Construction Code Communicator

State of New Jersey
Philip D. Murphy, Governor

Department of Community Affairs
Lt. Governor Sheila Y. Oliver, Commissioner

Volume 35, Number 1 **Spring 2023**

UCC Summary of Rule Changes – Spring 2023 Update

March 6, 2023, *New Jersey Register*
N.J.A.C. 5:23-3.4 – Responsibilities – This adoption updates and incorporates the code references of the 2021/2020 editions of the model codes as the responsibilities for their respective subcodes.
→ *for more information, please see "Jul 05, 2022" row at*
https://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html

March 6, 2023, *New Jersey Register*
N.J.A.C. 5:23-2.35, 3.2, 3.8, 5.3, 5.19G, 5.23B, 6.2, 6.3A, 6.6, 6.7, 6.8, 6.9, 6.31, and 6.32 – Rehabilitation subcode, etc. – This adoption updates and incorporates the code references of the 2021/2020 editions of the model codes with the Rehabilitation Subcode and other applicable sections of the UCC. This adoption also incorporates the requirements for special inspector certification for mass timber construction special inspectors and soils special inspectors.
→ *for more information, please see "Sep 06, 2022" row at*
https://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html

(Continued on next page)

In This Issue

(UCC Summary of Rule Changes – Spring 2023 Update)

March 20, 2023, *New Jersey Register*
N.J.A.C. 5:23-2.15(b) – Elevator, Escalator, and Moving Walkway Mechanics License – This adoption incorporates that, when submitting a permit application, if the work involves an elevator, escalator, or a moving walkway, any mechanic performing the work must be licensed pursuant to N.J.S.A. 45:44M et seq. Additionally, the license number of the mechanic must be on the permit application; UCC standard form F150 is updated to reflect this change.

→ *for more information, please see "Sep 19, 2022" row at*
https://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html

Source: Code Development Unit
(609) 984-7609

ICC Errata Central

Errata, in short, is an error in printing or writing. For code users, this means that when a publication error is found, at least for ICC, it is posted at https://www.iccsafe.org/errata-central/. So, for those that just got your newly minted 2021 NJ International Building Code and International Residential Code (IRC), well, there just may be publication errors that stem from the national level. To provide an example, see Table R301.2.1(1) for component and cladding loads. Within your NJ edition of the IRC, you'll find that page 3-9 got the heading correct, but pages 3-10 and 3-11 did not. The easiest thing here is to place a note in your NJ edition to go back to page 3-9 for the appropriate heading or to mark up the other pages. Below demonstrates the publication error in the "plain Jane" IRC and the NJ edition. The moral of the story, if something looks off in your code book, check the errata first.

Correction:

TABLE R301.2.1(1)
COMPONENT AND CLADDING LOADS FOR A BUILDING WITH A MEAN ROOF HEIGHT OF 30 FEET LOCATED IN EXPOSURE B (ASD) (psf) [a, b, c, d, e, f, g]

ZONE	EFFECTIVE WIND AREAS (square feet)	ULTIMATE DESIGN WIND SPEED, V_{ult}											
		90.0	95.0	~~105.0~~ 100.0	~~115.0~~ 105.0	~~130.0~~ 110.0	~~150.0~~ 115.0	~~170.0~~ 120.0	~~95.0~~ 130.0	~~105.0~~ 140.0	~~115.0~~ 150.0	~~130.0~~ 160.0	~~150.0~~ 170.0	~~170.0~~ 180.0

Remainder of table and notes unchanged

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

Rehab Grace Period and the 2021/2020 Codes

I don't know about you, but anytime I see/hear the word "Grace," I immediately think of National Lampoons Christmas Vacation. For a reminder, here's how it went:

> Aunt Bethany: "Grace? Oh, she passed away thirty years ago…"
> Uncle Lewis: "They want you to say Grace… The BLESSING!"
> Aunt Bethany: "…oh."

Anyway, this article has nothing to do with a movie or a blessing, but it serves as an explanation of the applicability of another grace, as in period, found at N.J.A.C. 5:23-1.6 and its relationship to the changes in the rehabilitation subcode. This question is common when changes to the rehab subcode are made following the adoption of more recent editions of the model codes. To the extent that changes to the rehab subcode involve section number changes, with the requirements remaining the same, there is no real issue. However, if a new requirement is being added to the rehab subcode, then the grace period would apply. The decision to add – or not to add – a requirement to the rehab subcode is one that is taken deliberately. It is not automatic upon adoption of the most recent edition of the national model code.

That all being said, I am happy to say, we made our informal deadline of having the rehab updates adopted by the end of the new code cycle's 6-month grace period. The September 6, 2022, proposal has been adopted March 6, 2023. Therefore, for those who wish to use the previous provisions, a complete permit application would have to be submitted on or before September 5, 2023.

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

Accessible Means of Egress

Recently, the Code Assistance Unit has had an influx of calls regarding Section 1009 of the 2021 International Building Code (IBC), accessible means of egress.

I am sure you have been enforcing these requirements for new buildings since the adoption in New Jersey of the 1993 BOCA National Building Code. However, an issue that seems to resurface each code cycle pertains to buildings that are not provided with (and are not required to have) an elevator to provide a vertical accessible route to the second floor. Subsection 1009.1 of IBC states that spaces required to be accessible must be provided with at least one accessible means of egress.

The question: Is a second floor of a building that is not provided with (and not required to have) an elevator required to have an accessible means of egress? The short answer is no. The longer answer is if I'm not required to provide barrier free access per Chapter 11, then I'm not required to provide accessible means of egress per Chapter 10.

The purpose of an accessible means of egress is to provide a protected waiting space for a person with a disability in the case of an emergency. If the building is not provided with an elevator, the upper levels of the building are not required to be provided with the accessible means of egress. Individuals who occupy those floors have done so by using the stairs and they may do so in an emergency as well.

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

Accessory Dwelling Units

The Division has come across some information that about local zoning boards approving what they like to call, Accessory Dwelling Units, or ADUs for short. In other words, many locales that may have been zoned for one- or two-family detached dwellings only, are now permitting to increase or add another dwelling unit to the property.

You may be asking, why am I noting this? Well, we all know when one adds a dwelling unit, there are provisions in the Rehabilitation Subcode, N.J.A.C. 5:23-6, that are to be followed per the scope of the work. For a one-family, detached home that would like to convert the existing into two units, Section 6.31(a)8 speaks to the change in character of use (because it is still a Group R-5) and the appropriate separation. If there is an addition, Section 6.32 would handle this if the separation occurred between the existing and new; this assumes the home also does not exceed the story, height, and area allowances for the need of a sprinkler or construction type-upgrade per Section R300 of the International Residential Code/2021.

Here's where it gets trickier. If I have a two-family, detached home and a new unit is desired, therefore making it a three-family, this will change the use to Group R-2. For starters, Section 6.31(e) notes that a change of use from Group R-5 to Group R-2, a higher hazard, requires a reevaluation of the height and area of the building. Also, Section 6.31(g) notes an increase in hazard and the entire structure requires suppression. However, Section 6.31(g)i provides an exception that is: where a separation is provided per Section 707.3.10 of the International Building Code/2021 (per Group R-2) between the old units and the new unit, one only has to suppress the new unit.

It should be further noted that per the other sections of the Rehab Code, egress may need to be addressed, emergency escape and rescue openings may need to be added and smoke alarms may be required.

If your zoning boards are going to allow more dwelling units within areas zoned for one- or two-family detached dwellings, be ready for the Rehab-ramifications in order to complete these potential projects.

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

Cable Rails

There are many opinions when it comes to measuring the opening limitations for the in-fill balusters of cable rail guards. I've heard that inspectors like to forcefully shove their sphere through the cables to see if they would spread beyond the maximum measurement of 4-inches for level walking surfaces and 4 3/8-inches for stairways per Section R312.1.3, Opening limitations, of the International Residential Code (IRC). Some state they are permitted to apply 50 lbs. of force to the sphere in accordance with Table R301.5, which states that guard in-fill components are given a concentrated load of 50 pounds per square foot. However, footnote f. states, guard in-fill components (all those except the handrail), balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot. As you can see, this force is to be applied on a 1-foot by 1-foot square area, not between each individual baluster. Footnote f. is not new and has been in the IRC since 2003. It must be understood that the loading and the measurement are two separate requirements and should never be performed simultaneously.

So, in conclusion, spread your joy and sunshine, but not the cable balusters.

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

The CEO's Private Bathroom

Reviewing a set of plans that includes a private bathroom accessed only from the office of the CEO? Well, don't let them bully you and say they don't want an accessible bathroom with grab bars, etc.! Just remind them, all toilet and bathing facilities must be accessible in accordance with the ICC A117.1-2017.

Now, not all is lost for the CEO though. They do get to have it their way, to a point. Yes, the bathroom must be accessible BUT there are exceptions built into Chapter 6, Plumbing Elements and Facilities, to customize the executive washroom. These exceptions are as follows:

* Section 603.2.2, Door Swing [Clearance], exception 1;
* Section 604.4, [Toilet] Height, exception;
* Section 604.5, [Toilet] Grab Bars, exception 1;
* Section 606.2, [Lavatory] Clear Floor Space, exception 2;
* Section 606.3, [Lavatory] Height, exception;
* Section 607.4, [Bathtub] Grab Bars, exception 1
* Section 608.3, [Shower Compartment] Grab Bars, exception; and
* Section 608.2.1.3, [Transfer Shower] Seat, exception.
* Section 608.2.2.3 [Roll-in Shower] Seat, exception 1.
* Section 608.2.3.2 [Alternative Roll-in] Seat, exception.

The CEO's private bathroom has to be accessible with the exceptions provided above. If you have further questions, please contact the Code Assistance Unit at (609) 984-7609.

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

Energy and Mechanical Ventilation

There seems to be some confusion regarding when mechanical ventilation is required due to the energy subcode. This article will cover one-and two-family detached and attached dwellings, townhouses, and apartment buildings. In short, dwelling units are going to require mechanical ventilation that have conditioned space. You can stop here or read on as we connect the code path below.

Here, we'll start with the simplest configurations, one- and two-family detached dwellings and attached single-family townhouses, all three or fewer stories (Group R-5). Section N1102.1 in the 2021 International Residential Code (IRC) states that all buildings must comply with the building thermal envelope provisions except for:

1. Low-energy buildings, or portions thereof, separated from the remainder of the building-by-building thermal envelope assemblies, where:
   1.1 Those with a peak design rate of energy usage less than 3.4 Btu/h × ft^2 (10.7 W/m^2) or 1.0 watt/ft^2 of floor area for space-conditioning purposes.
   1.2 Those that do not contain conditioned space.
2. Log homes designed in accordance with ICC 400.

Section R303.4 of the IRC states that buildings and dwelling units complying with Section N1102.4.1 shall be provided with mechanical ventilation in accordance with Section M1505, or with other approved means of ventilation. Therefore, all dwellings are required to meet the building thermal envelope, will be required to have mechanical ventilation, and shall exhaust air from bathroom, toilet rooms and kitchen directly to the outdoors per Section M1505.2.

(Continued on next page)

(Energy and Mechanical Ventilation)

For the non-IRC dwellings, that is, one- and two-family detached dwellings and attached single-family townhouses, all four stories or greater (Group R-3), one- or two-dwellings attached to a non-residential use (Group R-3) and multiple dwelling buildings (Group R-2) three stories or less. Section 1202.1 of the 2021 International Building Code (IBC) needs to be clarified since there is a conflict between codes. Section 1202.1 states that buildings shall be provided with natural ventilation in accordance with Section 1202.5, or mechanical ventilation in accordance with the International Mechanical Code (IMC). This section further provides an air infiltration rate in which must always mechanically ventilate. However, the IMC contains different language at 401.2 that now states that ALL dwelling units complying with the air barrier requirements (in this case the IECC-R) need to be provided with mechanical ventilation. So yes, there are two codes with differing requirements, and in this case, the more stringent applies. If you want to really get into the thick of this change, review M20-18 at www.iccsafe.org under their Archive Code Changes for 2018/2019. The following paragraph will help explain Section 401.2 more in depth:

Group R-2 buildings four stories or more need to comply with 2021 IMC and from the energy-side, the ASHRAE 90.1-2019. There significant change noted above to Section 401.2, Ventilation required, which states that dwelling units complying with the air leakage requirements of the International Energy Conservation Code or ASHRAE 90.1 be ventilated by mechanical means in accordance with Section 403. Section 5.4.3. of ASHRAE has air barrier requirements that every dwelling unit must comply with, therefore, triggering mechanical ventilation in accordance with Section 403 of the IMC. The confusion appears to stem from the words “air leakage requirements.” Many presumed that since there is not a specific air leakage rate within ASHRAE, this section should not apply. But again, regardless of the text of Section 1202.1 of the 2021 IBC, Section 401.2 of the IMC refers to ALL dwelling units. In addition, Section 5.4.3 of the ASHRAE has other requirements such as air barrier requirements in which the dwelling units need to comply.

In conclusion, the requirement for mechanical ventilation in Group R-2 dwelling units is no longer tied to a residential blower door testing requirement. This eliminates the distinction between commercial and residential Group R-2 buildings as defined in the IECC. The IMC does not regulate IRC-designed dwellings but does regulate R-2 multiple-family buildings, and the intent of this code section is now evident regarding R-2 buildings; that is, dwelling units under the scope of the IMC must be mechanically ventilated if such units comply with the air leakage requirements of the applicable energy code. In other words, if the building is constructed to significantly limit air leakage through the thermal envelope, then the building will have few air changes per hour and mechanical ventilation will be necessary to provide a healthy environment in the dwelling units. Section 403.1 was revised for consistency, as the number of stories above grade is no longer relevant.

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

Comparing Sizes and Clearances

Starting with some lyrics from “Size Matters” by Natasha Bedingfield, “Size matters, but not how you think. I'm talking 'bout your heart.” And for us code users, the size of our heart is essentially measured by our codes. Yes, they may be rigid and cold (at times), but it is for the safety and usability of a building. And you may now be asking, why am I saying this? Well… take a look at your new referenced accessibility standard from Chapter 11 of the International Building Code/2021, the ICC A117.1-2017 edition. The clearance dimensions, etc. have grown since the previous 2009 standard and for new construction, this is not a problem as it can be designed into the initial plans well before final installation. The question arises, what happens with its application in the Rehabilitation Subcode? The simple answer is that one may apply the “existing buildings” provisions/exceptions throughout the standard to a Rehabilitated building. The more complicated answer however, is what happens to new buildings after this point? Meaning, when they are now an existing building in a few years or so when potential work may occur?

(Continued on next page)

(Comparing Sizes and Clearances)

As always, the Rehabilitation Subcode is still the starting point for an existing building for the scoping on how to apply the A117.1-2017 standard per the realms of rehab other than an addition (e.g., repair, renovation, alteration, reconstruction, and change of use). Once the A117.1-2017 is officially part of the subcode, it will essentially split existing buildings into two categories: those that existed before the State of New Jersey adopted the A117.1-2017 and those that were initially constructed when the 2017 standard was in place. The Rehab subcode is adopted as of March 6, 2023, with a grace period ending the close of business on September 5, 2023.

So, at the current moment, all buildings currently erected would be permitted to follow the dimensions of provisions/exemptions for "existing buildings," essentially the dimensions of the past, the 2009 edition. For future projects that occur in buildings built under the 2021 IBC, they would be subject to the updated dimensions of the 2017 edition.

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

Blower Door Test

There have been a few significant changes within 2021 International Energy Conservation Code, Residential Provisions (IECC-R) and the energy provisions of 2021 International Residential Code (IRC) as it pertains to dwelling unit blower door tests.

First, a blower door test is now mandatory for all new buildings designed under the IRC (Group R-5), dwelling units outside the scope of the IRC (Group R-3) and multi-family dwelling units three or fewer stories (Group R-2) per the 2021 International Building Code (IBC). Section R402.4.1/N1102.4.1, Building thermal envelope, previously of the 2018 IECC-R/IRC had the word "or" between Section R402.4.1.1/N1102.4.1.1 and R402.4.1.2/N1102.4.1.2, which meant you either complied with the air barrier and insulation installation visual inspection in accordance with Table R402.4.1.1/N1102.4.1.1 or testing in accordance with RESNET/ICC 380, ASTM E779 or ASTM E1827, which is better known as a blower door test. You will now notice that for 2021, the State of New Jersey deleted this amendment and the text of the unamended code prevails with "through" which results in both sections, the visual and the blower door test being required.

Secondly, Section R402.4.1.2/N1102.4.1.2, Testing, has been revised. For a refresher, the 2018 IECC-R/IRC stated: in Climate zones 3 through 8 (New Jersey is 4A & 5A) requires an air leakage rate not exceeding three air changes per hour for under any compliance path. In the 2021 IECC-R/IRC, it states that the air changes shall not exceed 5.0 per hour or 0.28 cubic feet per minute (CFM) per square foot [0.0079 m^3 /(s × m^2)] of dwelling unit enclosure area under any compliance path. There is a new exception that permits heated, attached private garages and heated, detached private garages accessory to one-and two-family dwellings and townhouses not more than three stories above grade plane in height, to only have to meet the envelope tightness and insulation installation meeting Table R402.4.1.1/N1102.4.1.1, therefore, there is no blower door test required, only a visual inspection. There is also another ill-placed exception under Section R402.4.1.2/N1102.4.1.2 which permits the testing of individual dwelling units to have an air leakage rate not exceeding 0.30 cubic feet per minute per square foot of the dwelling unit enclosure area. This is only for attached single- and multiple-family building dwelling units and buildings or dwelling units that are 1,500 square feet (139.4 m^2) or smaller.

Lastly, is new Section R402.4.1.3/N1102.4.1.3, Leakage rate, which states where a building is complying with Section R401.13.1/N1101.13.1, Prescriptive Compliance, the air changes shall not exceed three air changes per hour for Climate Zones 3 through 8. So, if you choose to follow the prescriptive compliance method, such as using Table R402.1.2/N1102.1.2 or R402.1.3/N1102.1.3, you will not qualify to use Section R402.4.1.2/N1102.4.1.2, where it states 5.0 air changes is permitted.

(Continued on next page)

(Blower Door Test)

Note: Utilizing REScheck as a compliance option is considered a prescriptive method since it is simply a tradeoff program of prescriptive R-values by components.

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

Emergency Disconnects for One- and Two-Family Dwellings

As with any adoption of a new code, new requirements come along with it. The 2020 edition of the National Electrical Code (NEC/2020), aka NFPA 70, was adopted on September 6, 2022, at N.J.A.C. 5:23-3.16. With it came Article 230.85, Emergency Disconnects, and applies to new services on one- and two-family dwellings only. For those of you familiar with the building codes, please do not apply these definitions. Remember, the NEC/2020 has specific definitions in Article 100 and this is where you would find how Article 230.85 applies to these types of buildings:

A "Dwelling, One-Family" means, "A building that consists solely of one dwelling unit." While a "Dwelling, Two-Family" means, "A building that consists solely of two dwelling units".

The word "solely" above means that Article 230.85 applies to one- and two-family detached dwellings and would not apply to townhouses/rowhomes or multi-family buildings.

When it comes to a Rehabilitation project, you will note that materials and methods at N.J.A.C. 5:23-6.8(d) does not delete this section; thus, it would be included per the scope of a project, as outlined at N.J.A.C. 5:23-6.2(b). This requirement would be limited to complete service changes and upgrades to these types of homes. "Complete" implies that the project includes new service conductors, service entrance conductors and service equipment.

One of the early questions we have received, pertains to whether a separate ground and neutral would be required when installing these disconnects, similar to the installations of subpanels. Officials should take note that the NEC offers three options for compliance. The only method that requires the disconnect to be marked as "Service Equipment" would be the only one that would require the installation of separate grounds and neutrals.

Source: Scott Borsos
Code Assistance Unit
(609) 984-7609

GFCI Requirements for HVAC Under 2020 NEC

The adoption of the 2020 National Electrical Code (NEC) has generated quite a bit of confusion as to how to enforce article 210.8(F). This article pertains to GFCI requirements for ALL outdoor outlets (for dwellings only), rated 120/240 volts and 50 amps or less. This requirement inherently includes outlets for HVAC equipment.

Across the country, there have been numerous reports of "nuisance tripping" involving compliance with article 210.8(F). It has been discovered that HVAC manufacturers, to date, have not been able to integrate the necessary circuitry in their equipment to operate seamlessly with GFCI devices. Earlier editions of the NEC, which the Department reviewed for adoption, provided no relief to account for this issue. However, in later editions NFPA issued an exemption that delayed the enforcement of this article until September 1, 2026.

(Continued on next page)

(GFCI Requirements for HVAC Under 2020 NEC)

Herein lies the confusion, we did not adopt this later version of the NEC, so technically, 210.8(f) is still enforceable. The Department understands that enforcing this code can potentially lead to difficulties during the summer months where A/C equipment can possibly trip, leaving our older population at risk during periods of prolong heat. To help bridge this gap in different editions of the code, the Department in the process of crafting a proposal that will adopt this exemption.

As adopted by rehab, guidance should remain the same for new installations. Replacement of existing equipment would not trigger the need for GFCI protection as the existing circuit is not being altered. As stated in the issued Alert, the Department does intend to adopt the tentative interim amendment within N.J.A.C. 5:23-3.16 to extend the enforcement date. However, until that time, the AHJ will continue to approve plans designed in accordance with the 2020 NEC and TIA-19.

For additional information, please see the letter concerning GFCI incompatibility with certain types of HVAC equipment on the Division of Codes and Standards Alerts & Issues page; https://www.nj.gov/dca/divisions/codes/alerts/.

Source: Scott Borsos
Code Assistance Unit
(609) 984-7609

Elevator Two-Way Communication

As you are aware, elevator devices are to be installed in compliance with Chapter 30 of the International Building Code (IBC)/2021. Within the scoping language of this chapter of the IBC/2021, you will find that ASME A17.1-2019 is the applicable code. It should be noted that one of the scoping sections, Section 3001.2, Emergency elevator communication systems for the deaf, hard of hearing, and speech impaired, is deleted per N.J.A.C. 5:23-3.14; this remains a deletion that stems from the adoption of the IBC/2018. The language within Section 3001.2 is similar but as it pertains to the ASME A17.1-2019, items within this standard that relate to emergency elevator communication systems for the deaf, hard of hearing, and speech impaired would also be deleted.

In other words, the specific deletion in the scoping text would delete the general text within the standard. This leads to new Section 2.27.1.1.3(k) of the ASME A17.1-2019. This section relates to these specific communication systems and would not be applicable. As such, the Department is utilizing ASME A17.1-2016 for the applicable code reference for elevator two-way communication.

Source: Dan Tober
Elevator Safety Unit
(609) 984-7833

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.

3-Tier Car Stackers and Car Lift Systems

So far, here is what we know. Previously, as referenced by Chapter 35, Reference Standards, of the 2018 International Building Code (IBC), NFPA 13-2016 did not address a 3-tier car stacker and lift system configuration. For reference, the Annex of NFPA 13-2016 reads, in part:

> A.5.4.2 Extra hazard (Group 2) occupancies include occupancies having uses and conditions similar to the following:
>
> (9) Car stackers and car lift systems with 2 cars stacked vertically.

As noted above, car stackers and car lift systems with two cars stacked vertically are classified as an extra hazard (Group 2) occupancy and since the classification stops at two cars stacked vertically, car stackers and lift system with three cars or more would be outside the scope of NFPA 13-2016. In this case, an engineer will need to design a performance-based system.

Currently, with the adoption of the 2021/IBC, it is worth noting that a new section under 903, Automatic Sprinklers Systems, addresses part of this issue with the car stackers, which reads, in part:

> 903.2.10.2 Mechanical-access enclosed parking garages. An approved automatic sprinkler system shall be provided throughout buildings used for the storage of motor vehicles in a mechanical-access enclosed parking garage. The portion of the building that contains the mechanical-access enclosed parking garage shall be protected with a specially engineered automatic sprinkler system.

As noted above, although the new section, 903.2.10.2 of the 2021/IBC, acknowledges the use of mechanical-access within enclosed parking garages, NFPA 13-2019, as referred to by Chapter 35 of the 2021/IBC, retains the same language from previous 2016 edition. For reference, the annex of NFPA 13-2019 reads, in part:

> A.4.3.6 Extra hazard (Group 2) occupancies include occupancies having uses and conditions similar to the following:
>
> (9) Car stackers and car lift systems with 2 cars stacked vertically.

Looking ahead to NFPA 13-2022, not currently adopted by New Jersey, if an EH2 system cannot be installed due to ceiling constraints, Section 10.3.2 now offers a sidewall sprinkler alternative, which reads as follows:

> 13.3.2 Sidewall Spray Sprinklers. Sidewall sprinklers shall only be installed as follows:
>
> (9) * Under cars in car stackers and car lift systems with cars stacked vertically placed under each level of cars.

It should be noted that the new sidewall sprinkler alternative from above, is to be installed in conjunction with section 9.5.5.3.1.2, Obstructions to sprinkler discharge, and is limited to two tiers of cars stacked vertically, which is the same as the EH2 system. In the event neither an EH2 nor sidewall sprinklers can be installed, a performance-based system would still be permitted for the 2-tiers. That is how the 2022 edition of this code plays out. Since we are utilizing the 2019 edition, a variation request would be required to apply this section of the 2022 code.

What is still unknown, is if NFPA 13 will eventually establish a reference standard or assign an occupancy classification that directly addresses the 3-tier or more car stackers and car lift systems configuration.

In summary (currently): two cars or fewer = EH2 or performance-based system; and three cars or more = performance-based system only (that is until NFPA 13 truly addresses it).

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

2021 IRC Automatic Sprinkler Systems - P2904 vs. NFPA 13D

It has come to the Department's attention that there appears to be some confusion regarding the application of automatic sprinkler systems in the 2021 International Residential Code (IRC). Generally, for one-and two-family dwellings and attached single-family townhouses, all with a maximum of three stories, Residential Group R-5, an automatic sprinkler system is not a mandatory code requirement. Rather, it can be utilized as an option for the purposes of achieving a third story or applying an exception(s) as noted throughout the 2021/IRC.

For example: According to Section R300.1 of the 2021/IRC, construction type VB is unprotected wood-framed construction (as defined in Section 602 of the building subcode) and limited to two stories, not more than 35 feet in height, and not more than 4,800 square feet in area per floor.

However, if one would like to achieve a third story or increase the height past 35 feet, Section R300.4 permits buildings of construction type VA (i.e., 1-hour fire rated) to be increased up to 40 feet, or Section R300.2, which permits buildings equipped with an automatic sprinkler system (either NFPA 13D or P2904), to be increased up to 55 feet.

This would also work similarly for an increase in the building area.

> Note: If you don't like either of the "increase" options, there is always the habitable attic route but that would require you to review pages 8 and 9 of the Spring 2022 CCC article, "The Habitable Attic Provision in the New Jersey International Residential Code" and substitute "2018" with "2021."

Additionally, when the 2021/IRC identifies only one specific automatic sprinkler system, as an option for the purposes of applying an exception, either system would be acceptable.

For example: Section R302.2.2 of the 2021/IRC, Condition 1, allows a common wall separating townhouses to have a 1-hour fire resistance rating as long as an automatic sprinkler system in accordance with Section P2904 is provided. However, it should be noted that Section P2904.1 of the 2021/IRC states, "The design and installation of residential automatic sprinkler systems shall be in accordance with NFPA 13D or Section P2904, which shall be considered to be equivalent to NFPA 13D." In other words, for the purposes of applying the exception, either system is acceptable.

If you have any questions, please contact the Code Assistance Unit at (609) 984-7609.

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

Water-Level Monitoring Devices

There seems to be a question as to whether a mini-split, ductless system requires a water-level monitoring device. For reference, the International Residential Code (IRC/2021), Section M1411.3.1.1, and the International Mechanical Code (IMC/2021), Section 307.2.3.1 call for these devices as such: On down-flow units and other coils that do not have secondary drain or provisions to install a secondary or auxiliary drain pan, a water-level monitoring device shall be installed inside the primary drain pan.

(Continued on next page)

(Water-Level Monitoring Devices)

As this Division sees it, the answer is no, a mini-split, ductless system does not require a water-level monitoring device. As provided for in the IRC/2021 and the IMC/2021 commentary: When the water overflows from the pan, it typically runs into the duct, causing mold and mildew problems and insulation damage. It will eventually leak out through the joints or seams and cause damage to the building structure.

Since there are no ducts on these systems, that is not a concern. After much research on several mini-split brands, there does not appear to be a built-in sensor, nor is there an accessory from the manufacturer that would fall in line with the listing and labeling of the device. Installing such a device would involve taking the factory assembled unit apart to install a device into the pan, which mini-split systems do not have, and wiring said device into the factory wiring. In addition to possibly violating the listing/labeling of the appliance/equipment, this could be a serious hardship as well as possibly voiding the manufacturer's warranty.

Note: We have heard that there is a written opinion from the ICC stating that the citation applies to mini-split systems. However, as noted above, the ICC's published commentary contradicts said written opinion and this article should be referenced.

Source: Anthony Menafro
Code Assistance Unit
(609) 984-7609

Signing and Sealing Tech Sections

There seems to be some confusion about HVACR licensed contractors sealing F130 Plumbing tech sections as licensed contractors. Outside of R-3 and R-5 use groups, they must submit an F130 tech section, therefore, they are to seal and sign the F130 tech section as a licensed contractor. Also, licensed electricians must also submit an F130 tech section for the gas piping for their generators, so they should also seal and sign that tech section.

The seal is required as per N.J.A.C. 5:23-2.15(b)2ii. Since the F130 Plumbing tech section has been changed to read, "[ ] Licensed Contractor," in 2017, and is no longer "[ ] Licensed Plumbing Contractor," then they should sign and seal as the Licensed Contractor. On older F130 forms where it still reads, "[ ] Licensed Plumbing Contractor," then they should check off the Exempt Applicant box and seal and sign the F130 tech section. Master Hearth should do the same for their gas piping but without the seal since there is no pressure seal for them, only a license. Also, Licensed Electrical contractors that are running gas piping to their gas generators should do the same as the HVACR licensed contractors. The current Plumbing Tech section can be found at https://www.nj.gov/dca/divisions/codes/resources/constructionpermitforms.html

Please be aware that the F130 tech sections are also required in existing Group R-3 and R-5 uses where the Mechanical inspector is not a Plumbing inspector, and a non-testable backflow preventer is installed or replaced. If the non-testable backflow preventer is being replaced, then a Licensed Master Plumber or a licensed Master HVACR may submit that F130 tech section. If the non-testable backflow preventer is being installed or the piping is being altered, then only a Licensed Master Plumber may submit the F130 tech section. In uses other than existing Group R-3 and R-5, the F130 tech section must be submitted by the Licensed Master Plumber or Licensed Master HVACR for replacements of non-testable backflow preventers, but new non-testable backflow preventers must be submitted by a Licensed Master Plumber only.

Licensed HVACR contractors should also sign and seal the F110 Building tech section for the installation of ductwork outside of R-3 and R-5 use groups as per N.J.A.C. 5:23-2.15(b)2ii.

Source: Anthony Menafro
Code Assistance Unit
(609) 984-7609

Types of Plumbing fixtures for Accessibility 

I would like to clear up a misunderstanding regarding types of plumbing fixtures and the accessibility requirements. According to N.J.A.C. 5:23-6.8(g)2, "...at least one of each type of fixture shall comply with the barrier free materials and methods." And in the 2018 International Building Code (IBC) 1109.2, Exception 4 and 2021 IBC 1110.2, Exception 4, “where no more than one urinal is provided in a toilet room or bathing room, the urinal is not required to be accessible."

Before going any further, let's understand the fixture requirements as per the National Standard Plumbing Code 7.21.5a. "Urinals: In male toilet rooms, urinals may be substituted for up to 50% of the required number of water closets." This code citation explains that water closets and urinals are the same type of fixture.

That being said, when a toilet room calls for two water closets and you chose to substitute a urinal in lieu of the second water closet, then the water closet is the only fixture required to be accessible.

While the UCC Rehab citation may seem to be different than the IBC new code citation, they are actually supportive of each other. The IBC exception sets the baseline and applies for rehab projects as well as new work. If the applicant decides to make the water closet and urinal accessible, then that is their right to do so as our job is to be sure that the minimum code requirements are achieved.

Source: Anthony Menafro
Code Assistance Unit
(609) 984-7609

Building Cavity Usage - Energy 2023 Update 

For those of you who are designing, installing, reviewing, or inspecting HVAC systems in one- and two-family dwellings, or multi-family dwellings three stories or less in height, please be aware of a difference between sections cited in Chapter 11 in the code as discussed in his Fall 2017 Code Communicator article, *Building Cavity Usage – Energy.*

The more restrictive section still applies. In the International Residential Code/2021 (IRC/2021), Chapter 16, section M1601.1.1, Above-ground duct systems, Item 7.1 says that stud wall cavities and the spaces between solid floor joists shall not be used as plenums for supply air.

Chapter 11 of the IRC/2021, Section N1103.3.7, Building cavities states that building framing cavities shall not be used as ducts or plenums. Also, the International Energy Conservation Code/2021, Section R403.3.7 states the same language as IRC/2021, Section N1103.3.7.

Therefore, the more restrictive requirement at Section N1103.3.7 is to be applied. Meaning, building framing cavities cannot be used as supply duct/plenum, nor can they be used as a return duct/plenum.

Source: Anthony Menafro
Code Assistance Unit
(609) 984-7609

Municipal Construction Office Responsibilities - Confirming Proper Licensing

The Department of Community Affairs has recently been made aware of situations where municipalities have hired Subcode Officials who do not possess the required Subcode Official license for the discipline in which they've been hired to serve. Municipal Construction Offices are responsible for ensuring their officials are properly licensed in accordance with Uniform Construction Code (UCC) standards. If the municipality is unable to confirm an applicant's license(s) on their own accord, the municipality should contact the Department for confirmation that the applicant is properly licensed. In instances where an individual has performed official duties without proper licensing, the Office of Regulatory Affairs has recommended revocation of all licenses held by that individual.

Municipalities must notify the Office of Regulatory Affairs of any changes with their Construction Official and Subcode Official lineup. The duties, powers, and procedures of municipal enforcing agencies are covered under N.J.A.C. 5:23-4.3. Pursuant to N.J.A.C. 5:23-4.3(e)2, "not later than 30 days after the effective date of the regulations and whenever changed thereafter, the municipality shall file with the department a list containing the names and certification numbers of the construction official and each subcode official."

Pursuant to N.J.A.C. 5:23-5.4(a) "No person shall be appointed to, or shall hold, the position of construction official or subcode official unless that person has received a license required for that position pursuant to these regulations." This regulation is a matter of public safety. An unlicensed person performing the duties of a Subcode Official may result in various penalties from warnings and fines to suspensions and revocation of licenses.

N.J.A.C. 5:23-5.4(g) establishes the violations and penalties which may be assessed to those who perform the duties of a licensed official without proper licensing, as well as the penalties applicable to those who offer employment to individuals who do not possess proper licensing. Failure to comply with the licensing requirements may result in fines of up to $2000 for each offense perpetrated by the unlicensed person performing the duties of a Subcode Official, as well as the enforcing agency offering employment to the unlicensed official.

In addition to fines and suspensions, revocation of licenses is also a possible outcome for unlicensed individuals performing the duties of a Subcode Official. The revocation of licenses and certifications and alternative sanctions is detailed in the UCC at N.J.A.C. 5:23-5.25. Pursuant to N.J.A.C. 5:23-5.25(a)4, those who have "fraudulently or deceitfully practiced as a licensed code enforcement official or certified special inspector" are in violation of the UCC. Additionally, those who have misrepresented their qualifications are also at risk for license revocation, along with anyone who has aided and abetted "any person not authorized to practice as a licensed code enforcement official".

In some cases, Departmental intervention may be necessary as detailed in N.J.A.C. 5:23-4.3(f). When the Department of Community Affairs has reasonable cause to believe that a local enforcing agency is not performing its duties in accordance with the Uniform Construction Code Act, the Department may intervene and issue a notice stating the nature of the alleged failure, the implications of the failure, and a statement establishing the corrective action to be taken by the local enforcing agency. If the issues persist, pursuant to N.J.A.C. 5:23-4.3(f)1i, "In the case of a local enforcing agency which the Department finds to have repeatedly or habitually failed to enforce the provisions of the State Uniform Construction Code Act, the Department shall issue an order, in the manner, and subject to the requirements, set forth in (f)1 above, to dissolve the local enforcing agency and replace it by the Department."

In summary, please make sure that your inspectors and officials are properly licensed. If you're unable to verify the status of someone's license on your own, please contact The Department of Community Affairs so that we can confirm the status of the license in question.

Source: Jack Ryan
Office of Regulatory Affairs
(609) 984-7672

Is A Field Fabricated Fiberglass Shower Pan Code Compliant?

The Department has received numerous calls by code officials and contractors inquiring about field fabricated fiberglass shower pan installations and if they are installed, do they meet the 2021 National Standard Plumbing Code (NSPC)? There appears to be as many interpretations as there are officials and contractors. So, let's start with the question that gets asked the most.

Can a fiberglass shower pan be accepted if a waterproofing and crack prevention membrane, such as RedGard, were to be applied over the fiberglass? The short answer is… no. Using RedGard as an example, the reason this is unacceptable is because fiberglass is not listed as a suitable substrate in the manufacturer's literature. Applying/installing the membrane would be a violation of the listing of RedGard, which in turn is a violation of the NSPC and should not be approved.

This brings us back to the original question; is a field fabricated fiberglass shower pan code compliant? The short answer… maybe. The more complicated answer is that fiberglass is not listed specifically for "field fabricated shower pans" as an acceptable material within Chapter 3 of the 2021 NSPC. It is for this reason that a field fabricated fiberglass pan is not seen as code compliant. However, this type of installation may be approved by means of a variation request per the Uniform Construction Code (UCC) at N.J.A.C. 5:23-2.12 and the manufacturer's instructions must be followed. How does the code official know that the requirements were followed? The assumption is always that the requirements were followed unless there is proof that they were not. As always, a variation is an exception to the minimum requirements of the code and the applicant must provide a way of showing that the intent of the UCC has been met. One way of doing this would be requiring that the water test of the installed pan liner be witnessed by the code official.

If you have further questions, please contact the Code Assistance Unit at (609) 984-7609.

Source: William B. Schmidt
Office of Regulatory Affairs
(609) 984-7672

New Jersey Department of Community Affairs
Division of Codes and Standards
101 South Broad Street
P.O. Box 802
Trenton, NJ 08625-0802

BULK RATE
US POSTAGE
PAID
PERMIT NO.
XXXXX

FIRST-CLASS MAIL

Mail to: