

Construction Code Communicator



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Department of Community Affairs
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Dormitories and the Barrier Free Subcode

Some facilities of higher education are initiating the construction of new undergraduate dormitories and new graduate student housing. With regard to providing accessibility for students with disabilities, higher education facilities must comply with both the Barrier Free Subcode (BFSC) and the Americans with Disabilities Act (ADA). It has come to our attention that the ADA/2010 has a new section in which it addresses “graduate student or faculty housing leased on a year-round basis and without any common use areas available for educational programming” (ADA/2010, Section 233). Because the ADA is specific in its requirements for leased housing for graduate students and faculty, questions have arisen about the requirements of the BFSC for graduate student housing.

Group Home Fire Sprinkler Requirements Group R or Group I

The Department of Community Affairs and the Department of Human Services met recently to complete a review of fire suppression system requirements as they apply to homes licensed under N.J.A.C.10:44A, Standards for Community Residences for Individuals with Developmental Disabilities, and N.J.A.C. 10:37, Standards for Community Mental Health Services Regulations. This review resulted in the determination that a NFPA 13D fire sprinkler system may be installed in licensed community homes with five or fewer persons, one or more of whom cannot evacuate in three minutes or less.

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Group Homes

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This determination is based on the following:

1. Homes with five or fewer residents.

The definition of Group I-1 from the Building Subcode of the Uniform Construction Code (N.J.A.C. 5:23-3.14(b)) follows.

308.2 Group I-1

This occupancy shall include buildings, structures or parts thereof housing more than 5 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of slow evacuation in an emergency situation without physical assistance from staff. For the purpose of applying this provision, slow evacuation shall mean the movement of all occupants, residents and staff to an exit in more than three minutes, but not more than 13 minutes. This group shall include, but not be limited to, the following:

Alcohol and drug abuse centers

Assisted living facilities

Boarding houses

Congregate care facilities

Convalescent facilities

Group homes

Halfway houses

Social rehabilitation facilities

A facility such as the above with five or fewer persons shall be classified as a Group R-3 in accordance with the building subcode (N.J.A.C. 5:23-3.14) or shall comply with the one- and two family dwelling subcode (N.J.A.C. 5:23-3.21).

In sum, a home with up to five residents, one or more of whom is not capable of evacuating in less than three minutes, is Group R-3; a NFPA 13D sprinkler system may be installed.

2. Homes with more than five residents who cannot self-evacuate.

Residential group homes housing more than five persons with any occupant who is not able to evacuate in emergency situations without physical assistance from staff are classified as Group I-1. These homes are required to install NFPA 13R fire sprinkler systems in accordance with the building subcode. A contracted provider/housing developer can apply for a variation from the building subcode to apply the provisions of the unamended International Building Code (IBC)/2009. The variation would allow the installation of a NFPA 13D fire sprinkler system in accordance with IBC/2009, Section 903.2.6 (unamended), which allows this type of system for Group I-1 facilities.

Soil Conservation Prior Approvals for Projects Involving Demolition

At N.J.S.A. 4:24-41(g), the Soil Erosion and Sediment Control Act defines "Project" as "any disturbance of more than 5,000 square feet of the surface area of land (1) for the accommodation of construction for which the State Uniform Construction Code would require a construction permit, except that the construction of a single-family dwelling unit shall not be deemed a "project" under this act unless such unit is part of a proposed subdivision, site plan, conditional use, zoning variance, planned development or construction permit application involving two or more such single-family dwelling units, (2) for the demolition of one or more structures, (3) for the construction of a parking lot, (4) for the construction of a public facility, (5) for the operation of any mining or quarrying activity, or (6) for the clearing or grading of any land for other than agricultural or horticultural purposes."

Therefore, if the project requires a permit through the Uniform Construction Code (UCC) *and* the soil disturbance meets the definition of "project" given above, a prior approval by the Soil Conservation District is required. The problem is that some local code officials have not been properly classifying the work as a demolition project and, therefore, are concluding incorrectly that no soil conservation approval is required.

For example, a UCC demolition permit is not required for the partial demolition of the exterior of a building or structure because that work is categorized as alteration or reconstruction work according to the Rehabilitation Subcode. However, if the project will cause the disturbance of more than 5,000 square feet of soil, the partial demolition falls within the parameters of N.J.S.A. 4:24-41(g), and a soil conservation prior approval is required before a UCC permit can be issued.

As you can see, it does not make any difference whether the project is an alteration, reconstruction, or demolition. Quite simply, when more than 5,000 square feet of soil is disturbed, the project falls within the parameters of N.J.S.A. 4:24-41(g) and a soil conservation prior approval is required before the issuance of a UCC permit.

If you have any questions on this, please direct your calls to me at (609) 984-7609 or to the appropriate County Soil Conservation District listed in Bulletin 91-2, Compliance with Requirements of the Soil Erosion and Sediment Control Act.

Source: Marcel Iglesias
Code Assistance Unit

Dormitories*continued from page 1*

CURRENT BARRIER FREE SUBCODE: The BFSC does not draw a distinction between housing provided for undergraduate students and housing provided for graduate students. At N.J.A.C. 5:23-7.5(f), the BFSC has a clear standard for dormitories: 5% accessible and 95% adaptable rooms/suites. As with the scoping requirements for other kinds of accessible housing, whether elevator service is provided affects the total number of accessible or adaptable dwelling units. Where an elevator is provided, 5% of the total dwelling units/rooms/suites must be accessible and 95% must be adaptable. Where no elevator service is provided, 5% of the ground floor dwelling units/rooms/suites must be accessible and 95% of the ground floor dwelling units/rooms/suites must be adaptable.

Because the ADA/2010 is specific with regard to multifamily graduate student housing that is leased on an annual basis, questions have arisen as to the applicability of the BFSC to housing being constructed for graduate students or faculty. In advance of revising the BFSC for clarity, this article is intended to stand as a statement of the Department's position on the accessibility requirements for these projects and to provide the reasoning behind that position.

ADA 2010—Graduate Student/Faculty Housing: The ADA/2010 requires compliance with Sections 233 and 809 of 2010 ADA standards for "apartments or townhouses that are provided on/benefit of a place of higher education." Section 809 contains the specific requirements for accessibility within the residential unit—accessible route, bathrooms, communication features, etc. It does not address scoping and, therefore, is not the subject of this review. Section 233 contains the scoping provisions. At 233.3.1, Minimum number, new construction, 5% of the residential units ("graduate student housing leased on a year-round basis and without any common use areas available for educational programming") are required to be accessible (which means that they must comply with Section 809).

OTHER LAWS (BFSC and FHA): In guidance provided in its technical assistance manual, the Department of Justice states that it is possible for a residential unit to be subject to both Title II (State and Local Government) and Title III (public accommodations and commercial facilities) and that "the standard that provides the highest degree of access to individuals with disabilities" applies. It is reasonable to conclude that this reasoning also applies to other laws—the Federal Fair Housing Amendments Act and the BFSC. (NOTE: Because the BFSC has been amended to reflect the requirements of the Federal Fair Housing Amendments Act, this discussion focuses on the BFSC only.)

Following the line of reasoning that a graduate student housing construction project is subject to more than one law, once the 5% accessible requirements of the ADA have been met, a review must be conducted to determine whether other laws might apply. If it is found that other laws do apply, it must be determined whether those laws have requirements that are more stringent than those of the ADA. In New Jersey, this review would involve the BFSC and its application to the balance of the residential units. In multifamily residences with four or more units in a single structure, the BFSC requires adaptability of ground floor dwelling units in non-elevator-serviced buildings and of all units in elevator-serviced buildings. Thus, in buildings with four or more dwelling units in a single structure, the 95% of the units that are not required to be accessible would be required to be adaptable—because, when conducting a stringency test, adaptability is more stringent than no requirement at all. As with other multifamily designs, where elevator service is provided, 95% of the dwelling units/rooms/suites would be adaptable. Where no elevator service is provided, 95% of the ground floor dwelling units would be required to be adaptable.

On the other hand, if the graduate student housing consists of otherwise exempt building designs (single-family detached, townhouses, or buildings with three or fewer dwelling units in a single structure), 5% of the dwelling units would be required to be accessible; none would be required to be adaptable.

IN SUM: If the buildings constructed as "graduate student housing leased on a year-round basis and without any common use areas available for educational programming" are townhouses or another exempt housing design, they must be 5% accessible only. No adaptable units are required.

Where there are four or more dwelling units in a single structure, multistory dwelling units and single story dwelling units (flats) must be 5% accessible. An elevator is not required, but when an elevator is provided, 95% of the remaining dwelling units in the elevator-serviced building must be adaptable. When no elevator is provided, 95% of the ground floor dwelling units, including the entry level of multistory dwelling units, must be adaptable.

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

Group Homes

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Each variation request must be accompanied by a rationale. The following are the New Jersey Uniform Construction Code variation criteria that must be followed.

N.J.A.C. 5:23-2.9 Variations and exceptions

(a) *No variations or exceptions from the requirements of any subcode of these regulations may be made, except upon the following findings:*

1. *That strict compliance with any specific subcode provision, if required, would result in practical difficulty to such owner; and*
2. *That the exception, if granted, will not jeopardize the health, safety and welfare of intended occupants and the public generally.*

(b) *Except as may be otherwise specified in this chapter, no variations shall be granted from any of the requirements of N.J.A.C. 5:23-2, 4 or 5.*

In this case, the Department regards allowing compliance with Section 903.2.6 (unamended) as reasonable. However, the decision regarding an application for a variation rests with the local enforcing agency, not with the Department. A denial may be appealed to the Construction Board of Appeals.

If you have any questions, please feel free to call me at (609) 984-7609.

Source: Michael E. Whalen
Code Assistance Unit

License Number for Alarm Contractor is Required!



Just a quick reminder that, as with licensed electrical, plumbing, home improvement, fire alarm, and suppression contractors, the name and license number of the contractor installing burglar alarms, fire alarms, or electronic security devices **MUST** appear on the construction permit application.

The Department of Community Affairs has received a complaint from the Director of the Division of Consumer Affairs about the lack of compliance with the licensing laws. As code officials, we are the front line of enforcement for many of the licensing laws in the State.

As a reminder, the applicant is required to fill out the forms completely!

Source: John N. Terry
Code Assistance Unit

Read-only Link to National Fire Protection Codes and Standards



The below link is being provided through a new National Fire Protection Association (NFPA) initiative to offer public access to NFPA codes and standards. After signing in and receiving a validation email, code users will be able to view the NFPA standards referenced in the International Codes Council codes adopted as part of the State's Uniform Construction Code.

Instructions:

1. Click on the link below or a link is also provided on the Division of Codes and Standards webpage at <http://www.nj.gov/dca/divisions/codes/codreg/>

http://www.nfpa.org/itemDetail.asp?categoryID=279&itemID=18123&order_src=C800
2. Click on "**View the list of NFPA's codes and standards**" under the title "**To review NFPA's codes and standards online:**"
3. Click on the NFPA code or standard you wish to view.
4. Select the currently referenced edition by clicking on the drop down arrow next to the "**Edition to display**" at the top of the page.
5. Click on "**View the** (edition you selected in step 4) **edition online**" under the title "**View the document online (read only)**". After agreeing to the terms, start viewing the document. If you are a first time user, you must enter your email address and a password before you can proceed. In some cases you may need to click on "**Create an account**" and follow the prompts.
6. NFPA will send you an email validation message from verify@nfpa.org. Please make sure that your email provider is not blocking this address as spam.
7. Once you receive the validation email, just click on "**click here**" to validate your email address and

Water-powered Sump Pumps –Backflow Preventer

With the many storms we have been having that involve the loss of electrical power, this office has been receiving many calls about what type of backflow preventer is required on the water supply to the new type of water-powered back-up sump pumps.

Manufacturers recommend that a water- powered sump pump be used as a backup sump pump for the primary electric sump pump. The discharge from the water-powered sump pump must discharge to the outdoors. Manufacturers state that the discharge not be connected to the discharge from the main pump. It will cause the main pump to send water back into the pit and a spill from the backflow preventer will occur.

Since these pumps could be subject to a back siphon condition, a proper backflow preventer must be installed on the water supply to the pump. Not knowing what might enter the sump pit, a reduced pressure zone backflow preventer is the proper backflow preventer to use.

This could conflict with some of the manufacturer's recommendations which only require an atmospheric vacuum breaker. In that case, the Uniform Construction Code (UCC) would override the manufacturer's instructions. Check to be sure that the ejector pump is not set into the sump pit. These units are not made to be submerged.

Finally, a plumbing technical section is required for the installation of this system. It is very important to ensure that the proper backflow preventer is installed and that the pump discharge is not connected to the primary sump pump discharge piping. Connection to the primary pump discharge would be a violation of the manufacturer's installation instructions.

Should you have any questions, you may contact me at (609) 984-7609.

Source: Thomas C. Pitcherello
Code Assistance Unit



Commercial Kitchen Exhaust Hoods, Alarms Required?

Questions have been coming in recently about when hood suppression systems are required to have alarm devices installed. Apparently some code officials have required contractors to install a local horn and strobe device when a hood requires a suppression system. The horn/strobe device has been required to activate upon discharge of the hood suppression system even though there is no fire alarm system installed in the building. This is incorrect. Although subsection 904.3.4, Alarms and warning signs, and subsection 904.3.5, Monitoring, have been cited by code official, these sections only require that automatic fire extinguishing systems be monitored when the occupancy is required to have a fire alarm system.

The requirement to monitor the activation of a hood system comes from the International Building Code (IBC)/2009 New Jersey edition, specifically Section 904.3.5, Monitoring. This section does not require an additional horn or strobe to be installed when no fire alarm system is required; in fact, it requires the monitoring of hood suppression systems only when a fire alarm system is otherwise required to be installed in the building.

The IBC/2009 provides for the building fire alarm system to monitor the activation of the kitchen hood extinguishing system. To accomplish this, the monitoring system would need to activate a required fire alarm system in accordance with Section 907, Fire Alarm and Detection Systems. When no fire alarm system is required, no additional alarm devices are required.

In closing, as a reminder: To verify proper operation, all required tests and inspections must be conducted in accordance with National Fire Protection Association (NFPA) 72, and the IBC/2009, Section 904.4, Inspection and Testing, and Section 907, Fire Alarm and Detection Systems.

If you have any questions, please feel free to call me at (609) 984-7609.

Source: Michael E. Whalen
Code Assistance Unit

Refrigerant –Locking Access Port Caps

This article is to bring to your attention, a new requirement with the adoption of the International Mechanical Code (IMC)/2009 and International Residential Code (IRC)/2009: Refrigerant circuit access ports located outdoors shall be fitted with locking-type tamper-resistant caps. IMC Section 1101.10 Locking access port caps, and IRC Section M1411.6 Locking access port caps, states: “refrigerant circuit access ports located outdoors shall be fitted with locking-type tamper-resistant caps.”

Condensing units or heat pump units are typically located outdoors and that are equipped with access ports on the vapor and liquid refrigerant lines are required to be fitted with locking-type tamper-resistant caps. This would include all newly installed and replacement equipment. The access ports allow the connection of diagnostic gauges and to allow refrigerant to be added to or taken from the unit during servicing.

This article is to alert you that, during an inspection, the inspector must make sure that these locking-type caps are installed. If they are not, the equipment/lines will fail inspection.

Should you have any questions, you may contact me at (609) 984-7609.

Source: Thomas C. Pitcherello
Code Assistance Unit

NFPA Link

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start using the free read only edition of this code or standard. If the standard does not open, have someone check your computer for the required program to read the document.

If you have any problems or questions about this service please call (609) 984-7609, ask for Code Assistance, and someone will help.

Source: Michael E. Whalen
Code Assistance Unit

Department of Education Approval for School Projects

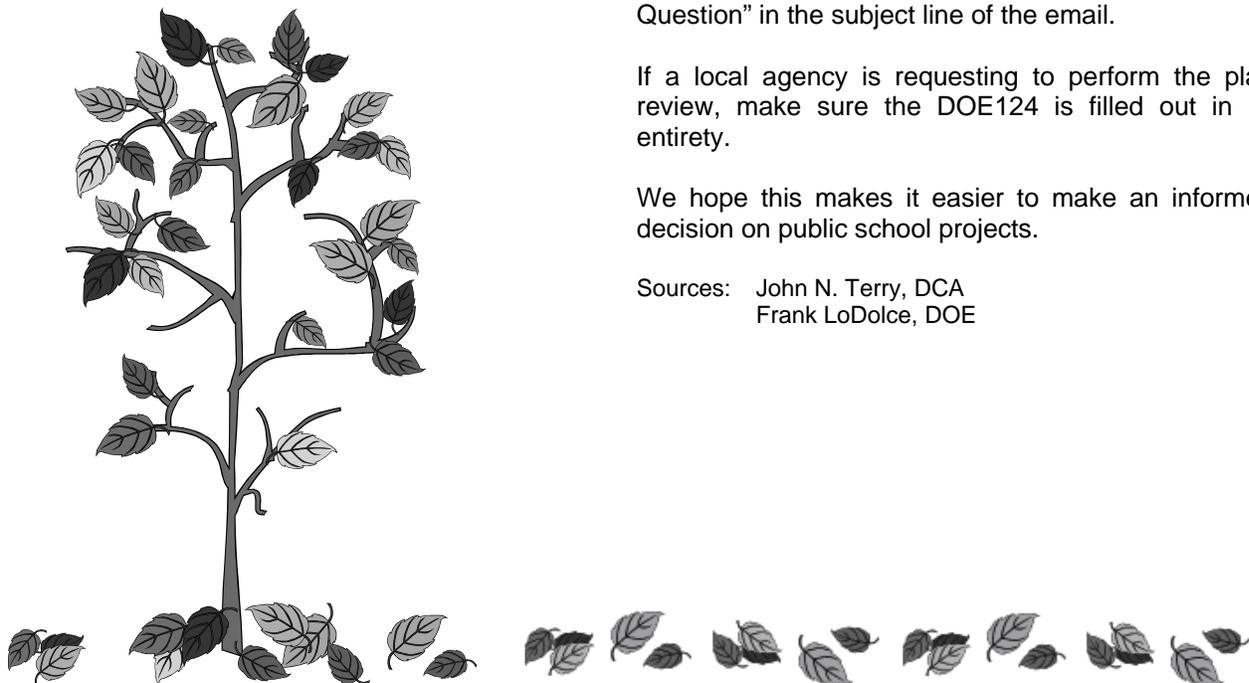
Do I really need Department of Education (DOE) approval for that school project? This is a recurring question that code officials ask when school administrators bring projects directly to their offices. Now, there is a very simple way to get an answer. (No, don't call the Department of Community Affairs!) Go directly to the source, Frank LoDolce at DOE.

The process is quite easy. Simply email Mr. LoDolce at frank.lodolce@doe.state.nj.us, provide him with the details of the project, and he will let you know whether DOE review and approval is required. To receive a prompt response, make sure you put “EA Review Question” in the subject line of the email.

If a local agency is requesting to perform the plan review, make sure the DOE124 is filled out in its entirety.

We hope this makes it easier to make an informed decision on public school projects.

Sources: John N. Terry, DCA
Frank LoDolce, DOE



Kitchen Remodeling Projects

The Department has been receiving questions on the enforcement of code requirements in kitchen remodeling or renovation projects. Some of the most frequently asked questions revolve around determining the category of work; others are concerned with permit requirements and code compliance when the work is ordinary maintenance. In this article, we will try to answer some of the most common questions as they have been asked of us.

Question 1: Bulletin 94-3 states that the installation of new and/or replacement cabinets does not need a permit and that only electrical or plumbing work requires permits. There is a discrepancy in this requirement in the categorization of the replacement or installation of cabinets as ordinary maintenance. N.J.A.C. 5:23-2.7(c)1vi refers to the replacement of a cabinet, which is singular, as in one cabinet, and only replacement, not the addition of new cabinets.

RESPONSE: The text states: "The repair or replacement of any non-structural member such as a partition railing or kitchen cabinet." "Any... kitchen cabinet" can mean one -- or more than one -- kitchen cabinet, so there is no discrepancy.

Question 2: N.J.A.C. 5:23-2.7(c)1ii refers to "repair or replacement of 25% or more of interior finishes in any one room." The vast majority of kitchen cabinets replacements involve more than 25% of wall surfaces in the kitchen. Cabinetry is part of the interior finishes of a kitchen since they are permanently attached to the wall, they are not furniture or furnishings and are much more involved than installing paneling for which a permit is required. This should require a Building Technical Section for verification of compliance with N.J.A.C. 5:23-6.8 for materials, methods and attachment, especially for the upper cabinets.

RESPONSE: Because kitchen cabinets are not interior finishes, the 25% limitation does not apply to them.

Question 3: N.J.A.C. 5:23-2.7(b)4 and 5 refer to ordinary maintenance that "does not affect fire safety.. [and] does not increase non-conformity with the regulations." In Section 1901, the International Residential Code (IRC)/2009, as adopted at N.J.A.C. 5:23-3.21, references clearances to combustibles above ranges and cooking appliances. At N.J.A.C. 5:23-3.4, the plan review and inspection responsibilities are assigned to the Fire Subcode Official. This clearly indicates the need for a Fire Technical Section to review and inspect for compliance with this regulation with regard to fire-related issues.

RESPONSE: Within the framework of the Uniform

Construction Code (UCC), there is a distinction between requiring a construction permit and code compliance. Although a permit is not always required, the code requirements always apply. It is not unusual for code requirements to be associated with "ordinary maintenance" items. For example, the replacement of glazing in the side-light of a door is ordinary maintenance and therefore, no permit, inspection, or notice to the enforcing agency is required. However, the UCC requires that the glazing being installed be safety glazing. Regardless of whether a construction permit is required, the project must comply with the UCC. The same holds true for the clearances to combustibles above ranges and cooktops—a construction permit is not required, so a technical section is not required, but the code provisions do apply.

Question 4: N.J.A.C. 5:23-2.17A(c)1ii refers to requiring a minor work permit for "renovation provided no primary structures are altered and the project is not a reconstruction." A kitchen is, by definition, a renovation project and possibly even a reconstruction, since it usually takes from 1 to 4 weeks to do the project and the room, in some cases, cannot be used or occupied during the progress of work. This puts most kitchen renovations, at the very least, in the scope of minor work and, in some cases, a major project. *Very few* kitchen projects are replacement of cabinets only.

RESPONSE: Reconstruction, by definition, is work that is so extensive that it not only encompasses the entire primary function space, use group, or tenancy, but also requires a new certificate of occupancy. Therefore, remodeling a kitchen is never a reconstruction project. We agree that a kitchen remodeling project can be, and often is, minor work. As a reminder, in a kitchen remodeling project, the cabinets would be exempt from the permit; only work that requires a permit should be included in the permit application and in the calculation of the fee.

One of the most basic, foundational ideas of the UCC is that its requirements be predictable; another is that its enforcement be uniform. Questions should be directed to the Code Assistance Unit at (609) 984-7609.

Source: John N. Terry
Code Assistance Unit



Vapor Retarders

The requirements --and the exceptions--for vapor retarders in the International Residential Code (IRC)/2006 have been distributed throughout the text of IRC/2009 regarding the building thermal envelope. The Department has received many questions on the application and installation of vapor retarders, so, in this article, we are providing the IRC/2006 text, footnoted, to help you find the requirements in the IRC/2009; keep in mind that climate zone 4 is exempt for framed assemblies, so the following applies to climate zone 5, unless otherwise noted.

IRC/2006

R318.1 Moisture control.

In all framed walls^a, floors^b and roof/ceilings^c comprising elements of the building thermal envelope, a vapor retarder shall be installed on the warm- in-winter side of the insulation.

Exceptions:

1. In construction where moisture or freezing will not damage the materials.
2. Where the framed cavity or space is ventilated to allow moisture to escape.
3. In counties identified as in climate zones 1 through 4.

IRC/2009

a – R601.3, General wall construction

b – R408.1 and R408.2, Naturally ventilated under-floor spaces; R408.3, Unvented under-floor spaces; R506.2.3, Concrete floors on ground (*not a framed assembly and contains its own exceptions*)

c – R806.4, Unvented attic assemblies

The term “vapor retarder,” is included in the following sections of the IRC/2009, but not necessarily for the building thermal envelope:

- R202 – Definitions
 - * Roof assembly
 - * Vapor retarder class
- R302.10.1 – Flame spread index and smoke developed index for insulation
- R317.1, item #7 – Protection of wood and wood based products against decay
- R405.2.2 – Wood Foundations
- R611.9.1.2, exception – Removal of stay-in-place form material at bolts (for connections between concrete walls and light-framed floor, ceiling and roof systems)
- R702.3.8 – Water-resistant gypsum backing board (for interior wall coverings)
- M1601.3 – Duct insulation materials
- M1601.4.5 – Duct insulation

If you have questions, please contact me at (609) 984-7609.

Source: Rob Austin
Code Assistance Unit

Smoke Alarms and Additions

The Department has been receiving inquiries about whether low voltage smoke detection systems can be installed or extended during rehabilitation work; the question specifically focuses on addition to a detached single family dwelling or a one- or two-family dwelling of Group R-3 or R-5.

N.J.A.C. 5:23-6.32(f)1 of the Uniform Construction Code (UCC) requires that smoke alarms that comply with the building subcode or one-or two-family dwelling subcode, as applicable, be installed throughout the addition and the existing building when 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. At N.J.A.C. 5:23-6.32(f)2, the UCC requires that smoke alarms be installed on each level of the dwelling when the cumulative area of all floors of the addition(s) is at least five percent, but less than 25 percent, of the floor area of the largest floor of the existing building. When the addition is less than five percent (5%), the provisions of the rehabilitation subcode at N.J.A.C. 5:23-6.4(f) apply. Smoke alarms may be battery-powered. They must be installed or maintained on each level of the dwelling and outside the immediate vicinity of the bedrooms.

So what does this mean for smoke alarms? When additions to dwellings are constructed that meet the thresholds of the above sections, smoke alarms are required to be installed. The smoke alarms can either be hardwired, interconnected smoke alarms with battery back-up or smoke alarms meeting the requirements of Section R314, Smoke alarms, of the one- and two-family dwelling subcode. The International Codes Council (ICC) modified Section R314 to allow household fire alarm systems that are installed in accordance with National Fire Protection Association (NFPA) 72, National Fire Alarm Code, and the requirements of this new subsection, including Section R314.2, which requires that the detection system become a permanent fixture of the occupancy, owned by the homeowner, monitored by an approved supervising station, and maintained in accordance with NFPA72.

When a contractor builds an addition to an existing dwelling and there is an existing low voltage smoke detection system, the existing low voltage system may be extended as long as a qualified contractor verifies that the conditions specified in Section R314.2 have been met. When a homeowner performs his/her own

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Smoke Alarms

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work, the homeowner must provide a written statement from the monitoring and service company that the conditions in Section R314.2 have been met.

Section R314.2 also requires that the household fire alarm system provide the same level of smoke detection and alarm as required by Section R314 for smoke alarms. So, a low voltage detection system may be approved as long as there is documentation that it complies with Section R314.2. A homeowner is not required to install a separate hardwired A/C supplied, interconnected smoke alarm system with battery back-up if the low voltage system meets the requirements of Section R314.2. Furthermore, a variation is no longer needed.

Please contact me if you have any questions; I can be reached at (609) 984-7609.

Source: Michael E. Whalen
Code Assistance Unit

Ductwork and the Energy Subcode 

In the International Energy Conservation Code (IECC)/2009, Section 403.2, Ducts, has been modified and expanded from the IECC/2006 for ductwork insulation and sealing. For your information and convenience, the changes follow.

Insulation: This is a minor change. Section 403.2.1 now requires supply ducts in attics to be insulated to a minimum of R-8 when outside the building thermal envelope, and all other ducts outside the building thermal envelope, to a minimum of R-6. The obvious exception to this is when ducts or portions thereof are located completely inside the building thermal envelope.

Sealing: As before, Section 403.2.2 requires that all ducts, air handlers, filter boxes and building cavities used as ducts be sealed and that joints and seams comply with Section M1601.4.1, Joints and seams, of the International Residential Code (IRC)/2009. This reference ensures that joints of duct systems are made substantially airtight by means of tapes, mastics, liquid sealants, gasketing, or other approved closure systems, including UL 181 tapes per duct type.

These changes are minor; the bigger change is this: **Starting January 1, 2013**, duct tightness must be verified by a leakage test unless the air handler and all ducts are located within conditioned space. The

See Ductwork -continued at right

Playground Equipment

The Department has recently received inquiries about when foundations drawings for playground equipment are required to be signed and sealed by a design professional.

N.J.A.C. 5:23-7.16 of the Barrier Free Subcode states that the construction of recreational equipment *may* require a construction permit, if so determined by the building subcode official.

If the building subcode requires a construction permit, plans for the foundation may or may not be required depending on the recreational structure. The decision as to whether plans are required lies with the building subcode official. Some structures could be considered "work of minor nature" as per N.J.A.C. 523-2.15(f)1x, in which case, plans would not be required. Large, complex structures might need footings and, due to the size or complexity, the building subcode official might need to review plans to ensure the stability of the structure.

If the building subcode official requires plans, they must be signed and sealed by a design professional. The only exception to the requirement for plans that are signed and sealed by a design professional is for a single family home owner who has prepared his or her own plans for the construction of a detached structure used or intended to be used exclusively as his or her private residence.

If you have any questions, please direct your calls to me at (609) 984-7609.

Source: Marcel Iglesias
Code Assistance Unit

Ductwork

continued from left

permit holder may have the test conducted either post-construction or during rough-in; the timing of this test is the permit holder's choice. The benefit to a post-construction test is that the standard for passing is less stringent than is the standard for a rough-in test. The benefit to a rough-in test is that the ductwork should be much more accessible to fix if the work fails the test. A copy of the test results will be part of the permit file. The IECC/2009 establishes no credentials for persons performing this test.

Again for your convenience, the standards for passing follow:

* Postconstruction test -- Leakage to outdoors is to be less than or equal to 8 cfm per 100 ft² of

See Ductwork - page 12

Hotels/Motels and the Rehabilitation Subcode

It has come to the attention of the Division that some rehabilitation projects in hotels and motels are not well-understood and are being misclassified. Hotels and motels are unique in that rehabilitation projects are routinely undertaken—guest rooms are taken out of service to be altered or upgraded and, over time, all rooms undergo rehabilitation.

As an example, the classification of a project in which all the guest rooms are rehabilitated at one time is clear: it is a reconstruction project. In this case, the primary function of building (transient lodging) has ceased. The work involves a primary function space (guest rooms). Even when the work is limited to removing and replacing all the sheetrock and plumbing fixtures within the guest rooms (renovation) and does not include reconfiguring the guest rooms (alteration), this is classified as a reconstruction project.

As a reminder, a reconstruction project consists of “repairs, renovations, alterations or any combination thereof in a building which results in the entire use, primary function space or tenancy not being able to be occupied while the work is in progress and in which a new Certificate of Occupancy is required prior to re-occupying.” (N.J.A.C. 5:23-6.3)

Referring to the definition above, when the work involves the entire use or primary function space, the space cannot be occupied while the work is taking place, and a new Certificate of Occupancy (CO) is required, the project is a reconstruction project. It is critical to remember that the basic and supplemental requirements of the Rehabilitation Subcode apply to reconstruction projects.

However, most of the time, all the guest rooms in a hotel or motel are not rehabilitated at one time. It is more common for some rooms to be rehabilitated at one time and for all rooms to have been rehabilitated over a period of time. Remember, the Rehabilitation Subcode provides for projects undertaken over time. In fact, when classifying a project, all work begun within a single 12-month period is counted (N.J.A.C. 5:23-6.10(b)2). So, even when a project is phased, it can still be classified as a reconstruction project. To make sure that the work is classified correctly, the construction official should ask the agent of record and/or design professional named on the construction project application to identify in writing the full extent of work at the completion of a phased or long-term project.

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REScheck Assumptions

As they say, the information provided is only as good as the user who provided it! That being said, how many of you really know how REScheck “works”? Well, the creators of REScheck (Pacific Northwest National Laboratories) include “Help” within the program itself. The “Help” function is in the same row as the “File” menu. Scroll the cursor to “Help.” A drop down menu will appear; select “Help Topics”. The topics provided help a user become more familiar with REScheck and also help the user find out what the program assumes when the user inputs information.

Since “Wall Software Inputs” seem to cause the most questions, for your convenience, they are provided below.

Wall Software Inputs

- **Gross Area** - Enter the gross area of the wall component in the *Gross Area* field. The gross wall area includes the area of all windows and doors within the wall. You must link the wall to the windows and doors within that wall by using the tree on the left side of the *Envelope* screen. To link a window or door to a wall, drag the window or door label on the tree to the wall label and release the mouse. The gross wall area also includes the peripheral edges of floors (the area of the band joist and subfloor between floors).
- The gross area of any one wall of a conditioned basement with an average depth less than 50% below grade should be entered as a wall (not as a basement). In this case, the gross wall area includes the below-grade portion of the wall as well as the areas of doors and windows within those walls.
- **Cavity Insulation R-Value** - Enter the R-value of any insulation to be installed in the cavities between above-grade wall structural members. The insulating values of other parts of the building assembly (e.g., gypsum board and air films) are accounted for by the program and should not be included.
- **Continuous Insulation R-Value** - Enter the R-value of any continuous insulation in the above-grade wall. Continuous insulation is continuous over framing members or furring strips and is free of significant thermal bridging. The R-values of other parts of the

See *REScheck* - page 11

REScheck

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building assembly (e.g., gypsum board and air films) are accounted for by the program and should not be entered. Insulating sheathing installed on the exterior of above-grade walls is an example of continuous insulation. For structural insulated panels and insulated concrete forms, enter the manufacturer-reported R-value for the entire assembly. Continuous insulation on wood-framed walls is assumed to cover 100% of the wall area. If the continuous insulation does not cover the entire wall or the continuous insulation has variable R-value ratings across the wall, create separate wall assemblies for each distinct R-value rating.

- Assembly U-Factor - If you have selected the *Other* wall type, enter the overall U-factor of the above-grade wall assembly including exterior and interior air films. Building departments may require supporting documentation for assemblies entered using the *Other* wall type and *U-Factor* field.

REScheck may be downloaded from www.energycodes.gov.

If you have questions, please contact me at (609) 984-7609.

Source: Rob Austin
Code Assistance Unit

Lateral Deck Connection: Reminder

It has recently come to the Department's attention that there has been some confusion as to when lateral deck attachment, like the one illustrated in Figure R502.2.2.3, which shows deck lateral load connection, of the International Residential Code/2009 (IRC/2009), is required.

The specific deck attachment for lateral loads as demonstrated in Figure R502.2.2.3, as referenced by Section R502.2.2.3, Deck lateral load connection, of the IRC/2009, is not required. This figure is rooted in Federal Emergency Management Agency (FEMA) 232, entitled "Homebuilders' Guide to Earthquake-Resistant Design and Construction," and is clearly a seismic requirement. Section R301.2.2, Seismic

See Reminder -continued at right

Hotels/Motels

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Properly classifying rehabilitation projects as reconstruction is especially important in buildings that were built prior to the Uniform Construction Code (UCC). Reconstruction projects are required to comply with the basic and supplemental requirements of the Rehabilitation Subcode (N.J.A.C. 5:23-6.7(i) and (j)). The basic and supplemental requirements are drawn from Subchapter 4 of the Uniform Fire Code (UFC), so that compliance with them results in compliance with the UFC's retrofit requirements in Subchapter 4 (N.J.A.C. 5:70-4).

Proper classification of reconstruction projects means that, when classifying an extensive project, whether that project is undertaken at one time or over a period of time, UFC-required retrofit work is included in a reconstruction project. This, in turn, ensures that there are no surprises at the completion of the project. No building owner wants to learn of retrofit requirements at the completion of an extensive rehabilitation project. To avoid this, proper classification of projects under the Rehabilitation Subcode is vital.

You may direct any questions to the Code Assistance Unit at (609) 984-7609.

Source: Carmine Giangeruso
Supervisor of Investigations
Office of Regulatory Affairs

Reminder

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Provisions, of the IRC/2009, states "Detached one- and two- family dwellings and attached single family townhouses are exempt from the seismic requirements of this code."

Based on this, the lateral deck attachment like the one illustrated in Figure R502.2.2.3 is not required for a detached one- or two- family dwelling or attached single family townhouse in New Jersey that is designed and built in accordance with the IRC/2009.

If you have any questions, please direct your calls to me at (609) 984-7609.

Source: Marcel Iglesias
Code Assistance Unit

Useful Links Regarding Code Violations



The duties of a subcode official/inspector, N.J.A.C. 5:23-4.5(i), requires that violations found in the plan review or during inspections be reported to the construction official and the owner (or owner's agent). This report should be complete. This means: do not stop reviewing after you find the first area of noncompliance; do a thorough review/inspection and be sure all violations are noted.

Those of us who are involved in the "code world" know how to make sense of the citations so that we can find the subject-matter of the identified violations. However, the building owner (or owner's agent) does not have the code book to make sense of the citations. Fortunately, many of the codes are not online and, in an attempt to help, a list of links is provided below to direct persons seeking the texts of the references:

- **Uniform Construction Code (N.J.A.C. 5:23):**
<http://www.nj.gov/dca/divisions/codes/codreg/uc.c.html> (*regulations listed by subcode*);
 - Rehabilitation Subcode (N.J.A.C. 5:23-6)
 - Barrier Free Subcode (N.J.A.C. 5:23-7)
- **International Building Code/2009:**
http://www.ecodes.biz/ecodes_support/Free_Resources/NewJersey/2009/09NJ_Bldg/09NJBldg_main.html (*regulations listed by chapter*);
 - **National Fire Protection Association (NFPA) referenced standards:**
http://www.nfpa.org/aboutthecodes/list_of_codes_and_standards.asp;
- **International Residential Code/2009:**
http://www.ecodes.biz/ecodes_support/Free_Resources/NewJersey/2009/09NJ_Residential/09NJResidential_main.html (*regulations listed by chapter*);
- **National Electrical Code/2008 (NFPA 70):**
http://www.nfpa.org/aboutthecodes/list_of_codes_and_standards.asp;
- **International Energy Conservation Code/2009:**
<http://publicecodes.citation.com/icod/iecc/2009/index.htm?bu=IC-P-2009-000014&bu2=IC-P-2009-000019> (*regulations listed by chapter*);
- **ASHRAE Standard 90.1-2007** (*the link provided is for the 2010 edition as the 2007 edition is not longer online for free*):
http://openpub.realread.com/rrserver/browser?title=/ASHRAE_1/ashrae_90_1_2010_IP_1024 (*regulations listed by chapter*);
- **International Mechanical Code/2009:**
<http://publicecodes.citation.com/icod/imc/2009/>

See Useful Links -continued at right

Useful Links

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ndex.htm?bu=IC-P-2009-000005&bu2=IC-P-2009-000019 (*regulations listed by chapter*);

- **International Fuel Gas Code/2009:**
<http://publicecodes.citation.com/icod/ifgc/2009/index.htm?bu=IC-P-2009-000007&bu2=IC-P-2009-000019> (*regulations listed by chapter*).

Unfortunately, we do not have links for the National Standard Plumbing Code/2009 or International Code Council/American National Standards Institute (ICC/ANSI) A117.1-2003 standard for accessible design, but this list could be given to those who do not have code books and who are trying to decipher the references in a code violation. Finally, if any of these links does not work, the user can go to the Division's website and "backdoor" these links at www.nj.gov/dca/divisions/codes.

Source: Rob Austin
Code Assistance Unit

Ductwork

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conditioned floor area or a total leakage less than or equal to 12 cfm per 100 ft² of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots are to be taped or otherwise sealed during the test.

* Rough-in test -- Total leakage is to be less than or equal to 6 cfm per 100 ft² of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the roughed in system, including the manufacturer's air handler enclosure. All register boots are to be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage is to be less than or equal to 4 cfm per 100 ft² of conditioned floor area.

Building Cavities: There is no change at Section 403.2.3, Building cavities, but I want to take this opportunity to remind you that this section does not allow building framing cavities to be used as supply ducts.

If you have questions, please contact me at (609) 984-7609.

Source: Rob Austin
Code Assistance Unit

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