Construction Code Communicator

NEW JERSEY UNIFORM CONSTRUCTION CODE

State of New Jersey Philip D. Murphy, Governor Volume 36, Number 1 Department of Community Affairs Jacquelyn A. Suárez, Acting Commissioner

Spring 2024

UCC Summary of Rule Changes – Winter 2024 Update

January 2, 2024, New Jersey Register

N.J.A.C. 5:23-3.21, 6.5, 6.6, 6.7 and 6.31 – One- and Two-Family Dwelling Subcode and Rehabilitation Subcode – Three Notices of Administrative Correction were issued to amend a cross reference related to the building subcode within Section 3.21, a repeated cross reference related to the Energy Subcode within Sections 6.5, 6.6, 6.7, and a descriptor used for Group A-3 within Section 6.31.

→ for more information, please see "Jan 02, 2024" row at <u>https://www.nj.gov/dca/codes/codreg/rule_proposals_adoptions.shtml</u>

N.J.A.C. 5:23-3.4 – Responsibilities – This Notice of Administrative Correction amends the placement and titles concerning International Swimming Pool and Spa Code sections in Chapter 31 of the Building Subcode. → for more information, please see "Jan 16, 2024" row at

https://www.nj.gov/dca/codes/codreg/rule_proposals_adoptions.shtml

N.J.A.C. 5:23-11.1_ Playground Safety Subcode – This Notice of Administrative Correction amends the reference to an obsolete website link for the Consumer Product Safety Commission.

→ for more information, please see "Feb 20, 2024" row at https://www.nj.gov/dca/codes/codreg/rule_proposals_adoptions.shtml

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Division of Codes and Standards, P.O. Box 802, Trenton, New Jersey 08625-0802 www.nj.gov/dca/divisions/codes

(UCC Summary of Rule Changes – Spring 2024 Update)

Bulletins - https://www.nj.gov/dca/codes/resources/bulletins.shtml

• 96-2, Signing and Sealing of Construction Documents – Revised, December 2023

Source: Code Development Unit (609) 984-7609

DCA Opens Application Portal for Lead Remediation and Abatement Program

Landlords and Tenants Can Now Apply Online for Grant Funding to Remove Lead from Homes Built Before 1978 (Reprint of February 26, 2024, DCA Press Release, available online at https://www.ni.gov/dca/news/news/2024/approved/20240226.shtml)

TRENTON, NJ –The New Jersey Department of Community Affairs (DCA) today announced the recent opening of the Lead Remediation and Abatement Program (LRAP) application portal. Landlords and tenants can now apply online for assistance with removing lead-based hazards from homes that may have lead-based paint. Landlords and tenants can visit the application portal at: <u>https://nj.gov/dca/dhcr/offices/Irap.shtml</u>. Applications can also be submitted to a designated community-based agency or municipality.

In the SFY23 budget, an unprecedented commitment of \$180 million was made to address the ongoing threat of childhood lead poisoning. Lead is toxic, especially to children, and can potentially cause permanent health issues. The most common way young children are exposed to lead is by putting lead-based paint chips in their mouths or by inhaling dust containing lead particles in and around their homes or apartments.

"These grant funds are an investment in improving people's health by remediating and abating lead hazards in affordable housing across the state," said DCA Acting Commissioner Jacquelyn A. Suárez. "Through the LRAP program, DCA has empowered community-based organizations throughout New Jersey by providing specialized lead remediation and abatement training and seed capital allowing them to act as contractors for this specialized service."

Tenants who have identified deteriorating lead-based paint (peeling, chipping, chalking, cracking, or damaged paint) are encouraged to reach out to their landlord, building owner, local housing authority, or DCA-certified contractors for assistance as this is a sign of a hazard and needs immediate attention.

Tenant households who meet the following requirements may qualify for help:

- Must be income-eligible, at or below 80% of the area median income for the county in which the municipality is located;
- Property was built prior to 1978;
- Property has lead-based paint hazards;
- Property contains no more than four residential units; and
- Property is free from structural issues.

In July 2022, the State of New Jersey implemented a new law, P.L.2021, c.182, concerning certain lead-based paint hazards in residential rental property. The law imposes an obligation on municipalities and property owners to perform themselves or hire a certified lead evaluation contractor to perform inspections of certain single-family, two-family, and multiple-rental dwellings for lead-based paint hazards.

All rental dwelling units required to be inspected pursuant to P.L.2021, c.182 must be inspected for lead-based paint no later than July 22, 2024, or upon tenant turnover, whichever is earlier. If lead-based paint hazards are identified, then the owner of the dwelling shall remediate the hazards through abatement or lead-based paint hazard control mechanisms. Landlords can directly hire a certified lead evaluation contractor for this purpose.

Landlords interested in remediating their units through LRAP must first ensure that the tenants renting their unit(s) meet the program requirements. If the residence is vacant at the time of application, the landlord must place incomeeligible tenants in the building within 120 days of the completion of remediation and/or abatement work.

(DCA Opens Application Portal for Lead Remediation and Abatement Program)

Priority will be given to proposals that serve areas with the highest level of need, based on the number of children under the age of six with elevated blood lead levels.

Applications approved for assistance will be assigned to a certified contractor in the service area where the home resides.

Approved contractors will conduct lead-safe repairs and energy efficiency improvements in residential units built prior to 1978. These funds will be used to identify and remediate lead-based paint hazards through encapsulation, replacement, or abatement. Encapsulation is defined as a set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards. Lead abatement measures provide a long-term solution to removing lead-based paint hazards from surfaces and components via replacement and/or repair.

LRAP grant funding also supports nonprofits, for-profit agencies, and municipalities in removing lead-based hazards from homes of low- to moderate-income households.

DCA offers a wide range of programs and services that respond to issues of public concern including affordable housing production, fire and building safety, community planning and development, local government management and finance, disaster recovery, and information privacy.

Source: DCA Office of Communications (609) 984-7609

Emergency Building Inspection Program: Mutual Aid

The Office of Regulatory Affairs is updating the list of municipalities offering mutual aid. As you are aware, this is used for extra manpower when a municipality is affected by a disaster such as hurricanes, flooding, etc. We are asking that municipalities supply a copy of their existing Resolution of Participation or Non-Participation and the required information per N.J.A.C. 5:23-4.25(c)1. Any municipality that does not currently have a resolution or wishes to opt in or out must supply a new resolution. These resolutions are to be received by the Office of Regulatory Affairs by May 15, 2024, via mail at 101 South Broad St. P.O. Box 818, Trenton, NJ 08625 or email at <u>Codes.ORA@dca.nj.gov</u>.

Any UCC licensed official, not actively employed as such, who wishes to volunteer may do so by providing the required information to the Office of Regulatory Affairs as indicated above.

Source: Bill Schmidt, Supervisor of Enforcement Office of Regulatory Affairs (609) 984-7672

Blow by Blow, Pile Certification Requirements

For my Spaceballs fans out there, "It's Mega Maid! She's gone from suck, to blow!" Gotta love a Mel Brooks quote. There is a lot more context needed there, but in relation to this article, it's just how many blows a pile takes until it is soundly implanted in the ground.

For background, lessons learned from Superstorm Sandy kicked off some amendments to the Uniform Construction Code, and on October 1, 2014, a new requirement was added regarding pile certification in accordance with P.L. 2014, c.34. As provided at N.J.A.C. 5:23-2.18(b)1i(1):

(Blow by Blow, Pile Certification Requirements)

In the case of pile foundations, a pile log and certification prepared by a licensed design professional shall take the place of the inspection required by (b)1i above [the "stop" inspection of the bottom of footing trenches before placement of footings]. Such certification shall include, but not be limited to, verification that the size, type, and location of the piles conforms to the released plans and that the piles are properly set to support the design loads. Such certification shall be based upon personal observations made by the design professional at the site.

So, what is needed to comply with a pile log and certification above, and what should it consist of?

• Pile Log – These are recorded field observations of piles being driven. (See sample form below.) A separate form should be completed for each pile witnessed. Completing pile logs requires on-site field inspection by the licensed design professional or one of their employees. This is not unlike a special inspection.

• Pile Certification - This term must be used in the submittal. The pile certification must address the size, type and location (including spacing) of the piles.

This should be shared with applicants to help to avoid delays later in the process, especially in locations where piles are likely needed. This information can be provided to the local enforcing agency in the format the design professional prefers; letter, plan, details, etc. The design professional may even reference the original plans, but the certification must indicate that the design professional has verified (through field observation) that the piles are as specified on the plans. Remember, the Pile Certification must be submitted **BEFORE** the house is set or constructed on the piles.

Project:			Date:
Contractor:			Inspector:
Building:			Pile Location:
Pile:			Size (Butt/Tip)
Elevation Gr	ound:	Pile Tip Elevation:	Cutoff Elevation:
Hammer/Ma	ke/Model:		
Depth in ft.	Blow s/ft.		Comments
1			
2			
3			

Source: Rob Austin

Code Assistance/Development Unit (609) 984-7609

Proper Disposal of Construction Materials and Debris 2024

Since this article has a timeline associated with it, I'd like to start with 1970 and a sing-along with Oscar the Grouch...

Oh, I love trash; Anything dirty or dingy or dusty; Anything ragged or rotten or rusty; Yes, I love trash!

So yeah, I really don't love trash or anything dirty for that matter but that allows me to set the mood and move onto this real issue of this article. Back in Fall 1996, an article was published where the Code Assistance Unit was trying to obtain clarification from the Department of Environmental Protection (DEP) regarding their requirements for the proper disposal of construction debris generated on site. This article provided information for recycling or reuse of these materials, provided exceptions, and provided an example using an inground swimming pool.

This brings me to a Communicator follow-up article in Spring/Summer 2014 (what can I say, it was a slim year for articles and we combined seasons), where the contents of the original article were updated and DEP no longer took a position on the removal of below-ground concrete supports (foundations) as it is not considered solid waste or recyclable material until such time as it is removed. DEP informed us that they do not have regulations mandating the removal of below-grade concrete. This article concluded that, the property owner will decide whether to remove the foundations or other below-grade concrete.

(Proper Disposal of Construction Materials and Debris 2024)

Fast forward 10 years, and the second article remains valid. DEP, Division of Sustainable Waste Management, Bureau of Recycling and Hazardous Waste Management, confirmed that regarding below-ground concrete supports (foundation or pool), the property owner may decide whether to remove the foundation or other below-grade concrete.

Source: Rob Austin Code Assistance/Development Unit (690) 984-760

Update on Emergency Responder Radio Coverage System Requirements (Updated reprint from Spring 2018)

Included in the Summer 2021 edition of the Construction Code Communicator, I wrote an article to provide basic information on when Emergency Responder Radio Coverage Systems (ERRCS) would be required. Recently, I have been advised that during final inspections, code officials have been failing the final fire protection inspection due to radio coverage systems not being installed. I am also hearing that certificates of occupancy are not being issued due to this. This should not be happening at a final inspection. The Code Assistance Unit suggests that a Temporary Certificate of Occupancy (TCO) be issued if all other fire protection systems are compliant and a plan to install an ERRCS or a plan to modify an existing system to meet required signal strength is submitted with a timetable for completion.

Note: The recommendation provided in this article to issue a TCO clarifies the intent of Bulletin 01-2, Temporary Certificates of Occupancy, where it states:

"A TCO shall not be issued when any of the following items that are part of a construction project have not yet been provided:

• health and life-safety systems (Note: Required systems must be fully operational and, where required, systems must have been tested.)"

Since the testing of an ERRCS cannot be performed by the local until construction of the building is complete, the "where required" from Bulletin 01-2 dictates the timetable and advises, in this instance, that the issuance of a TCO would be reasonable solution for this specific "health and life-safety system." Locally, code officials need to know about radio coverage issues inside building around the towns they work in. When code officials are made aware that the fire department is having radio issues in existing buildings, they should ask for design plans during the plan review process of similar type building designs; this is not an issue to bring up at the final inspection. This way provides a mechanism so that the system will be in place, and if there are minor issues at the final inspection, they should be much easier to address/fix. Bringing up this issue on final inspection may require destruction of ceiling and wall finishes to run wire for these systems.

Most of the examples brought to my attention are in basements or buildings of concrete and steel construction. Some areas are not meeting the minimum signal strength required by the International Fire Code. Please contact your local emergency responders and their radio technicians to identify the coverage problem areas within buildings in your municipality. This resource will give you a better understanding of when you need to ask for coverage systems. Below is a link to the original article: https://www.nj.gov/dca/codes/publications/pdf_ccc/CCC_Smr_2021.pdf

Source: Code Assistance Unit (609) 984-7609

Update to the Automatic Rain Sensor Law

Humidity is rising (uh rising); barometer's getting low (how low girl?). According to all sources (what sources now?), the street's the place to go (we better hurry up). 'Cause tonight for the first time (first time), just about half-past ten (half past ten). For the first time in history, it's gonna start raining men (start raining men)!

Well, maybe not raining men, or woman for that matter, but the intent of this article is to inform you that P.L. 2023, c.299 was adopted January 16, 2024, concerning automatic lawn sprinkler systems. This new law updates P.L. 2000, c.107, which mandated that any automatic lawn sprinkler system installed must be equipped with an automatic rain sensor device or switch that overrides the irrigation cycle after adequate rainfall. The Uniform Construction Code (UCC) was amended to account for these devices originally at the electrical subcode, N.J.A.C. 5:23-3.16, on June 16, 2003. Since then, the requirement has been moved to the plumbing subcode, N.J.A.C. 5:23-3.15, and remains:

(c) A newly installed automatic lawn sprinkler system, where such systems are not prohibited by local ordinance, shall be equipped with an automatic rain sensor device or switch that will override the irrigation cycle of the automatic lawn sprinkler system when rainfall of more than one-half inch has occurred.

The new law adopted earlier this year requires the installation of automatic rain sensor or smart sprinklers as a condition of sale for certain properties. So, the question is, does this change the current provisions of the Uniform Construction Code (UCC)? Specifically, are "smart sprinklers" unique enough to warrant changing the code?

The simple answer is, no. P.L. 2023, c.299, defines "smart sprinkler" as an internet connected device that monitors the weather, soil moisture, and other conditions to calculate and automatically adjust the watering schedule of an automatic sprinkler system. The key word there is that "smart sprinklers" are defined as a "device," which is already in the UCC text at N.J.A.C. 5:23-3.15(c). Fortunately, because of this distinction we have a little less Spring cleaning to do this year.

I hope you find this explanation clear and if you liked the Weather Girls song lyrics, you could thank Rob Austin for editing this article.

Source: lan Rayfield Code Development Unit (609) 984-7609

The Many Faces of a Homeowner and HIC

Mirror, Mirror on the wall, who's the fairest of them all? The homeowner, of course! But like any mirror, the reflection may be something that not all others see. And how a homeowner is seen via Uniform Construction Code (UCC) versus the licensing/registration laws at the "other DCA" (Division of Consumer Affairs, Department of Law and Public Safety), things can get iffy. So, this article intends to help clear up some confusion between home improvement contractors (HIC) and homeowners preparing their own plans.

The HIC requirements, as they pertain to the UCC, can be found at N.J.A.C. 5:23-2.15(b)8. The exception for single-family homeowners preparing their own plans is located at N.J.A.C. 5:23-2.15(f)1ix.

Please keep in mind that the UCC references above have distinct differences. N.J.A.C. 5:23-2.15(f)1ix notes that the construction official is to waive the requirement for signed/sealed plans in the case of a single-family homeowner who has *prepared* construction plans to a detached structure used or intended to be used exclusively as their private residence. As per N.J.A.C. 5:23-2.15(b)8ii, an HIC registration is not required for any person *performing* a home improvement upon a building or structure in Group R-2, R-3, R-4 or R-5 owned by that person, or by a member of that person's immediate family.

(The Many Faces of a Homeowner and HIC)

As you can see from the bolded/italicized words above, N.J.A.C. 5:23-2.15(f)1ix deals with *preparation of plans*, while N.J.A.C. 5:23-2.15(b)8ii deals with construction *work being performed*. An example would be a single-family homeowner owning two homes; one is their residence; the other is a rental property. The homeowner has decided to build an attached deck at their personal residence and also an attached deck at the rental property. The homeowner is allowed to draw the deck plans for the home where they live but may not draw the deck plans for the rental property, a design professional must draw the plans for the rental property. However, the homeowner may construct the deck at their personal residence and may also construct the deck at the rental property without being registered as a HIC.

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

Accessibility and Sales Offices

(Updated reprint from Fall 2016)

The Department of Community Affairs has received several requests for clarification on the accessibility requirements for sales offices at developments of single-family homes.

Accessible route: The office is required to be accessible to all customers; therefore, there must be an accessible route into the office. When the office is in an on-site trailer, this is usually accomplished by a ramp. When the office is in the garage of the on-site model home, the entrance to the office is at grade and is accessible. The model home itself is not required to have an accessible route into and through the dwelling, and the toilet facilities in this single-family home are (of course) exempt from the Chapter 11 of the Building Subcode.

Accessible toilet room: When toilet facilities are available to customers, an accessible toilet room must be provided. When the sales office is in the garage of the model home, this may be accomplished by providing an accessible portajohn on an accessible route (stable, firm, and slip-resistant) adjacent to the office. When toilet facilities are not available to customers but are available only for employees, an accessible toilet must be provided (in compliance with the Americans with Disabilities Act, Title I) as an accommodation to an employee.

If you have further questions on this issue, please contact the Code Assistance Unit.

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

IRC R300 & VA Construction Basics

The Code Assistance team receives many inquiries regarding Section R300 of the International Residential Code (IRC). Although the height and area restrictions are unique to New Jersey, the numbers are not random. These provisions were first included in the BOCA code, which NJ adopted between 1977 - 2003.

Section R300.1 of the IRC explains the limitations of VB unprotected wood-framed construction as follows; not more than two stories, not more than 35 feet in height, and not more than 4,800 square feet in area per floor. If a habitable attic that meets the definition "attic, habitable" found in Section 202, it shall not constitute a story. For more information regarding habitable attics, refer to a previous article titled "The Habitable Attic Provision in the New Jersey International Residential Code" on page 8 of the Spring 2022 Communicator. Also, for the application of private detached garages, see page 2 of the Spring 2017 Communicator for "Private Detached Garages in the One- and Two-Family Dwelling Subcode."

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(IRC R300 & VA Construction Basics)

All volumes and editions Construction Code Communicator can be found at the following link: <u>https://www.nj.gov/dca/codes/publications/ccc.shtml</u>.

Now that background is provided, we can dive into the main issues of area calculation and height.

Area limitation: Essentially, the entire footprint of the building, including any horizontal roof or floor projections like covered porches, must be included in the area calculation. This reasoning stems from the International Building Code (IBC) definition of "building area," which is also applicable to IRC projects in accordance with Section R201.3, Terms defined in other codes. If the area exceeds 4,800 square feet, you have three choices: (1) Provide an automatic sprinkler system in accordance with NFPA Standard 13D or P2904 per Section R300.3.1, which permits an unlimited area building; (2) frontage increase per Section R300.3.2. Note: this uses 1996 BOCA calculations not found in the IBC; or (3) upgrade the construction type to VA per Section R300.4, which permits up to 10,200 square feet in area; and the area may further be increased by frontage.

Height limitations: This measurement shall be the vertical distance from grade plane to the average height of the highest roof surface per the definition of "building height" found in Section 202 of the IRC. The average height of the roof would be the average between the eave and the ridge. In discussion with the International Code Council, the highest roof surface should always be the highest roof surface with the biggest span. For example, if you have a main roof span with a dormer that shares the same ridge, the main span would be the main roof as averaged, not the dormer. As you can imagine, a typical small dormer would raise this average substantially for a very low hazard and this not the intent. Two choices exist for an increase in height. One option would be to install an automatic sprinkler system in accordance with Section R300.2, which allows for a 55-foot height, or use VA construction in accordance with Section R300.4, allowing for a 40-foot height.

If using VA construction, we would now have to travel from the IRC to the IBC for the application of fire-resistance ratings. Starting in Chapter 6, Types of Construction, you will find the definitions of all five construction types at Section 602. More specifically, Section 602.1 references Table 601, which states that VA building elements must have a 1-hour fire-resistance rating. Section 602.1 also provides a pointer to Table 705.5 for the fire-resistance rating requirements for exterior wall based on fire separation distance. Note: if there is a fire separation distance greater than 5 feet, then the exterior wall would only need to be rated for exposure to fire from the inside.

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

Residential - Fire and Smoke Alarm/Detection Systems Quick Reference Guide 2021

(Updated reprint from Spring 2022)

For residential projects that are new construction or existing, the minimum smoke alarm and/or detection system installed should comply with either the 2021 International Building Code (IBC), the 2021 International Residential Code (IRC), or Subchapter 6, Rehabilitation Subcode, of the Uniform Construction Code (UCC), N.J.A.C. 5:23, as applicable. For reference, the tables below provide guidance to applicable code sections based on the residential use group classification. Please be advised that the following table is for *informational purposes only* and not intended as an all-inclusive list:

EXISTING HOMES/DWELLINGS				
Uniform Construction Code (UCC), Subchapter-6, Rehabilitation Subcode				
R-1	R-2	R-3	R-4	R-5
N/A	6.4(f)			
·		6.4(c)	2	
	EXIS Uniform R-1 N/A	EXISTING HOMES/D Uniform Construction C R-1 R-2 N/A Image: Colspan="2">Image: Colspan="2" Image: Colspan="2"	EXISTING HOMES/DWELLINGS Uniform Construction Code (UCC), Sub- R-1 R-2 R-3 N/A 6.4(c)	EXISTING HOMES/DWELLINGS Uniform Construction Code (UCC), Subchapter-6, Rehabilitat R-1 R-2 R-3 R-4 N/A 6.4(f) 6.4(c)2

Catagorias of Mark		STING HOWES/DV		hantor 6 Dehahilitetia	n Subcode	
	Unito	n Subcode				
	R-1	K-2	K-3	<u>к-4</u>	K-5	
Smoke alarms required	N/A		C F(-)2	6.5(T)		
Fire protection system	6.5(c)2					
Materials and methods	6 5/b) & 6 8/b)/ c c/b) 9					
Waterials and methods		6 8(h)1vii				
AITERATION	R-1	R-2	R-3	R-4	8-5	
Smoke alarms required	N/A			6.6(f)		
Fire protection system	,		6.6(c)2	0.0(1)		
removal			(-)			
Materials and methods		6.6(i) &	6.8(b)4		6.6(i) & 6.8(h)1vii	
Basic requirements	6.6(h);	6.6(h) & 6.30(f)	6.6(h) &	6.6(h); 6.26(f)1;	6.6(h) & 6.27(a)	
(Shall not be reduced)	6.25(a); &		6.27(a)	6.26(k)3iii(3); &		
	6.30(f)			6.30(f)		
Windowless basement	6.30(c)6 &	6.30(c)6 &	N/A	6.10(d); 6.30(c)6; &	N/A	
	6.30(c)7ii	6.30(c)7ii		6.30(c)7ii		
Work creates a bedroom			6.6(e)12	2i		
RECONSTRUCTION	R-1	R-2	R-3	R-4	R-5	
Fire protection system removal		6.7(c)2				
Materials and methods	6.7(g) and 6.8(b)4				6.7(g) & 6.8(h)1vii	
	6.7(i);	6.7(i); 6.26(f)1;	6.7(i) &	6.7(i); 6.26(f)1;	6.7(i) & 6.27(a)	
Basic requirements	6.25(a); &	6.26(k)3iii(3); &	6.27(a)	6.26(k)3iii(3);		
	6.30(f)	6.3(f)		6.30(c)6; 6.30(c)7ii; &		
	6 7(i):	6 7(i): 6 264(b):	N/A	6.30(1)	Ν/Δ	
Supplemental requirements	6 25A(b)	6 26A(c)	177	6.26A(c): 6.26A(d):	177	
supplemental requirements	6 25A(c): &	6 26A(d): &		& 6 26(e)3iii(3)		
	6.25A(d)	6.26A(e)3iii(3)		a 0120(c)011(0)		
Supplemental requirements /	6.7(i):6.25A(f	6.7(i): 6.26A(f)1:	N/A	6.7(i) & 6.26A(f)1	N/A	
high-rise)1; &	& 6.26A(f)4	.,			
0	6.25A(f)4					
Mixed use building	6.10(c) & 6.29(c)			N/A		
Windowless basement	6.10(d); 6.30)(c)6; & 6.30(c)7ii	N/A	N/A		
				6.30(c)7ii		
CHANGE OF USE	R-1	R-2	R-3	R-4	R-5	
Fire alarms/detection systems	6.31(h)8 &	6.31(h)9; 6.31(i)2	6.31(i)2 &	6.31(h)10; 6.31(i)2	6.31(a) <mark>8 &</mark>	
	6.31(i)1	& 6.31(i)3	6.31(i)3	& 6.31(i)3	6.31(i)2	
Basic requirements		6.31(b) (Note	If applicable se	ee basic requirements)		
Single- converted to two- family	N/A	N/A	6.31(a)8	N/A	6.31(a)8	
Bed and Breakfast	N/A	N/A	6.31(p)2i & 6.31(p)2xi(1)(B)II (Not		e: also see 2.6(b)1i)	
Cooperative sober living		N/A	6.31(q)1ii	6.31(q)	6.31(q)1ii	
ADDITION	R-1	R-2	R-3	R-4	R-5	
Applicable to new			6.32(a) & 6.	32(b)		
construction						
Existing portion of the home		N/A	6.32(f)	N/A	6.32(f)	

(Residential - Fire and Smoke Alarm/Detection Systems – Quick Reference Guide/2021)

NEW CONSTRUCTION

2021 International Residential Code (IRC)

R-5 (see 310.6 of the 2021/IBC for description)

R314.1 General.

R314.1.1 Listings.

R314.2 Where required.

R314.2.1 New construction.

R314.3 Location.

R314.3.1 Installation near cooking appliances.

R314.4 Interconnection. (Includes "wireless" option)

R314.5 Combination alarms.

R314.6 Power source. (Separate from interconnection)

R314.7 Fire alarm systems.

R314.7.1 General.

R314.7.2 Location.

R314.7.3 Permanent fixture.

R314.7.4 Combination detectors.

R314.7.5 Monitoring.

(Note: At a minimum for R-5, a "smoke alarm system" is

is required. However, as an alternative, a "fire alarm system," see R314.7, is permitted to be installed in lieu of the smoke alarm system)

2021 International Building Code (IBC)			
R-1 (see 310.2 for description)	R-2 (see 310.3 for description)		
2021 Internationa R-1 (see 310.2 for description) 420.5 Fire alarm systems and smoke alarms. (Redirects to 907.2.8 droup R-1. *907.2.8.1 Manual fire alarm system. *907.2.8.2 Automatic Smoke Detection system. 907.2.8.3 Smoke Alarms. (Redirects to 907.2.11) 907.2.11 Single- and multiple-station smoke alarms. 907.2.11.1 Group R-1. 907.2.11.3 Installation near cooking appliances. 907.2.11.4 Installation near bathrooms. 907.2.11.5 Interconnection. (Includes "wireless" option) 907.2.11.6 Power Source. (Separate from interconnection) 907.2.11.7 Smoke detection system. (Alternative system with "monitoring", see # 3.)	Building Code (IBC) R-2 (see 310.3 for description) 420.5 Fire alarm systems and smoke alarms. (Redirects to 907.2.9 and 907.2.11) 907.2.9 Group R-2. *907.2.9.1 Manual fire alarm system. 907.2.9.2 Smoke Alarms. (Redirects to 907.2.11) *907.2.9.3 Group R-2 college and university buildings. 907.2.11 Single- and multiple-station smoke alarms. 907.2.11.2 Groups R-2, R-3, R-4 and I-1. 907.2.11.3 Installation near cooking appliances. 907.2.11.5 Interconnection. (Includes "wireless" option) 907.2.11.6 Power Source. (Separate from interconnection) 907.2.11.7 Smoke detection system. (Alternative system with "monitoring", see # 3.)		
 907.5 Occupant notification systems. 907.5.2.1 Audible alarms. 907.5.2.1.3 Audible signal frequency, R-1 sleeping rooms. 907.5.2.3 Visible alarms. 907.5.2.3.2 Groups I-1 and R-1. 	 907.5 Occupant notification systems. 907.5.2.1 Audible alarms. 907.5.2.1.3 Audible signal frequency, R-2 sleeping rooms. 907.5.2.3 Visible alarms. 907.5.2.3.3 Group R-2. 		

NEW CONSTRUCTION

NEW CONSTRUCTION				
R-4 (see 310.5 for description)				
420.5 Fire alarm systems and smoke alarms. (Redirects to 907.2.9A and 907.2.11) *907.2.9A Automatic smoke detection systems for				
Group R-4.				
907.2.11 Single- and multiple-station smoke alarms.				
907.2.11.2 Groups R-2, R-3, R-4 and I-1.				
907.2.11.3 Installation near cooking appliances.				
907.2.11.4 Installation near bathrooms.				
907.2.11.5 Interconnection. (Includes "wireless" option)				
907.2.11.6 Power Source. (Separate from interconnection)				
907.2.11.7 Smoke detection system. (Alternative system with monitoring", see # 3.)				
907.5 Occupant notification systems.				
907.5.2.1 Audible alarms.				
907.5.2.3 Visible alarms.				

(Residential - Fire and Smoke Alarm/Detection Systems – Quick Reference Guide/2021)

*If the listed exceptions do not apply, users are redirected to Section 907.5 Occupant Notification Systems.

Occupant Notification Systems: New to the 2021 IBC is Section 907.5.2.1.3, Audible signal frequency, in Group R-1 and R-2 sleeping rooms. In a nutshell, where a fire alarm system is required, the alarm signal in the sleeping area(s) must be a 520 Hz low-frequency signal that complies with NFPA 72. Additionally, when a fire alarm system is mandated, all single- or multiple-station smoke alarms located within sleeping rooms must also provide a 520 Hz signal. Section 907.5.2.1.3.2 provides scoping that takes precedence over the provisions in Ch. 29 of NFPA 72-2019.

Note: The current market may have a limited selection of smoke alarms capable of providing the 520 Hz signal while operating in battery backup mode. In this case, design professionals may want to consider alternative means of compliance, such as, fire alarm system horns and horn/strobes, smoke detectors with integral sounder bases, and speakers connected to an Emergency Voice Alarm Communication (EVAC) system.

<u>Contractors - Certification & Licensure</u>: Whenever work involves fire protection equipment, contractors should have the appropriate certification as per N.J.A.C. 5:23-2.15(b)5 (please note exceptions). In addition, if work involves a burglar alarm, fire alarm, or electronic security system, contractors performing such work should have the appropriate license as per N.J.A.C. 5:23-2.15(b)7 (please note exceptions).

Locations: Devices for new construction should be installed at the locations specified in either Section 907 of the 2021 IBC or Section R314 of the 2021 IRC, as applicable. Devices for existing structures should be installed at the locations specified within the UCC/Sub-6 or as directed by this Subchapter to the 2021 IBC or 2021 IRC, as applicable. In this case, the hierarchy of code versus standard means the model code has specifically called out the minimum locations. In other words, if the model code is silent on location, which it is not, then NFPA 72 would be used for location.

<u>Ordinary Maintenance & Minor Work</u>: For work that qualifies as Ordinary Maintenance, a UCC permit is not required; see N.J.A.C. 5:23-2.7(c)4 for description. For work that qualifies as Minor Work, a UCC permit is required, but the work may commence before the permit is issued, provided, however, that notice is submitted to the local enforcement agency, see N.J.A.C. 5:23-2.17A(c)5 for description.

Signing and Sealing of Construction Documents: Following the guidance of UCC Bulletin 96-2, Signing and Sealing of Construction Documents, the general rule is that a design professional (e.g., architect or engineer) registered with the Department of Consumer Affairs submits plans with either a raised seal (for hard copy submission), or digital seal (for electronic submission). However, note the following exceptions:

(Residential - Fire and Smoke Alarm/Detection Systems – Quick Reference Guide/2021)

1. For all residential uses, N.J.A.C. 5:23-2.15(f)x states, "The construction official upon the advice of the appropriate subcode official may waive the requirement for plans when the work is of a minor nature." Please note emphasis on work is of a minor nature, which is not to be confused with Minor Work.

2. For single family detached homeowners, who desires to prepare the plans themselves, see N.J.A.C. 5:23-2.15(f)ix(1). Note: the intent of this exception is for when a single-family detached home is "used or intended to be used exclusively as his or her private residence". Ownership under an LLC or similar would not qualify, as this form of ownership is considered a business.

3. For licensed or certified contractors, where the project involves a class 3 structure, see N.J.A.C. 5:23-2.15(f)1vii(1).

For additional guidance, please see the following related CCC articles: <u>https://www.nj.gov/dca/codes/publications/ccc.shtml</u>

Article Title	Edition	Page #
Acceptance Testing – Single- and Multiple-Station Smoke Alarms vs Smoke Detectors	Fall 2016	15
Fire Protection Equipment Contractor, NJ Division of Fire Safety Permit/Certification	Summer 2013	7
Numbers		
Fire Protection System Removal	Spring 2020	10
Kidde Recalls Smoke & Combination Smoke/Carbon Monoxide Alarms: Can Fail to Warn	Summer 2021	4
of a Fire		
Residential Smoke Alarm - Wireless Interconnection	Summer 2017	14
Smoke Alarms 10-Year Sealed Battery Type	Summer 2019	13
Smoke Alarm and Carbon Monoxide Alarm Compliance for Rehabilitation Projects	Spring 2020	5
Visible Alarm Notification – Updated	Spring 2021	3
Windowless Basement - Sprinkler or Supervised Automatic Fire Alarm	Spring 2016	11
Wireless Burglar or Supplemental Fire Alarm Systems and Permits	Spring 2020	4
Wireless Smoke Detection Systems	Spring 2019	10

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

Listing of Insulation Piercing Connectors

The Code Assistance Unit has received many calls regarding application and acceptance of insulation piercing connectors (IPCs) and their listing for use on the line side of service equipment, commonly used in PV installations.

Some code officials are under the assumption that there are no listed products for this purpose. However, this assumption is false. When this information is disseminated, installers get misconceptions, and frankly, the rest of the code enforcement community gets confused as well.

Underwriters Laboratory (UL) utilizes a category-based system of listing products for certification, and it has been erroneously stated that IPCs are under category ZMWW. This category is inaccurate; products complying with Section 230.46, Spliced and Tapped Conductors, of the electrical subcode, the 2020 National Electric Code (NEC), must be listed under ZMVV. Engineering at UL has confirmed support of this determination. Furthermore, UL lists on their website all products and the product number by their manufacturer that comply with this category.

(Listing of Insulation Piercing Connectors)

When specifically asked as to what category IPCs must be listed, this is the response from UL engineering:

The short answer is that ZMVV (Wire Connectors and Soldering Lugs) is the correct category for certifications intended to satisfy the requirements of the NEC, including those at Section 230.46. Regarding Section 230.46, the following information is on the ZMVV guide card under Product Markings and Ratings:

Suitable for Use on the Line Side of Service Equipment - Wire connectors evaluated for use on service conductors may be marked on the connector, the smallest unit container, or on an information sheet placed in the smallest unit container, with the following or equivalent: "SR", or "Suitable for Use on the Line Side of Service Equipment".

The reason ZMWW gets mentioned, is because the source of requirements for that utility-based category is the ANSI/NEMA C119 Series of Standards, which happens to be the same set of requirements identified in the UL standards cited in ZMVV (UL 486A-486B and UL 486C). So, a connector with the above marking is evaluated to the NEC-based requirements of UL 486 Series of standards, **in addition** to the utility-based requirements of C119; however, a connector solely evaluated to C119 would not be subject to the requirements specific to the NEC. It is common practice for a connector certified to ZMWW to show a certification mark for ZMVV, as those connectors meet UL 486 and C119 requirements. For the purposes of complying with Section 230.46, a connector certified to ZMVV, with the marking noted above, should be used.

Provided an installer can supply you with the appropriate documentation that is confirmed to match the installed product, it should be accepted as complying with the applicable code.

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

Required Elevator Maintenance Checklists and Routine Inspections

In 2017, the Department adopted amendments to the Uniform Construction Code (UCC) that discontinued the performance of routine (six-month) elevator inspections done by the Elevator Safety Unit (ESU). This did not, however, relieve the device owners of the requirement to continue to maintain those devices in accordance with the code. The onus was placed on owners to retain a checklist of maintenance performed by their elevator maintenance company and produce the same to the ESU inspectors upon completion of the annual, periodic inspection.

It has come to the attention of the Department that there may be firms in the state informing building owners that these routine inspections are still required and soliciting the performance of these "inspections" to meet that requirement. There is no inspection requirement, and in order to do an elevator inspection, one must not only be an appropriately licensed elevator inspector by the Department, but more importantly, must be employed as and inspecting on the part of a duly authorized authority having jurisdiction (AHJ). The intent of the regulations adopted in 2017 was to put the responsibility of maintenance on the owner and their elevator maintenance company; requiring elevator maintenance be carried out by a licensed elevator mechanic.

Let's examine the code requirements:

The required checklist, as per the UCC 5:23-12.2(b):

(b) All operating and electrical parts and accessory equipment for elevator devices shall be maintained in safe operating condition.

(Required Elevator Maintenance Checklists and Routine Inspections)

In this opening sentence, the reference to maintenance must be defined. ASME A17.1 states:

Maintenance: a process of routine examination, lubrication, cleaning, and adjustment of parts, components, and/or subsystems for the purpose of ensuring performance in accordance with the applicable Code requirements. (See also *repair* and *replacement*.)

This definition provides all the "duties" for the qualified personnel to follow. The Division of Consumer Affairs has adopted regulations requiring that elevator mechanics must be licensed. The New Jersey Administrative Code, at N.J.A.C. 13:44M, details these requirements. Specifically, N.J.A.C. 13:44M-5.2(f)1(i) and (ii) state that only a licensed mechanic or a mechanic being supervised by a licensed mechanic, but not holding the license themselves, can perform.

(i) Equipment governed by ASME A17.1, not including section 5.3, and the work includes: cleaning; oiling; greasing; painting; changing brushes; fixture maintenance; observing the operations of equipment; relamping; replacing comb plate teeth; replacing carbons, contacts, and shunts (not including soldered contacts or shunts); replacing door gib inserts; or clearing obstructions; and

(ii) Equipment governed by ASME A17.1 section 5.3 or A18.1, or the equipment is a dumbwaiter in a residential property, and the work includes: testing; oiling; greasing; cleaning; observing elevator operations; clearing obstructions; cleaning and adjusting contacts; replacing plug and play devices such as: fixtures, ice cube relays, solid state relays, programmable logic controllers, direct plug in printed circuit boards, and selector heads; replacing fuses, batteries, uninterrupted power supplies, position indicators, lamps, and bulbs; replacement of rollers, guide shoes, valve coils, and seals; adjusting swing door interlocks; replacing collapsible/accordion gates and operators, not including single or multispeed commercial sliding doors; or using a diagnostic tool to identify issues.

With all this in mind, for the definition of elevator maintenance, it is understood that you must be a licensed mechanic.

Referring back to N.J.A.C. 5:23-12.2(b), it states:

The maintenance of elevator devices shall conform to the most recent edition of ASME A18.1 or ASME A90.1, or ASME A17.1 referenced in the building subcode. Additionally, maintenance of ASME A17.1 elevator devices shall be in accordance with (c) below. Checklists of maintenance performed according to the applicable six-month inspection section of ASME A17.1 shall be maintained by the building owner and the owner shall make such records available to the authority having jurisdiction.

The above highlighted section specifically calls out maintenance, and the Division of Consumer Affairs dictates that only licensed personnel may undertake maintenance work. It also states that a record of the maintenance shall be kept in accordance with the applicable to the six-month inspection. This places the duty of the elevator company responsible for maintenance of the device to complete the checklist as performed.

As such, there is no path for outside inspectors or consulting firms to have the ability to complete the required checklist in place of the six-month inspection.

Source: John Delesandro Chief, Bureau of State and Local Code Inspections (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.

Oil Minder Sump Pumps in Elevator Hoistways

Yes, we all know the Tin Man from the Wizard of Oz needed his oil can, but when it comes to elevators, not all are created the same. So, when applying the different types of installations to the plumbing subcode, one should follow the parking lot oil trail after the rain that leads to Section 2.26.2 of the 2021 National Standard Plumbing Code (NSPC), as adopted at N.J.A.C. 5:23-3.15.

Taking a closer took, Section 2.26.2d of the NSPC states, "The controls for sump pumps serving elevators shall include automatic oil sensing with pump cutoff." Okay, great... but what if the elevator is non-hydraulic? Well, this section requires a sensing device for elevators that use oil as its driving means. Therefore, if the elevator is a traction-type, this provision is not a requirement as there would be no oil to pump out of the pit/hoistway.

And in other related business, please be aware that the location for the oil minder pump control panel cannot be in the hoistway as per ASME A17.1-2019, Section 2.8.2.2, which states, "Only such electrical wiring and antennas used directly in connection with the elevator ... for pit sump pumps; ... shall be permitted to be installed inside the hoistway, machinery space, machine room, control space, or control room." The control panel must be installed outside of the listed areas, and the device is in the pit. The reference for the code that dictates the location of the control panel is in ASME A17.1-2019, Section 2.2.4.4, and states, "Pits shall be accessible to elevator personnel only." This citation will ensure the safety of any other discipline that needs to gain access to the controls for this device without elevator personnel present. Additionally, testing or resetting the device can be performed externally.

Source: Code Assistance Unit (609) 984-7609

Dryer Vent Piping

Lately, dryer vent pipe connections have come into question. Screws were never allowed as they penetrate the piping, causing areas for lint to build up, which could cause a fire hazard. As recently as the 2009 edition of the International Residential Code (IRC), Section M1502.4, and International Mechanical Code (IMC), Section 504.6.2, "Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct." The IRC Commentary cites:

Joint sealing is not equivalent to or a substitute for mechanical fastening, yet this section has, from a practical standpoint, forced the installation of dryer exhaust ducts that rely solely on joint sealants to hold them together.

The IMC Commentary cites:

All ducts have been required by tradition, codes or installation standards to be mechanically fastened at all joints (see Section 603.9 applicable to HVAC ducts); however, this section departs from that practice by specifically prohibiting the only means of joining such ducts other than spot welding (i.e., screws and rivets). Joint sealing is not equivalent to or a substitute for mechanical fastening; yet, this section has, from a practical standpoint, forced the installation of dryer exhaust ducts that rely solely on joint sealants to hold them together.

In the 2012 edition of the IRC, Section M1502.4.2, which we did not adopt, cites:

Exhaust duct joints shall be sealed in accordance with Section M1601.4.1 and shall be mechanically fastened. Ducts shall not be joined with screws or similar fasteners that protrude more than 1/8 inch (3.2 mm) into the inside of the duct, while the 2012 IMC 504.6.2 cites "Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct.

(Dryer Vent Piping)

The IRC commentary cites:

Previous editions of the code did not permit duct fasteners to protrude into the inside of the ducts. This created a problem since all ducts have been required by tradition, codes or installation standards to be mechanically fastened at all joints and joint sealing is not equivalent to or a substitute for mechanical fastening (see Section M1601.4.1 applicable to HVAC ducts).

In the 2012 IMC, Section 504.6.2 commentary, which we also did not adopt, cites:

All ducts have been required by tradition, codes or installation standards to be mechanically fastened at all joints (see Section 603.9 applicable to HVAC ducts); however, this section departs from that practice by specifically prohibiting the only means of joining such ducts other than spot welding (i.e., screws and rivets). Joint sealing is not equivalent to or a substitute for mechanical fastening; yet, this section has, from a practical standpoint, forced the installation of dryer exhaust ducts that rely solely on joint sealants to hold them together.

The currently adopted 2021 IRC and IMC still have the same language. So, in short, the connections always required a mechanical connection. Rivets or spot welding were always a good method, but rarely used. A listed metal tape was the preferred method, but technically, it was not code compliant. Since the 2015 code cycle, however, screws are the preferred method as duct cleaners were causing connections to come apart while cleaning the ducts as long as the screws did not penetrate more than 1/8" into the duct.

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

Roof Top Unit Replacements

We have received many questions regarding whether or not a Building Technical Section is a requirement for a direct Roof Top Unit (RTU)/HVACR replacement. Well let's look into it, as per the Uniform Construction Code (UCC).

A like-for-like RTU/HVACR replacement is a renovation project, as per the N.J.A.C. 5:23-6 of the UCC. Section 6.8, Materials and Methods, is the reference for this application. Per N.J.A.C. 5:23-6.8(b)9, Chapter 16 of the International Building Code is not applicable for this project, including the section on wind resistance and loads.

Yes, N.J.A.C. 5:23-6.8(e)1 references Section 301.15 of the International Mechanical Code for wind resistance, but this only contains the provisions for the contractor on how to anchor the RTU/HVACR equipment. The attachment is based on the manufacturer's installation instructions and the licensed contractor responsible for the job.

So, the answer is no; the Building Technical Section is **NOT** a requirement for direct RTU replacement as long as the weight of the unit remains the same or is less than that of the replaced RTU. If the contractor cannot demonstrate that this is a direct replacement, then the Building Technical Section would be required for, at a minimum, plan review purposes.

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

Scope of Work and Exhaust Vents

We have received many calls, emails, and questions regarding inspections and the scope of work. In particular, most have concerned water heaters, boilers, and furnaces with direct vent or fan assisted vents. The issue at hand is the exhaust vent and using foam core piping as the material for venting the exhaust from the water heater, boiler, and/or furnaces. Currently, there are NO companies that allow foam core as a material for exhaust venting, but this has not always been the case. As per N.J.A.C. 5:23-6.2(c), if the pre-existing non-conformity was code compliant upon installation of the original appliance, what currently exists may remain. The requirement for inspection is the material installed as part of the appliance replacement.

If the inspector finds that the existing piping is compromised, whether it is foam core or schedule 40 PVC pipe, then a Notice of Violation shall be issued to the owner of the building/home and the compromised piping must be replaced, as this compromised piping is a life safety issue. The contractor performing the replacement is not responsible for the existing piping. I have even seen manufacturers' direct that existing piping must be inspected and replaced should any of it be compromised, but that is not something that we can enforce. While I agree that it is a good practice and ethical, we have no vehicle that drives that compliance, so all that is required to be inspected is the work performed as part of the replacement.

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

Free Access to Mechanical and Plumbing Standards



We understand that purchasing standards can be very costly, but we would like to provide free, read only access to Standards recently sent to us. Please feel free to share these resources with any that may benefit from their substance.

All IAPMO and ASSE standards are available in a free, read-only format online. I've included links to each page below. Simply click on the title of any standard, and you will see an option to either purchase the standard, or a link that states "read-only", where you can access the standard.

- IAPMO Codes All IAPMO Code Documents in read-only format
- IAPMO (iapmostandards.org) IAPMO Industry Standards in read-only format
- IAPMO (iapmostandards.org) IAPMO ANSI Standards in read-only format
- IAPMO (ASSE Standards) ASSE Product Standards in read-only format
- IAPMO (ASSE PQ Standards) ASSE Professional Qualification Standards in read-only format

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

