

# Construction Code Communicator



State of New Jersey  
 Chris Christie, Governor  
 Kim Guadagno, Lt. Governor

Department of Community Affairs  
 Charles A. Richman, Commissioner

Volume 29, Number 2

Summer 2017

## Public Swimming Pool Occupant Load

For those of you who reviewed the International Building Code/2015 proposal back on January 5, 2015, [http://www.nj.gov/dca/divisions/codes/codreg/pdf\\_rule\\_proposals/2015\\_adopied\\_subcodes\\_proposal\\_final.pdf](http://www.nj.gov/dca/divisions/codes/codreg/pdf_rule_proposals/2015_adopied_subcodes_proposal_final.pdf), Item 58 under the Building Subcode heading states:

At N.J.A.C. 5:23-3.14(b)9iv, the amendment would delete the maximum floor area allowance per occupant of swimming pools and decks. These requirements that establish the minimum square foot per occupant for pools and their surrounding decks are regulated by the “International Swimming Pool and Spa Code” that would be adopted by reference at N.J.A.C. 5:23-3.13(b)21iv.

You may be asking why we deleted the occupant load requirements from Table 1004.1.2 of the International Building Code/2015 (IBC/2015). In response, as noted above, you can find the occupant load criteria within the International Swimming Pool and Spa Code/2015 (ISPSC/2015), as referenced by Chapter 31 of the IBC/2015. For example, a Class B or C public swimming pool, typical of a hotel/motel or apartment/condo building, would use the maximum bather load found at Table 403.1 of the ISPSC/2015, <https://codes.iccsafe.org/public/document/toc/555/>. The calculation would be based on the worst-case scenario (i.e. most occupants) for the combined pool/deck areas.

















For example, if the pool deck area is at least more than twice the water surface area, the third of row Table 403.1 is to be used. Assuming the water surface area contains a diving area of 300 sq. ft., a deep area of 1,200 sq ft. and a shallow area of 900 sq. ft., the bather load would be as such:

- Diving area (1 board) = 300 sq. ft. area / 300 sq. ft. per bather = 1 bather.
- Deep area (>5 feet) = 1200 sq. ft. area / 10 sq. ft. per bather = 120 bathers.
- Shallow area (≤5 feet) = 900 sq. ft. area / 8 sq. ft. per bather = 112.5 bathers, which would be rounded up to 113 bathers.

Total bathers based on this pool/deck area: 234.

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

### In This Issue

April 2017 Construction Highlights	11	Pool Access Handrails 	9
Digital Signature and Seal, Additional Information	7	Public Swimming Pool Electrical Safety 	10
Elimination of Six Month Inspection of Elevator Devices 	10	Public Swimming Pool Occupant Load 	1
Fire Rated Ductwork Systems and Assemblies for Ventilation  	8	Quarterly State Training Fee Report Information	9
Gas Piping Protection – Above and Below Ground UPDATE  	15	Residential Smoke Alarms – Wireless Interconnection  	14
Motor Fuel-Dispensing Facilities 	13	Single Means (Sole Path) Fire Alarm Transmission – Revised 	6
New CO Detection Rules Adopted for New and Existing Buildings 	11	State Licensing Requirements for Alarm and Locksmith	6
Open Permits and Change of Owner	7	The 36 <sup>th</sup> Annual Building Safety Conference of New Jersey	2
PermitsNJ and the Mechanical Inspection Technical Section  	5		

## The 36<sup>th</sup> Annual Building Safety Conference of New Jersey

The 36<sup>th</sup> Annual Building Safety Conference of New Jersey was held on May 3<sup>rd</sup> through 5<sup>th</sup> at Bally's Atlantic City. Our focus this year was on preparing the next generation of code enforcement officials and bringing together all of our partners in building safety. The International Code Council (ICC) was a larger part of our event this year, providing both continuing education seminars and certification academies for special inspectors as well as staffing a bookstore for our attendees to pick up codes and reference standards.

As always, the "Crackerbarrel" began our Conference. This very popular event gives our guests the opportunity to hear from a variety of presenters in a short format style with a focus on new items of particular interest to the code enforcement community. Topics ranged from the interaction of code officials with landscape irrigation installations to an opportunity to meet with ICC staff and representatives of the Board of Directors to find out about new offerings.

The centerpiece of the Building Safety Conference was the opportunity to recognize and honor those selected by their associations as Inspectors of the Year and as the Technical Assistant of the Year. We were honored to have both Commissioner Charles Richman and Director Edward Smith join with the Presidents of the respective associations in making the award presentations at the annual luncheon.

The following awards were presented:



New Jersey Building Officials Association  
Building Inspector of the Year - Cornelius R. Byrne, Jr.



Municipal Electrical Inspectors Association of New Jersey  
Electrical Inspector of the Year - Mario I. Patruno



New Jersey Fire Prevention and Protection Association  
Fire Protection Inspector of the Year - Kirk J. Miick



New Jersey State Plumbing Inspectors Association  
Plumbing Inspector of the Year - Calvin L. King



New Jersey Association of Technical Assistants  
Technical Assistant of the Year - Christine Groendyke



*The award recipients with Commissioner Richman and Director Smith*



*New Jersey Building Officials Association*  
Building Inspector of the Year – Cornelius R. Byrne, Jr. (with NJBOA President Pat Naticchione, Commissioner Richman, and Director Smith)



*Municipal Electrical Inspectors Association of New Jersey*  
Electrical Inspector of the year – Mario I. Patruno (with Brian Vanore, MEIA North, George Selah III, MEIA NJ, Commissioner Richman, and Director Smith)



*New Jersey Fire Prevention and Protection Association*  
Fire Protection Inspector of the Year – Kirk K. Miik (with Richard Silvia, NJFPPA, Commissioner Richman, and Director Smith)



*New Jersey State Plumbing Inspectors Association*  
Plumbing Inspector of the Year – Calvin L. King (with Ronald Barbarulo, NJPIA, Commissioner Richman, and Director Smith)



*New Jersey Association of Technical Assistants*

Technical Assistant of the Year – Christine Groendyke (with Susan Mealey, Central Jersey TA Association, Commissioner Richman, and Director Smith)

Congratulations to all for your hard work and dedication to improving code enforcement in New Jersey!

The Building Safety Conference is a unique opportunity to broaden your knowledge of cutting-edge code enforcement and building construction techniques while also providing an opportunity to meet with your peers throughout the State to share ideas and promote camaraderie and collegiality among the code enforcement community. We also plan to provide certification academies again next year. Stay tuned!

The Conference Committee is always on the lookout for great and innovative ideas to meet the needs of our attendees. If you have an idea, please pass that along to your association or email me at [john.delesandro@dca.nj.gov](mailto:john.delesandro@dca.nj.gov).

We hope to see you all next year at Bally’s Atlantic City May 2<sup>nd</sup> through 4<sup>th</sup>, 2018. Please save the date and “like” us on Facebook for event updates, room locations and all other important information!

Source: John Delesandro  
Supervisor, Education and Licensing Units  
(609) 292-7899

**PermitsNJ and the Mechanical Inspection Technical Section**

We are in the process of creating the Mechanical Inspection Technical Section (F145) within the PermitsNJ construction permitting application. Once completed, users will be able to enter information directly from the form onto the corresponding screen, output the completed form, and run reports on the related information.

While we are addressing this matter, please continue to accept the Mechanical Inspection Technical Section and enter its contents into the PermitsNJ application as appropriate. You can add the appropriate line items to the existing subcode fee schedules as needed. Please remember that all subcode fee schedule changes take one calendar day to take effect.

If you have any questions, or if you need assistance on this matter, please do not hesitate to contact me by email at [charles.pierson@dca.nj.gov](mailto:charles.pierson@dca.nj.gov) or by phone.

Source: Charles Pierson Jr.  
PermitsNJ Technical Support  
(609) 292-7899

<b>TO:</b>	Department of Community Affairs, Code Officials	<b>Mailing Address:</b>
<b>FROM:</b>	Fire Alarm, Burglar Alarm and Locksmith Advisory Committee	P.O. Box 45042
<b>DATE:</b>	April 19, 2017	Newark, NJ 07101
<b>SUBJECT:</b>	State Licensing Requirements for Alarm and Locksmith	(973) 504-6245

It has come to the attention of the Fire Alarm, Burglar Alarm and Locksmith Advisory Committee (the "Committee") that there is some confusion as to the need for a license from this Committee for certain professions. There are individuals that believe a township license is sufficient for the types of work regulated by this entity.

The Committee is requesting that the following information be shared with the municipalities:

*The State of New Jersey regulates and requires a license for fire alarm, burglar alarm, electronic security and locksmithing installation, maintenance and service. Electronic Security Systems is defined by regulations as CCTV Cameras and Systems, including network cameras, Access Control Systems and Intercom Systems. Possession of a Municipal license or registration does not exempt individuals or businesses from obtaining the proper State license in order to engage in these types of work.*

The Committee directs your attention to N.J.S.A. 45:5A-36 which states:

*No municipality or county shall enact an ordinance or resolution or promulgate any rules or regulations relating to the licensing or registration of locksmiths or alarm businesses. The provisions of any ordinance or resolution or rules or regulations of any municipality or county relating to the licensing or registration of locksmiths or alarm businesses are superseded by the provisions of this act.*

### Single Means (Sole Path) Fire Alarm Transmission – Revised

The Department has been receiving phone calls again about Plain Old Telephone Service (POTS) being removed from towns and businesses wishing to install single means (sole path) communications equipment for fire alarm transmission. In the 2012 article, we said this was acceptable.

National Fire Protection Association (NFPA) 72/2013, **Section 26.6.3.1.5, Single Communications Path**, allows the enforcing authority to approve a single transmission path. The path must be supervised at an interval of not more than 60 minutes. When there is a failure of the path, the supervising station must be notified within not more than 60 minutes. When there is a failure to complete a signal transmission it must be annunciated at the protected premises in accordance with Section 10.15 Trouble Signals.

**Section 26.6.3.1.7, Single Technology**, allows single technology to be used to create multiple paths provided the requirements of 26.6.3.1.6(1) through 26.6.3.1.6(3) are met. (Some manufacturers refer to this technology as a "mesh network.")

**Section 26.6.3.1.6, Multiple Communications Paths.** *If multiple transmission paths are used, the following requirements shall be met:*

- (1) Each path shall be supervised within not more than 6 hours.\**
- (2) The failure of any path of a multipath system shall be annunciated at the supervising station within not more than 6 hours.\**
- (3) The failure to complete a signal transmission shall be annunciated at the protected premises in accordance with Section 10.15.*

\*Please note the test interval has changed from 24 Hours to 6 Hours in the current NFPA 72 standard.

In the NFPA 72/2007 edition, Section 8.6.4, Other Transmission Technologies, allowed for the installation of other means which the standard didn't already cover. The NFPA 72 committee has relocated supervising stations communications methods to Section 26.6 in the 2013 edition.

The question that needs to be asked is does your system currently use a Digital Alarm Communicator Transmitter (DACT)? NFPA 72 Section 26.6.3.2.1.4, Transmission Channels, requires systems using a DACT to use one phone line (number), and a second transmission means must be employed. In the past, this second means was permitted to be another phone line. However, the standard was changed, eliminating a second phone line as an acceptable transmission means. NFPA 72 now requires that the second means of transmission be one of the following:

*(continued on next page)*

*(Single Means (Sole Path) Fire Alarm Transmission – Revised)*

- (1) One-way private radio alarm system;
- (2) Two-way RF multiplex system; or
- (3) Transmission means complying with 26.6.3.1.

There is an exception allowing the use of a second phone line, with the approval of the fire subcode official, where the secondary methods listed are not available.

Single means (Sole Path) communications are typically found in Radio Frequency (RF), Cellular and Internet Protocol (IP) Fire Alarm Communications Equipment, but any listed fire communications equipment that meets the performance criteria of NFPA-72 can be used as Single Means (Sole Path).

Code Officials should pay particular attention to the UL864 listing of communications equipment to assure that it is being installed, configured, and used in accordance with its listing, including but not limited to sole path communications.

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

---

### **Open Permits and Change of Owner**

The Code Assistance Unit frequently receives questions regarding what one should do when a property owner has open permits for work being performed on a building that the owner is selling or has sold.

In short, a change in owner requires a new permit. The new owner must file a permit application with a signed affidavit, etc. (If this were only a change of contractor(s), then the change could be handled through a permit update.) The new owner may or may not hire different contractors. But the new owner must sign a permit application taking responsibility for compliance with the law. The contractors, whether there are changes in contractors or not, act as agents of the owner. It is the owner who ultimately is responsible.

It should be suggested that the old permit be closed out as suspended/abandoned and a new permit be opened by the new owner. This can be done at no fee since the fees were already paid by the previous owner. All of the inspection reports, open violations, etc. should be transferred to the new permit, and the new (or old) contractors are responsible for correcting any noncompliant items identified on the old permit. The new permit application may continue to rely on the codes that were in effect when the permit was initially approved. Please note that all of this advice is fact sensitive. If the new owner is making radical changes to the project that was the subject of the open permit, necessitating new or revised plans, then payment of a fee and review of the plans under the code in effect at the time of this new (revised) application may be required. The specifics (what has been done and what, if any, changes are planned) matter.

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

---

### **Digital Signature and Seal, Additional Information**

With the May 1 adoption of rule amendments by the Board of Architects, all licensed design professionals (architects and engineers) now have the ability to seal plans electronically. The fact that design professionals are able to do this does not mean that local code officials are compelled to accept electronic signatures. We are not there yet. Many local code enforcement agencies lack the equipment and/or software to make this possible. With that said, truss drawings may be an exception to the general rule as they may be viewed more easily.

The Department now requires electronic submissions for plan review. However, paper plans, with a raised seal, are still required for all inspections. Inspectors do not have equipment in the field that would make it possible to reference electronic plans for inspection purposes. When the Department reviews and releases electronic plans, a release stamp is placed in the upper right corner. At that point, the plan is "locked" and no further amendments can be made. The design professional prints the sheet with the release stamp and supplies a paper copy with a raised seal as part of the permit application submitted to the town.

For further information regarding the use of digital seals, see the May 22 Memorandum to Construction Officials on our website at <http://www.nj.gov/dca/divisions/codes/alerts/>. Note that a .pdf file does not meet the requirements for the electronic sealing of plans.

Source: Code Assistance Unit  
(609) 984-7609

## Fire Rated Ductwork Systems and Assemblies for Ventilation

Where Fire Rated Ductwork Systems and Assemblies are proposed as an alternate to the horizontal or vertical shaft requirements, the alternate system must be at least the equivalent of that prescribed:

The applicable section of the Uniform Construction Code (UCC) is found at **N.J.A.C. 5:23-3.7, Municipal approvals of alternative materials, equipment, or methods of construction**, which states:

“(a) Approvals: Alternative materials, equipment, or methods of construction shall be approved by the appropriate subcode official provided the proposed design is satisfactory and that the materials, equipment, or methods of construction are suitable for the intended use and are at least the equivalent in quality, effectiveness, fire resistance, durability and safety of those conforming with the requirements of the regulation.

1. A field evaluation label and report or letter issued by a nationally recognized testing laboratory verifying that the specific material, equipment, or method of construction meets the identified standards or has been tested and found to be suitable for the intended use, shall be accepted by the appropriate subcode official as meeting the requirements of (a) above.”

The UCC building subcode code addresses the fire resistance rating of assemblies that are not symmetrical under **Section 703.2.1 Nonsymmetrical wall construction**, “Interior walls and partitions of nonsymmetrical construction shall be tested with both faces exposed to the furnace, and the assigned fire-resistance rating shall be the shortest duration obtained from the two tests conducted in compliance with ASTM E119 or UL 263.”

### Fire Rated Ductwork Assemblies:

In the case of fire rated ductwork, fire test standards ISO 6944, ISO 6944-01 or ASTM E2816 where the fire rated ducts for ventilation are tested to fire exposures may be considered equivalent to the standard-time temperature curve, as set forth for 'built-in' assemblies in ASTM E119. Under all three of these ventilation duct fire resistance test standards, there are four conditions that are necessary for fully testing the assemblies:

- Fire inside vertical
- Fire inside horizontal
- Fire outside vertical
- Fire outside horizontal

Examples of applications utilizing fire resistance ductwork systems or assemblies for ventilation may include the use of horizontal offsets as an alternate to the two-hour enclosure as currently required by the building subcode code:

- Exhaust systems (bathroom, domestic kitchen, commercial dryer, residential dryer)
- Supply air systems (make up, outside)
- Horizontal offset transitions for vertical risers
- Laboratory or hazardous exhaust systems
- Life Safety systems (stairwell & elevator shaft pressurization, smoke evacuation, smoke control)

### Verification of Compliance:

- Ventilation duct testing certifications from a Nationally Recognized Testing Laboratory (NRTL) that document compliance of all four orientations;

ISO 6944 or ISO 6944-1, All 4 orientations:

- Duct A (fire outside) Horizontal
- Duct A (fire outside) Vertical
- Duct B (fire inside) Horizontal
- Duct B (fire inside) Vertical

Or, ASTM E2816, All 4 orientations:

- Condition A (fire outside) Horizontal
- Condition B (fire outside) Vertical
- Condition C (fire inside) Horizontal
- Condition D (fire inside) Vertical



## Quarterly State Training Fee Report Information

Most of you know me because I call about monthly building permit reports. You may now receive a call from me about training fee reports as well. These reports are submitted quarterly to the DCA along with a check. The report contains the volume of work for new construction and addition permits as well as the dollar amount for alteration permits. The quarterly report should also clearly show the amount of activity exempted from fees.

Here are some tips regarding the quarterly reports:

- The quarterly report and check are due on the 10<sup>th</sup> of the month after the quarter ends. I will call after a few weeks, and a letter will be sent a few weeks after that.
  - The first letter to the Construction Official goes out 45-60 days after the quarter ends.
  - The second letter to the Construction Official and the Mayor goes out about 30 days after the first letter.
- You must send the quarterly report ***and*** the check. If either one is missing, you are delinquent.
- The report must be signed and dated or it will not be accepted.
- ***Do not*** staple the check to the report.
- You can fax or email the report. Make sure you include my attention on the fax.
- ***Do not*** send vouchers. We ***do not*** accept them. They will be returned.
- Current Training Fee Rates:
  - .00371 per cubic foot volume for new construction and addition permits.
  - .0019 per dollar of construction for alteration permits.
  - Demolition permits do not get charged a training fee.
- Check the report before you send it. Do the math. If you have questions, call me.
- If possible, do not to combine other payments with the quarterly checks. If payments are combined, document them on the check stub.
- Even though the fiscal office may send the check, it is the responsibility of the Construction Office to make sure that the numbers add up and the DCA receives the report and check in a timely manner.

If you have problems, questions or concerns, then please do not hesitate to call. I am available from 8AM-4PM Monday through Friday, and I am here to help with anything related to the quarterly reports.

Please send the quarterly reports and checks to my attention at:

State of New Jersey  
 Department of Community Affairs  
 101 S. Broad St.  
 PO Box 802  
 Trenton, NJ. 08625

Source: Charles Pierson Jr.  
 PermitsNJ Technical Support  
 (609) 292-7899

---

## Pool Access Handrails

The 2015 International Swimming Pool and Spa Code (ISPSC) is referenced within the International Building and Residential Codes. Chapters 4 through 10 contain the specific requirements by type of pool, while Chapter 3 contains general requirements that apply to all pools. For example, the requirements for pool barriers can found at Section 305 of the ISPSC.

One other example which the code assistance unit receives questions about is the installation of handrails. Section 323.2 states, "Where handrails are installed, they shall conform to this section," which has the technical requirements. This means that there is another section, or sections, that contain the handrail scoping (when required) requirements. More specifically, Section 322.3.2 (handrails and handholds for ladders) and Section 322.4.3 (handrails and grab rails for recessed treads) provide the requirements for handrail installation for pool access.

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

## Elimination of Six Month Inspection of Elevator Devices

Please be advised that the requirement for routine inspection (six month) of elevator devices has been eliminated. The proposed amendments to the Uniform Construction Code to bring about this change appeared in the *New Jersey Register* on July 5, 2016. The Notice of Adoption of these changes appeared in the July 3, 2017 issue of the *New Jersey Register*. A link to the notice of adoption is included below. Please note that escalators continue to require inspection every six months.

The notice of adoption may be found at

[http://www.nj.gov/dca/divisions/codes/codreg/pdf\\_rule\\_adoptions/elim\\_six\\_month\\_elev\\_insp.pdf](http://www.nj.gov/dca/divisions/codes/codreg/pdf_rule_adoptions/elim_six_month_elev_insp.pdf). To read the rule proposal, see

[http://www.nj.gov/dca/division/codes/codreg/pdf\\_rule\\_proposals/PRN2016\\_104\\_DCA\\_5\\_23\\_12\\_2.pdf](http://www.nj.gov/dca/division/codes/codreg/pdf_rule_proposals/PRN2016_104_DCA_5_23_12_2.pdf) (or see the “July 5, 2016” row in the chart of rule proposals and adoptions posted at [http://www.nj.gov/dca/divisions/codes/codreg/rule\\_proposals\\_adoptions.html](http://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html).)

The fee schedule at N.J.A.C. 5:23-12.6 has been adjusted to reflect this change, and a reinspection fee has been established for any device that is the subject of a Notice of Violation necessitating a reinspection.

Any questions should be directed to the Department’s Elevator Safety Unit at (609) 984-7833 or [elevatorsafetyunit@dca.nj.gov](mailto:elevatorsafetyunit@dca.nj.gov).

Source: Code Assistance Unit  
(609) 984-7609

---

## Public Swimming Pool Electrical Safety

Bulletin 99-1 was issued April 1999 and revised August 2008 regarding the Periodic Electrical Inspections, and “Bonding and Grounding” Certificates for Swimming Pools, Spas, and Hot Tubs (see <http://www.nj.gov/dca/divisions/codes/resources/bulletins.html>).

Lately, the Code Assistance Unit has been receiving questions regarding the first paragraph under “Electrical Certificate of Compliance,” which states:

The electrical subcode official/inspector performs a visual (nondestructive) inspection of the electrical equipment and wiring associated with each pool, spa, or hot tub to ensure that the installation is safe, and meets the applicable requirements of the Electrical Subcode. This inspection should address all visible safety items covered by the Electrical Subcode, such as the condition of connections and terminations, GFCI protection for motors (where required), receptacles and underwater lights, the location of receptacles and switches, the location and sealing of junction boxes and deck boxes, etc. Retrofitting may be necessary to correct any deficiencies found during this inspection. Variations may be granted where retrofitting is impossible and safety is not compromised.

So, what does this mean for the GFCI protection for motors? Does the protection need to be evaluated during the visual inspection to see whether a possible upgrade is necessary based on the latest electrical subcode? The short answer is yes. In other words, if the pool motor is required to have GFCI protection, and it is not present, then it would need to be installed.

N.J.S.A. 52:27D-133.1 within the Uniform Construction Code Act defines an Electrical Certificate of Compliance as, “a document issued by the enforcing agency that verifies that all wiring located in or about the pool pump house or similar structure and associated electrical equipment is ***in compliance with the electrical subcode*** of the State Uniform Construction Code.”

All items listed above would have to be upgraded if, upon a visual inspection, it is found that they do not meet the current electrical subcode. Of course, any defective conditions would have to be corrected, as well.

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

## New Carbon Monoxide (CO) Detection Rules Adopted for New and Existing Buildings

The new CO detection rules were adopted June 5, 2017. They address newly-constructed buildings, buildings undergoing a rehabilitation project and buildings regulated by Subchapter 4 of the Uniform Fire Code (UFC). Please see each section of the attached links for your specific scope of work or situation. The Uniform Construction Code enforcement effective date (end of the six month grace period) is December 5, 2017. After that date, any applications for rehabilitation projects or new buildings must include CO alarms per the new rules. The effective date for enforcement in buildings regulated by Subchapter 4 of the UFC is September 3, 2017.

The proposal and notice of adoption can be found by clicking on [Rule Proposals and Adoptions](#) in the Rule Proposals and Notices of Adoption chart; go to the September 19, 2016 row within the chart at [http://www.nj.gov/dca/divisions/codes/codreg/rule\\_proposals\\_adoptions.html](http://www.nj.gov/dca/divisions/codes/codreg/rule_proposals_adoptions.html).

### **New Construction**

The building subcode now requires CO alarms in all buildings that contain a fuel-burning appliance or fireplace or have attached garages with communicating openings into the building. Newly-installed CO alarms must receive their primary power from the building wiring and have a secondary battery backup source. Where there is no commercial power source in the building, battery CO alarms can be used. You can find corrected pages 238 and 239 (Section 915) of the 2015 New Jersey International Building Code (NJ IBC) under the BUILDING SUBCODE heading within the Adopted Codes and Standards chart; click on [\\*Corrected pages \(NJ errata\)](#) at <http://www.nj.gov/dca/divisions/codes/codreg/>.

### **Existing Buildings – Rehab Subcode**

For existing buildings undergoing a rehabilitation project, the six month grace period ends on December 5, 2017. For a building undergoing a rehabilitation project, battery-powered or plug-in type CO alarms are acceptable. “When alarms are installed in lieu of detection, they shall be located such that the audible signal is not less than 15 dB above the average ambient sound level.” You can find the updated pages under the REHABILITATION SUBCODE heading within the Adopted Codes and Standards chart, by clicking on [NJUCC, Subchapter 6](#) at <http://www.nj.gov/dca/divisions/codes/codreg/>.

When a change in use occurs per NJAC 5:23-6.31 that involves Group I-1, I-2, I-4 or R or classrooms in Group E occupancies, systems complying with the building subcode Section 915 for new construction must be installed (battery-powered or plug-in type CO alarms are not acceptable).

### **Existing Buildings - UFC**

The effective date for enforcement of the UFC requirements is September 3, 2017. (See N.J.A.C. 5:70-4.9 (d) for the new installation requirements.) For a building being inspected in accordance with UFC Subchapter 4, battery-powered or plug-in type CO alarms are acceptable. You can find the new requirements of NJAC 5:70-4.9 by clicking on [Relationship to Uniform Construction Code](#) after March 15, 2017 at <http://www.nj.gov/dca/divisions/dfs/codes/>.

### **Detection Systems**

It is important to note that detection systems are not required. As per the above, alarms are acceptable for meeting the requirements for carbon monoxide detection. When someone wishes to install a CO detection system, the system must comply with the installation requirements of these new rules and the balance of the system must comply with NFPA 720.

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

## April 2017 Construction Highlights

- For the 25<sup>th</sup> month in a row, construction exceeded one billion dollars. The dollar amount of work authorized by building permits in April was \$1.005 billion.
- Residential work totaled \$540.8 million. This was 53.8 percent of authorized construction. New houses accounted for \$243.4 million (24.2 percent).
- Edgewater in Bergen County had the most work, \$46.9 million. Avalon Bay at Edgewater, a new, 240-unit development, accounted for \$26.3 million.
- Edison in Middlesex County had \$37.3 million of construction. \$19.4 million was for a renovation of an Amazon warehouse.
- Plainsboro had \$27.9 million of construction. A Life Time Fitness Center accounted for \$22 million.

*(continued on next page)*

(April 2017 Construction Highlights)

<b>Major Construction Indicators, New Jersey, January - April 2008 to 2017</b>				
NJ DCA, 6/7/2017				
Period	Estimated cost of construction	Authorized housing units	Authorized office space (square feet)	Authorized retail space (square feet)
January - April 2017	\$4,772,835,656	5,477	2,072,928	794,048
January - April 2016	5,734,978,178	9,149	1,617,303	810,587
January - April 2015	4,039,461,004	4,968	1,005,828	1,746,835
January - April 2014	3,876,038,930	6,230	1,601,420	628,231
January - April 2013	3,930,738,582	5,737	1,921,562	695,444
January - April 2012	3,390,078,746	4,208	2,415,800	646,398
January - April 2011	3,444,393,038	3,786	1,978,255	781,690
January - April 2010	2,869,962,723	3,474	1,487,311	431,806
January - April 2009	3,267,591,107	3,451	1,030,568	730,065
January - April 2008	4,877,901,636	6,720	3,086,873	3,058,145
<b>2016-17</b>	<b>-\$962,142,522</b>	<b>-3,672</b>	<b>455,625</b>	<b>-16,539</b>
<b>percent change</b>	<b>-16.8%</b>	<b>-40.1%</b>	<b>28.2%</b>	<b>-2.0%</b>
<b>2015-16</b>	<b>\$1,695,517,174</b>	<b>4,181</b>	<b>611,475</b>	<b>-936,248</b>
<b>percent change</b>	<b>42.0%</b>	<b>84.2%</b>	<b>60.8%</b>	<b>-53.6%</b>
<b>2014-15</b>	<b>\$163,422,074</b>	<b>-1,262</b>	<b>-595,592</b>	<b>1,118,604</b>
<b>percent change</b>	<b>4.2%</b>	<b>-20.3%</b>	<b>-37.2%</b>	<b>178.1%</b>

**Year to Date**

- \$4.772 billion was authorized by building permits between January and April. This was \$962.1 million less than last year, a decline of 16.8 percent.
- New home construction is down 3,672 dwelling units (40.1 percent).
- Newark had the most activity through April. Jersey City ranks second. Two other Hudson municipalities rank among the top ten, Hoboken and Secaucus. Three Middlesex County municipalities—Edison, Woodbridge, and Sayreville—and two Bergen County localities—Paramus and Edgewater—also are among the top performers.
- The top ten localities accounted for over 20 percent of all authorized work in the State and 24.2 percent of all the new houses.

<b>Dollar Amount of Authorized Construction, top municipalities, January - April 2017</b>					
NJ DCA, 6/7/2017					
Municipality	County	Estimated cost of construction	Authorized housing units	Authorized office space (square feet)	Authorized retail space (square feet)
Newark	Essex	\$189,299,087	259	140,443	2
Jersey City	Hudson	177,044,367	432	12,910	93,252
Edison Township	Middlesex	99,576,047	20	0	0
Hoboken City	Hudson	87,437,213	95	15,034	9,248
Woodbridge Township	Middlesex	82,608,382	17	1,260	9,105
Sayreville Borough	Middlesex	76,763,066	6	0	0
Parsippany	Morris	76,092,596	217	913	0
Secaucus Town	Hudson	71,557,301	6	0	0
Paramus Borough	Bergen	60,471,261	9	0	15,000
Edgewater Borough	Bergen	53,248,540	271	0	0
Top municipalities		974,097,860	1,332	170,560	126,607
<b>New Jersey</b>		<b>\$4,772,835,656</b>	<b>5,477</b>	<b>2,072,928</b>	<b>794,048</b>
top munis as % of NJ		20.4%	24.3%	8.2%	15.9%

(continued on next page)

(April 2017 Construction Highlights)

Big permits, 2017										
municipality	county	permit no.	month	year	use	activity	estm work \$	sq ft	dwelling	description
Newark	Essex	20170398	02	17	R-2	NEW	\$99,453,325	396,358	245	22-story apartment bldg
Sayreville	Middlesex	20170175	02	17	U	ALT	66,268,000	0	0	pump station renovation
Parsippany	Morris	20161303U	01	17	R-2	NEW	49,810,191	259,964	212	apartments
Weehawken	Hudson	20170049	02	17	R-2	NEW	43,595,250	276,199	236	Harbor Blvd apts
Newark (state review)	Essex	16-0339+C	01	17	E	NEW	33,318,000	update	0	elementary school
Vineland	Cumberland	16-60006+C	01	17	E	NEW	31,105,000	partial	0	Lincoln Av Middle School
Madison	Morris	17-008	01	17	B	ALT	30,327,748	0	0	office renovation
New Brunswick	Middlesex	16-60005+A	01	17	E	ADD	29,803,000	update	0	elementary school
Montvale	Bergen	16-00606	01	17	M	NEW	27,783,500	122,108	0	Wegmans
Unon City	Hudson	20131332U	01	17	R-2	NEW	27,330,000	172,500	108	Summit Av, multifamily
Edgewater	Bergen	000020170113	04	17	R-2	NEW	26,320,000	314,404	240	Avalon Bay, 700 River Rd
Fort Lee	Bergen	20170010U	02	17	E	NEW	25,430,000	10,233	0	middle school
Bayonne	Hudson	17-01-092	01	17	R-2	NEW	24,965,556	142,815	138	Broadway apts
Jersey City	Hudson	20162394+A	01	17	R-2	NEW	24,800,001	238,050	0	NJ University dormitory
Lawrence	Mercer	000020170666	05	17	B	ALT	24,226,052	0	0	Bristol-Myers Squibb
Glassboro Boro	Gloucester	17-228	03	17	M	NEW	24,100,000	169,620	90	Rowan Univ; mixed use; 90 apts
Logan	Gloucester	20173	01	17	S-1	NEW	24,000,000	1,016,116	0	Amazon warehouse
Edison	Middlesex	00020165239U	01	17	S-1	ALT	22,480,000	0	0	warehouse, Lincoln Hwy
Plainsboro	Middlesex	00020162295U	04	17	A-2	NEW	22,035,454	117,593	0	Life Time Fitness, 700 Campus Rd
Piscataway	Middlesex	00020161357U	05	17	F-2	NEW	21,251,006	92,600	0	Colgate Palmolive, River Rd
Edison	Middlesex	00020165239U	04	17	S-1	ALT	19,407,096	0	0	Amazon warehouse
Greenwich	Warren	17-07094	05	17	S-1	ALT	18,286,800	0	0	2-story commercial renovation
Pennsville Twp	Sussex	00020170167U	03	17	E	ALT	18,000,000	0	0	Pennsville Memorial high school
Secaucus	Hudson	17-143	02	17	S-1	NEW	18,000,000	302,729	0	warehouse
Union Twp (state review)	Union	17-90042	02	17	R-2	NEW	17,280,000	112,555	0	Kean University dormitory
Somerdale	Camden	17-045	02	17	E	ALT	17,234,300	0	0	high school
Paramus	Bergen	00020161155U	02	17	I-2	ALT	16,965,785	86,764	0	assisted living
Cinnaminson	Burlington	17-00213	03	17	M	ADD	16,000,000	42,477	0	Walmart
Secaucus	Hudson	16-515+C	03	17	E	NEW	16,000,000	0	0	Hudson County vocational ed
Jersey City	Hudson	20170142	01	17	R-2	NEW	15,682,500	79,830	64	new apartments; Ocean Av
Manalapan	Monmouth	000020170205	01	17	I-2	NEW	15,668,507	99,462	0	assisted living

Source: John Lago  
Code Assistance Unit  
(609) 984-7609

**Motor Fuel-Dispensing Facilities**

There has been some confusion regarding the plan review and inspection responsibilities for the installation of motor fuel-dispensing facilities.

Chapter 4, Special Detailed Requirements Based on Use and Occupancy, of the International Building Code (IBC)/2015, New Jersey Edition, contains the requirements for Motor-Vehicle-Related Occupancies. Section 406.7, Motor Fuel-Dispensing Facilities states, “motor fuel-dispensing facilities shall comply with the IFC and Sections 406.7.1 and 406.7.2.”

Referring to N.J.A.C. 5:23-3.4, Responsibilities, the fire subcode official is responsible for both the plan review and inspection of motor fuel-dispensing facilities.

The confusion stems from the International Mechanical Code (IMC)/2015, Chapter 13, Fuel Oil Piping and Storage. This chapter regulates fuel oil and storage systems, **not** the installation of motor vehicle fuel dispensing systems. For this Chapter in the IMC/2015, the plan review for the storage system is the responsibility of the fire and plumbing subcode officials. Inspections are the responsibility of the fire subcode official for storage systems and the plumbing subcode official for piping systems.

Therefore, as stated above, for IBC/2015 Section 406.7, Motor Fuel-Dispensing Facilities, the fire subcode official is responsible for plan review and inspection.

Source: Thomas C. Pitcherello  
Code Assistance Unit  
(609) 984-7609

## Residential Smoke Alarms – Wireless Interconnection

Can battery-powered wireless interconnected smoke alarms be used for rehabilitation projects? **It depends.**

The key to good code enforcement is to read all rules pertaining to the scope of work. Underlined below are the methods that someone can use to comply with the five percent or more but less than 25 percent, or 25 percent additions of the Rehab subcode (N.J.A.C. 5:23-6.32) and the requirements of the one- and two-family dwelling subcode. Both codes require smoke alarms to have a primary AC power source, with battery back up power and they also require interconnection. While the code does require the alarms themselves to be hardwired to the AC power source, the interconnection can either be hardwired or utilize a radio signal.

Some manufacturers have developed listed smoke alarms that utilize a radio frequency (RF) signal for the interconnect portion that **can** be used in both new and existing construction. Keep in mind, however, that RF interconnected smoke alarms that only receive power from batteries are **not** permitted for these code applications.

These smoke alarms must receive their primary power from a non-switched wall or ceiling branch circuit, an overcurrent protection device (circuit breaker) is the only control that can be installed on these circuits. With that said, there are dedicated circuits in the electrical subcode (2014 National Electrical Code), Article 210.11(C), Dwelling Units, that cannot be used. These circuits are (1) Small-Appliance Branch Circuits, (2) Laundry Branch Circuits, (3) Bathroom Branch Circuits, (4) Garage Branch Circuits, or branch circuits dedicated for equipment by 110.3(B), Listed and Labeling, or 210.23, Permissible Loads. The Uniform Construction Code, at N.J.A.C. 5:23-6.8(d)2, has deleted 210.11. But if the branch circuits are code compliant, the work is not allowed to make the existing branch circuits less code compliant. All smoke alarms must be listed in accordance with UL 217. Smoke alarms do not require a dedicated AC Power Circuit and can receive their power from any AC circuit other than those listed above.

Can a complete low voltage wired or wireless household fire alarm system be used in lieu of the AC wired smoke alarms required by the code? **Yes**, as long as the system meets the requirements of the building subcode, fire protection subcode or one- and two-family dwelling subcode they can be approved and installed. (See applicable sections of each code.)

### Uniform Construction Code (NJ UCC) N.J.A.C. 5:23-6.32

(f) Whenever an addition is made to a detached, single-family dwelling of Group R-3 or R-5, smoke alarms shall be installed in accordance with the following:

1. If the cumulative area of all floors of the addition(s) is 25 percent or more of the floor area of the largest floor of the existing building, smoke alarms (1) complying with the building subcode or (2) one- and two-family dwelling subcode, as applicable, shall be installed throughout the addition and the existing building. (Smoke alarms must be installed in each sleeping room, outside of the sleeping rooms within 21 feet of their doors and one on each level of the dwelling.)
2. If the cumulative area of all floors of the addition(s) is five percent or more, but less than 25 percent, of the floor area of the largest floor of the existing building, (1) hardwired, (2) interconnected smoke alarms with battery back-up meeting the requirements of NFPA 72, except as otherwise provided in the (1) building or (2) fire protection subcode or (3) (one- and two-family dwelling subcode), as applicable, shall be installed and maintained in each story in the dwelling unit, including basements. (Fire)

### One- and two-family dwelling subcode (NJ IRC 2015)

**R314.3 Location.** Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional *story* of the *dwelling*, including *basements* and *habitable attics* and not including crawl spaces and uninhabitable *attics*. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.
4. Smoke alarms shall be installed not less than 3 feet horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section R314.3.

(continued on next page)

(Residential Smoke Alarms – Wireless Interconnection)

**R314.4 Interconnection.** Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual *dwelling unit*. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

**R314.6 Power source.** Smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.

**R314.7 Fire alarm systems.** Fire alarm systems shall be permitted to be used in lieu of smoke alarms and shall comply with Sections R314.7.1 through R314.7.4.

**R314.7.1 General.** Fire alarm systems shall comply with the provisions of this code and the household fire warning *equipment* provisions of NFPA 72. Smoke detectors shall be *listed* in accordance with UL 268.

**R314.7.3 Permanent fixture.** Where a household fire alarm system is installed, it shall become a permanent fixture of the occupancy, owned by the homeowner.

**R314.7.5 Monitoring.** The system shall be monitored by an approved supervising station and shall be maintained in accordance with NFPA 72.

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

**Gas Piping Protection – Above and Below Ground UPDATE  **

This is an update to an article that was printed in the CCC, 2002, Volume 14, Number 3, Page 4. It has been revised to clarify whether galvanized gas piping installed aboveground is permitted without additional factory applied coating or wrapping.

The International Fuel Gas Code (IFGC), Section 404.11, “Protection against corrosion,” and the International Residential Code (IRC), Section G2415.11, state: “metallic pipe or tubing exposed to corrosive action, such as soil condition or moisture, shall be protected in an approved manner. Zinc coatings (galvanizing) shall not be deemed adequate protection for gas piping underground.”

IFGC, Section 403.8, “Protective coating,” and IRC, Section G2414.8, state: “where in contact with material or atmosphere exerting a corrosive action, metallic piping and fittings coated with corrosion-resistant material shall be used.”

As stated in the IFGC commentary, which is not code, “protective coatings in the form of wrappings, tapes, enamels, epoxies, sleeves, casings and factory-applied coverings are a common method of isolating metallic piping materials from atmosphere .....” Zinc coating (galvanizing) would be an approved coating for aboveground gas piping only.

Therefore, any of the above protective coatings, including zinc coating (galvanizing), are acceptable methods for aboveground metallic gas piping.

Factory-applied protective coatings and wrappings, per IFGC, Section 404.11.2, and IRC, Section G2415.11.2, must be approved for the application and shall be used for gas piping underground. Approved factory-applied protective coatings and wrappings may be used for aboveground gas piping as well.

Source: Thomas C. Pitcherello  
Code Assistance Unit  
(609) 984-7609

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

Copies may be read or downloaded from the division’s website at: [www.nj.gov/dca/divisions/codes](http://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](mailto:codeassist@dca.nj.gov).

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:

