

Construction Code Communicator



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Ongoing Construction Projects and COVID-19

The Department of Community Affairs is aware of the construction industry's concerns about the interruption of plan review and inspection responsibilities, State or local, due to the Coronavirus (COVID-19).

Pursuant to Executive Orders 107 and 108, at this time, local enforcing agencies (LEAs) cannot restrict code officials from performing their obligations under the Uniform Construction Code (UCC), N.J.A.C. 5:23. In response to this, the Department of Community Affairs has temporarily relaxed and modified certain provisions concerning Minor work (N.J.A.C. 5:23-2.17A), Inspections (N.J.A.C. 5:23-2.18), and Certificate requirements (N.J.A.C. 5:23-2.23) in order to ensure the continuity of construction without a detriment to the public welfare during the COVID-19 pandemic. The below guidance explains these rule modifications.

Guidance for construction offices:

The Department does understand that LEAs should be flexible in order to preserve the health of inspectors, contractors, and the general public. LEAs should consider work from home options whenever possible, e.g., plan review and administrative actions, and use electronic communication to the greatest extent possible. Construction offices should prioritize inspections necessary for the health and welfare of the public. Should in-person inspections not be possible, LEAs are encouraged to employ creative solutions, such as video conferencing via platforms like FaceTime or Skype, whenever feasible, to conduct inspections. In addition, the Department advises the following:

1. All required inspections for new construction and any work on the exterior or outside of any occupied building should be performed as usual.
2. Rough inspections for new additions should be performed, provided no entry to the occupied home or building is required or that appropriate social distancing is in effect.
3. Contractors may report construction activity, such as rough inspections, in existing occupied buildings with photos or other documentation for the time being.
4. Items listed as Minor Work at N.J.A.C. 5:23-2.17A require only a final inspection. This includes inspections of replacement items such as a residential heater, air conditioner and/or water heaters. These inspections may be deferred to a later date. The contractor should report construction activity as indicated in item 3 above.

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(Ongoing Construction Projects and COVID-19)

Guidance for construction offices that had to close:

Notwithstanding the above, this section addresses the closure of construction offices in the event that there are future Orders regarding such closure, or if an office is closed due to unforeseen circumstances such as the quarantine of all staff members as a result of the spread of COVID-19.

Currently, LEAs should consider work from home options whenever possible, e.g., plan review and administrative actions. However, should the LEA need to close due to unforeseen circumstances, such as the quarantine of all staff members as a result of the spread of COVID-19 and, consequently, inspections must be deferred, the Department advises the following:

Notwithstanding emergency work in accordance with N.J.A.C. 5:23-2.14(b)3, if a permit was issued prior to the closure of a construction office and inspections have been deferred, then construction officials shall perform a Certificate of Continued Occupancy (CCO) inspection upon the office reopening. A CCO inspection is a reasonable solution for ensuring that construction work is properly documented and that future projects within the building are not cited for violations resulting from work performed without permits or inspections. In this unprecedented circumstance, the documentation for a CCO inspection shall, at a minimum, include the following: a report describing the work that was completed within the time that no inspections were available; the design professional or firm associated with the project shall oversee, approve, and document the portions of the project where no inspections were performed; licensed/registered tradesmen shall document the process of their work in accordance with the inspection procedures of the UCC; and before, during, and after pictures and/or video shall be included in the documentation.

Construction officials should be aware that CCO inspections are limited to those portions of the building that are visible at the time of inspection. For items that are no longer visible, there must be probable cause to warrant uncovering the completed work to allow for inspections even if the documentation noted above does not demonstrate compliance. Destructive inspections should be performed only if there is reason to believe that a life-safety violation exists.

The above portion of the guidance is based on the notion that the referenced building has been issued a Certificate of Occupancy (CO) previously, very much like the guidance within Bulletin 06-1, Work Done without Permits, and the procedures outlined within the Annual Permit issuance at N.J.A.C. 5:23-2.14(e). Again, this will be based on the organized and catalogued documentation provided by the licensed design professional and/or the licensed/registered tradesmen.

In the event a building has never been issued a CO, the same procedures shall be followed. However, instead of the eventual CCO issued by the LEA when reopened, it may be necessary to reach out to the Department in order to obtain a Temporary Certificate of Occupancy (TCO). Once the building is initially occupied under the TCO, a CO would eventually be issued by the LEA per the applicable construction activity at N.J.A.C. 5:23-2.23.

We cannot stress enough: documentation of all types is key in both situations, CCO or TCO. The more documentation provided, the better, and cataloging in the order of progress per N.J.A.C. 5:23-2.18 would be necessary.

Lastly, in the event a construction office had to close, plan review for any new projects may be placed on hold unless the project is critical to combating COVID-19.

If you have questions regarding the above, please contact the Division of Codes and Standards at (609) 984-7672 or (609) 984-7609.

This article is a reprint of official guidance from the Division of Codes and Standards. For more information on the developing COVID-19 issue and related Executive Order modifications, please see the Division's website at <https://www.nj.gov/dca/divisions/codes/alerts/>.

Error in the December 19, 2019 Supplement to the Uniform Construction Code

As you may have noticed, the most recent supplement to N.J.A.C. 5:23 had an error: all of the Formal Technical Opinions (FTOs) were erroneously titled "Formal Technical Bulletins," and they did not include the signature from the Director. Our publisher, LexisNexis, will be issuing an errata supplement to correct this error. However, until the errata is issued, the FTOs with the correct headings and signatures are available on our website at <https://www.nj.gov/dca/divisions/codes/resources/ftos.html>.

Source: Code Assistance Unit
(609) 984-7609

Electronic Permit Submittals

In 2014, a "Dear Construction Official (DCO) letter" was issued on November 21 and a Communicator article was published in the Winter edition regarding whether electronic permit applications could be accepted by construction officials. The answer remains the same today as it was back then: Yes, but...

Since that time, not much has changed. However, there has been some movement for engineers and architects. Keep in mind the licensure of design professional and trades is housed under the "other DCA," the Division of Consumer Affairs within the Department of Law and Public Safety. On February 24, 2016, a DCO was sent advising that professional engineers now have digital signatures and seals; another DCO followed May 22, 2017 referencing the same for architects. The "other DCA" is on their way, but not there yet. As stated in the first DCO referenced:

A number of local code officials have asked whether electronic permit applications may be accepted. This memo is to advise that electronic permit applications may be accepted provided that no plans or seal, either from a licensed design professional or licensed contractor, is required. This limits the ability to submit an electronic permit application for the time being. It is our hope that the licensing boards will work to make it possible to seal applications electronically at some point in the not-too-distant future. Until then, only applications that do not require any seal may be accepted electronically.

For electronic applications, please use the following language, together with a check box, above what would be the signature on the application: I hereby certify by checking this box that the foregoing statements made by me on this application are true. I understand that if any of the above statements is willfully false, I am subject to punishment.

For context, N.J.A.C. 5:23-2.15(b)2ii states that the seal and signature of the licensed plumbing and electrical contractor shall be affixed to the corresponding subcode application form. This implies that the rules and regulations of the licensing laws apply, in this case, for plumbing and electrical contractors. Both boards have yet to implement a digital seal/signature. So if a single-family homeowner of a detached dwelling chose NOT to do his/her own work and the contractor for a project requiring a permit would like to do an electronic submittal for the permit application, he/she could not – not because of the regulations of the UCC, but because of the licensing rules and regulations.

Source: Code Assistance Unit, (609) 984-7609

REScheck, Web Only for 2018

This article serves as a notice to those that use REScheck to demonstrate compliance with the residential portions of the energy subcode, N.J.A.C. 5:23-3.18 or N.J.A.C. 5:23-3.21, for dwellings units three (3) or fewer stories in height. As per N.J.A.C. 5:23-2.15(f)1vi(1), REScheck remains a means to demonstrate compliance with the residential code portions of the energy subcode (this is reiterated within Bulletin 19-2). However, the US Department of Energy's (USDOE) Building Energy Codes Program (BECP) only supports the 2018 edition of the codes within their "web" version of the program. This means that when you select "REScheck" from <https://www.energycodes.gov/>, you must navigate to the "REScheck web" link. This will require you to set up a free account, along with a username and password. If you have further questions, the previous link also provides access to a "Help Desk" where you can contact the BECP.

Source: Rob Austin
Code Assistance/Development Unit
(609) 984-7609

Rehabilitation Subcode Update – Incorporating 2017/2018 Model Codes

The proposal for the Rehabilitation Subcode update incorporating the 2017 National Electrical Code, 2018 I-Codes, and 2018 National Standard Plumbing Code was published in the *New Jersey Register* on April 6, 2020. The proposal is available on the Division's Rule Proposals and Notices of Adoption webpage, http://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html. The 60-day comment period will end June 5, 2020, and the Division staff will work diligently on responses to comments we have received. Until then, please use the link above to keep track of this adoption. If a design professional would like to take advantage of using the proposed changes, code officials should be accepting of this so Rehabilitation Subcode projects can align themselves with the newest model codes adopted (see "Subcode References in the Rehabilitation Subcode, 2020 Version" on page 7).

Source: Code Assistance Unit, (609) 984-7609

Building Safety Conference and Spring Courses Cancellation Message

I am sad to inform you that due to the COVID-19 virus, Rutgers University has directed that all educational programs must be online only for the spring semester of 2020.

As a result, the Spring 2020 Uniform Construction Code (UCC) Educational Program is **CANCELLED, except for the online programs already scheduled**. Any registrations for face-to-face training that have been made are void. We are working with our instructors to have some additional online training programs made available- more details to follow in another email in the very near future. Here is a link to our existing online programs: <http://tiny.cc/UCConline>

Also, most unfortunately, the 2020 Building Safety Conference of NJ/ICC Code Council Leadership Week event is **CANCELLED** for April 28th through May 1st. We are currently in negotiations to reschedule in the fall of 2020, more details to follow as soon as they become available.

We apologize for any inconvenience this may cause you and please know that we are working diligently to find workable solutions and alternative training opportunities.

It is imperative that we have a valid email address from all in order to effectively communicate these and other important messages. Cancellations and the revised schedule will be sent via email.

Source: John Delesandro, DCA/Rutgers Program and the Building Safety Conference Committee

This is a reprint of guidance from the Division of Codes and Standards' Licensing and Education Unit. For more information, please visit https://www.nj.gov/dca/divisions/codes/offices/licensing_cont_ed.html.

Wireless Burglar or Supplemental Fire Alarm Systems and Permits

Recently, we have been hearing that some code officials are not requiring permits for “wireless security or supplemental wireless fire alarm system systems” So, I wish to remind everyone of an article that Dave Greenhill wrote in the Spring/Summer 2014, titled “Wireless Systems and Permits” page 9, available online at:

https://www.nj.gov/dca/divisions/publications/pdf_ccc/ccc_2014_spring_summer.pdf

This article did not say that permits are no longer required for new burglar alarm or supplemental fire alarm systems. When any type of wiring is installed, a permit is still required. Simply put, the only systems that can be installed are cord and plug power supplied without any low voltage wiring being installed.

In light of the permit application changes adopted March 5, 2018, a modification to the ordinary electrical maintenance items changes the original article: When a burglar alarm system, or security system is installed in a one- or two-family dwelling, no permit is required. Therefore, when low voltage wiring is run from the power supply transformers to the control panel or low voltage wires are run from the keypad to the control panel in buildings other than one- and two-family dwellings and if any of the low voltage wiring penetrates a fire rated assembly, a permit is still required.

Source: Michael Whalen, Code Assistance Unit
(609) 984-7609

2017 National Electrical Code: Questions and Confusion

There seems to be a bit of confusion about the National Electrical Code (NEC). Let's address the bigger issues.

The 2020 NEC

I have received a handful of calls on this. Although electrical contractors are being taught the 2020 edition of the NEC, please note this edition is not in use in New Jersey and is not enforceable. The current edition adopted by the Department is the 2017, as amended at N.J.A.C. 5:23-3.16. The adoption occurred on September 03, 2019.

Tentative Interim Amendments

The 2017 Tentative Interim Amendments (TIA) of the NEC are not enforceable. The NEC is only enforceable as adopted in the electrical subcode of the Uniform Construction Code, N.J.A.C. 5:23-3.16. This has led to some confusion in terms of electrical vehicle charging, specifically Article 625.54, Ground-Fault Circuit-Interrupter Protection for Personnel, as written and the changes within TIA 17-2. For this Article, voluntary compliance with the TIA is acceptable, but compliance cannot be mandated unless installation instructions state otherwise.

Misinterpretation of NEC Article 110.14, Electrical Connections

Though we are all accustomed to this Article in the NEC, there seems to be some misinterpretation. In sum, Article 110.14(C)(1)(a)(3), which addresses conductors with higher temperature rating and dual rated lugs, states that if a 90°C wire starts in a 60/75°C lug, it is permissible to use this assembly at the 75°C range, provided the assembly complies with all other factors (derate, etc.). See also the U/L white book category (AALZ), “Equipment for ordinary locations – appliance and utilization equipment terminations,” and “Distribution and control equipment terminations.”

Source: Neil Nagy, Bureau of Construction Project Review

SMOKE ALARM AND CARBON MONOXIDE ALARM COMPLIANCE FOR REHABILITATION PROJECTS ☀

This form is being updated since it appeared in the 2016 Fall CCC. Since September 3, 2017, carbon monoxide detection has been required in accordance with the Uniform Fire Code (UFC) for all buildings that contain a fuel burning appliance or have an attached garage. The application for permit that you have submitted requires the installation of smoke alarms and carbon monoxide alarms when they have not been installed as part of the original construction or have not been installed as part of the UFC retrofit requirements. This information does not contain change of use requirements located at N.J.A.C. 5:23-6.31(i) and (j) or addition requirements located at N.J.A.C. 5:23-6.32(f). Smoke and carbon monoxide alarms must be installed in accordance with the following information. All buildings should be in compliance with these regulations, so this should serve as a reminder.

The following are the requirements for Smoke Alarm Installation: Dwelling Units in Group R-2 and buildings of Groups R-3, R-4 and R-5.

- Work being performed in accordance with N.J.A.C. 5:23-6.4(f) repair, 6.5(f) renovation and 6.6(f) alteration require smoke alarms to be installed.
- Smoke alarm(s) must be installed on each level of the dwelling, including the basement, outside of each separate sleeping area in the immediate vicinity of the bedroom. Smoke alarms may be placed on the ceiling or within 12 inches of the ceiling on the wall.
- Smoke alarms are permitted to be battery-operated but shall not replace any required A/C-powered smoke alarms or a household fire alarm system.
- The installation of battery-operated smoke alarms does not require a permit.

The following are the requirements for Carbon Monoxide Alarms:

- Work being performed in accordance with N.J.A.C. 5:23-6.4(g) repair, 6.5(g) renovation, 6.6(g) alteration, and 6.7(f) reconstruction require that carbon monoxide alarms be installed in **all buildings that contain a fuel burning appliance or have an attached garage**.
- Section 915 of the building subcode and Section R315 of the one- and two-family dwelling subcode require that carbon monoxide alarms be installed in the immediate vicinity of each sleeping area when the building contains a fuel burning appliance or has an attached garage. **Section 915 of the building subcode also has additional installation requirements for other than residential occupancies located at Section 915.2, Locations and Section 915.2.4, Other occupancies.**
- Carbon monoxide alarms may be placed anywhere on the ceiling or the wall.
- Carbon monoxide alarms are permitted to be battery operated, hard-wired or the plug-in type.
 - o The installation of battery operated or plug-in type carbon monoxide alarms does not require a permit or an inspection. When detectors are proposed for installation, a permit is required.

It is your responsibility to ensure that these provisions have been met.

Source: Michael Whalen
Code Assistance Unit
(609) 984-7609

The Construction Code Communicator is an online publication of the New Jersey Department of Community Affairs' Division of Codes and Standards. It is typically published four times a year.

Copies may be read or downloaded from the division's website at: www.nj.gov/dca/divisions/codes.

Please direct any comments or suggestions to the NJDCA, Division of Codes and Standards, Attention: Code Development Unit, PO Box 802, Trenton, NJ 08625-0802 or codeassist@dca.nj.gov.

IRC Window Fall Protection

Based on the recent number of phone calls we've been receiving, it seems that there is some confusion on how to determine if window fall protection is required for homes designed in accordance with the One- and Two-Family Dwelling Subcode, N.J.A.C. 5:23-3.21. The 2015/2018 International Residential Code, Section R312.2.1 (Window sills) states in part, "where the *top of the sill* of an operable window opening is located less than 24 inches above the finished floor and greater than 72 inches above the finished grade or other surface below on the exterior of the building," the window shall meet one of the three fall protection methods provided for in this section.

The problem we are encountering is: to what part of the sill should we be measuring? Does this dimension terminate at the ornamental jamb, stool trim, or clear opening?

The short answer is: it terminates at the clear opening.

For some background, the language was altered between the adoptions of the 2009 and 2015 editions (New Jersey never adopted the 2012 edition) and remains the same for the 2018 edition. Back in 2009, Section R612.2 (Window sills) used the following language: "the lowest part of the clear opening of the window shall be a minimum of 24 inches above the finish floor of the room in which the window is located." In reviewing the code change that instigated this alteration (ICC code change #RB146-13), it specifically did not provide for difference in measurement; it is therefore implied that the change was grammatical.

In other words, the intent is the same: "sill" is a generic term to apply to the manufacturer's construction of the window frame.

Below are definitions of "window sill" according to three reputable window manufacturers:

Anderson Windows sill definition: Horizontal member that forms the bottom of a window or door frame.

Pella Windows sill definition: The main horizontal part forming the bottom of the frame of a window.

Marvin Window sill definition: The horizontal member forming the bottom of a window or exterior door frame; the lowest member of the frame of a structure, resting on the foundation and supporting the frame.

Source: Adam Matthews
Code Assistance Unit
(609) 984-7609

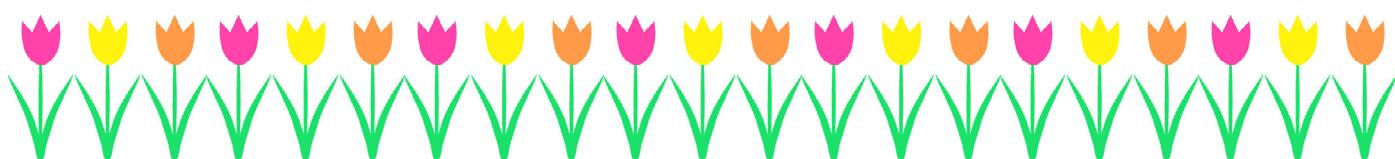
Elevator, Escalator and Moving Walkway (EEMW) Mechanics Licensing Board

The Division of Consumer Affairs has advised the Division of Codes and Standards of a change in their licensing. Effective February 1, 2020, the "other DCA" is enforcing the licensing requirement under the EEMW Mechanics Board.

Consumer Affairs does not yet have all these contractors licensed and are requesting that construction departments help them with getting the word out. When a contractor comes to the counter to obtain a construction permit, please remind him or her of the licensing requirements. The exact words provided in their January 7, 2020 memo to this Division state, "Any person who is performing Elevator Mechanics work, must produce a license at the time of inspection or testing. Anyone who cannot produce a license at any time **MUST** contact the board immediate[ly]."

If a permit application is submitted regarding the items noted above, you may verify their license at <https://newjersey.mylicense.com/verification/>. Those that do not have a license should be directed to Consumer Affairs. Licensing applications, forms and other information regarding this Board may be obtained via <https://www.njconsumeraffairs.gov/esc/Pages/default.aspx>, calling (973) 504-6260, or emailing askconsumeraffairs@dca.lps.state.nj.us.

Source: Code Assistance Unit
(609) 984-7609



Subcode References in the Rehabilitation Subcode, 2020 Version

As you may have noticed, rule proposals and adoptions have again slowed to a somewhat glacial pace. This is something that's out of the Department's hands, and unfortunately creates some issues when companion changes are required throughout the Uniform Construction Code (UCC) when a model code is updated. It poses a particular problem in the Rehabilitation subcode, N.J.A.C. 5:23-6, as it is filled with cross-references to other subcodes of the UCC. Please note that while this is not the first time this subject has been tackled in the Construction Code Communicator (see Fall 2009, Fall 2010 and Summer 2013 editions), it is the most recent word on the subject.

Normally, when a newer edition of a model code is adopted through amendment to Subchapter 3, a proposal is presented to update the Rehab subcode. So the question arises, what does the code user do when a newer edition of a model code is adopted, but the companion change has not yet occurred in the Rehab subcode? Which edition of the model code is supposed to be used in existing buildings undergoing a construction project? The short answer is that the most recently adopted model code may be used, but only for sections that existed previously and were included by reference in the Rehab subcode (even if sections moved).

Sections deleted from the State's adoption of the model code as part of the amendments made in N.J.A.C. 5:23-3.14 through 3.22 would not be cited under the Rehab subcode. Similarly, sections of the model code not picked up as part of the Rehab subcode (see N.J.A.C. 6.8, Materials and methods) should not be cited. These sections were deliberately identified as being outside the scope of the Rehab subcode. This remains true when moving to a newer edition. The section numbers may have changed; code officials should match the content. Brand new sections included in a model code (content that did not exist in the previous edition) should not be cited under the Rehab subcode until and unless the Department has acted on them through a rule proposal and adoption.

The best way to explain this is through the following examples:

- First, in the electrical subcode (National Electrical Code), tamper resistant receptacles, Section 406.12, has been modified for the 2017 edition (NEC/2017). Note that the list provided for, items (A) – (C) have become (1) – (3). However, items (4) – (7) were not provided for previously. Therefore, it would be acceptable to cite (1) – (3) but not the additional provisions within that section, (4) – (7), until a rule has been published to include these new requirements as part of the Rehabilitation subcode.

In a perfect world, the references would be updated automatically the day the NEC/2017 was adopted as the Electrical Subcode. However, we live in an imperfect world. That being said, the day that the NEC/2017 was adopted as the electrical subcode, September 3, 2019, the NEC/2017 became the effective referenced code, even without the 2014 code references having been specifically updated. Therefore, while an update of the code references in the Rehabilitation subcode is pending, the 2014 references within the Rehabilitation subcode may be treated as 2017 references as discussed above. Yes, this does mean you will occasionally have to check to be sure that a referenced section has not been changed, but diligence ensures that we stay aware of the changes to the most recently adopted national model codes.

- Second, in the one- and two-family dwelling subcode (International Residential Code), there are new roof access and pathway requirements for roof mounted photovoltaic (PV) arrays in the 2018 edition (IRC/2018). Section R324.6 is brand new to the code and has been discussed in the Fall 2019 edition of the Construction Code Communicator, <https://www.nj.gov/dca/divisions/codes/publications/ccc.html> (see page 9 for "Section R324, Solar Energy System Pathways, Roof Access, and Setback Requirements," authored by Michael Whalen). This section never existed in the IRC/2015 and cannot be applied to existing homes undergoing a Rehabilitation project. Yes, N.J.A.C. 5:23-6.8(h)1xii does cite Section R324 as a material and method but this still applies to the 2015 edition, before Section R324.6 of the 2018 existed. Please note that the 2017 NEC and 2018 I-Codes and NSPC updates to the Rehabilitation subcode will be proposed in the April 6th NJ Register. The proposal shows the same text, but the reference to R324 will now capture the new pathway requirement once the proposed amendments are adopted. Keep in mind, however, that even when the updated codes are adopted, the Rehabilitation subcode gets a 6-month grace period like any other subcode; this could extend the "life" of the 2015 provision if the permit applicant applies in such a fashion.
 - As an aside, we have been getting calls that some municipalities are requiring fire protection technical sections for these new installations; this should not be required yet either. In the March 2, 2020 NJ Register "Responsibilities" proposal (available online on the Division's website at https://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html), the Fire Protection subcode official is being proposed to have inspection responsibilities. Once this proposal is adopted, the Fire Protection subcode technical section will be required for permit application (this is currently the Building subcode inspection responsibility).

(continued on next page)

(Subcode References in the Rehabilitation Subcode, 2020 Version)

In short, when you see a reference to a subcode, you may use the corresponding section of the most currently adopted model code. This also applies to the grace period, meaning that if a subcode is in its grace period, so is the Rehab subcode.

Questions should be addressed to the Code Assistance Unit at (609) 984-7609.

Source: Rob Austin
Code Assistance Unit
(609) 984-7609

New NFPA Reference Standards for the 2018 I-Codes

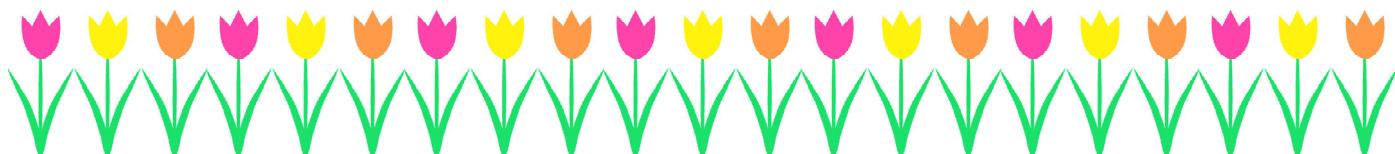
Recently I have been receiving calls again from designers asking which National Fire Protection Association (NFPA) standards we have adopted because they don't see any on our website. My response is that the Division doesn't adopt individual NFPA standards, we use the ones referenced in the NJ IBC and NJ IRC. Below is a partial list of the more commonly used standards that I receive questions on. The editions noted below must be used for new permit applications submitted now that the grace period for the 2018 codes has expired. A full list of the standards can be found in the rear of each code book in the referenced standards section. These are available online at:

NJ IBC <https://codes.iccsafe.org/content/NJBC2018PA2/chapter-35-referenced-standards>

NJ IRC <https://codes.iccsafe.org/content/NJRC2018PA2/chapter-44-referenced-standards>

<u>Title</u>	<u>Standard/Edition</u>
Portable Fire Extinguishers	10-18
Low Expansion Foam	11-16
Carbon Dioxide Extinguishing Systems	12-15
Installation of Sprinkler Systems	13-16
Installation of Sprinkler Systems in 1&2 Family Dwellings and Manufactured Homes	13D-16
Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height	13R-16
Installation of Standpipe and Hose System	14-16
Installation of Foam-water Sprinkler and Foam-water Spray Systems	16-15
Dry Chemical Extinguishing Systems	17-17
Wet Chemical Extinguishing Systems	17A-17
Installation of Stationary Pumps for Fire Protection	20-16
Flammable and Combustible Liquids Code	30-18
Liquefied Petroleum Gas Code	58-17
Prevention of Fires and Dust Explosions in Agricultural and Food Product Facilities	61-17
Electrical Subcode, N.J.A.C. 5:23-3.16, NEC	70-17
National Fire Alarm Code	72-16
Fire Doors and Other Opening Protectives	80-16
Smoke Control Systems	92-15
Identification of the Hazards of Materials for Emergency Response	704-17
Clean Agent Fire Extinguishing Systems	2001-15

Source: Michael Whalen
Code Assistance Unit
(609) 984-7609

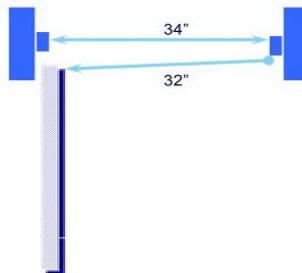


Occupant Load Calculations for Existing Buildings

In past Construction Code Communicator (CCC) articles, guidance has been provided on how to calculate occupant loads for new construction type buildings using Section 1004 of the International Building Code (IBC), as adopted at N.J.A.C. 5:23-3.14. This article will address how to calculate the occupant load of an existing building under the Uniform Construction Code (UCC), N.J.A.C. 5:23-6 Rehabilitation Subcode. A new occupant load calculation is triggered when a Rehabilitation project is classified as either Reconstruction or Change of Use when an increase to the hazard index occurs. This level of work (as further explained in Bulletin # 98-1) requires compliance with the Basic Requirements of N.J.A.C. 5:23-6.10 through N.J.A.C. 5:23-6.30. Once it has been determined that Basic Requirements have been triggered, a new occupant load is established using N.J.A.C. 5:23-6.11, Basic requirements in all Groups.

Measuring Clear Width

Measuring elements of egress are based upon the clear or useable width of the element.



The occupancy load for an existing building is determined by the size and number of exit doors from the room or space. The figure above demonstrates how to take a clear width measurement of a typical 36" door. When a door can be fully open, the clear width measurement can be taken from "door stop" to "door stop" (34" as shown above), OR when a door cannot be fully open due to a wall or obstruction, a clear width measurement is taken from "door edge" to "door stop" (32" as shown above). The following is an example of how to calculate the occupant load of an existing structure using "Table 1" under N.J.A.C. 5:23-6.11(b):

Table 1
CAPACITY PER UNIT EGRESS WIDTH

Without automatic sprinkler system			With automatic sprinkler system		
Number of occupants			Number of occupants		
Group	Stairways	Doors, Ramps and Corridors	Stairways	Doors, Ramps and Corridors	
A	75	100	113	150	
B	60	100	90	150	

Using the door(s) clear width measurement, multiply by the applicable value found in Table-1 then divide the total by 22 (Under (b), means of egress shall be measured in units of exit width of 22 inches).

Given:

Room or space has 3-exit doors, each with 32" clear width openings:
Occupancy use group B, located on the 1st floor, non-sprinklered:

$$\begin{array}{r}
 96 \\
 \times 100 \\
 \hline
 9600 \div 22 = \underline{\underline{436 \text{ occupants}}}
 \end{array}$$

At times, the calculated occupant load may not appear to suit the space provided, but keep in mind that the occupant load from the calculation performed has nothing to do with size of the space, but rather the capacity for egress. In other words, this would be the maximum amount of people allowed to evacuate an area using the available egress doors provided. If the occupant load desired is less than calculated, the owner will need to demonstrate to the construction official how the proposed configuration of the space will be utilized to decrease the total number of occupants.

For nightclubs, as per N.J.A.C. 5:23-6.11(b)1i, the occupant load of the space shall be determined in accordance with the building subcode. The occupant load for dance floors shall be calculated at seven feet of floor area per occupant.

Source: Keith Makai,
Code Assistance Unit
(609) 984-7609

Fire Protection System Removal

Recently, I have received inquiries regarding the removal of fire protection systems when the scope of the project is a change of use and the new use would not require the fire protection system to be installed.

The Rehabilitation Subcode has two “triggers” for when a system can be removed:

- (1) When a system is a partial system (e.g., a storage room being converted into office space), the sprinkler system may be removed being it was a partial system to protect a specific hazard that is being removed.
- (2) When the system is redundant (definition of redundant, **no longer needed**) or not required under the adopted code.

I'm writing this article to clarify the Department's intention when the provision was added into the rehabilitation subcode; previous text prohibited the removal of any fire protection system. The word redundant is purposely used in this case because the fire protection system may have been required for the previous use but under the new use, the system would not be required. In situations such as these, if the fire protection subcode official and the fire official are both in agreement as to the redundancy of the system, they may permit the removal of said system. The reason both fire code officials need to sign off on the removal is that one of the officials may have granted a variance or variation, whichever the case may be. We wanted both officials to be given the chance to review the removal so one didn't approve the removal unaware that the other required the protection to be installed, as stated in their variance or variation. Other reasons to have both officials involved may be that an alternative approved system that may have been approved by the fire protection subcode official in a building that was required to be fully sprinklered, or when an exception or reduction was granted to the provisions of the code, making the protection that was installed a required system.

Many of the issues I have been involved with have been dealing with a Change of Use. To demonstrate, I provide the following examples:

1. A single-family dwelling was converted into a multi-use building; due to the scope of the work, a sprinkler system was required for the new occupancies. The commercial space, say Group A-2 which is now closed for business, required sprinklers to be installed and the owner wishes to turn the building back into a Group R-5, but this time it will be two dwelling units with separate entrances and exits. The current code does not require a NFPA 13 or 13R system to be installed, so the owner would like to remove it. Being that one-and two-family dwellings, with separate entry points to each dwelling unit and of 2 or fewer stories in height, do not require a sprinkler system to be installed, the existing system would not be required in the proposed new use. The system was required to be installed in the building to protect the Group A-2 occupancy, but it is not required for the proposed new use. The local code officials may approve the removal of the existing system in this situation.
2. A voluntary fire alarm system was installed in an existing occupancy (Group B, doctor's office), but the new tenant does not require a fire alarm system under the currently adopted code. The code officials may approve the removal of the existing system.
3. A pre-1977 building with a windowless basement monitored automatic fire alarm system is installed. The proposed new use is a Group R-5. Again, in this case, the code officials may permit the removal of the monitored fire alarm system.

There are various sections of the rehabilitation subcode, N.J.A.C. 5:23-6.6(c)2, 6.7(c)2 and 6.31(a)4, and within the Uniform Fire Code, Section 901.4.2, that permit this to occur. However, both the fire protection subcode official and the fire official must approve the removal and all parts of the system must be removed. When one official or both deny the removal request, the denial may be appealed by the requesting party through the appropriate appeals process per N.J.A.C. 5:23A.

Below is the code text from both codes.

Fire protection system removal: Any fire protection system providing partial or redundant protection originally installed to protect a special hazard that no longer exists and that is not required in accordance with the current Uniform Construction Code, is allowed to be removed with the written approval of the fire subcode official and fire official. All disconnected equipment and devices, such as pull stations, nozzles, detectors, sprinklers, sensors, panels and hose connections, shall be removed so as not to give a false indication that the structure, area or space is protected. (Fire)

Source: Michael Whalen
Code Assistance Unit
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New and Existing Stairs in the Rehabilitation Subcode and the International Residential Code

One- and two-family detached home stairways are approached differently depending on whether the project is new construction, work in an existing dwelling, or the creation of a new stair where one did not previously exist. The following are some of the most commonly asked questions regarding stairways in detached one- and two-family dwellings.

New Construction

Guards

How do I know if a guard is necessary?

It is important that you understand that in Section R312.1.1, Where Required, of the 2018 International Residential Code (IRC) – adopted as the one- and two-family dwelling subcode of the Uniform Construction Code – the 30-inch measurement in height is to be measured from any point within 36 inches horizontally. For example, if you have a grade that slopes away from a deck or open walking surface, the measurement would be determined from the lowest point within the horizontal measurement of 36 inches.

What if I choose to install a guard that is not necessary?

Required guards must have a height in accordance with Section R312.1.2, Height. All opening limitations must follow Section R312.1.3, Opening Limitations. However, if you decide to install guards on a deck that is below 30 inches, instead of calling it a guard, you may want to think of it as more of an “ornamental rail”; referring to these railings as guards would imply that there are requirements for such installations. However, if your ornamental rail is on a deck 30 inches or above, the situation has changed; this is now classified as a guard, which must comply with the height and opening limitation requirements of the IRC.

Handrails

When is a handrail required and can a guard serve as a handrail?

Handrails are required for stairs that have four or more risers. Guards are permitted to serve as a handrail pursuant to Section R312.1.2, Height, exception 2, if the height is not less than 34 inches and not more than 38 inches. Such guards have to be considered graspable and must follow the dimensions given in Section R311.7.8.3, Grip-size. There has been some confusion in applying this, especially regarding exterior plastic composite railings; most styles appear graspable but do not comply with the specified dimensions.

Landings

What type of material should a landing consist of at grade?

Landings are required for doors and stairs at Sections R311.3 and R311.7.6, respectively. Both contain instances in which a landing may not be required. When a landing is required and is located at grade, its composition can be of almost any material, including the ground or gravel. The important part to note is that regardless of material composition, it must comply with the required dimensions of section R311.7.6, Landings for Stairways, and the slope of section R311.7.7, Stairway Walking Surface.

This was previously covered in a Construction Code Communicator article from the Fall 2017 edition (see page 1 for “Landings for IRC Stairways” at <https://www.nj.gov/dca/divisions/codes/resources/ccc.html>).

Risers

What is the maximum and the minimum riser height?

The maximum riser height for a “straight run” stair must not exceed 8 1/4 inches as per Section R311.7.5.1, Risers; this does not apply to spiral stairs. The greatest riser in any flight of stairs cannot exceed 3/8 of an inch throughout the flight. However, there is no specified dimension in the IRC for a minimum riser height.

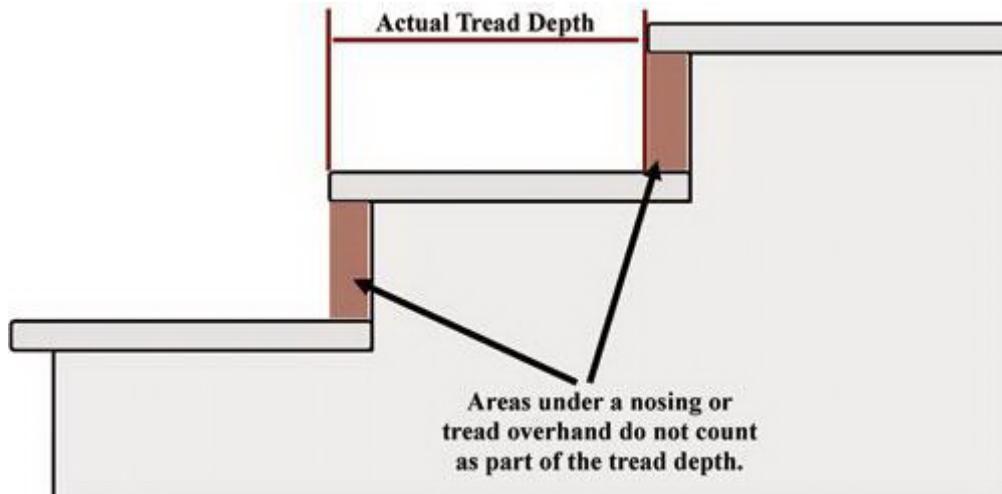
(continued on next page)

(New and Existing Stairs in the Rehabilitation Subcode and the International Residential Code)

Treads

How do I measure tread depth correctly?

Tread depth must not be less than 9 inches in length as per section R311.7.5.2, Treads; again, this dimension does not apply to spiral stairs. The tread depth shall be measured horizontally between the vertical planes of the FOREMOST projection (nosing) of the adjacent tread at a right angle to the treads leading edge. This is important to note because often treads are measured incorrectly from the face of the riser to the edge of the nosing



Rehab

If I am performing a repair, renovation, alteration, reconstruction, or a change of use project, do the existing stairs now have to comply with new codes?

In the case of an existing staircase, the rehab subcode doesn't provide a link that requires compliance with new building codes, because it is understood, in most cases, that you might not have the space to fully comply with the current code. You can replace in-kind or work your way to getting as close to new code as possible. However, when creating a "new" staircase where one previously did not exist, you must comply with N.J.A.C. 5:23-6.9(a)8, Newly created stairways.

Guards and handrails

Where 50 percent or more of the handrail or guard on a flight or on a level is replaced, it is considered a complete replacement and is required to comply with Sections R311.7.8, Handrails, R311.8.3, Handrail Clearance, and R312.1, Guards of the one-and two-family dwelling subcode. The repair or replacement of less than 50 percent of a handrail or guardrail shall be permitted to match the existing handrail or guardrail as per N.J.A.C. 5:23-6.4(e)5.

2015 to 2018

No cross-references have changed in the update to the 2018 edition of the IRC. This will be reflected in the upcoming proposal found at https://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html listed at the "Apr 6, 2020" row in the table.

Source: Adam Matthews
Code Assistance Unit
(609) 984-7609

Conflict of Interest

Sometimes a construction official in one town is asked to work in another because of a conflict of interest. Who does the inspection? Who reports the work? How is this done?

Suppose town A asks town B for help. The code official in town B is responsible for plan review, inspections and approvals. She does the work. Her name goes on the permit and certificate.

This permit, however, must show that the activity was in town A, though the code official in town B did the work. It must use town A's fee schedule and prior approvals. How this is done can be tricky; code officials have several options.

In the future, permit software will allow a code official in one town to use another town's computer. Ideally, the code official in town B would have restricted and limited "jurisdictional access" for this one permit. She does the work, but reports and records it on town A's computer.

Few building departments today have this ability, so what do they do? Some simply work offline. The code official in town B does the work but does not enter anything in her computer; the paperwork goes to town A to record and report.

Another option is to have town A's technical staff work on behalf of the code official in town B. They schedule her inspections but record and report the permit, its updates, and all inspections and approvals. Some building departments choose to record and report all permits they issue, even those for another town. Be careful. The Department of Community Affairs does not electronically receive every entry on a building permit; only a few data fields are sent. They deal mainly with economic and demographic measures, like the dollar amount of construction, the number of housing units gained or lost, square feet of new construction and additions, and fees. Few geographic details are sent. The Department does not see descriptions or notes such as, "*This permit was issued on behalf of town A because of a conflict of interest.*"

If the construction official from town B reports and records the permit, she must make sure the Department of Community Affairs knows it was for activity in town A. When the Department publishes building statistics, we report where the work occurred, not who performed it.

Source: John Lago, Division of Codes and Standards, (609) 984-7609
Steve Rodzinak, Member of the Uniform Construction Code Advisory Board

Flashback Picture to the 38th Annual Building Safety Conference of New Jersey 2019 Award Recipients



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