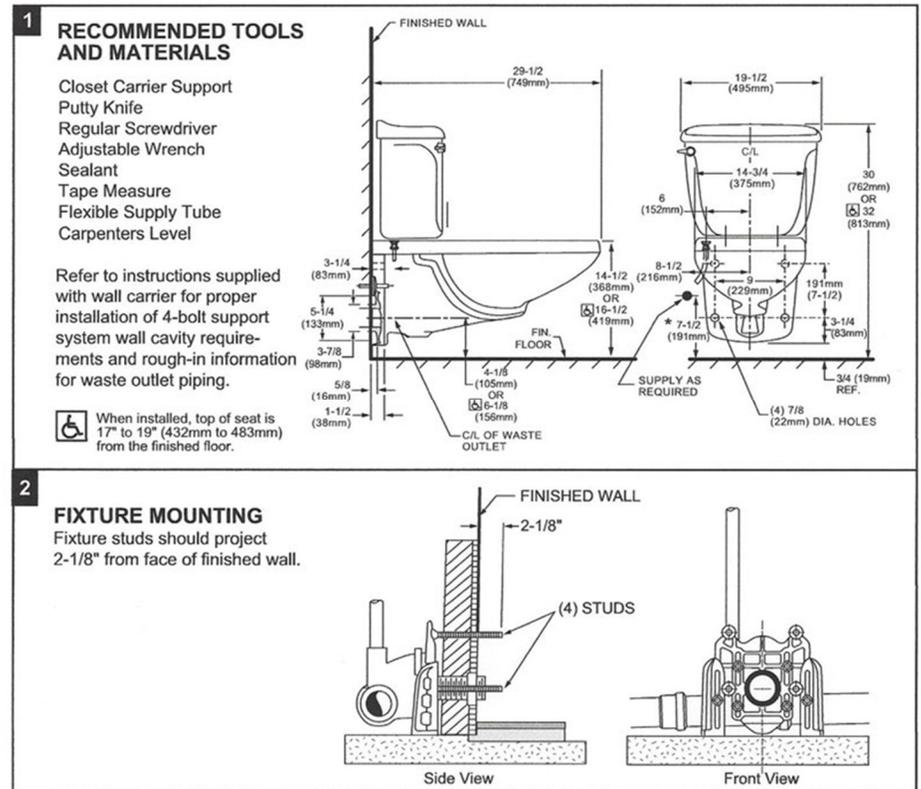
By: Gary Bergeron, CSI, CCS, GSR Technical Chair

Toilet, Water Closet, or porcelain thrones, no matter what you call them, there are some important “means and methods” when they are installed. There are two types of toilets. There are floor mounted toilets which are usually in our homes and wall hung toilets usually located in commercial buildings. The floor mounted toilets are often specified as a less expensive option when cleaning behind and around the toilet is not an important issue. In hospitals and many public facilities, wall hung toilets are specified so that cleaning underneath the fixture is more efficient. The wall hung toilets require more room for a

plumbing chase because a cast iron wall carrier is needed to suspend the toilet from the wall. This carrier comes in many different varieties but they all require bolting to the floor. I was on a recent construction site where I observed the contractor starting to install the tile backer board. I was taking photos of the toilet wall carriers and noticed there were no bolts securing the wall carrier to the floor. The only thing which would have secured the toilet in place was the piping in the wall cavity. After repeated use, the toilet would start sagging and pulling away from the wall. The attached cut sheet indicates where the floor anchor bolts should have been installed. If these anchor bolts are not installed correctly there is an option. This very attractive footstool to hold up the toilet when it starts sagging can be installed. This support defeats the entire purpose of a wall hung toilet being easier to clean.



Toilet footstool wall



Cut sheet showing toilet mounting arrangement



Shop fabricated pipe and wall hanger pipe spool



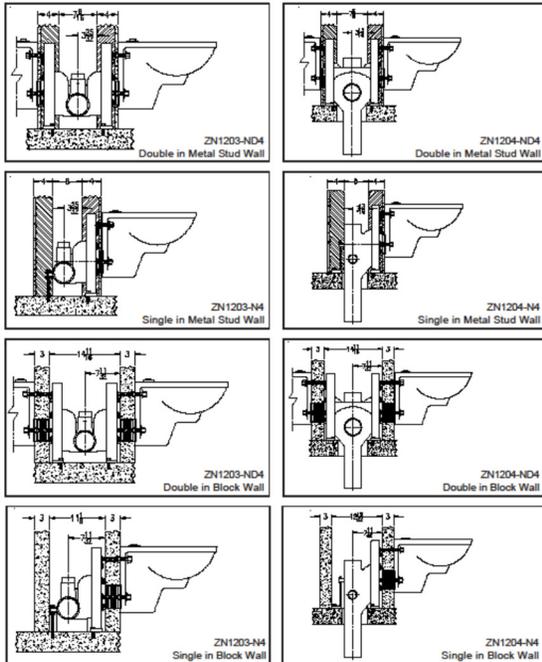
Wall carrier closeup



Minimum Chase Requirements for Narrow Wall Installation

Horizontal Adjustable Carriers

Vertical Adjustable Carriers



Form # C30 Date: 3/30/07 C.N. No. 99430 Rev. A Page 1 of 2

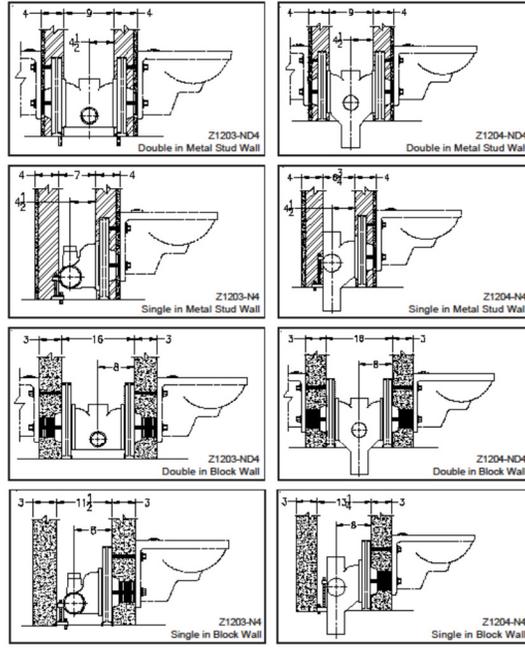
ZURN INDUSTRIES, INC. • SPECIFICATION DRAINAGE OPERATION • 1801 Pittsburgh Ave. • Erie, PA 16514
Phone: 814-654-0921 • Fax: 814-654-7592 • World Wide Web: www.zurn.com
In Canada: ZURN INDUSTRIES LIMITED • 3544 Neatness Drive • Mississauga, Ontario L4V1L2 • Phone: 905-605-6272 Fax: 905-605-1252



Minimum Chase Requirements for Standard Wall Installation

Horizontal Adjustable Carriers

Vertical Adjustable Carriers



Form # C10 Date: 8/17/10 C.N. No. 111535 Rev. F Page 1 of 3

ZURN INDUSTRIES, LLC • SPECIFICATION DRAINAGE OPERATION • 1801 Pittsburgh Ave. • Erie, PA 16514
Phone: 814-654-0921 • Fax: 814-654-7592 • World Wide Web: www.zurn.com
In Canada: ZURN INDUSTRIES LIMITED • 3544 Neatness Drive • Mississauga, Ontario L4V1L2 • Phone: 905-605-6272 Fax: 905-605-1252

SPECIFICATION:		CLOSET CARRIER RIGHT HAND	
JOSAM 12684 SERIES COATED CAST IRON SINGLE HORIZONTAL 4" NO-HUB RIGHT-HAND OFFSET FITTING WITH 2" NO-HUB VENT AND ADJUSTABLE CARRIER BODY. INVERTIBLE FOR SIPHON JET OR BLOWOUT CLOSETS. WITH ABS EXTENSION WITH INTEGRAL TEST CAP, PYLON FEET, ANCHOR FOOT, PLATED HARDWARE AND NEOPRENE FIXTURE GASKET. 500 LB CAPACITY.		SERIES 12684	
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES TO BE CHANGED AND CHANGES WITHOUT NOTICE. WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR OLD DATA.		<ul style="list-style-type: none"> FOR DIMENSION SHORTER THAN 5-1/2" (1" MIN) CUT EXTENSION FOR LONGER EXTENSION (10-1/2" MAX) SPECIFY (-10) RECOMMEND FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS (BY OTHERS). FOR SIPHON JET ROUGHING OVER 6" OR BLOWOUT ROUGHING OVER 12-1/2" SPECIFY ON ORDER. SIPHON JET DIMS SHOWN FOR BLOWOUT DIMS, USE: <ul style="list-style-type: none"> MIN 2" & MAX 4" MIN 11" & MAX 16 1/2" AUX INLET IS 6" OFFSET FROM VENT 	
-XSD EXTRA SPECIAL DUTY 1,000 LB CARRIER -PF NPT FCPLT AND EXT - STD -OR O-RING FCPLT AND EXT -CR COMP. RING FCPLT AND EXT -PAF PREFAB ADJUSTABLE FOOT -HS HUB & SPIGOT -AUX AUXILIARY INLET (2" NO-HUB) -HUB AUX AUXILIARY INLET (2" HUB) -VP VANDAL-PROOF TRIM	-SDH SPECIAL DUTY HIGH 750 LB CARRIER -2 SUPPLY PIPE SUPPORT (SPECIFY TYPE OF PIPE) -10 ABS EXTENSION THROUGH 10-1/2" WALL -24 FLOOR MOUNTED BACK OUTLET CHINA BOWL -30 CAST IRON ADJ. EXTENSION W/ CONNECTOR -30-2 CAST IRON ADJ. EXTENSION W/ CONNECTOR & TEST CAP -32 CARRIER FOR WIDE CHASE INSTALLATIONS -35 CARRIER FOR WHEELCHAIR HIGH ROUGH -58 HORIZONTAL NO-HUB CAST LONG BARREL -1 POSITIONING FRAME	DATE OF LAST CHANGE: 01/18/22 DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES TO BE CHANGED AND CHANGES WITHOUT NOTICE. WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR OLD DATA.	
		NOTES	

Cut sheet showing 1/2" anchor bolts in carrier feet

Award Recommendations, A Guideline for Design Professionals

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

Design professionals often assist project owners with evaluating bids received from prospective contractors and furnish to owners written recommendations on awarding the associated construction contract(s). Many such recommendation letters read by this writer are quite brief—sometimes only one or two paragraphs. However, many owners may desire some detail on how the bids were obtained and evaluated. Also, to properly manage the design professional's risk, certain actions should be taken and language included in award recommendations.

Although construction managers-as-advisors (CMA) and program managers also assist owners with procuring construction services, this brief essay addresses only design professionals; similar considerations apply for CMA's and program managers. Also, while the owner may solicit either bids or proposals, this essay addresses only competitive bidding and closely related procurement methods.

Commonly, the design professional prepares a tabulation of the bids indicating, for each bid item, the bid price submitted by each bidder. Often, bid tabulations also feature the design professional's opinion of probable bid prices. Other basic information, such as the project name and contract designation; bid opening date; bidder's name, address, and contact information; and indication of each bidder's surety are also typical in bid tabulations. The tabulation frequently indicates the bids from lowest to highest-priced. When a bid includes a math error, typically, the mathematically correct amounts are presented on the tabulation. The tabulation is an important attachment to the award recommendation.

A second attachment is often appropriate to briefly summarize **all** the irregularities in the bids, especially for public work. In competitive bidding, owners often award the contract to the "responsible" bidder submitting the lowest-priced, **responsive** bid. "Responsiveness" entails determining whether bids comply with the bidding requirements—e.g., all required blanks are properly filled in, required bid security is furnished, and the bid includes all other required information and attachments. Some matters of non-responsiveness may be deemed minor by the owner and waived. The owner may decide that other irregularities are sufficient grounds for rejecting the bid. Because it is the owner who determines what is and is not the basis for rejecting a bid for apparent lack of responsiveness—especially in public work. Therefore, it is good practice for the design professional to bring to the owner's attention **all** irregularities, no matter how minor. For this, a tabular format, specific to the bid form and its supplements (bid bond form, qualifications statement form, and other forms to be completed and submitted with the bid), may be useful.

The following are suggested topics to be addressed in design professionals' award recommendations:

- *Receipt of Bids* – Indicate the date, time, and location at which the bids were received and opened; it may be appropriate to list the firms that submitted bids, although this is also indicated in the bid tabulation. This part of the letter may direct the reader to the attached bid tabulation and summary of irregularities.
- *Publicity* – A brief description of measures taken by the owner's staff and design professional to publicize the project to attract prospective bidders and sub-bidders may be appropriate, especially when the owner is budget-conscious and believes that increased competition will result in lower-priced bids. If fewer bids than expected were received, it may be appropriate to indicate the reasons for the lack of bids, if known.
- *Identification of Apparent Best Bid* – The award recommendation should identify the bidder that submitted the lowest-priced bid. When alternate bid items are used, the award recommendation should indicate how the alternates were evaluated to identify the low bid.

When either “best value” or “competitive sealed proposals” are the basis for awarding a competitively-bid contract, the recommendation should identify the bidder that submitted the best-scoring bid and should briefly recap the basis for the evaluation, in accordance with the Instructions to Bidders.

Bids submitted with conditions or exceptions to the requirements of the bidding documents are often rejected. However, the direction of the owner and its legal counsel should always be obtained concerning rejection of any public bid, regardless of whether the basis for rejection appears obvious and justifiable.

Where the owner desires to reject the low-priced or best-scoring bid for either non-responsiveness or lack of responsibility, the recommendation letter should briefly address the rejection directed by the owner, using language such as: “*After initially considering the Bids, the Owner directed the Architect that the Owner will reject the Bid of XYZ Construction, Inc. because: ____.*” For public work, the owner’s attorney should furnish the language indicating the reasons, because the recommendation letter will be part of the public record and, therefore, could become an exhibit in a bid protest.

- *Comparison with Budget* – Many owners may desire to know how the apparent low bids compared with the design professional’s opinion of probable bid prices. When there are substantial differences, it may be appropriate to explain the reasons for the discrepancies between the low bid and the design stage estimate.
- *Evaluation of Responsiveness* – The award recommendation should discuss the responsiveness of the lowest-priced bid that will not be rejected and refer to the attached summary of irregularities in the bids received. For most projects, especially public work, the design professional should avoid making judgments as to whether an irregularity is sufficient basis for the owner to reject the bid. **Oral** discussions with the owner, to obtain the owner’s opinion and directions on apparent irregularities should be held prior to finalizing the award recommendation.
- *Evaluation of Responsibility* – Deciding whether a bidder has sufficient prior experience, qualifications, resources, and an appropriate record (collectively, “responsibility”) to be awarded the contract is **subjective**. While the design professional often assists the owner with evaluating bidders’ responsibility by reviewing bidders’ submitted qualifications statements and checking references, the decision of whether to deem a bidder sufficiently responsible for purposes of award should reside with the owner. Thus, when the owner and design professional are unfamiliar with the apparent low bidder or have any reasonable doubts, **oral** discussions between the owner and design professional are necessary to identify the owner’s views and directions on the bidder’s responsibility, especially for public work.

Rather than making express judgments of responsibility, design professionals should indicate only facts, e.g.: “*Based on the Qualifications Statement submitted with the Bid and the Engineer’s prior experience with this contractor, the Bidder appears to possess a record of successfully completing work generally similar in nature, complexity, and size to the Project,*” or, “*Only two of 10 ongoing and completed projects indicated in the Bidder’s Qualifications Statement appear to be generally similar in nature to the Work required for this Contract.*”

Design professionals usually have little or no experience with matters of construction safety, including interpreting a bidder’s safety record. While certain indices, such as a bidder’s workers compensation liability insurance experience modification rate (EMR) may be indicated on a qualifications statement, interpreting the meaning of such data, or evaluating its accuracy, is often not within the design professional’s experience or expertise. When safety is addressed at all, award recommendations should indicate only facts, e.g.: “*This Bidder’s reported five-year EMR record is indicated in its Qualifications Statement submitted with the Bid. Based on the limited information readily available to the Engineer, this Bidder has no apparent OSHA-reportable safety violations during the past three years.*”

- *Recommendation and Next Steps* – The final part of a letter on awarding the contract should present the design professional’s recommendation for award. Certain aspects of bid evaluations, such as responsiveness, responsibility, and ranking of competitive sealed proposals (when solicited) have subjective elements. Thus, it is **essential** for the design professional to engage the owner in oral discussions **before** the recommendation is finalized
- In public work, bidders or others may have rights to submit bid protests; a formal bid protest is filed with a court of competent jurisdiction seeking an injunction against either awarding the contract or starting the construction. Therefore, on most projects, and for all public work, it is very important that the design professional’s recommendation be **expressly conditioned** upon the owner’s attorney’s review of the apparent successful bid and all rejected bids, if any, and approval of the award recommendation. Awarding a public contract may have legal consequences and architects, engineers, and geologists do not practice law. The owner’s legal counsel is, therefore, in the best position to advise the owner on the potential for bid protests and, if one occurs, the defensibility of rejecting a bid, waiving irregularities, or awarding certain alternates and not others.

Appropriate language in the award recommendation may include, “*Subject to review and approval by the Owner’s legal counsel and based on the Owner’s directions and other information presented above, we recommend awarding the Contract to ABC Contracting, Inc., [indicate the successful bidder’s address], in the amount of \$____, [for the base bid plus alternate bid item nos. _].*”

The award recommendation may also briefly list next steps, such as: (1) a vote by the owner’s governing board to award the contract; (2) preparation of a notice of award (which may be drafted by the design professional and enclosed with the award recommendation) for the owner’s signature, followed by issuance to the successful bidder; (3) advising the owner, based on time limits stipulated in the Instructions to Bidders, when the contract will likely be available for the owner to sign; (4) actions needed from funding or financing entities, if any, prior to award; (5) authorization of professional services for the construction stage; (6) which entity will receive and initially review the successful bidder’s signed agreement, contract bonds (when required), and insurance documentation; and (7) procedures for preparing and issuing a notice to proceed, if any, signed by the owner.

Thus, evaluating bids and issuing a recommendation for awarding the construction contract, particularly for public work, is an important action that should never be treated lightly. In awarding public contracts, the owner’s legal counsel should be involved in the decisions on awarding the contract. In drafting its award recommendation, the design professional should understand the risks, act accordingly, use professional judgment, and employ appropriate wording.



Kevin O'Beirne, PE, FCSI, CCS, CCCA is a professional engineer licensed in NY and PA with over 30 years of experience designing and constructing water and wastewater infrastructure for public and private clients. He is the engineering specifications manager for a global engineering and architecture design firm. He is a member of various CSI national committees and is the certification chair of CSI's Buffalo-Western New York Chapter. He is an ACEC voting delegate in the Engineers Joint Contract Documents Committee (EJCDC) and lives and works in the Buffalo NY rea. [Kevin O'Beirne's LinkedIn page.](#)

Business Correspondence: The Usefulness of “Old-Fashioned” Letters

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



Technology often improves the efficiency and swiftness of business communications. Increasingly, many project owners, design professionals, construction managers as advisor (CMA), and contractors rely on e-mail or messages sent via online project document management systems for routine, written communications.

While improved efficiency and speed are the benefits, there are drawbacks to relying “too much” on e-mail and other, similar, less-formal types of written communication while implementing a capital project, including:

- Potential for important or consequential communications, including contractually-required notices, to be mistaken as routine correspondence and not properly recognized.
- A tendency to write less-formally and quickly for e-mails and messaging, which has potential to not properly communicate important matters, especially for serious topics or concerns.
- The ease of nearly instantaneous transmissions may be to the sender’s disadvantage when communications are written in anger or other less-than-fully-professional frame of mind.

Some people may use types of electronic communication that are even less formal than e-mail or document management system messaging, including: instant messages via applications such as Microsoft Teams or Cisco Webex, cell phone text messages, and social media messaging such as Facebook, Twitter, and others. Such informal means of communicating complex business-related matters are not recommended by this writer. Even more than e-mail, they are typically conversational and informal, although they do result in a written record that may be difficult to eliminate if desired. Some employers’ systems log and save all instant messages automatically, unless the user explicitly disables recording/storing.

There are advantages to sending an “old-fashioned” business letter in many situations. A formal letter, written on the letterhead of its author’s organization, may carry increased perceived weight, compared to an e-mail or electronic message, and thus better communicate the importance and gravity of the matter at hand.

While implementing a capital project, letters may be desirable for situations such as:

- Transmitting proposals or other business offers, including requests for amendments or changes in contractual compensation or time of performance.
- Communications that are deliverables under the design professional’s or CMA’s scope of services. See, “[Award Recommendations: Guideline for Design Professionals](#)”, previously posted on this writer’s blog.
- Contractually required notices, such as: notice of differing site conditions, notice of discovery of apparent hazardous materials, notice of defective work, notice of delay, notice of a claim, written decisions on change proposals and claims, demands for dispute resolution, notice of termination, notice of change of principal personnel engaged on the project, and others. See “[Giving Notice: What It Is and How to Do It](#)”, previously posted on this writer’s blog.
- Communications of a sensitive nature, such as those addressing work that is behind schedule. See “[Liquidated Damages: Enforcing Damages for Late Completion](#)”, previously posted on this writer’s blog.
- Correspondence that is lengthy or addresses complex matters.

Business letters should be on the author's organization's official letterhead, indicating the organization name, address, and telephone number. The letter should clearly indicate the date; recipient's full name, title, and address; the subject of the correspondence; and an appropriate salutation. Where the letter constitutes an official notice required by contract or law, it is also useful to indicate, just above the date, the transmission method, such as, "Transmitted via US Certified Mail/Return Receipt Requested, and via e-mail," or "Delivered via overnight express courier and via project document management system," or other appropriate language.

The letter's recipient should be the appropriate person for the matter at hand. Some contracts may stipulate that contractually-required notices must be delivered to a specific person. Certain, important matters may perhaps best be addressed to a higher-level person in the recipient's organization above the day-to-day project team.

Business correspondence is not a mystery novel, where reading the entire text is entertainment before the perpetrator of the crime is revealed. Rather, business correspondence should communicate up front the basic point of the document, and present the substance of the matter afterward. Such an approach aids in effective communication and the reader's comprehension.

Regardless of its use or, indeed, whether written on letterhead or otherwise, correspondence by owners, design professionals, CMA's, or contractors should always be: professional, even-handed, largely related to contractual obligations and factual events, as objective as possible, and written so that its author will not be embarrassed to have the correspondence appear as an exhibit in litigation or other form of dispute resolution. Judgements, accusations, controversial or subjective statements, and other potentially inflammatory language should typically be avoided. While writing such communications, ask yourself, (1) "Would I say this to the recipient's face, whether in a meeting with others or in private?"; (2) "Would my employer, client, or I be embarrassed if parts of this communication appeared in a local newspaper story about the project?"; and, (3) "How would it look if this correspondence came into the hands of the opposing party's legal counsel?"

Presented below are examples of writing from a hypothetical situation of notifying the contractor of defective work. The first example employs ill-advised language for a business letter:

"The anchor bolts holding the pre-engineered metal building to its foundation are defective work. The cost will be deducted from payments to your firm. They are installed to insufficient depth, despite us repeatedly telling you, in writing and onsite, how they should be installed. This is the fifth instance of shoddy work on this project."

In contrast, the following example better-addresses the same hypothetical situation:

"We must inform you of an unfortunate matter on the Project: the anchor bolts attaching the pre-engineered metal building to its concrete foundation are non-compliant with both Drawing S-16 and Paragraph 3.3.D of Specifications Section 13 34 19 – Metal Building Systems, because they are installed with insufficient depth into the concrete, some by as much as four inches. We believe this makes the building non-compliant with both the applicable building code and the wind design criteria indicated in Paragraph 2.1.C.5 of Section 13 34 19. We previously indicated in our comments on approved Shop Drawing 13 34 19-002-B that embedment depth of the anchor bolts, which was not clearly shown on the subject shop drawing, needed to be sufficient to withstand the required wind loading. This must be remedied as soon as possible. If not remedied within 30 days, we will need to recommend the Owner withhold payment for the metal building work. We are available to meet with you, either via conference call or at the site, to discuss this matter."

A letter's closing should indicate how the reader may contact the author; indicate either "Sincerely," or "Very truly yours,"; the author's organization name; the author's signature; the author's printed name and title; enclosures, if any, to the letter; and the names and employer of any people receiving copies of the letter. Recipients of copies should be people involved in the matter at hand and ***judiciously selected***.

In the modern era of preparing and sending electronic letters, the frequency of receiving unsigned letters is sometimes surprising. The author's signature on correspondence indicates the letter is legitimate and properly conveys the signatory's sentiments. For this reason, letters that are either unsigned or feature only a non-secure, computer-generated "signature" might, perhaps be regarded as unofficial or incomplete.

When sending an e-mail or electronic message, it is often tempting to hit the "send" button almost as soon as the communication is written. In contrast, the process of writing a formal letter is marginally more-involved and therefore often allows greater opportunity for reflection on the document's content before it is transmitted. When possible, allow a day or two to pass before transmitting the letter. This allows not only opportunity for quality control (i.e., review and comment on the letter by others familiar with the project and matter at hand) but also allows passions to cool and time to consider alternative wording. Such reflection, and its attendant revisions to the correspondence, often improves the communication and may help preserve professional relationships.

Preparing certain correspondence on letterhead does not preclude sending via modern transmission methods. A letter, even those closing with a real, "wet" signature, can be easily scanned to a portable document format (PDF) file and transmitted electronically as either an attachment to an e-mail or uploaded to an online document management system. Ensure that contractually required notices are transmitted via the delivery method(s) specified in the contract.

Regardless of whether the correspondence is a letter or other, less formal written communication, project participants should understand and comply with attorney-client privilege, when applicable. Such correspondence must typically be transmitted to or copied to the sender's organization's legal counsel and clearly labeled, "Privileged and Confidential" and/or, "Attorney-Client Communication". Privilege and confidentiality may perhaps not apply unless governing law and rules are heeded. Routine matters should not be labeled "privileged and confidential". In some jurisdictions, only certain individuals may have the right to privileged communications with the entity's legal counsel. Be aware of the rules before committing truly sensitive matters to writing. An oral discussion with leadership or the firm's legal counsel may be necessary to learn the "rules" and does not leave a trail of documentation.

A well-written, professional letter, on the author's letterhead, helps convey formality and importance and helps the recipient avoid misinterpreting the matter as just another item of routine correspondence. As you implement design and construction projects, consider whether significant correspondence should be prepared as a letter. Despite advances in modern communication methods, there is still a lot to be said for old-fashioned business letters.

Acknowledgments: The author gratefully acknowledges the assistance of Jerry Cavaluzzi, Esq., vice president and general counsel at Kennedy/Jenks Consultants, and Jim Brown, PE, vice president in construction management at Arcadis, for reviewing and commenting on drafts of this article.

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PERMEABLE PAVERS: RESILIENCE FOR YOUR HOME AND COMMUNITY

By: William Sundquist, Regional Sales Manager for Whitacre Greer



As our landscape keeps evolving with the built environment, the need for environmentally friendly outdoor building materials becomes more and more necessary for our communities. Landscapes have changed from natural open spaces that could absorb most rainfall events. Today, our communities divert large amounts of rainfall runoff and discharge into waterways, hopefully filtering it first. As this trend progresses over time, the ground is not able to absorb rainwater as it used to. Thus, increasingly disruptive flash floods plague urban and suburban spaces. Fortunately, an alternative to standard driveways and concrete patios is gaining increasing attention. Beautiful and functional, permeable pavers were developed to enhance our hardscapes and to help manage rainfall runoff and recharge our local water tables.

that capture and retain rainfall when it falls on your property. Often the pavers themselves are not permeable, and stormwater trickles down through the joints into various layers of stone below. But where the pavers are permeable themselves and joined with aggregate (that is, crushed stone filling in the gaps), they can reduce stormwater runoff by nearly 1,000 gallons per hour. The wide variety of decorative styles, patterns, and textures suit any home from historic to traditional to modern.

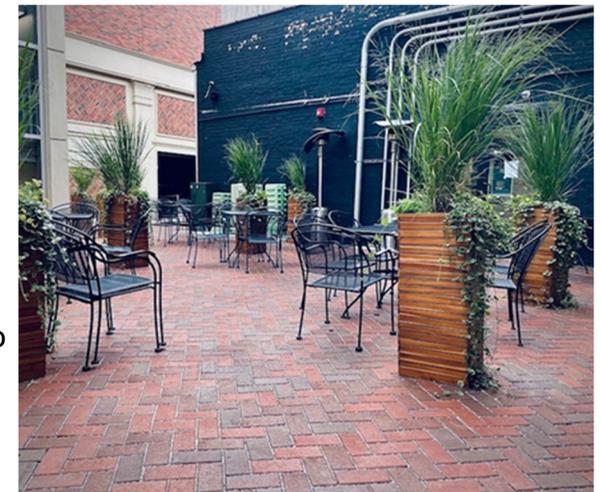
Cement patios and drives—or hardscapes with pavers having mortared or tightly joined gaps—prevent water from penetrating through to the ground. Stormwater runoff then flows (hopefully) into storm drains. In the worst cases, stormwater rushes and pools onsite or downhill, damaging valuable landscaping or structures.

When our built-up communities come to grips with stormwater management (SWR), our outdoor living spaces can support a more sustainable environment.

DINE PERMEABLE!

In the suburbs of Chicago, a local restaurateur determined to resurface the alley area at the back of the restaurant, in order to invite outdoor dining. The owner chose permeable pavers so that diners could enjoy their meal with dry shoes. Plus the paver helps the community retain rainwater and reduce the burden on the stormwater management systems. This intimate dining area is a beautiful space that achieves multiple objectives.

Permeable pavers, along with gravel and groundcover hardscapes, feature paver designs and joint materials



PARK PERMEABLE!

When constructing three stylish, [net zero energy houses in Chattanooga, TN](https://www.greenspaceschattanooga.org/nextgen) (<https://www.greenspaceschattanooga.org/nextgen>), the builder chose permeable pavers for the expansive driveway. Chattanooga requires SWR in order to retain excess stormwater runoff, discharging it at a slower rate. This prevents the city's storm sewer system from becoming overloaded during rain events. Thus stormwater can be treated before it finds its way into the Tennessee River, Chattanooga's primary source of drinking water.

Because the properties are perched on a hill, building a [retention pond](#) or [swale](#) would have been very challenging or impossible. And not only are these super-efficient hillside homes stormwater-smart, they're stunning assets to this community nestled in the foothills of the Appalachian Mountains.

GO GREEN, LITERALLY

Many permeable paver systems encourage green grass or a native groundcover to spring up between the stones and allow rainfall to seep through into the ground. This more organic look (grow-through pavers? grassblock pavers?) offers stormwater management and often a more DIY-friendly configuration. Still, a qualified engineer should look at your site and approve the drainage strategy. If you're seeking LEED accreditation, these (and other permeable pavers) offer points in Sustainable Sites, Water Efficiency, and Materials & Resources. But make sure the vegetation gets proper sun, can be maintained minimally over time, and the pavers or framing will stand up to the application. The result can be beautiful, cooling greenspaces that add color, texture, and fragrance to your site.

PREPARE FOR PERMEABLE

It's important to mention that these systems are far more expensive than pouring concrete and require important soil and bedding detail and preparation to allow rainfall to "exfiltrate." We are re-creating the earth's natural percolation and filtering processes, and these systems do come with an increased cost.

Even though there are additional costs, we must accept that SWR is a vital 21st-century construction risk, and must be included in a home's infrastructure design. Think about a major intersection in your neighborhood that floods whenever a major rain event occurs. The water is sheeting off homes and roofs, driveways and parking lots, heading downhill with gravity. And as we develop more and more land, across the country, the likelihood of stormwater flooding increases. Extreme precipitation events (i.e., deluges) have become more frequent, and climate change models suggest this will continue.





WHAT IS THE COST OF INACTION?

Construction practices have and will continue to create manmade waterways in our communities, causing flash flooding with heavy rainfall. When flooding occurs, and a major road is shut down, what is that cost? Trucks sitting idle, lost time in traffic jams, perhaps repairs needed for water damage. We all pay a price somewhere along the line for lack of adequate infrastructure. I encourage our elected officials in municipalities and states across the country to consider the risks and avoidable costs of poor SWR where we work, live, and play. A few extra dollars on the front end can save more (and help ensure safe drinking water) over time.

So whether you're interested in a smoother commute, a driveway that helps reduce stormwater runoff in your neighborhood, or you just want to dine al fresco in an enticing grotto... you have a choice to make. Permeable pavers in your favorite style and pattern can make a difference in your local community. You might think of your lot as small and not doing much. But lot by lot, owner by owner, we can manage our stormwater runoff and ensure the future health of our waterways.



The author:

William Sundquist, FCSI is the Regional Sales Manager for Whitacre Greer clay pavers, responsible for the Southwest and West Coast markets. He earned his bachelor's degree in public relations from Georgia Southern University in 2001, and since graduating he has worked in various architectural and management roles in the brick industry. Sundquist was elected Chair-Elect of the Construction Specification Institute in 2022 and has served on the CSI Board of Directors the past 4 years. He has also worked in various regional and chapter leadership roles since joining the Institute in 2004. In 2020, Sundquist was elevated to the Construction Specifications Institute College of Fellows for his contributions to the industry.

Additionally, he has contributed to the AECO industry as an allied board member with the East Tennessee Chapter of the American Institute of Architects, The University of Tennessee Chattanooga Interior Design School Advisory Board, and support roles with American Society of Interior Designers, Associated General Contractors of America, and Associated Builders and Contractors. Sundquist is also Second Vice Chair of the Brick Industry Association's American Landscaping and Paving Council, and in 2022 was appointed to the newly formed Corporate Committee for the American Society of Landscape Architects.

Decoded: Approved Changes and Clarifications to the 2024 International Building Code

By: Lori Greene, I Dig Hardware Blog

The model codes and referenced standards adopted in most U.S. states are typically revised on a three-year cycle, and the 2024 editions of the model building codes and fire codes are nearing completion. For the International Building Code (IBC), many changes have already been approved that will affect doors and hardware. The [Builders Hardware Manufacturer's Association \(BHMA\)](#) Codes, Government, & Industry Affairs (CGIA) Committee has been involved in the code development process for more than 20 years, allowing us to proactively impact the code requirements related to door openings.

A [previous Decoded article](https://idighardware.com/2022/01/whats-next-2024-ibc-changes-electrified-hardware/) (<https://idighardware.com/2022/01/whats-next-2024-ibc-changes-electrified-hardware/>) addressed upcoming changes to the IBC that were related to electrified hardware, including:

Clarifications on the code requirements for “[normal locking arrangements](https://idighardware.com/2021/08/decoded-special-locking-arrangements-vs-normal-locking-arrangements/)” (<https://idighardware.com/2021/08/decoded-special-locking-arrangements-vs-normal-locking-arrangements/>)

The addition of [UL 1034](#) as an alternative to the UL 294 listing

A limitation on the use of [electromagnetic locks](https://idighardware.com/2022/11/qg-mag-lock-panic-hardware-clarification/) (<https://idighardware.com/2022/11/qg-mag-lock-panic-hardware-clarification/>) on doors required to have panic hardware

Additional emergency release methods mandated for [stairwell reentry](https://idighardware.com/2021/12/code-update-emergency-release-methods-for-stairwell-reentry/) (<https://idighardware.com/2021/12/code-update-emergency-release-methods-for-stairwell-reentry/>).

A new code section related to electrified locking of [elevator lobby doors](https://idighardware.com/2021/12/code-update-elevator-lobby-exit-access-doors/) (<https://idighardware.com/2021/12/code-update-elevator-lobby-exit-access-doors/>).

Along with these important changes affecting electrified hardware and access control, additional changes and clarifications have been approved with regard to mechanical hardware, door size, and automatic operators. Generally, changes to the IBC also apply to the International Fire Code (IFC). Clarifications to the code will be helpful immediately, even prior to adoption of the new code in a project's jurisdiction, and five changes related to doors and hardware are summarized in this article.



Flush Bolts – Manual, Automatic, and Constant-Latching

The 2024 IBC will include definitions for the types of flush bolts that are addressed by a new table in the code, reducing the confusion caused by the Bolt Locks section in past editions.

ICC Proposal [E43-21](https://idighardware.com/wp-content/uploads/2023/02/E43-Flush-Bolts.pdf) (<https://idighardware.com/wp-content/uploads/2023/02/E43-Flush-Bolts.pdf>) – Approved as Modified by Public Comment 1.

The section of the IBC called “Bolt Locks” has often been misinterpreted as being applicable to deadbolts. Upon further investigation into the requirements of the section, and by reading the IBC Commentary, it is clear that the section is intended to apply to [flush bolts](https://idighardware.com/2016/12/decoded-flush-bolts-and-coordinators-january-2017/) and surface bolts installed on the inactive leaf of a pair of doors. This needed to be clarified to facilitate more consistent interpretations in the field.

There were some other issues with this section as well. For example, paragraphs three and four described locations where manual flush bolts were allowed, based on occupancy type, occupant load, and presence or absence of a sprinkler system. However, the code did not distinguish between fire doors and non-fire-rated doors in these paragraphs. Because of the positive-latching requirements, a fire door assembly would not typically be permitted to have manual flush bolts, even if it met the criteria stated in the code.

The other complication was a lack of familiarity with the various types of flush bolts – manual bolts, automatic flush bolts, and constant latching bolts (as well as deadbolts). These terms will be defined in the 2024 IBC, to differentiate between the types of bolts and the requirements that apply to each. In addition, a table has been added to clarify where each type of bolt is allowed based on occupancy type and calculated occupant load, and whether the assembly is required to be fire rated.



Key-Operated Locks for Main Entrances

ICC Proposal E45-21 – Approved as Modified by Public Comment 1

A change to the 2015 I-Codes resulted in some confusion regarding key-operated locks. The model codes allow these locks – for example, double-cylinder deadbolts – to be installed on certain doors in a means of egress, if the criteria listed in the codes are met. Because the locks require a key to unlock them, they must remain unlocked when the building is occupied to facilitate free egress. The model codes limit the occupancy types where these locks are allowed, require signage stating that the door must be unlocked when the building or space is occupied, and mandate a lock that is readily distinguishable as locked (this is typically interpreted to mean that an indicator is required).

The 2024 edition of the IBC will include a change to clarify the intent of the requirements for a double cylinder deadbolt used on the main entrance of a building or tenant

Prior to the 2015 edition of the IBC, key-operated locks were allowed on a building’s main exterior door or doors, in the following occupancy types: assembly (with an occupant load of 300 people or less), business, factory and industrial, mercantile, or storage, and in places of religious worship (no stated occupant load limit). In the 2015 edition of the code, the word “exterior” was removed, and a slight change was made to the required wording of the signage. The intent of the change was to allow this application to be used on the entrance to a tenant space, like a retail stair in a mall.

When the reference to exterior doors was removed, it became unclear where double-cylinder deadbolts were allowed. For example, if an end user wanted to install a double cylinder deadbolt on a locker room, with signage and an indicator, and the occupancy type and load were within the limitations of the code, it was extremely difficult to demonstrate why that did not meet the intent of the IBC.

The change to the 2024 IBC is simple, but an important clarification to show where these locks are intended to be allowed: The doors are the main exterior doors to the building, or the doors are the main doors to the tenant space. Based on this revision, double-cylinder deadbolts could be installed on the main exterior doors, or the main doors leading to tenant spaces, but could not be used on doors to individual rooms or other areas. In addition, the other criteria listed in the code must be met.



Double Egress Pairs in Health Care Smoke Barriers

ICC Proposal FS48-21 – Approved as Modified

One section of the IBC that has caused a lot of confusion over several editions of the code is the section addressing double-egress pairs of doors in health care smoke barriers. At one time, the common interpretation was that these doors were required to be fire door assemblies but did not require positive-latching hardware. Because fire doors are required to latch, many of these cross-corridor pairs were equipped with construction labels, stating that the doors were constructed to the same standards as labeled fire doors, but could not be labeled because they were not equipped with latching hardware. In some cases, latching hardware was installed to avoid problems with code interpretations in the field.

Double-egress pairs installed in smoke barriers in health care facilities are not typically required to be labeled fire doors or to have positive-latching hardware.

Over several editions of the IBC, the intent of the code became clear. Labeled fire doors are not required for double egress pairs of doors in smoke barriers in health care facilities. The applicable section of the code includes some other criteria, such as limitations on clearances, the allowable type of hold-open devices (if applicable), requirements that apply to vision panels, and the condition at the meeting stiles. But the 2021 IBC clearly states: *In Group I-1, Condition 2, Group I-2 and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall not be required to be protected in accordance with Section 716.*

applicable), requirements that apply to vision panels, and the condition at the meeting stiles. But the 2021 IBC clearly states: *In Group I-1, Condition 2, Group I-2 and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall not be required to be protected in accordance with Section 716.*

The referenced section – Section 716 in the 2021 edition – includes the requirements for opening protectives / fire doors, so these double egress pairs in health care smoke barriers are not required to be fire door assemblies. However, there was a line of text left in the 2021 and prior editions that continued to cause confusion: *Where permitted by the door manufacturer's listing, positive-latching devices are not required.* Because the doors are not required to be labeled or listed, there are no manufacturers' listings that could permit the omission of positive-latching devices. In the 2024 edition, this line of text will be removed.



Automatic Operators at Accessible Public Entrances

ICC Proposals E116-21 and E119-21 – Approved as Modified, E118-21 – Approved as Submitted

One of the important changes made in the 2021 IBC added requirements for automatic operators to be installed on the accessible public entrances in certain types of buildings, depending on the use group and the calculated occupant load. In the 2024 edition, some clarifications will be made to this section. The reference to “automatic doors” will be changed to “power-operated doors”, to be consistent with other references in the code. Another change clarifies that when these entrances contain doors in a series – for example, exterior doors and vestibule doors – at least one of each must have an automatic operator.

The 2021 IBC introduced requirements for accessible public entrances serving some types of buildings to have automatic operators. These requirements will be clarified in the 2024 edition.

Clarifications will also be made to the 2024 edition of the IBC to help determine which buildings are required to have power-operated doors for the accessible public entrances. Where a tenant space in one of the applicable use groups has its own exterior public entrance, it will be considered a separate facility and building for the purpose of determining power-operated door requirements. For mixed-use facilities, the code has been clarified regarding how the requirement for automatic doors is applied.



Locks for Multi-Stall Restrooms

ICC Proposal [P35-21](#) – Approved as Modified by Public Comment 1

Although most of the BHMA committee's time is spent on the model codes and referenced standards that commonly affect door openings, occasionally a change to another code or standard is needed. This was the case with the final change discussed in this article.

The International Plumbing Code (IPC) includes a section addressing the type of locks that are allowed on doors serving multi-stall restrooms. The IPC does not permit these doors to have locks that are lockable from inside of the restroom – for example, a lockset with a thumbturn or push button would not be allowed on the restroom's main entrance door. (Note: Family and assisted-use toilet rooms are exempt from this limitation.)

A code change was needed in order to allow this deadbolt function to be used on multi-stall restrooms. A key can be used to throw or retract the bolt from the inside, and the thumbturn can be used to retract the bolt for egress.

In recent years many facility managers have expressed a need for multi-stall restrooms to be lockable from within the room. In some buildings the restrooms may be used as a safe haven during an active-shooter event, and an authorized person – like a teacher – would need to be able to lock the door from the inside. Another possibility is where someone cleaning a restroom needs to temporarily restrict access to the room while they are working.

Along with the ability for an authorized person to lock the door to prevent access, it is important to ensure that the egress requirements are met. There is a deadbolt function available that includes key cylinders on the inside and outside of the door, along with a thumbturn on the inside. The thumbturn can be used to retract the deadbolt for egress but will not project the deadbolt. Past editions of the IPC would not allow this function to be used on a multi-stall restroom, but an exception has been approved for the 2024 edition of the IPC that will allow access to be limited while also providing for free egress.

The new exception states that the door serving a multiple occupant toilet room may be lockable from inside of the room by an authorized person using a key or other approved means, as long as the door is readily openable from the egress side with not more than one releasing motion and without the use of a key or special knowledge or effort. The door must also be able to be unlocked from outside of the room with a key or other approved means. To comply with accessibility and egress requirements, the thumbturn must be operable without tight grasping, pinching, or twisting of the wrist. Operable parts of the lock must be mounted between 34 inches and 48 inches above the floor (or as required by state or local codes and standards).

Remember, additional changes affecting electrified hardware were addressed in a [previous Decoded article](#); these revisions should help with more consistent interpretations. Although some changes do not apply until the new edition of the code is adopted in a particular jurisdiction, many are clarifications that can be used immediately to help demonstrate the intent of the code. Editions of the code that have not yet been adopted may be used when requesting a code modification. Be sure to check the adopted codes in a project's jurisdiction, as they may include state and local modifications that differ from the model codes. The Authority Having Jurisdiction (AHJ) will make the final determination regarding code compliance.

Giving Notice - What It Is and How to Do It

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

An often-overlooked and procedurally relevant provision of construction documents is that for “giving notice.” What does that mean?

Contracts for construction require that the parties and the design professional give various, contractually-stipulated notices. Such notices are formal, written communications that are, in accordance with the contract, of such importance that they must be transmitted or delivered in a certain manner, so that the receiving entity has a full understanding that they are receiving a formal, contractually required notice.

Various matters in construction contracts require formal, written notice and typically include as notice of: discovery of defective work, delays beyond the contractor's control, differing site conditions, discovery of unanticipated hazardous environmental conditions, change proposals, claims, filing for dispute resolution, and others. In fact, the General Conditions and other parts of many construction contracts require written notice for a surprisingly large number of events.

Furthermore, this writer has observed that it is fairly common for construction specifications to require “notice” by one party or the other, sometimes for garden-variety matters that may not otherwise, upon careful consideration, rise to the same level as events for which the General Conditions or Agreement require written notices. Requiring “written notice” for routine matters—for example, “Notify Engineer that substrate is ready for application of subsequent coats of paint,” or similar routine matters—should not be over-used. This is to avoid having truly important notices—such as claims and disputes, among others—become submerged or lost in a veritable pile of “notices” for ordinary matters. For routine events, contract documents should perhaps be worded as, “Advise the Architect in writing” or similar language, instead of requiring, “Give written notice to Architect.” To summarize, a formal, written notice is supposed to signal something **important** and, often, out of the ordinary.

Notices are addressed at Section 1.6 (“Notice”) of the American Institute of Architects’ (AIA) A201—2017, *Standard General Conditions of the Contract for Construction*. AIA A201—2017 requires that, to be valid a notice must, “*be provided in writing to the designated representative of the [recipient]... delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.... [Except that] Notice of Claims...shall be... delivered to the [recipient]... by certified or registered mail, or by courier providing proof of delivery.*”

The Engineers Joint Contract Documents Committee’s (EJCDC) C-700—2018, *Standard General Conditions of the Construction Contract*, Paragraph 18.01 (“Giving Notice”), requires that contractually-required notices be, “*delivered: 1. in person, by a commercial courier service or otherwise, to the recipient’s place of business; 2. by registered or certified mail, postage prepaid....; or 3. by e-mail to the recipient, with the words “Formal Notice” or similar in the e-mail’s subject line.*”

Thus, AIA documents appear to allow greater liberty for delivery of most notices—including normal U.S. Mail and perhaps even e-mail without specific identification as a notice— except for notice of claims, whereas EJCDC documents’ notice provision applies the same rules to all contractually-required notices. EJCDC also requires that e-mailed notices be explicitly identified as formal notices. Notice requirements in other contracts are likely to differ from the AIA and EJCDC examples presented above.

Failure to furnish a required notice as in accordance with the contract's notice delivery provision could result in a party or the design professional being deemed as failing to give a required notice; put another way, the notice could be invalid because of how it was delivered. However, in a matter of substantial importance, it may be inadvisable for a party to depend overmuch on the procedural technicalities of the notice clause to escape an otherwise-unpleasant outcome. While it is good practice to never treat the notice requirements lightly, it is also unwise to assume that a certain matter may be unenforceable because of the timing or delivery method of the associated notice. In determining the enforceability of a contract's notice provision, a court or arbitrator is likely to consider the extent to which other procedural technicalities were strictly enforced throughout the project.

How does one clearly and properly designate something as a contractually-required, formal, written notice? As observed by this writer, many attorneys do so by all of the following:

- *Clear Indication of Delivery Method:* Include a header at the top of the first page of the letter (or other form of written communication) indicating the mode(s) of delivery, such as, "TRANSMITTED VIA U.S. REGISTERED MAIL/RETURN RECEIPT REQUESTED AND VIA E-MAIL" or similar words.
- *Indicate in in the Subject Line:* In the communication's subject line, use clear language such as "Notice of Claim", "Notice of Differing Site Conditions", "Notice of Delay", and forth.
- *Cite the Provision:* The first paragraph of the notice should explicitly cite the contractual provision requiring the notice, such as, "This letter constitutes formal notice of a Claim in accordance with Paragraph 12.01 of the General Conditions," or similar working, as applicable.

Although both AIA A201 and EJCDC C-700 appear to leave the door open for issuance of formal notices as less-formal e-mail communications, this writer recommends that all contractually-required notices be on the transmitting party's letterhead. This will help to differentiate a formal notice from day-to-day project correspondence, which are often performed by e-mail.

Notices should be addressed and delivered to the appropriate representative of the receiving party, who may be other than that organization's normal, day-to-day contact for the project. For some projects, the designated representatives are to be indicated in writing at or prior to the preconstruction conference. In other contracts, including many of those modeled on EJCDC documents, the person and address for giving of formal notices is expressly indicated near the end of the Agreement. Thus, before finalizing and transmitting a formal notice, the writer should ensure that it is addressed to the proper person and location. If the person to whom formal, written notices are delivered is other than the recipient's day-to-day contact person, it is often appropriate to copy the regular contact person on the notice.

In closing, the contract clause on how formal, required notices are delivered is important. Comply with such provisions to avoid having an otherwise clearly written and relevant notice be deemed improperly delivered and therefore potentially invalid.



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Liquidated Damages—Enforcing Damages for Late Completion

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



This is the last in a three-part series on liquidated damages in construction contracts. The first post in the series addressed the various types of damages and how liquidated damages should be determined and specified. The second part presented an example of documenting the basis for liquidated damages for late completion. This final part addresses enforcing liquidated damages during construction.

Read Part 1 in the LRCSI SpecWork November 2022 Newsletter.

Read Part 2 in the LRCSI SpecWork January 2023 Newsletter.

The contractor on your project is behind schedule and will not comply with the contract times. The construction contract has a liquidated damages clause. Now what? How does the owner get compensation for its financial damages?

“Show Me the Money!”

Before attempting to impose liquidated or other damages included in the contract, the design professional or construction manager as advisor (CMA) should review the owner’s contractual rights for obtaining such compensation. Many non-standard construction contracts reviewed by this writer require the contractor, “shall pay the Owner” or, “is liable to the Owner”, or, “shall owe the Owner” liquidated damages. “Owing” means, “I’ll pay you someday”; “shall be liable” is more-clear but still does not address how the owner obtains compensation; and “shall pay the Owner” implies the contractor will issue a check to the owner, which is unlikely in actual practice. In all of these cases, the owner may conclude it is in a gray area where it may be obligated to continue to pay the contractor’s progress payments, even though the contractor is beyond the contract time and the owner will ultimately be contractually entitled to recoup damages.

Owners obviously prefer a more straightforward approach, such as the contractual right to withhold liquidated and other damages from payments due the contractor. To this end, Paragraph 15.01.E.1.j of EJCDC C-700—2018, Standard General Conditions of the Construction Contract, establishes:

“E. Reductions in Payment by Owner

“1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

“j. Liquidated or other damages have accrued as a result of Contractor’s failure to achieve Milestones, Substantial Completion, or final completion of the Work;”

Even when the owner has the right to withhold liquidated and other damages from payments due the contractor, a change order is eventually necessary to officially reduce the contract price by the required amount. Because a change order typically requires the signatures of both the owner and contractor to be effective, the potential exists for the contractor to attempt to stymie the owner’s reduction of the contract price for liquidated or other damages by refusing to sign the change order. To avoid such situations, EJCDC C-700—2018, Paragraph 11.02.B, states:

“B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A [which, among other things, requires change orders to finalize changes in the contract price for owner-imposed set-offs], it will be deemed to be of full force and effect, as if fully executed.”

Section 9.5.1.6 of AIA A201—2017, *Standard General Conditions of the Contract for Construction*, empowers the architect to reduce the amount eligible for payment due to liquidated damages, as follows:

“§ 9.5 Decisions to Withhold Certification

“§ 9.5.1 ...The Architect may also withhold a Certificate for Payment [to Contractor] or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect’s opinion to protect the Owner from loss for which the Contractor is responsible, including loss... because of

“.5 damage to the Owner or a Separate Contractor;

“.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;”

While AIA A201 allows the architect to reduce the eligible amount of payment to the contractor for liquidated and other damages, A201 does *not* allow the *owner* to withhold such payment on the owner’s initiative. However, as further discussed below, the architect should never unilaterally withhold payment for such amounts without first consulting with the owner and obtaining the owner’s direction on whether and when to withhold payment. A201 also does not address the potential for the contractor to withhold its signature from a change order that reduces the contract sum because of liquidated or other damages.

Contractors often take exception to withholding payment. Indeed, a frequent source of contractor claims is an owner’s alleged wrongful withholding of payment. Because the owner’s right to withhold payment for liquidated and other damages is so critical, for maximum clarity, this writer also prefers to include the following in the Owner-Contractor Agreement, at the end of provisions on liquidated and special damages:

“### Owner reserves the right to withhold from payments due Contractor under the Contract amounts for liquidated damages (if any), special damages (if any), and performance damages (if any) in accordance with the Contract.”

To contest withholding of liquidated or other damages, the contractor’s recourse in AIA A201 is a claim. In EJCDC C-700, the contractor may contest a set-off via a change proposal. If the contractor disagrees with the engineer’s decision on the change proposal, the contractor may submit a claim directly to the owner.

Communication and Documentation

On many projects in which this writer has advised design professionals and owners, it is surprisingly common for there to be a lack of documentation of construction delays. Often, “everyone” on such projects is aware the work is behind schedule, but the owner and design professional have not affirmatively asserted their position or the owner’s rights to compensation for damages.

In such cases, it may appear the contractor proceeded without implementing substantive, corrective actions to recover the lost time. After all, efforts to recover lost time typically result in added costs to the contractor. The contractor may proceed in a seemingly unhurried manner expecting a forthcoming change order extending the contract times. On many such projects, the contractor may become outraged when “suddenly hit with” news the owner might exercise its rights to contractually stipulated damages. This may set the table for claims, counterclaims, and substantive disagreements.

While it is unlikely all contractors in all late projects can be mollified by words alone when facing withheld payment for late performance, the owner typically has improved potential to successfully exercise their contractual rights when communication is clear, documented, and timely, as further discussed in the next section of this blog post.

The project's compliance with the contract times and construction schedule is a common topic at construction progress meetings. When the project is behind schedule, discussions at such meetings and the associated meeting minutes should generally follow the advice, presented below, for letters to the contractor concerning late performance.

The purpose of written communications on late performance is to ensure the contractor has a clear understanding of the owner's, design professional's, and CMA's position on the delays; to document the causes of delays; indicate the owner's recognition of its rights to damages; to furnish the contractor with an estimate of the time delay and the associated, estimated contractual damages; and to remind the contractor of its responsibilities. Again, withholding payment for damages should **never** be a surprise to the contractor.

When the work is behind schedule for a prolonged period, multiple letters to the contractor may be appropriate, especially when the delay increases. The frequency that such letters should be furnished varies, but likely not more often than once per month is sufficient, unless significant delays occur.

To be balanced against this is the potential of over-communicating the unwelcome accusation, "You're late, it's all your fault and, boy, it's going to cost you dearly." The written communications discussed in this blog post, regardless of how well-written, professional, impartial, and sympathetic, may provoke the contractor and contribute to deteriorated relationships on the project. Even when the contractor is entirely at fault for the delays, such communications are likely to be viewed as the design professional or CMA nailing the lid shut on the contractor's coffin while the contractor is still alive. Appropriate judgment of the dynamic situation and personalities involved, and application of what psychologists call, "emotional intelligence", are necessary.

Professionally Performing an Unpleasant Task

Reducing payment to the contractor from the requested amount is a **very serious** matter that may adversely affect the contractor's cash flow and ability to pay its creditors and, possibly, its relationship with its surety. It has strong potential to provoke an adverse reaction from the contractor and may have a detrimental effect on relationships on the project. Therefore, it should never be undertaken lightly or without careful consideration of all its likely impacts.

A design professional or CMA should **never** unilaterally reduce payment to the contractor, regardless of how much the contractor is, or appears to be, behind schedule **and** responsible for the delays. Because of the serious ramifications of reducing payment to the contractor, the owner **must** be consulted and ultimately decide whether to, and when, to withhold payment from the contractor for contractually stipulated damages. All entities on the owner's team should participate in the discussion: owner's project manager and legal counsel, design professional, CMA (if any), and owner's program manager (if any).

Simply because the owner has a contractual **right** to withhold payment for liquidated or other damages does **not** necessarily mean the owner **must** exercise its rights. Where an owner has sufficient funds, discretion is necessary in deciding whether to exercise such rights. An owner that acquires a reputation among contractors for frequently withholding payment because of late performance may see increased bid prices on future projects. Repeated, short-term attempts to be "made whole" may result in greater long-term costs to the

owner. Finally, accrued liquidated damages may be used as a bargaining chip in negotiating other, unrelated changes with the contractor; for example, the owner may offer to waive imposing liquidated damages if the contractor agrees to drop an unrelated claim for differing site conditions.

Conversely, not clearly asserting the owner's rights and, in certain cases, exercising its rights, may result in the owner's later attempt to recover such amounts possibly being deemed unenforceable; thus, the owner also should avoid having a reputation of "never" enforcing liquidated damages. The existence of such nuances reinforces the need for the owner to consult with qualified legal counsel.

The timing of actual withholding of payment should be judged for each project. The contractor's total liability for contractual damages and other set-offs to which the owner may be entitled should not exceed the unpaid balance of the contract price. For example, if the total accrued liability for damages for late completion and other set-offs is \$50,000 and the unpaid balance of the contract price is \$500,000, it may perhaps be premature to start withholding payment. On the other hand, if the total accrued liability for late completion and other set-offs is \$50,000 and the total unpaid balance of the contract price is \$25,000, the horse may already be partly out of the barn.

When the owner determines that amounts for damages should be withheld from the contractor's payments, it should not come as a surprise to the contractor. Projects almost never fall behind schedule overnight; rather, the signs and slippage are noticeable and usually fairly obvious for some time before matters progress to the point of withholding payment. During this period, it is necessary to document the schedule slippage via appropriate, written communications.

The design professional's or CMA's written communications to the contractor that the project is behind schedule and apparently may not or will not be completed within the contract times should be:

1. In writing.
2. Employ language and tone that is professional, guarded, impartial, and avoids controversial or unsubstantiated accusations. In certain situations, a sympathetic tone may be appropriate.
3. On letterhead rather than other, less formal types of communication, like e-mail. Communications under letterhead may perhaps be declining in popularity but nevertheless carry, in this writer's opinion, more gravity and communicate increased formality for important matters.
4. Indicate the writer's opinion of the reasons for the delays, supported by citations of specific facts in the project record. Citations to the contract's allocation of risk of delays is usually appropriate, including AIA A201—2017 Section 8.3 and EJCDC C-700—2018 Paragraphs 4.05 and 11.08. <https://www.csiresources.org/blogs/kevin-obeirne-pe-fcsi-ccs-cca-cdt1/2021/09/01/liquidated-damages-compensation-for-late-completi?CommunityKey=80c3b4dd-0d3f-4d4e-90f2-3bc6e4135dc2>
5. Indicate the number of days the writer believes the work will be completed beyond the contract times.
6. Include a reminder of the owner's rights to liquidated and other damages, if any, in accordance with the contract and, often, a statement of the writer's opinion of the total amount of the contractor's liability for such damages.
7. Urge the contractor to do all in its power to recover the lost time, including preparing and implementing a recovery schedule, and to complete the work either within the contract times or, if that appears to be no longer feasible, as close to the contract times as possible. A reminder that the contractor has full responsibility for compliance with the contract times and for construction means, methods, procedures, sequences, and techniques, may also be appropriate.

In preparing such communications, the design professional or CMA should understand there are two sides to every story and the contractor's view of why the work is behind schedule may be very different from the opinions of the owner, design professional, and CMA. That the contractor's view may have merit must be considered *impartially* and, where some or all of the delay resulted from causes beyond the contractor's control, an appropriate change order should be promptly issued. Time extensions should *not* build up for resolution in a final change order.

<https://www.csiresources.org/blogs/kevin-obeirne-pe-fcsi-ccs-ccca-cdt1/2021/10/06/liquidated-damages-documenting-the-basis-for-damag?CommunityKey=80c3b4dd-0d3f-4d4e-90f2-3bc6e4135dc2>

Taking extreme or unreasonable positions on causes of delays helps no one. Ultimately, if the parties cannot amicably resolve their disagreement, a court or arbitrator will impartially decide the matter, after the parties have incurred significant stress, lost time, attorneys' fees, and other costs. It is often best for all participants to be reasonable from the outset regarding causes of delays.

The advice presented above, concerning written communications, also largely applies in oral discussions between project participants. Whether during in-person discussions, in meetings, or on telephone calls with the contractor, the owner, design professional, and CMA should always endeavor to be professional, impartial, and properly informed concerning project events and contractual requirements.

Alerting the Surety

When the contractor has furnished a performance bond and the work is beyond schedule, occasionally, the owner or one of its consultants may believe it necessary to copy the contractor's surety on written communications concerning delays. This should be done rarely and only in extreme cases, where the work is so far behind schedule that the owner is *seriously contemplating terminating the contractor for cause*. Copying the surety should never be done casually or without due consideration of its likely effect on the contractor. The owner's legal counsel should be involved in the decision to copy the surety on such communications.

On the negative side, copying the surety on such correspondence is likely to provoke an adverse reaction from the contractor. Because of the indemnity agreement between the contractor and its surety, in the event the contractor is terminated for cause and the surety has to fulfill its performance bond obligations, the contractor will be liable to the surety for the surety's costs, which could involve the loss of the contractor's personal assets.

On the positive side, advising the surety of a delayed, troubled project at an appropriate time may result in the surety intervening to assist the contractor, to avoid a termination for cause. When the surety intervenes in this manner, it often provides guidance to the contractor and expertise in recovering the project.

Alerting the surety should be done only as the last step before the owner truly intends to exercise "the nuclear option".

Notice of Withholding Payment

When payment to the contractor is reduced for any reason, including exercising the contractual right to withhold payment for liquidated or other damages, it is always appropriate and, in many cases, an express, contractual *obligation*, for the contractor to receive formal, written notice of the reduction. Such notice should be furnished promptly, especially when contractually stipulated time limits (often, 10 days after receipt of the application for payment) apply for issuance of such notices.

Conclusions

Before enforcing the owner's rights to liquidated and other damages, the owner, design professional, and CMA should have a thorough understanding of the contract's provisions on withholding payment, the psychology of the situation and personalities involved, and should properly document the causes of delay and its estimated consequences. In certain situations, the parties should consult their respective legal counsels. Discussions, whether oral or written, of delays should always be professional, impartial, and based on facts. Change orders extending the contract times should be promptly issued when the cause of the delay was outside the contractor's control. Failure to comply with these recommendations may result in disagreements, claims, disputes, and their related unpleasantness.

Acknowledgments: The author gratefully acknowledges Jerry Cavaluzzi, Esq., vice president and general counsel of Kennedy/Jenks Consultants; Jim Brown, PE, CSI, CCCA, vice president in construction management at Arcadis; and Hugh Anderson, Esq., attorney-at-law and general counsel to EJCDC, for reviewing and commenting on drafts of this post.

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The Hidden Cost of Value Engineering

BY: David Corle, CSI

Quality + Fast + Cheap = Impossible

It's been said many times before that you can pick two of the three attributes, but you cannot have all three.

The question is, what do you sacrifice? So much hinges on those decisions that it can seem impossible to decide. As project budgets run out, many times designers are forced to make these impossible decisions.

Unfortunately, the often unseen cost to value engineering is that an inferior product is delivered to the client, who is then forced to make repairs, replacement or renovations far sooner than they expected.

Case in point - uncoated shower glass.

During a recent trip I stayed in a hotel with the shower doors pictured below.

Mind you, I did not use this shower prior to taking these pictures.

What you see is hard water deposits, soap scum and goodness-knows-what-else clinging to the glass and making this an altogether un-savory showering proposition.

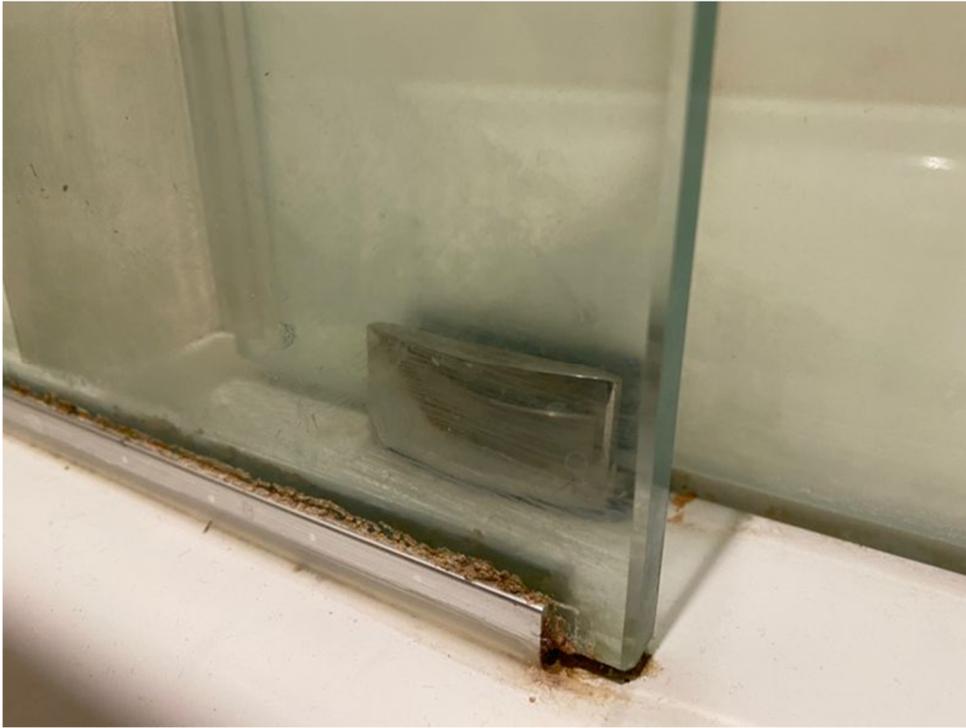
The unseen cost of value engineering is the fact that, although these bathrooms were recently remodeled, the showers look terrible and will result in poor reviews for the hotel, shorter lifespan, and ultimately more work for housekeeping to keep clean.

Cleaning coated glass usually only requires mild soap and a microfiber cloth. No bleach, no Clorox, no harmful fumes for employees or guests to inhale, no running hot water (\$\$\$) to get the glass clean. Just soap and water.

HMI Glass manufactures a glass coating that not only repels the nasty soap scum and oils, it also contains Microban which works 24/7 to fight bacteria and microbes from having the opportunity to grow in the shower. That's smart.

Coated glass:

1. Is environmentally friendly
2. Is healthier for guests and employees
3. Protects the investment for the client

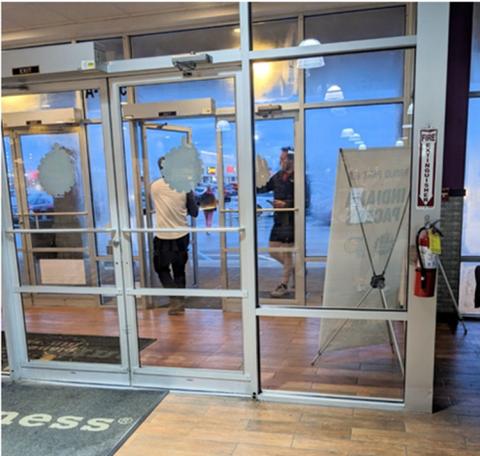


Fixed-It Friday: Actuator Location

By: Lori Greene, I Dig Hardware Blog

When [Aaren Kimes of Allegion](#) sent me these [Fixed-it Friday](#) photos, it took me a minute to find the problem.

What do you think about the location for the auto operator actuator? Based on the [BHMA A156.19 standard](#) and the accessibility requirements, is there a code issue?



Fixed-It Friday: LCN COMPACT Operator Accommodation

By: Lori Greene, I Dig Hardware Blog



[Greg Thomson of Allegion](#) shared today's [Fixed-it Friday](#) photo of an accommodation made in the field for an LCN 6400 COMPACT series automatic operator. I wonder at what point during the installation the problem was discovered.

The operator was installed on a door without the typical amount of clearance behind it, so the wall was modified to accommodate the operator. For pull-side mounting of this operator, 3 3/4 inches of clearance is required behind the door for a 90-degree installation. Normally this is not a problem because most doors have at least this amount of clearance, but the door in the photo has +/- 1 inch of clearance. "Necessity is the mother of invention," as they say!

If you haven't seen this product before, it is an auto operator that allows the reuse of an existing LCN 4040XP door closer. [Click here for more info.](#)

Fix-It Friday: Nothing to See Here

By: Lori Greene, I Dig Hardware Blog



[Logan Piburn of Dyron Murphy Architects](#) sent today's [Fixed-it Friday](#) photos of an egress door modification. I can see a few problems



Fixed-It Friday: I Wonder How Long this "Fix" Will Last?

By: Lori Greene, I Dig Hardware Blog

When [Stan Hubbell](#) posted these [Fixed-it Friday](#) photos in the ["There's no crying in Hollow Metal" Facebook group](#), I knew I had to share them (with permission). How would you handle this installation properly?



Quick Question: Spring Hinges on Fire Doors

By: Lori Greene, I Dig Hardware Blog

Today's Quick Question has come up dozens of times:



Can spring hinges be installed on a fire door that is larger than 3'-0" x 7'-0"?

NFPA 80 is the Standard for Fire Doors and Other Opening Protectives, and contains the detailed requirements for fire door assemblies. This standard is referenced by the model codes; fire rated doors, frames, and hardware must comply with NFPA 80. One of the mandates that applies to almost all fire doors is the requirement for doors to be self-closing, automatic-closing, or power-operated. This ensures that during a fire, the fire door will be closed (and latched). A fire door equipped with spring hinges and without any sort of hold-open mechanism would be considered a self-closing door.

The door size referenced in the Quick Question comes from a table in NFPA 80 – in recent editions it is [Table 6.4.3.1 Builders Hardware: Hinges, Spring Hinges, and Pivots](#).

The table states that for fire doors that are 1 3/4-inch thick or thicker, the maximum door size for self-closing spring hinges 3'-0" x 7'-0". The minimum hinge size and thickness are also shown in this table.

However, the table shows only the most common applications of hinges, spring hinges, and pivots – it is not intended to show every possible application. NFPA 80 states: [Hinges, spring hinges, continuous hinges, and pivots shall be as specified in individual door and hardware manufacturer's published listings or Table 6.4.3.1.](#)



Quick Question: Locking Arrangements

By: Lori Greene, I Dig Hardware Blog

Today's Quick Question came from an AHJ:



When I am evaluating a door that is equipped with a special locking arrangement, do the model code requirements for normal locking arrangements also apply?

The quick answer: No, (IMO) the section addressing that particular special locking arrangement would apply instead of the requirements for normal locking arrangements.

Read on...

The model codes include specific sections related to applications classified as “special locking arrangements.” The electrified hardware used on these doors may affect egress, so the detailed requirements stated in the applicable sections of the model codes are intended to

address the life safety needs of these openings. The following applications are typically considered special locking arrangements:

- Delayed egress locks
- Controlled egress locks in health care facilities
- Electrified locks released by a sensor
- Electrified locks released by a switch in the door-mounted hardware
- Elevator lobby egress doors

Stairwell reentry

Each of these applications is covered by a specific model code section. Here is an example of how I would interpret the requirements:

The 2021 edition of the International Building Code (IBC) states: *1010.2 Door operations. Except as specifically permitted by this section, egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.*

The code then describes various requirements such as one motion to unlatch the door for egress, hardware that is operable without tight grasping, pinching, or twisting of the wrist, the allowable mounting height range for the releasing hardware, etc. Subsections of 1010.2 address panic hardware, bolt locks (flush bolts and surface bolts), classroom doors, turnstiles, security grilles, and all of the special locking arrangements, as well as other applications.

For demonstration purposes, let's say that the door in question has delayed egress panic hardware that releases for egress 15 seconds after an attempt to exit is made (under normal operation). The signage on the door states “Push until alarm sounds, door can be opened in 15 seconds.” But going back to the requirement of 1010.2 (above), doesn't reading the signage, pushing for 3 seconds to activate the delayed egress timer, and waiting 15 seconds to exit require special knowledge and effort? What if someone can't read the sign, or doesn't speak English?

If we look at 1010.2 again, it says that egress doors must be readily openable for egress with a key or special knowledge or effort, **except as specifically permitted by this section**. Section 1010.2 includes a subsection on delayed egress locks, that allows an alternative means of providing code-compliant egress.

My interpretation of the model codes is that a door with delayed egress panic hardware has to comply with the code section addressing delayed egress locks, and would not have to comply with all of the other requirements listed in IBC-2021 Section 1010.2. According to the delayed egress lock section, the lock would have to release for egress after 15 seconds, or immediately if there is a fire alarm or power failure. The door would require signage, emergency lighting, and an audible alarm. It would have to take 15 pounds of force or less, applied for 3 seconds or less, to begin the timer, and the delayed egress locking system units would have to be listed to UL 294. The use group would have to be one where delayed egress locks are allowed by code, and the building would have to be equipped with an automatic sprinkler system or an approved automatic smoke or heat detection.

If all of the criteria stated in the delayed egress lock section of the code are met, the door is compliant. The code requirements of the other subsections do not have to be met in addition to the section addressing delayed egress locks. [Note: State/local requirements may vary.]

What's a normal locking arrangement? :

Decoded: Special Locking Arrangements vs. Normal Locking Arrangements

By: Lori Greene, I Dig Hardware Blog

Misinterpretations of the model code requirements for electrified hardware continue to hit my inbox on a regular basis, BUT – I expect some help from the ICC soon. I will share it as soon as I can. In the meantime, I hope this Decoded article will reach the people who need it – feel free to share it! Here's another article that might help if you run into questions about this issue.

There are a few door-related sections of the model codes that continue to cause confusion in the field, and this is one of them: special locking arrangements vs. normal locking arrangements. I can't think of any set of code requirements related to door openings that is more often misinterpreted, sometimes leading to unnecessary and costly modifications to access control systems in order to satisfy mandates that do not exist. In this article I will explain how to differentiate between a special locking arrangement and a normal locking arrangement and summarize the code requirements that apply to each.



Special Locking Arrangements

In the model codes used in the vast majority of US states, there are various sections addressing electrified locking systems that are considered special locking arrangements. There is even a section of NFPA 101 – Life Safety Code titled “Special Locking Arrangements.” The International Building Code (IBC) does not include a section by that name, although the IBC Commentary does refer to that term.

This controlled egress door in a health care facility is a special locking arrangement because it has electrified hardware that does not allow free egress under normal operation.

A special locking arrangement is a door opening that incorporates electrified hardware which delays or prevents egress under normal operation. The sections addressing these applications mandate specific releasing methods in order to balance life safety with the security this hardware is intended to provide. Examples of special locking arrangements include:

- Delayed egress locks prevent egress for 15 seconds under normal operation but allow immediate egress upon power failure and activation of the fire alarm or sprinkler system. The release time delay may be increased to 30 seconds if allowed by the Authority Having Jurisdiction (AHJ). Signage, an audible alarm, capability of remote release, and limitations of some occupancy types help to ensure life safety.
- Controlled egress locks are found in health care units where the patients require containment for their safety or security. Common locations include memory care units, maternity wards, and infant nurseries, although an AHJ may allow the installation of these systems in other areas within a health care facility. These doors remain locked in the direction of egress until an emergency occurs that requires the evacuation of patients. For most types of units (there are some exceptions), the locks must unlock to allow egress upon loss of power, activation of the fire alarm or sprinkler system, and remote release. In addition, the clinical staff must carry the keys, codes, or credentials needed to unlock the doors at all times.
- Sensor release is typically used for electromagnetic locks, which would not allow egress if the mandated release devices were not installed. In addition to the sensor which detects an approaching building occupant and unlocks the door for egress, the lock is also unlocked upon power failure, activation of the fire alarm or sprinkler system, and an auxiliary push button that is mounted beside the door in a location specified by the code. This switch must unlock the lock for 30 seconds, independent of the other electronics, to allow egress. [Note: This is the only type of electrical locking system that requires this auxiliary button.]
- Door hardware release is another section that typically applies to electromagnetic locks. With this type of system, the hardware mounted on the door (ex. lever handle, panic hardware, or sensor bar) incorporates a switch that unlocks the electrified lock. This electrified lock is a separate lock, usually mounted at the frame head, and operating the door-mounted hardware actuates the switch, unlocking the electrified lock and allowing egress. This type of lock is required to unlock upon power failure, but the model codes do not require the lock to unlock upon activation of the fire alarm or sprinkler system. The auxiliary push button that is required for sensor release locks is not required for electrified locks that are released by a switch in the door-mounted hardware.
- Stairwell reentry locks are used on doors that lead to an exit stairwell – the exit discharge door is not required to comply with these requirements. The intent is to allow the doors to be electrically locked on the stairwell side under normal operation, preventing access to the tenant space. In a fire emergency, the stairwell doors unlock on the stair side, allowing building occupants to leave the stairwell if it becomes compromised by smoke or by firefighting personnel and equipment. These locks are unlocked by a switch at the fire command center or other approved location, or upon activation of the fire alarm or sprinkler system, depending on which code has been adopted.
- Elevator lobby egress doors may be electrically locked when the adopted code is NFPA 101, or when a state or local jurisdiction has modified the IBC to allow these doors to be locked. The Life Safety Code requires fail safe electrified locks which will unlock upon power failure and activation of the fire alarm or sprinkler system. A two-way communication system is required in the elevator lobby, to allow a building occupant to communicate with a central control point that is constantly staffed. The IBC does not currently include a section addressing this type of system and requires each elevator lobby to have code-compliant access to an exit (a

The above descriptions are not intended to represent the complete requirements for each of these systems, but to illustrate the types of systems that are considered special locking arrangements. Without the criteria included in each of these code sections, the doors would not provide a safe means of egress.

Normal Locking Arrangements



The most common type of access control door allows free egress at all times. This is not considered a special locking arrangement, it is a normal locking arrangement.

Not all electrified door hardware is part of a system that would be classified as a special locking arrangement; remember, special locking arrangements delay or prevent egress under normal operation. The most common type of access control system consists of an access control reader on the outside of the door, which controls access/ingress without affecting egress.

This type of system functions similar to mechanical door hardware where a key cylinder is used to control access/ingress but the hardware allows free egress. On the inside of the door – whether the hardware is electrified or mechanical – the door hardware allows free egress at all times via the lever handle, panic hardware, or other operable hardware. Egress does not depend on the status of the access control system or whether the hardware is powered or not. In these access control systems, the door hardware – although electrified to control access – does not deter, delay, or prevent egress.

There is currently no section in the model codes that specifically addresses these doors with electrified hardware allowing free egress, since this application is not considered a special locking arrangement. These normal locking arrangements are subject to the same code requirements as doors

with mechanical door hardware:

- The door must unlatch with one releasing motion for egress (with some exceptions).
- Egress must require no key, tool, special knowledge or effort.
- Operation of the door hardware must require no tight grasping, pinching, or twisting of the wrist.
- Operable force for the hardware must be within the limits of the applicable code or standard.
- Releasing hardware must be mounted between 34-48 inches above the floor (with some exceptions).



Electrified hardware that is part of a normal locking arrangement is not required by the model codes to be listed

UL 294 – Standard for Access Control System Units

Many of the questions and misinterpretations specific to normal locking arrangements are related to whether the hardware is required by code to be listed to UL 294 – Standard for Access Control System Units. Currently, the model codes DO require the components of most special locking arrangements systems to be listed to UL 294. The model codes DO NOT require components of normal locking arrangements systems to be listed to UL 294. As stated above, these systems must comply with the requirements for mechanical door hardware, which does not require the UL 294 listing.

A recent interpretation from International Code Council staff confirms this interpretation, and I anticipate that the 2021 International Building Code Commentary will include further information to clarify the intent of the code. Although a state or local jurisdiction may modify the model codes to address regional issues, the model codes do not consider electrified hardware that allows free egress at all times to be a special locking arrangement. Consult the adopted code and the AHJ for additional information about electrified locking systems – both special locking arrangements and normal locking arrangements.

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*):

Website: <https://csilittlerock.org>

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LITTLE ROCK CHAPTER INFORMATION

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President:	Billy J. Mathis, FCSI, CDT
President-Elect:	Melissa Aguiar, CSI, CCS, CDT, SCIP
Immediate Past President:	Open
Secretary:	Billy J. Mathis, FCSI, CDT
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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

If you are interested in Joining CSI or if you are just interested in keeping up with the information provided by CSI, See the slides shown from the "Why CSI" presentation