

Construction Code Communicator

Superstorm Sandy Edition



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

Department of Community Affairs
Richard E. Constable III, Commissioner

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Flood Hazard Construction

On January 25, 2013, the State adopted emergency amendments to New Jersey's Flood Hazard Area Control Act rules (within the Department of Environmental Protection regulations at NJAC 7:13.) Among other changes, these amendments establish minimum elevation standards based on the Advisory Base Flood Elevations (ABFE's) issued by FEMA for Atlantic, Bergen, Burlington, Cape May, Essex, Hudson, Middlesex, Monmouth, Ocean, and Union Counties. The rule applies to new construction and those property owners whose properties were "substantially damaged" or are starting new construction. A structure is considered substantially damaged if the cost of restoration equals or exceeds 50 percent of the market value of the structure prior to the damage; this determination is made by the local floodplain administrator.

Keeping in mind that DEP's existing rules already contained a mandatory 1-foot freeboard*, which is maintained within this emergency adoption, and applies to the lowest floor of the home or building, the question remains, how does this interface with the Uniform Construction Code (UCC), NJAC 5:23? The quick answer is to see your local floodplain administrator as he or she will let you know the ABFE and the flood zone applicable to home or building in question. Under

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Installation of Standby Power Generators at Single-family Dwellings

The Department has received several questions concerning the installation of standby generators at single family dwellings: Who is responsible for plan review and inspection? and Where does the generator need to be located?

The Uniform Construction Code (UCC) and the one- and two-family dwelling subcode do not have specific requirements for these installations. However, the International Residential Code/2009 (IRC), Section M1301.1, Scope, requires compliance with the International Mechanical Code (IMC) and International Fuel Gas Code (IFGC) when installations are not specifically covered by the IRC. IMC, Section 915, Engine and Gas Turbine-Powered Equipment and Appliances, and IFGC, Section 616, Engine and Gas Turbine-Powered Equipment, both reference National Fire Protection Association (NFPA) 37-2006, Installation and Use of Stationary Combustion Engines and Gas Turbines, and both require that the requirements of UL 2200, Stationary Engine Generator Assemblies are met.

NFPA 37, Section 4.1.4, Engines Located Outdoors, has specific information on the location of the generator

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the UCC, this is handled through the prior approval process. However, you should know that the DEP rules only use “lowest floor” and the UCC, by means of referenced model codes and standards, uses this term and “lowest horizontal structural member”. This may seem confusing, but hopefully, this boiled-down version of the interaction between rules is helpful.

* Note – Freeboard is a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. (<http://www.fema.gov/national-flood-insurance-program-2/freeboard>)

Combining DEP’s new rules and the UCC’s existing requirements essentially means you are looking at the more stringent requirements of the two. Therefore, the breakdown of the elevation requirements in a flood zone per the 2009 International Building Code (IBC) and the 2009 International Residential Code (IRC) is as below, with detailed reasoning after.

		IRC ^a	IBC ^b			
			Cat I	Cat II	Cat III	Cat IV
Elevation of the lowest floor (IRC A zone and Coastal A zone and IBC A zone)	elevation to lowest floor	ABFE +1 ft	ABFE +1 ft	ABFE +1 ft	ABFE +1 ft	ABFE +2 ft
Elevation of bottom of lowest horizontal structural member (IRC V zone and IBC Coastal A zone and V zone)	where the lowest horizontal structural member ^c is parallel to direction of wave approach	ABFE	ABFE	ABFE	ABFE +1 ft	ABFE +1 ft
	where the lowest horizontal structural member ^c is perpendicular to direction of wave approach	ABFE +1 ft	ABFE	ABFE +1 ft	ABFE +2 ft	ABFE +2 ft

a – Per Sections R322.2.2, R322.3.5 and R309.3, attached and detached enclosed areas used solely for parking of vehicles, building access or storage may be below the ABFE.
 b – Category classifications are from Table 1-1 of the ASCE 24-05.
 c – Assuming lowest horizontal structural member is at least 1 ft in height.

IRC, Section R322 (One- and two-family detached dwellings and attached single-family townhouses, all 3 stories or less)

A zone and Coastal A zone (R322.2.1 and N.J.A.C. 7:13)

- The lowest floor must be elevated to or above the ABFE plus one foot.

V zone (R322.3.2 and N.J.A.C. 7:13)

- If the lowest horizontal structural member is parallel to the wave action, the bottom of the lowest horizontal structural member must be elevated to or above ABFE;
- If the lowest horizontal structural member is perpendicular to wave action, the bottom of the lowest horizontal structural member must be elevated to ABFE plus one foot.

Please note that, as per Sections R322.2.2, R322.3.5 and R309.3, attached and detached enclosed areas used solely for parking of vehicles, building access or storage may be below the ABFE.

IBC, Section 1612 and ASCE 24-05 (non-IRC buildings)

A zone (Section 2.3 and Table 2-1 of ASCE 24 and N.J.A.C. 7:13)

- The lowest floor must be elevated to or above the ABFE plus one foot, except that a Category IV building elevation is ABFE plus two feet.

Standby Power Generators

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for engine-driven generators located outside. The generators must be installed a minimum of five feet from any opening into the structure and at least five feet from structures that have combustible walls. There are two exceptions to the five foot separation:

- (1) No minimum separation is required when the wall adjacent to the generator has a fire resistance rating of at least one hour; and
- (2) A distance of less than five feet is acceptable when documentation is provided showing that a fire located inside the noncombustible weatherproof enclosure did not ignite combustible materials location outside. This exception applies because some generator manufacturers have performed burn tests and have proven their units can be within 18 inches of combustible materials without ignition. The subcode official who performs the review must make sure the applicant supplies documentation from the manufacturer indicating that the unit proposed to be installed closer than five feet has been tested and approved in accordance with the standard for clearance to combustibles. The documentation must include the model and size of the unit being installed. NFPA 37 requires the generator be supported on a foundation or secured to noncombustible framework. NFPA 37 also provides information on generators that are installed inside and those installed on top of structures.

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V zone and Coastal A zone (Section 4.4 and table 4-1 of ASCE 24 and N.J.A.C. 7:13)

- *If the lowest horizontal structural member is parallel to the wave action, the bottom of the lowest horizontal structural member must be elevated to or above ABFE, except that Category III and IV buildings elevations are ABFE plus one foot;*
- *If the lowest horizontal structural member is perpendicular to wave action, the bottom of the lowest horizontal structural member must be elevated to or above ABFE, except that a Category II building elevation is ABFE plus one foot and Category III and IV buildings are ABFE plus 2 feet.*

Note that the italicized portions from above are assuming the lowest horizontal structural member is at least one foot in height to meet the “plus one foot” of the lowest floor requirement from N.J.A.C. 7:13.

There actually are three entities involved in the enforcement of requirements for elevation of structures in identified flood hazard areas:

- The local floodplain administrator is responsible for the enforcement of the municipal flood ordinance. These ordinances are adopted as a condition of the municipality’s participation in the National Flood Insurance Program. (It should be noted that municipalities may choose to adopt requirements for higher elevations.) DEP provides a model flood ordinance at: <http://www.nj.gov/dep/floodcontrol/modelord.htm>.
- DEP is responsible for enforcement of the State’s Flood Hazard Area Control Act rules, N.J.A.C. 7:13. Under the emergency rule just adopted, if a home or building is being raised or reconstructed in the original footprint, DEP’s “permit by rule” allows construction to proceed without a separate review or approval from DEP. This same rule allows for an increase in the footprint of up to 300 square feet under the permit by rule provisions, which is helpful in terms of additional steps or ramps necessary to access elevated buildings. Other construction in a flood hazard area requires approval from DEP.
- The local construction official is responsible for enforcement of the UCC, including the elevation requirements described above.

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Standby Power Generators

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The review and inspection responsibilities are assigned to the building subcode official and fire protection subcode official, as follows:

- IMC requires building and fire review with building final inspection;
- IFGC requires building and fire review with fire final inspection.

When generators are being installed at Group R-3, R-4 or R-5 structures, the UCC (at N.J.A.C. 5:23-3.4(d)), allows a construction official to assign these responsibilities to the mechanical inspector when there is one employed by the enforcing agency.

In addition, the plumbing subcode official and electrical subcode official have inspection responsibilities for the connection of the gas line and the installation of electric wiring and sizing of the generator, respectively. The National Electrical Code (NEC), Article 702.4, Capacity and Rating, also requires that standby sources have the capacity to supply all the loads connected to them, unless an automatic load management system is used to ensure that the transferred loads do not overload the source. This requirement applies only to systems where the switching between power sources occurs automatically.

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

Source: Michael E. Whalen
Code Assistance Unit

Flood Hazard Construction

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TABLE 1-1. Classification of Structures for Flood-Resistant Design and Construction (Classification same as ASCE 7, Ref. [1])	
Nature of Occupancy	Category
<p>Structures that represent a low hazard to human life in the event of failure including, but not limited to:</p> <ul style="list-style-type: none"> ▪ Agricultural facilities^a ▪ Certain temporary facilities ▪ Minor storage facilities^b 	I
<p>All structures except those listed in Categories I, III and IV</p>	II
<p>Structures that represent a substantial hazard to human life in the event of failure including, but not limited to:</p> <ul style="list-style-type: none"> ▪ Buildings and other structures where more than 300 people congregate in one area ▪ Buildings and other structures with day-care facilities with capacity greater than 150 ▪ Buildings and other structures with elementary school or secondary school facilities with capacity greater than 250 ▪ Buildings and other structures with a capacity greater than 500 for colleges or adult education facilities ▪ Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities ▪ Jails and detention facilities ▪ Power generating stations and other public utility facilities not included in Category IV <p>Buildings and other structures not included in Category IV (including, but not limited to, facilities that manufacture, process, handle, store, use, or dispose of such substances as hazardous fuels, hazardous chemicals, hazardous waste, or explosives) containing sufficient quantities of hazardous materials considered to be dangerous to the public if released.</p> <p>Buildings and other structures containing hazardous materials shall be eligible for classification as Category II structures if it can be demonstrated to the satisfaction of the authority having jurisdiction by a hazard assessment as described in Section 1.5.2^c that a release of the hazardous material does not pose a threat to the public.</p>	III
<p>Structures designated as essential facilities including but not limited to</p> <ul style="list-style-type: none"> ▪ Hospitals and other health-care facilities having surgery or emergency treatment facilities ▪ Fire, rescue, ambulance, and police stations and emergency vehicle garages ▪ Designated earthquake, hurricane, or other emergency shelters ▪ Designated emergency preparedness, communication, and operation centers and other facilities required for emergency response ▪ Power generating stations and other public utility facilities required in an emergency ▪ Ancillary structures (including, but not limited to, communication towers, fuel storage tanks, cooling towers, electrical substation structures, fire water storage tanks or other structures housing or supporting water, or other fire-suppression material or equipment) required for operation of Category IV structures during an emergency ▪ Aviation control towers, air traffic control centers, and emergency aircraft hangars ▪ Water storage facilities and pump structures required to maintain water pressure for fire suppression ▪ Buildings and other structures having critical national defense functions <p>Buildings and other structures (including but not limited to, facilities that manufacture, process, handle, store, use, or dispose of such substances as hazardous fuels, hazardous chemicals, hazardous waste, or explosives) containing extremely hazardous materials where the quantity of the material exceeds a threshold quantity established by the authority having jurisdiction.</p> <p>Buildings and other structures containing extremely hazardous materials shall be eligible for classification as Category II structures if it can be demonstrated to the satisfaction of the authority having jurisdiction by a hazard assessment as described in Section 1.5.2^c that the extremely hazardous material does not pose a threat to the public. This reduced classification shall not be permitted if the buildings or structures also function as essential facilities</p>	IV

^aCertain agricultural structures may be exempt from some of the provisions of this Standard – see section C.4.3.
^bFor the purposes of this standard, minor storage facilities do not include commercial storage facilities.
^cSection 1.5.2 reference is made to ASCE Standard 7-05, not this standard.

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

Source: Robert Austin
Code Assistance Unit

Electrical Systems Guidance – November 2012

The Department has issued the following guidance for use in addressing electrical systems in the immediate aftermath of Superstorm Sandy.

- Panel underwater:
 - Pull the meter;
 - Clean and dry all breakers and bus bar;
 - Reinstall breakers necessary for temporary occupancy and restoration;
 - Within 90 days, all breakers and bus bar must be replaced. In lieu of replacement, the bus bar may be certified by a licensed electrical contractor.
- Wiring underwater:
 - If undamaged, no replacement is necessary.
- Other equipment and outlets (receptacles, lighting, switches, alarms, etc.) underwater:

Within 90 days, all other equipment and outlets must be replaced.

Landlords and Tenants Affected by Superstorm Sandy: An Important Message Concerning Security Deposits

In a November 2012 Alert, the Division of Codes and Standards advised:

The following information concerns security deposits.

Under the Security Deposit Law, N.J.S.A. 46:8-19 through 26, within five (5) business days after a tenant is displaced due to fire, flood, condemnation, or evacuation, the landlord must return the security deposit.

The law requires the return when either an authorized public official has posted the premises with a notice prohibiting occupancy, or any building inspector, in consultation with a relocation officer, where applicable, has certified within 48 hours that displacement is expected to continue longer than seven (7) days and has notified the owner or lessee in writing. The landlord must return to the tenant, upon his/her request, the security deposit and the tenant’s portion of interest, less any charges expended in accordance with the contract, lease or agreement, and less any rent due and owing at the time of displacement.

Within three (3) business days after receiving notification of the displacement, the landlord shall provide written notice to a displaced tenant, by personal delivery or mail to the tenant’s last known address, indicating when and where the tenant’s security deposit

See Security Deposits at right

Mechanical/Plumbing Guidance for Code Officials

In a November 2012 Alert, the Division of Codes and Standards advised:

- Gas piping in a residential structure that has been totally or partially submerged should be blown out and pressure tested with a pressure of not less than 3 psi for a period of 10 minutes.
- Gas piping in a commercial structure that has been totally or partially submerged should be blown out and pressure tested with a pressure of one and one-half times the working pressure, but not less than 3 psi for a period of 30 minutes for each 5,000 cubic feet of pipe volume.
- Where the gas piping has not been submerged, but, the appliance has been partially or completely submerged, the existing gas pipe joints should be tested to determine if leaks exist. This can be accomplished by any acceptable method including but not limited to a “soap-test”.
- Gas-fired or oil-fired appliances that have been partially or completely submerged should be repaired or replaced. Manufacturer’s instructions for repairs should be followed if available.
- Electrical components that have been partially or completely submerged should be repaired or replaced prior to energizing.

Should you have any questions or need any further information, please feel free to contact our Code Assistance Unit at (609) 292-7899 or codeassist@dca.state.nj.us.

Security Deposits

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will be available for return. If the last known address for the tenant is at the property that is no longer habitable, the landlord shall post notices at each exterior entrance of the property. The landlord may make arrangements to have the municipal clerk hold the security deposit so that the tenant may collect it at the clerk’s office. If the tenant does not collect the security deposit within 30 days, it shall be re-deposited or reinvested by the landlord in the same bank from which it was withdrawn.

If the tenant does collect the security deposit and then reoccupies the property, the tenant is required to repay the security deposit. The tenant must immediately redeliver one-third of the security deposit, one-third more in 30 days and the final one-third in 60 days.

The Security Deposit Law applies to most residential rental properties, including mobile homes. The exception is owner-occupied two- or three-family dwellings.

For more information on landlord tenant issues, please visit our website at: www.state.nj.us/dca and follow the Highlights link for “landlord tenant information.”

Disposing of Asbestos-containing Materials from Structures Impacted by Superstorm Sandy

In a February 2013 Alert, the Division of Codes and Standards advised:

ISSUE

Reports have been received that homes are being demolished without testing for or removing asbestos.

HAZARD

Asbestos is hazardous to human health and was a common building material prior to 1980, but can also be present in post-1980 structures. Asbestos can cause respiratory illness years after exposure. Consequently, all persons who are removing walls or other parts of homes damaged by Hurricane Sandy should be cautious and determine if asbestos is present prior to removal.

SUMMARY

Removal of any asbestos, or demolition of a home that potentially contains asbestos, must be done in accordance with local, state, and federal rules. There are more stringent requirements for friable asbestos, which can more readily become airborne. See requirements and attachments below. If anyone but the homeowner removes the asbestos, they must be licensed by the Department of Labor. This includes volunteers. Extensive training is required, including how to use personal protection equipment. While a homeowner is not required to be licensed, we recommend that only licensed professionals remove asbestos.

REQUIREMENTS

Prior to the demolition of any structure, the owner or owner's agent must provide documentation, a letter suffices, to the local construction department that all friable asbestos or asbestos-containing material that will become friable during demolition or removal has been or will be properly abated prior to demolition. Pursuant to NJAC 5:23-8, "Friable" means any material applied to ceilings, walls, piping, duct work, etc., which when dry may be crumbled, pulverized, or reduced to a powder by hand pressure. This documentation is needed to obtain a municipal demolition permit. Under current New Jersey Department of Health (NJDOH) and New Jersey Department of Labor and Workforce Development (NJDOLE), there is nothing that prohibits the homeowner from removing, packaging and disposing of asbestos roofing, siding and insulation from his personal residence. However, anyone but the homeowner removing the asbestos from a residence must have a license issued by the NJDOL. This includes volunteers who are assisting in Hurricane Sandy clean-up efforts.

Disposing of Asbestos

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NJDOL regulations can be found at [N.J.A.C. 12:120](#), Asbestos Licenses and Permits.

The asbestos packaging and disposal procedures issued by the NJDEP, NJDOL and the appropriate local and county entities apply to everyone, including the homeowner. NJ Department of Environmental Protection, Division of Solid and Hazardous Waste regulates the disposal of asbestos containing waste. Information on disposal requirements can be found at:

<http://www.nj.gov/dep/dshw/rtrp/asbestos.htm>

The following is a list of attachments which provide additional information:

1. Attachment I is "Asbestos Guidance for Sandy Home Demolition"
2. Attachment II is an article "Dept. of Labor: The Removal of Asbestos Containing Material" from Volume 24, Number 2, *Construction Code Communicator*. The *Construction Code Communicator* can be found at the following website:

http://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/ccc_2012_vol_24_no2_summer.pdf

3. Attachment III is a list of some Frequently Asked Questions about asbestos. More Frequently Asked Questions can be found at:

http://www.state.nj.us/health/iep/asbestos_faq.shtml

ATTACHMENT I

Asbestos Guidance for Sandy Home Demolition

1. Obtain a demolition permit from the local construction department. Before a demolition permit can be issued, the owner or owner's agent must document to the local enforcing agency that all friable asbestos or asbestos-containing material that will become friable during demolition or removal has been or will be properly abated prior to demolition. Pursuant to [N.J.A.C. 5:23-8](#), "Friable" means any material applied to ceilings, walls, piping, duct work, etc., which when dry may be crumbled, pulverized, or reduced to a powder by hand pressure. Removing asbestos improperly or conducting demolition activities without complying with all State and Federal asbestos regulatory requirements may jeopardize FEMA reimbursement, if applicable.
2. Demolition of homes as a result of Hurricane Sandy is subject to the same regulations as demolition under any other circumstance.
3. Demolition of multiple homes may also be subject to the Asbestos National Emission Standard for Hazardous Air Pollutants (Asbestos NESHAP).
4. The State of New Jersey Department of Health (DOH) provides comprehensive **General Information** for asbestos detection, removal, management and disposal activities at the following website:

http://www.nj.gov/health/iep/asbestos_faq.shtml%23Training_and_Permitting_in_NJ

You may contact the DOH office at 609-826-4950, for assistance.

5. Demolition of homes involving asbestos must be conducted by a contractor licensed by the State of New Jersey Department of Labor and Workforce Development (DLWD). Additionally, the contractor must submit a notification of the work 10 days prior to date of demolition. Information regarding licensing of contractors and DLWD requirements can be found at the following website:

http://lwd.dol.state.nj.us/labor/lsse/employee/asbestos_control_and_licensing.html

You may contact DLWD at 609-633-2159, for assistance.

6. Asbestos Containing Waste must be disposed of as ID 27A Solid Waste in New Jersey. Guidance for asbestos waste disposal is available at the following New Jersey Department of Environmental Protection (NJDEP) website:

<http://www.nj.gov/dep/dshw/rtrp/asbestos.htm>

You may contact the NJDEP's Bureau of Landfill and Hazardous Waste Permitting at telephone number: 609-984-6985, for assistance.

7. Sections of the DOH Asbestos General Information website are excerpted in Attachment III. Note that there may be other sections of the DOH Asbestos General Information website document that are relevant for and/or can inform persons of relevant aspects of asbestos detection, removal, management, and disposal activity, so please review the entire document which can be downloaded at:

http://www.state.nj.us/health/iep/asbestos_faq.shtml

ATTACHMENT II

From The Construction Code Communicator -Volume 24, Number 2 Summer 2012

Dept. of Labor: The Removal of Asbestos Containing Material

It has come to the attention of the Department of Labor that there is some misinformation surrounding renovations and demolitions involving asbestos containing materials (ACM). Navigating the maze of federal and state asbestos regulations can leave even the most conscientious contractor dazed and confused. In order to avoid problems, for each project, the contractor should answer some basic questions in order to determine which regulations are applicable.

It is the contractor's responsibility to determine whether the project involves the disturbance of asbestos containing material (ACM) before proceeding with work. Any material containing more than 1% asbestos meets the regulatory definition of ACM. If the contractor is working with more than 3 linear feet or 3 square feet of ACM, then the project falls within the jurisdiction of the New Jersey Department of Labor and Workforce Development (DOL). The removal or repair of ACM during such projects must be completed by a licensed asbestos abatement contractor. The demolition of a structure containing ACM also falls within the jurisdiction of DOL since the ACM is disturbed during the demolition process.

DOL regulations focus on the quantity, not the quality, of ACM. There is no distinction between friable and non-friable ACM in determining whether DOL regulations apply. The DOL regulates both friable ACM and non-friable ACM.

There are a few very limited exceptions to the DOL licensing requirement. One of those exceptions involves asbestos containing roofing and siding materials in renovation projects. The removal of asbestos containing roofing or siding in a rehabilitation project is not regulated by DOL and, therefore, does not require a licensed asbestos abatement contractor. However, it is important to note that the removal of asbestos containing roofing or siding must be completed by a licensed asbestos abatement contractor if the structure will be demolished.

In addition to DOL regulations, a contractor must be concerned with federal regulations (National Emission Standards for Hazardous Air Pollutants, which applies to residential buildings with 5 or more dwelling units and commercial buildings involving the stripping or removal of at least 160 square feet or 260 linear feet of regulated ACM), Occupational Safety and Health Administration (OSHA) requirements, New Jersey regulations for asbestos projects in educational facilities and public buildings (Asbestos Hazard Abatement Subcode of the Uniform Construction Code) and New Jersey Department of Environmental Protection regulations pertaining to the transport and disposal of ACM. DOL regulations can be found at N.J.A.C. 12:120, Asbestos Licenses and Permits. (Exceptions and exemptions can be found at N.J.A.C. 12:120-1.4 and N.J.A.C. 12:120-4.2).

Code enforcement officials should be aware that at N.J.A.C. 5:23-8.6, the Asbestos Hazard Abatement Subcode, requires that before work may be undertaken in an existing building or before a building may be demolished, a certification must be provided by the architect, engineer, or contractor specifying the extent to which ACM will be disturbed. If ACM will be disturbed, an assessment by the New Jersey Department of Health (DOH), local or county health department, or a private business authorized by DOH to perform an assessment is required before a permit may be issued for the rehabilitation or demolition project. Obtaining the DOH assessment and ensuring that, where required, the work will be performed by a licensed DOL contractor is a prior approval before a permit may be issued for a rehabilitation or demolition project in which ACM will be disturbed.

For further assistance on the DOL contractor licensing requirements, please call DOL at (609) 633-2159. For assistance on code enforcement, please contact Jim Amici of the Bureau of Code Services at (609) 633-6224.

Source: Tom Voorhees
Department of Labor

James Amici
Bureau of Code Services

ATTACHMENT III

DOH Asbestos General Information Website Excerpt: Testing for Asbestos

Q: How can I find out if I have asbestos in my home or not?

A: It is recommended that you hire a professional asbestos inspector certified by the U.S. Environmental Protection Agency to conduct an inspection and take samples of any suspect asbestos-containing material. If you can't afford to hire an inspector, you can contact an [accredited laboratory](#) to find out how much it would cost to analyze a sample and how they prefer it to be submitted.

Q: What types of testing methods are available?

A: There are a number of recognized testing methods for asbestos. Samples are typically analyzed by three main methods: Polarized Light Microscopy (PLM), Transmission Electron Microscopy (TEM), and Phase Contrast Microscopy (PCM). Not all techniques can be used for all sample types. Below is a description of each:

PLM -Typically fast and inexpensive; can distinguish asbestos fibers from other fibers such as fiberglass and cellulose; most common procedure for bulk samples; TEM recommended for accurate determination for samples such as floor tiles.

TEM -More expensive; state-of-the-science; magnification of at least 25,000X; accurately identifies fibers which PLM and PCM cannot confidently identify as asbestos or non-asbestos; recommended for dust wipe samples so that asbestos fibers are accurately identified; can be used for both bulk and air samples.

PCM - Typically fast and inexpensive; cannot identify asbestos directly; for lower detection limits or confirmation of asbestos, TEM is recommended; common analytical technique used for analysis of air samples. Following is a chart indicating the type of sample and appropriate testing methodologies for that sample:

Sample Type Method of Analysis

Bulk Sample

- Polarized Light Microscopy (PLM)
- Transmission Electron Microscopy (TEM)
- Surface/Wipe Sample Transmission Electron Microscopy (TEM)

Air Sample

- Phase Contrast Microscopy (PCM)
- Transmission Electron Microscopy (TEM)

Q: How do I know for sure whether or not something contains asbestos?

Unless the insulation is labeled as asbestos you cannot tell if it is asbestos-containing by merely examining it. To determine the presence of asbestos, a sample of the material must be analyzed by a laboratory that is

accredited for analyzing asbestos. We recommend using a laboratory accredited by one of these two following organizations:

- [American Industrial Hygiene Association \(AIHA\) Asbestos Analysts Registry](#)
- [National Voluntary Laboratory Accreditation Program \(NVLAP\) Directory of Accredited Laboratories](#)

Q:What is the proper way to take an asbestos sample so that it doesn't contaminate the area?

A: We recommend that a professional take the sample, however, homeowners/building occupants should be informed about the proper procedures to make sure the area isn't contaminated during the sampling process. Following are the steps that should be taken:

- Lightly wet the area with a fine water mist where the sample is to be taken. A small amount of detergent should be added to the water to help it penetrate the asbestos fibers better.
- A small sample of no more than one square inch of material is necessary (the laboratory where the sample will be taken will generally have guidelines on the size of the sample they need).
- The sample should be placed in two zip lock bags (one inside the other) or some other type of air tight container.
- The container should then be labeled with a description of the material, where it was taken and the date the sample was taken.
- To seal any loose asbestos around the sample area, clear spray lacquer can be used. Make sure the nozzle is far enough away to mist the exposed area before applying a heavier coat. If there is any asbestos dust it should be wiped up with a wet disposable cloth or paper towel. Any towels or cloth used for this purpose should be disposed of immediately.

What to Do if You Have Asbestos

Q: How can I protect my health?

A: Do not sand, cut or break any asbestos containing materials (ACM). Even if materials are non-friable they may release fibers if they are disturbed in this manner.

If you must work in an area where asbestos dust may be present, wet the area down thoroughly with a garden sprayer (or a regular spray bottle) filled with water and a few drops dish detergent. The detergent reduces the surface tension of the water and allows it to penetrate any asbestos fibers more readily, thus keeping them from becoming airborne. Dispose of any rags used to clean up ACM dust.

Never use a regular household vacuum on asbestos containing dust. Even if the vacuum is equipped with a High Efficiency (HEPA) filter, you will not be able to decontaminate it properly once you have vacuumed

Disposing of Asbestos*continued from page 8*

up the asbestos dust. Special vacuums are used on asbestos containing dust. They are equipped with a HEPA filter and are specifically designed to filter out asbestos fibers and be easily decontaminated after use.

Q: Do I have to remove asbestos if I have it?

A: Yes. Before a structure can be demolished or removed, the owner or owner's agent shall document that the requirements of USEPA 40 CFR 61 subpart M have been or shall be met. A permit to demolish or remove the structure shall not be issued until the owner or agent notifies the enforcing agency that all friable asbestos or asbestos-containing material that will become friable during demolition or removal has been or will be properly abated prior to demolition.

Q: I've heard that vermiculite might contain asbestos, is that true?

A: Vermiculite is a naturally occurring mineral which may contain asbestos. The uses of vermiculite vary. It has been used in potting soil for aeration purposes as well as in attics for insulation. The US Environmental Protection Agency has a considerable amount of information on their website regarding this topic. Click on the following links for more information:

[Asbestos and Vermiculite](#)

[Zonolite, Hamilton Township, Mercer County, New Jersey](#)

Q: Can I remove the asbestos in my home myself?

A: Technically, there are no regulations that forbid a homeowner from removing asbestos in their own home themselves, but we strongly advise against it for a number of reasons:

- Asbestos is a known human carcinogen. If it is removed improperly, it can cause your home to be seriously contaminated. Professional cleanup of the contamination could be more costly than if the abatement had originally been performed by professionals.
- Children are particularly susceptible to asbestos related disease. The normal latency period for an asbestos related disease in adults can be anywhere from 20 to 50 years after exposure. However, among children, the latency period can be much shorter, striking them very early in life.
- Asbestos is difficult to control without the proper equipment. Special equipment has been designed for abating asbestos properly. This equipment must be used and cleaned in a proper manner to ensure that little or no exposure to asbestos fibers occurs during or after abatement.
- Asbestos fibers can be too small for the human eye to detect. Professional asbestos abatement contractors use specialized cleaning equipment and confinement techniques to remove and contain asbestos materials and fibers. Once complete, air samples should be taken to ensure that there are no asbestos fibers remaining.

See Disposing of Asbestos - at right

Disposing of Asbestos*continued from left***Q: How can I find someone who is qualified to remove asbestos?**

A: NJ requires all contractors who abate asbestos-containing materials, to have a NJ Department of Labor and Workplace Development (DOLWD) license. In addition, all of the contractor's employees (who conduct the abatement) must possess either a DOLWD worker or supervisor permit. For information on how to contact the DOLWD to request a list of contractors or check to see if a contractor is licensed, please refer to the [Indoor Environments Contacts](#) page. Please Note: The only exception to licensing requirements for the removal of asbestos containing materials is if the contractor has acquired an exemption for certain types of [non-friable asbestos materials](#) such as floor tile. For more information regarding exemption requirements, you should contact the [Compliance Assistance Project within Indoor Environments Program](#). For more information on how to contact this project, please refer to the [Indoor Environments Contacts](#).

Q: What can I do to make sure the contractor I hire is competent?

- A: To be sure you are hiring a contractor who will do a safe and satisfactory job, you may want to do the following:
- Call the NJ Department of Labor and Workplace Development at 609-633-2158 to ensure that the contractor is licensed and reputable.
 - Ask the contractor about their abatement history and for references from similar projects.
 - Obtain a detailed estimate of the exact services to be provided, including monitoring, design, replacement, damages, etc.
 - Ask about their liability insurance, including the type, what it covers and the amount.
 - Obtain numerous estimates, they can vary significantly. Make sure all estimates are based on the same job requirements and specifications.
 - Consider hiring a monitoring firm (which has no financial relationship to the abatement contractor) to oversee the removal. Generally these projects are done better, but can be more costly.
 - Most importantly, talk to each contractor, learn exactly what they will do for you. Check your comfort level with each contractor and then hire one based upon an overall evaluation of services, not just cost.
 - Educate yourself regarding what occurs during an asbestos abatement so you know what to expect and can understand what must be done.

See Disposing of Asbestos - page 10

Disposing of Asbestos

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Q: What steps take place during an asbestos abatement?

A: Following are the primary steps of an asbestos abatement project:

1. All movable objects should be moved out of the area. All of these objects should be wiped down and/or vacuumed off (the only vacuum to be used for this purpose is one specifically designed to filter out asbestos fibers) prior to being removed. Any objects remaining in the area as well as the area itself should also be wet wiped and vacuumed.
2. Any vents or other portals (doors, windows, outlets, etc.) leading to the area should be sealed with plastic. These are referred to "critical barriers" and should be given special attention when sealing, because they are the most likely areas where asbestos fibers would escape during an abatement. Filters (such as from the HVAC system) which may have been contaminated, should be removed and disposed of. In addition, all nonremovable objects, which are not part of the structural components to be abated, should also be covered with plastic. Finally, the remaining area should then be covered with plastic to protect all surfaces which are not involved in the abatement. Please Note: At this point, depending on what type of material is to be removed, a three stage decontamination chamber may be set up. That chamber should consist of a series of three rooms. The three rooms are a "clean room", a "shower room", and a "dirty room" (in that order). Workers entering the work area should always change out of their street clothes and into disposable overalls, don appropriate respiratory protection, and then enter the work area through the decontamination unit. When leaving the work area, workers must leave the disposable overalls in the dirty room and take a shower, at which time they will also decontaminate their respirator. Additionally, there may be a filtration unit set up to create a "negative pressure" environment within the containment. This simply means that a specially designed air filtration unit will exhaust, through a High Efficiency Particulate Air (HEPA) filter (which is 99.9 % efficient in filtering asbestos fibers down to .3 microns in size), air from the contained area to the outside. This will prevent air from "back drafting" through decontamination unit into other areas of the building. If the material to be abated is pipe material, there may be general isolation of the work area (with plastic) and then they will use something called a [glovebag](#) to remove the ACM pipe lagging.
3. The ACM will be removed.
4. The area will be cleaned by wet wiping and HEPA vacuuming all surfaces within the containment area.
5. A visual inspection should be conducted to insure all visible asbestos has been removed. If any material is found it should be removed and the area should be re-cleaned.
6. A sealant should be applied to all surfaces to "lock

See *Disposing of Asbestos* - at right**Disposing of Asbestos**

continued from left

- down" any remaining microscopic fibers.
7. Non-critical barriers are removed and the entire area should be cleaned again.
 8. Air sampling should be conducted to ensure that fibers which cannot be seen, or have not been "locked down" by the sealant, are not present. This sampling should be conducted in a fashion to simulate occupancy (often conducted with fans running). The acceptable limit for these air samples are anything below 0.01 fibers per cubic centimeter (f/cc) of air. If the air sample is above this, the area should be re-cleaned and re-sampled.
 9. Once acceptable air levels are reached, the remaining plastic barriers can be removed and the area can be re-occupied.

Q: Where can asbestos-containing waste be disposed of?

A: The transportation and disposal of asbestos-containing waste in NJ is regulated by the Department of Environmental Protection (DEP). For more information contact the [DEP](#).

Regulations**Q. Who regulates Asbestos Containing Materials (ACM)?:**

A:

Federal Regulatory Agencies:

The [U.S. Environmental Protection Agency \(USEPA\)](#) is responsible for developing and enforcing regulations necessary to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health.

The [Occupational Safety and Health Administration \(OSHA\)](#) is responsible for the health and safety of workers who may be exposed to asbestos in their work place, or in connection to their jobs.

NJ State Regulatory Agencies:

[Department of Health](#). The NJ Department of Health (DOH) is the lead agency for the asbestos and environmental health information in NJ.

The [Indoor Environments Program](#) administers the Asbestos Hazard Emergency Response Act (AHERA), provides site audits and a Quality Assurance/Quality Control program for asbestos abatement in schools. The DOH also provides training and accreditation for asbestos training providers and conducts studies to evaluate asbestos abatement and management methods.

The [Public Employee Safety and Health Program](#) regulates asbestos exposures among public employees.

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Disposing of Asbestos

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Department of Environmental Protection. The [NJ Department of Environmental Protection \(DEP\)](#) regulates, the management, transportation and disposal of ACM. In concert with county health departments, the DEP investigates reports of unregistered transporters, illegal disposal and oversees the review of the 10-day notification submissions.

Department of Community Affairs. The NJ Department of Community Affairs (DCA) regulates asbestos remediation in schools and buildings in which public employees are located and regulates the air monitoring firms for asbestos abatement projects. The DCA Bureau of Code Services, Asbestos Safety Unit can be reached at (609)633-6224.

Department of Labor and Workplace Development. The NJ Department of Labor and Workplace Development (DOLWD) licenses abatement contractors, permits abatement workers and supervisors, and investigates complaints of improper abatements in private homes and commercial buildings. For more information on how to contact the DOLWD, please refer to the [Indoor Environments Contacts](#) page.

Advisory Base Flood Elevations and Construction Requirements

In a January 2013 memorandum to Construction Officials the Division advised:

As many of you know, FEMA has issued Advisory Base Flood Elevations for Atlantic, Bergen, Burlington, Cape May, Essex, Hudson, Middlesex, Monmouth, Ocean and Union Counties. These new numbers impact new construction and the restoration of buildings determined by the floodplain administrator to be substantially damaged as defined in federal rules. The new flood maps also impact the boundaries of the A zone, including the creation of a coastal A zone, and the V zone, a change which also affects the associated construction requirements. This applies to both residential and nonresidential structures.

As construction officials, you are not responsible for making substantial damage or building elevation determinations. However, residents, contractors and business owners in your towns expect that you will be knowledgeable and be able to answer their questions. For now, please make everyone aware of these new Advisory Base Flood Elevations. Do not issue any permits without the required prior approval to be

See ABFEs -at right

ABFEs

continued from left

supplied by the local floodplain administrator. The substantial damage determination must be made by the floodplain administrator and disseminated to the applicant using forms to be determined by the town so that the attendant requirements are known. The base flood elevation and zone to be used also must be known. We are in constant contact with DEP and with FEMA. **As soon as we have further information, we will share it with you.**

For floodplain administrators and code officials who act as floodplain administrators:

FEMA is gearing up to provide training in the use of its substantial damage estimating tool and technical assistance to collect data for up to 7,000 structures. Teams will be ready to go right after the first of January. Local floodplain administrators should call Nancy Mikoda at 225-910-4592. She is with the Hazard Mitigation-Floodplain Management & Insurance Group at the Joint Field Office in Lincroft. **If you are not also serving as the floodplain administrator, please pass the above information along.**

Construction Permits Associated with the Repair of Storm-damaged Single-family Homes

In a November 2012 Alert, the Division of Codes and Standards advised:

The Department of Community Affairs urges you to use extreme caution when reentering any residence that has been submerged or water damaged during the storm. Do NOT enter any building that displays an order to vacate or unsafe structure placard.

When Construction Permits are NOT Required:

Construction permits will not be required when the repair work includes only cosmetic work, such as roof shingle repair or replacement, flashing repair or replacement, siding, gutter repair or replacement, window repair or replacement and any other exterior or interior non-structural repairs, including the repair or replacement of plaster or gypsum board walls or ceilings, bathroom tiles, etc.

When Construction Permits ARE Required:

All repairs that require structural work, including the repair or replacement of the following:

- Roof rafters
- Roof ridge beams
- Structural window headers

See Storm Repair –Single-family Dwelling - page 12

Storm Repair –Single-family Dwelling *continued from page 11*

- Interior doorway headers
- Ceiling and floor beams
- Main girders
- Exterior wall framing
- Interior bearing walls
- Foundation walls
- Chimneys
- Retaining walls
- Accessory structures, such as detached garages or sheds

ELECTRICAL & PLUMBING WORK

Notify the local construction code enforcement agency of all electrical and plumbing work undertaken and apply for necessary construction permits as soon as it is practical to do so. In the event that the interior was damaged by water or the basement was flooded and the wiring, receptacles, switches or panels were compromised, it is recommended that a New Jersey licensed electrical contractor be contacted to inspect, evaluate and make necessary repairs or replacements. Similarly, in the event that the water heater or heating or cooling equipment was submerged, it is recommended that a New Jersey licensed plumber or mechanical contractor inspect, evaluate and make necessary repairs or replacements. All work should be inspected by the local code enforcement agency *before* final payment is made to the contractor.

If you have questions, please contact the local construction official or the Department of Community Affairs, Division of Codes and Standards at (609) 292-7899.

Waiving Permit Fees in the Wake of the Storm

In a letter dated November 2, 2012, Director Smith wrote:

Dear Construction Official:

I am writing to remind everyone that municipalities may waive fees for permits for work made necessary by hurricane damage. Pursuant to N.J.A.C. 5:23-4.19(b)5., if the municipality is waiving its fees, then the State permit surcharge fee also is waived.

Should you have any questions, please feel free to contact the Office of Regulatory Affairs at (609) 984-7672.

Sincerely,

Edward M. Smith
Director
Division of Codes and Standards

Flood Elevation FAQs: NJ’s Emergency Flood Elevation Rule

In order to better protect lives and property following Superstorm Sandy and other major recent flooding events, the state has adopted emergency amendments to New Jersey’s Flood Hazard Area Control Act rules that establish minimum elevation standards for the reconstruction of houses and buildings in areas that are in danger of flooding. The following FAQs answer some of the most common questions and will help you determine if you need to elevate and get you started if you need to do so. If your property was not substantially damaged, you do not need to take any action now. Municipal floodplain administrators make “substantial damage” determinations. The rule applies to new construction and those property owners whose properties were substantially damaged or are starting new construction. A structure is considered substantially damaged if the cost of restoration equals or exceeds 50 percent of the market value of the structure prior to the damage. Recent congressional action resulted in significant changes to National Flood Insurance Program rates. Flood insurance costs, which are outside the control of the state, are likely to be much lower for those who elevate using the state’s elevation standards.

Q: What does the flood hazard area emergency rule do?

A: The rule, adopted by emergency action on Jan. 24, requires new and reconstructed buildings to be elevated in accordance with the best available flood mapping. This will help protect people and property during future floods. The emergency rule also adopts a new permit-by-rule so that people reconstructing and elevating buildings utilizing the state’s elevation standard will not need to secure a permit from the Department of Environmental Protection, nor pay the fee typically charged for a Flood Hazard Area permit. This will save them time and money while spurring quicker recovery from Sandy.

Q: What are the new elevation standards?

A: The Department of Environmental Protection (DEP) has determined that the Federal Emergency Management Agency’s (FEMA) recently released Advisory Base Flood Elevation (ABFE) maps provide the best elevations to be protective of lives and property and has incorporated them as the new elevation standard for the state. Property owners who have to rebuild because their property is substantially damaged will have to build to the highest available state or FEMA elevation level. In most cases, this will be the ABFE. In addition, Flood Hazard Area Act rules, in effect since 2007, require the lowest floor of each building in flood hazard areas to be constructed at least one foot above this elevation.

Flood Elevation FAQs

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Q: What are ABFEs?

A: FEMA had been remapping the floodplain along New Jersey's coastline for two years when Sandy hit. FEMA's previous maps were outdated and did not always accurately show the potential for flooding. In order to support and guide New Jersey's recovery efforts, FEMA released its new mapping in December on an advisory basis. The ABFEs use the most accurate modeling, topographic maps and scientific data available. To learn more about ABFEs and to view the maps for New Jersey, visit:

<http://www.region2coastal.com/sandy/abfe>

Q: Will the ABFEs change?

A: FEMA anticipates some changes to these maps for both elevations and zones. The ABFEs currently reflect the most accurate modeling, topographic maps and scientific data available. FEMA plans to release updated flood maps over the next six to seven months, which will further fine-tune coastal flood elevations. The regulatory process to finalize the maps could take up to two years. DEP will continue to work with FEMA to provide input on these maps.

Q: If the ABFEs are only advisory, why is the state incorporating the use of these maps now as the basis for elevation standards?

A: In many cases, existing FEMA flood maps were significantly outdated. Many were more than two decades old. The ABFE maps, which are the precursor to final flood maps, will better protect property and lives and provide consistency and predictability during rebuilding. They will make coastal areas stronger and more resilient. Consistency and predictability will allow rebuilding to occur much more quickly so lives affected by Sandy can return to normal. Without this action, residents may have reconstructed with inadequate safety standards, exposing them to substantially higher flood insurance rates when FEMA adopts its final maps.

Q: Do I have to elevate my home and/or build to new construction standards?

A: You are required to elevate and/or meet new construction standards if your house is located in a flood zone and was declared substantially damaged by your local floodplain administrator or is new construction. You have no legal obligation to elevate if your home was not substantially damaged.

Q: What is the definition of substantial damage?

A: Substantial damage means damage of any origin

See Flood Elevation FAQs –at right

Flood Elevation FAQs

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sustained by a structure in which the cost of restoration of the structure to its condition before damage would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Q: If I have to elevate my house, will the state or federal governments help finance the work?

A: Yes. FEMA can provide up to \$30,000 to cover the Increased Cost of Compliance (ICC) with federal, state and local regulations if you have federal flood insurance. In addition, the Christie Administration intends to provide grants to homeowners with substantially damaged homes to help them offset some of the costs of elevation, mitigation and renovation, and intends to announce in the spring the mechanism for such grants. In order to access any additional funding, FEMA requires property owners reconstruct using the best available data.

Q: Can I get Increased Cost of Compliance assistance to elevate my home even if it was not determined to be substantially damaged?

A: This FEMA assistance is only available to those who had National Flood Insurance Program protection for structures that have sustained substantial damage and were below the current base flood elevations. It is available to anyone with flood insurance, regardless of whether the house is a primary place of residence or not. The state is exploring other options to assist property owners who want to elevate but did not meet the threshold for a determination of substantial damage.

Q: Will the emergency regulation affect my flood insurance rates?

A: The ABFEs do not affect insurance rates. Your rates could increase when FEMA adopts its final flood maps. If you do not meet its elevation standards, which are likely to be close to the ABFEs, your rates could increase even more significantly.

Q: Are there benefits to elevating?

A: Yes. You will better protect your house and its contents and you will likely pay lower flood insurance rates in the future than if you do not elevate. Some people may find that the long-term insurance savings alone can offset the cost of raising a house.

Q: If my home is determined to be substantially damaged, can I still live in it until I elevate?

A: Homeowners may live in structures that are deemed substantially damaged for up to four years before needing to elevate if they can take temporary measures to make their homes habitable. The determination of habitability must be made by the local construction official.

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Flood Elevation FAQs

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Q: Am I eligible for Increased Cost of Compliance funding if I take up to four years to elevate my house?

A: Yes, provided you were insured under the National Flood Insurance Program and you elevate in accordance with applicable standards and FEMA regulations.

Q: Do I have to elevate my house and/or build to new construction standards if my municipality does not pass an ordinance adopting the ABFEs?

A: Yes, if your municipality declares your house substantially damaged and it is located in a flood hazard area, you are required to elevate and/or build to new construction standards and may begin doing so right away. The DEP, however, is encouraging municipalities to pass an ordinance adopting the ABFEs because this will make your town eligible for Increased Cost of Compliance assistance and other federal mitigation aid. The DEP will be providing municipal officials with a model ordinance so they can adopt the ABFEs as the new elevation standard.

Q: If I have to rebuild, when should I get started and what should I do?

A: You can begin immediately. The emergency rule provides people who must rebuild and elevate a high level of confidence that they will be in compliance with the flood elevation standards that FEMA will be adopting. There is no need to wait for FEMA to formally propose flood insurance rate maps. You can get started by talking to your municipal floodplain administrator to see if your house is substantially damaged. You should also contact your municipality to see what kind of local approval you may need and what construction standards you have to build to. In addition to the DEP's elevation standards, buildings in flood zones must meet Uniform Construction Code standards that are regulated by the New Jersey Department of Community Affairs (DCA) and implemented at the local level.

Q: Will I need a state permit to reconstruct or elevate my building?

A: The DEP regulates building elevations through its Flood Hazard Area Control Act rules. Under the emergency Flood Hazard Area Control Act rule just adopted, you are eligible for what is known as a permit by rule (effectively an automatic permit) as long as the lowest floor is elevated to at least one foot above the state's design flood elevation and provided the building stays within its original footprint. Slight variations in size and location can

See Flood Elevation FAQs –page 15

Transfer Switch Issues for Newly Installed Generators 

With the influx of generator installations taking place as a result of Superstorm Sandy, questions have arisen regarding the correct location of the transfer switch. Specifically, one question is: Can a transfer switch for a standby power system be located between the meter and existing service equipment? Another question follows: Does the grounding electrode conductor and the main bonding jumper need to be relocated?

Standby power systems that supply power to the service conductors are allowed to be connected ahead of an existing service disconnecting means only if such systems are provided with a separate disconnecting means and overcurrent protection. The means of disconnect are considered service equipment and must be installed in accordance with requirements for service entrance conductors. Therefore, based on the requirement to provide service equipment, the transfer switch must comply with Section 230.90, Service Equipment, Overcurrent Protection, Where Required, which **requires** that each ungrounded service conductor **have overcurrent protection**. Section 230.70, Service Equipment, Disconnecting Means, General, **requires** a means of disconnecting all conductors in a building or other structure from the service entrance conductors. Also, Section 230.66, Service Equipment, General, Markings, requires service equipment rated 600 volts or less to be marked and identified as being **"suitable for use as service equipment"** (service rated). Since the disconnecting means and overcurrent protection is part of the transfer switch it becomes the service disconnect, the provisions of Article 250, Grounding and Bonding, require that the system grounding specified in Section 250.24, Grounding Service-Supplied Alternating Current Systems, be done at any accessible point from the load end of the service drop to the service disconnecting means which is now in the transfer switch. The connection of the grounded service conductor to the grounding electrode conductor is required to be relocated from the existing service equipment and installed in the transfer switch enclosure that is identified as "suitable for use as service equipment", based on Section 250.24. If the grounding connection is made within the existing service enclosure, such an arrangement would not comply with Section 250.24(A)(5), Load-side Grounding Connections

To summarize, a transfer switch cannot be placed ahead of the service main unless it becomes the service main (with service disconnect and overcurrent protection).

Another acceptable option is to add a new service-rated

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Transfer Switch Issues

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disconnect with overcurrent protection installed ahead of a transfer switch.

With either option, the existing service equipment becomes distribution equipment requiring separation of neutrals and grounding conductors, and the service bonding and grounding needs to be relocated to the new service equipment.

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

Source: Ken Verbos
Office of Regulatory Affairs

DEP Prior Approvals and Other Issues, Guidance for Code Officials

DEP Flood Rules - On January 24, the Governor announced an emergency rule amending DEP's Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. Here is some very basic information on what these rules do and do not say.

- They effectively require use of the Advisory Base Flood Elevations (ABFE's) for anyone seeking to construct or to elevate a house right now.
- Elevation above base flood is required for new construction and for homes determined by the local floodplain administrator to be substantially damaged; these rules do not require the elevation of all existing buildings as they stand.
- In the case of homes determined to be substantially damaged, owners have up to four years to elevate the house. Owners are allowed to undertake work to render the house habitable in the meantime. As always, this work is subject to the requirements of the Uniform Construction Code, including the issuance of permits for any work undertaken to make a house habitable and inspections of this work. It is important to track these occupied houses to ensure that the requirement to elevate (a condition of the floodplain administrator's prior approval) ultimately is met.
- The DEP rules allow owners to elevate an existing house under a "permit by rule" (an automatic permit) as long as the building footprint is not increased by more than 300 square feet. Owners do not need to go to DEP to obtain a permit for a house that legally existed before Sandy.
- The rules DO NOT impact the need to obtain UCC permits.

See DEP Prior Approvals at right

Flood Elevation FAQs

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sometimes be allowed. You will still need to secure local construction permits. A state Coastal Area Facility Review Act (CAFRA) permit is not needed if you reconstruct in place.

Q: What should I know before rebuilding?

A: It is very important that you carefully document any repair or reconstruction project to ensure you have a record of all activities from inception to completion. Photographs and other forms of documentation should be kept before, during, and after construction. Retain all receipts, bills, surveys and construction plans. These items will help document the history of your project should you need to do so for FEMA assistance or insurance reimbursement.

Q: What's the difference between FEMA's Zone A and Zone V? Can I appeal a V-Zone designation?

A: Both zones lie within FEMA's 100-year floodplain. Zone V applies only in tidal floodplains and denotes hazards associated with storm-induced waves of at least three feet in height. Construction standards in the V-zone are more stringent in order to account for the increased risk of damage from storm surges. While there is no appeal process for the ABFEs, you may appeal to FEMA after the agency formally proposes flood maps later this year.

A more detailed version of the FAQs and additional information on working with the DEP to recover from Sandy is available on the DEP web site at: <http://www.nj.gov/dep/landuse/SandyFAQ.html>.

DEP Prior Approvals

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- Below are links to a question and answer document posted on the DEP website and to the full text of the emergency rule itself:

<http://www.state.nj.us/dep/special/hurricane-sandy/docs/abfes-faq-20130207.pdf>

<http://www.nj.gov/dep/docs/20130124flood-hazard-emergency-rule.pdf>

A note on "reconstruction" - The DEP rules use the term "reconstruct," but the definition used in the DEP rules is different from the definition found in the Uniform Construction Code (UCC.) The DEP definition, as amended by the emergency rule, appears below for your information. It includes some of the definition of substantial improvement/substantial damage from the National Flood Insurance Program rules. Reconstruction requires elevation, but it is allowed under the "permit by rule" provisions and does not require a separate DEP approval or permit.

"Reconstruct" means to patch, mend, replace, rebuild and/or restore a lawfully existing structure to a usable condition after decay or damage has occurred, in which 50 percent or greater of the structure is replaced

See DEP Prior Approvals – page 16

Helpful Links Provided by FEMA

National Flood Insurance Program (NFIP) Technical Bulletins:

<http://www.fema.gov/national-flood-insurance-program-2/nfip-technical-bulletins>

Substantial Improvement/Substantial Damage Desk Reference (FEMA P-758):

<http://www.fema.gov/library/viewRecord.do?id=4160>

FEMA Building Code Resources:

<http://www.fema.gov/building-science/building-code-resources>

- Flood Provisions of the 2009 I-Codes (basis for NJ state codes)
- Highlights of ASCE 24 (referenced by the building code)
- Quick Reference Guide: Visual Comparison of NFIP and Building Code Requirements for Special Flood Hazard Areas

FEMA Hurricane Sandy Recovery Advisories (series of 7; in development):

<http://www.fema.gov/library/viewRecord.do?id=6994>

- Improving Connections in Elevated Coastal Residential Buildings (RA 1);
- Reducing Flood Effects in Critical Facilities (RA 2);
- Restoring Mechanical, Electrical, and Plumbing Systems in Non-Substantially Damaged Residential Buildings (RA 3);
- Reducing Operational Interruptions to Mid- and High-Rise Buildings During Floods (RA 4);
- Designing for Flood Levels Above the Base Flood Elevation After Hurricane Sandy (RA 5);
- Protecting Building Fuel Supplies from Flood Damage (RA 6); and
- Reducing Flood Risk and Flood Insurance Premiums for Existing Buildings (RA 7).

Local Official's Guide to Coastal Construction (FEMA P-762):

<http://www.fema.gov/library/viewRecord.do?id=3647>

Homebuilder's Guide to Coastal Construction (FEMA P-499):

<http://www.fema.gov/library/viewRecord.do?id=2138>

Homeowner's Guide to Retrofitting (FEMA P-312):

<http://www.fema.gov/library/viewRecord.do?id=1420>

Coastal Construction Manual (FEMA P-55):

<http://www.fema.gov/library/viewRecord.do?id=1671>

Engineering Principles and Practices of Retrofitting Floodprone Structures (FEMA P-259):

<http://www.fema.gov/library/viewRecord.do?id=1645>

Source: John N. Terry
Code Assistance

DEP Prior Approvals

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and/or the size, shape or location of the structure is altered. For habitable buildings, the percentage of replacement shall be determined by comparing the cost of the reconstruction to the market value of the building as determined before the start of construction; where the percentage of replacement is 50 percent or greater, such reconstruction shall also constitute a substantial improvement as defined in this section. For all other structures, the percentage of replacement shall be determined by comparing the area of the structure being reconstructed to the total area of the structure.

DEP Coastal Area Facility Review Act (CAFRA) – A State Coastal Area Facility Review Act (CAFRA)

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DEP Prior Approvals

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permit is not needed to reconstruct in place in the CAFRA area. A person may request a written determination from the DEP, which includes the submittal of an application, fee and specific information. A relocation of the footprint of the development laterally or landward which does not enlarge the footprint may also be exempt from CAFRA if the DEP determines that such relocation will result in less environmental impact than the in place reconstruction of the development. In this case, written approval from the DEP is required. (The full text of the CAFRA exemption for the reconstruction of a development damaged or destroyed in whole or in part, by fire, storm, natural hazard or act of God (N.J.A.C. 7:7-2.1(c)3), is included at the bottom of this document for your information. "Development" is defined very broadly in the DEP rules.)

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BULLETIN 13-1A: Elevating existing houses

In the aftermath of Superstorm Sandy, there have been a number of inquiries about elevating existing houses. The following is intended to offer guidance on some of the technical issues associated with elevating existing houses in flood hazard areas. This guidance is limited to existing houses with no increase in the habitable space. As always, new construction, even if it is to replace storm-damaged structures, must meet all of the applicable requirements of the adopted subcodes.

An elevation is an addition: Elevating an existing house is categorized as an addition under the rehabilitation subcode because it brings about an increase in the mean height of the highest roof of the structure. The addition itself must comply with the requirements for new construction. In the case of elevating an existing house, this would be the new foundation system, and associated work, including pilings.

Increase in height to greater than 35 feet: The rehab subcode prohibits an increase in height beyond that which would be permitted for new construction. Under the one- and two-family dwelling subcode, buildings of unprotected wood-framed (VB) construction are limited to two stories and 35 feet in height. Buildings with a mean roof height of greater than 35 feet or greater than two stories in height must be of VA construction or must have a fire sprinkler system. While these are reasonable requirements when applied to new construction, these requirements become punitive when applied to an existing house being elevated. (Note that "any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access, or limited storage" is not counted as a story. See Section R322.1.5 of the one- and two-family dwelling subcode.)

Clearly, the primary concern here is fire safety, specifically, the ability of the occupants to evacuate safely in the event of a fire. For this reason, a variation is appropriate for increases in height that bring the mean height of the highest roof surface to greater than 35 feet provided that (1) a smoke alarm system or a household fire alarm system is installed in accordance with the one- and two-family dwelling subcode Section R314; and (2) the dwelling unit is separated by a one hour, fire-rated assembly from any parking area or other area underneath the dwelling unit where motor vehicles or water craft or other gas-fired engines may be stored. (See FTO-13)

Wind load: An increase in height also necessitates consideration of any increased wind load.

- International Residential Code (IRC) Houses elevated up to a maximum of 42 feet - For houses constructed in compliance with any edition of the International Residential Code (or the International Building Code) with an elevation of the existing house that brings the mean height of the highest roof surface up to, but not above, 42 feet, no additional analysis of the existing building is required. The factors of safety incorporated into the structural requirements of the International Codes are sufficient.
- "Pre-IRC" Houses elevated up to a maximum of 42 feet– Roof Connections - There is some concern with the ability of roof connections to withstand uplift forces for houses constructed prior to adoption of the International Codes. This is because earlier national model codes allowed toe nailing and did not include the requirements for strapping found in the International Residential Code. Toe nails have low capacity to resist uplift forces; therefore, an engineering analysis should be required to demonstrate that the connections will resist the predicted wind forces.
- Houses elevated to greater than 42 feet - For all houses (whether built under the IRC or not) where the mean height of the highest roof surface resulting from elevating the existing house will be greater than 42 feet, an engineering analysis should be required to demonstrate that all of the connections (not limited to the roof) will resist the predicted wind forces.

DEP Prior Approvals

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UCC Fees for Elevating an Existing House - The elevation of an existing house is categorized as an addition under the rehabilitation subcode because it brings about an increase in the mean height of the highest roof of the structure. For additions, the fee typically is calculated based on volume. This does

not necessarily make sense when the "addition" consists of pilings. For purposes of doing the fee calculation, the elevation of an existing house should be treated the same as the site construction associated with premanufactured construction and should be computed as a unit rate per \$1,000 based on the estimated cost of the work. In this case, the cost of the work should be limited to the construction of the pilings and should exclude the cost of lifting the house and placing it on the pilings. Again, this is similar to what is done for a premanufactured unit. The cost does not include the cost of moving the unit into place.

Historic Preservation - Projects receiving FEMA Public Assistance and Hazard Mitigation Grant Program funds will require review under Section 106 of the National Historic Preservation Act. The review will be conducted by FEMA in consultation with the New Jersey Historic Preservation Office. This review is a condition of the receipt of federal funding. It is NOT a Uniform Construction Code prior approval, however, it is useful for code officials to know something about this in order to inform the owners of historic buildings in the community. FEMA's rules (the National Flood Insurance Program rules) provide some flexibility on projects that affect buildings that are listed on, or eligible for listing on, the National Register of Historic Places. Online maps of New Jersey's historic resources are available at:

<http://depnet/gis/geoweb2.htm>

For help in using the online mapping, or for questions about the Section 106 review process, contact the Historic Preservation Office at 609-292-0061.

*Excerpt from DEP CAFRA Rules:
N.J.A.C. 7:7-2.1(c)3. The reconstruction of any development which was legally existing on and damaged subsequent to July 19, 1994 that is*

See DEP Prior Approvals –at right

DEP Prior Approvals

continued from left

damaged or destroyed, in whole or in part, by fire, storm, natural hazard or act of God, provided that such reconstruction is in compliance with existing requirements or codes of municipal, State and Federal law; and further provided that such reconstruction does not result in:

- i. The enlargement or relocation of the footprint of the development; or*
- ii. An increase in the number of dwelling units or parking spaces within the development.*
- iii. A relocation landward or laterally may qualify for the exemption at (c)3 above if the Department determines, in writing, that such a relocation would result in less environmental impact than the in place reconstruction of damaged or destroyed development.*
- iv. Any person requesting a determination concerning relocation landward shall follow the procedures for an exemption determination at (f)2 below.*
- v. An increase in the area covered by buildings and/or asphalt or concrete pavement.*

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Volume 25, Number 2

Summer 2013

The 32nd Building Safety Conference of New Jersey “Rebuilding New Jersey-Together”

The 32nd Annual Building Safety Conference was held May 1st through 3rd at Bally’s Atlantic City. The focus was on Rebuilding New Jersey- Together. With that in mind, a special training opportunity - Superstorm Sandy, Lessons Learned - was held. We had a very successful conference this year with about 600 people in attendance to attend classes and to honor the inspectors and technical assistant of the year.

The kickoff event for the Conference was the “Crackerbarrel.” This event gives the attendees the opportunity to hear presentations of a variety of topics in a short format that focuses on new codes and standards and items of particular interest to the code enforcement community. The topics this year ranged from several topics concerning the rebuilding effort in New Jersey to a preview, given by Steve Jones, International Code Council (ICC) Vice President, of the upcoming ICC Conference later this year in Atlantic City.

The centerpiece of the Conference was the recognition and honoring of those selected by their associations as Inspectors of the Year and as the Technical Assistant of the Year. Division of Codes and Standards’ Director Edward Smith and the Presidents of the respective

See Building Safety Conference- page 3

Subcode References in the Rehabilitation Subcode



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

Normally, when a newer edition of a model code is adopted through amendment to Subchapter 3, a proposal is presented to update the Rehabilitation Subcode. So the question arises, what does the code user do when a newer edition of a model code is adopted, but the companion change has not yet occurred in the Rehabilitation Subcode? Which edition of the model code is supposed to be used in existing buildings undergoing a construction project? The short answer is that the most recently-adopted model code may be used, but only for sections that existed

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Building Safety Conference

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associations made the award presentations this year at the annual luncheon.

The following awards were presented:

Building Officials Association of New Jersey
Building Inspector of the Year- Thomas J. Pinand

New Jersey State Plumbing Inspectors Association
Plumbing Inspector of the Year- Anthony F. Gargani, Jr.

New Jersey Fire Prevention and Protection Association
Fire Protection Inspector of the Year- Paul Allen

Municipal Electrical Inspectors Association of New Jersey
Electrical Inspector of the Year- Ernest J. Sisco

New Jersey Association of Technical Assistants
Technical Assistant of the Year- Valerie A. Figueiredo

Congratulations to all for your hard work and dedication to the betterment of code enforcement here in New Jersey!

The Building Safety Conference is a terrific opportunity not only to broaden your knowledge of cutting edge code enforcement and building construction techniques, but also to meet with officials from throughout the state to share ideas and promote collegiality among our community. We hope to see you all next year at Bally's Atlantic City May 7th through 9th, 2014. Please save the date!

Source: John Delesandro
Bureau of Code Services



Above, NJPIA's 2013 honoree Anthony F. Gargani, Jr. (left), accompanied by NJPIA President Michael G. Baker (right).



Above, NJFP&PA's 2013 honoree Paul Allen (center), accompanied by NJFP&PA President Stanley Sickels (right), and Codes and Standards Director Edward M. Smith (left).



Above, BOANJ's 2013 honoree Thomas J. Pinand (left), accompanied by BOANJ President James Zaconie (right).



Above, MEIA's 2013 honoree Ernest J. Sisco (left), accompanied by MEIA President Ed Reed (right).



Above, NJATA's 2013 honoree Valerie A. Figueiredo (left), accompanied by NJATA President Linda Aiello (right).



Above, Director Smith and all 2013 honorees.

Arc-Fault Circuit Protection for PV Systems –Limited Availability! What do I do?

Section 690.11 of the 2011 National Electrical Code (NEC), titled "Arc-Fault Circuit Protection (Direct Current)," requires photovoltaic systems with dc circuits, dc output circuits, or both, on or penetrating a building operating at a PV system maximum system voltage of 80 volts or greater, to be protected by a listed (dc) arc-fault circuit interpreter, PV type, or other system components listed to provide equivalent protection. The problem is this requirement and the technology are so new that very few inverter manufacturers have even started manufacturing inverters with arc fault protection inside them. So, as the electrical subcode official responsible for enforcing these provisions, what do you do?

Section 90.4 of the 2011 NEC, titled "Enforcement," acknowledges that the NEC may require new products, constructions or materials that may not be available at the time of the NEC publication. In such event, the authority having jurisdiction (AHJ) is authorized to allow the use of the products, constructions or materials that comply with the most recent previous Code edition.

Because the NEC is on the cutting edge of technology, it is difficult to establish a viable future effective date within each section of the NEC because the time needed to change existing products and standards, as well as to develop new materials and test methods. This information usually is not known at the time the Code is adopted. In this case, manufacturers have been slow to have products meeting the requirements developed. That's why this section exists. The Department is advising electrical subcode officials to waive new requirements of Section 690.11 from the 2011 NEC and use the 2008 provisions while products that meet the new requirements are developed, manufactured and become commercially available.

Should a variation be issued? No, a variation is not required since Section 90.4 allows the AHJ to approve the PV-DC system without arc fault protection. However, a written record should be kept with the inspection file.

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

Source: Ken Verbos
Office of Regulatory Affairs

Prototypes and the EXTENDED Permits Extension Act

(Essentially a reprint of the Spring 2011 article, but with new dates)

Prototype releases that might otherwise have expired are still valid. Why? As you may recall, the Permit Extension Act (PEA) extends all permits that were open and valid as of January 1, 2007. This Act overrides the rules of the Uniform Construction Code (at N.J.A.C. 5:23-2.16(b)) regarding the suspension of a construction permit. (As a reminder, the UCC provides that a permit lapses if (1) no work is done for a year or (2) work, having been started, is discontinued for six months.) However, every beginning must have an ending and the PEA ends December 31, 2014, with exceptions that may allow the permit to continue to June 30, 2015.

In general, the PEA provided that a UCC permit issued before January 1, 2007 would be valid for an additional six months beyond December 31, 2014 or for the time

See Prototypes- page 4



Rehab Subcode

Continued from page 1

previously and were included by reference in the Rehabilitation Subcode (even if sections moved).

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

The best way to explain this is through an example. In the electrical subcode, Section 406.3 is currently referenced in the repair, renovation, alteration and reconstruction sections of the Rehabilitation Subcode. This reference is to the 2008 edition and previous editions of the National Electrical Code (NEC). With the adoption of the NEC/2011, this text was moved to Section 406.4. Section 406.4 of the NEC/2011 may be referenced in place of Section 406.3 of the NEC/2008. To further explain, tamper resistant receptacles in dwelling units was Section 406.11, which was the last requirement in Section 406 for 2008; it is now Section 406.12. As you will see, the sections have moved, but the text is, for the most part, the same. Section 406.12 added one hyphenated word for clarity and provided exceptions. It would be acceptable to use the exceptions in this case. However, the new sections that follow, Tamper Resistant Receptacles in Guest Rooms (406.13) and Child Care Facilities (406.14) should not be cited because no rule has been published to include these new requirements as part of the Rehabilitation Subcode.

In a perfect world, the references would be updated automatically the day the NEC/2011 was adopted as the Electrical Subcode. However, we live in an imperfect world. That being said, the day that the NEC/2011 was adopted as the electrical subcode, May 7, 2012, the NEC/2011 became the effective referenced code, even without the 2008 code references having been specifically updated. Therefore, while an update of the code references in the Rehabilitation Subcode is pending, the 2008 references within the Rehabilitation Subcode may be treated as 2011 references as discussed above. Yes, this does mean you will occasionally have to check to be sure that a referenced section has not been changed, but diligence ensures that we stay aware of the changes to the most recently-adopted national model codes.

See Rehab Subcode at right

Prototypes

Continued from page 3

that would have remained on January 1, 2007, whichever is shorter. Any permit issued during the extension period (between January 1, 2007 and December 31, 2014) would be valid until June 30, 2015 (six months beyond the end of the extension period,) or until the date when it would have expired if the PEA had not been passed, whichever is longer.

The Department has provided guidance on this issue (September 23, 2008, January 25, 2010 and December 10, 2012 correspondence to code officials, most recent located at:

http://www.nj.gov/dca/divisions/codes/alerts/pdfs/PEA_of_2012a.pdf

However, another question has arisen: How does the PEA affect prototype plans? The answer is: If a prototype plan release was valid on January 1, 2007, it remains valid until June 30, 2015. The reasoning is provided below: The PEA stopped the clock for releases that were in place on January 1, 2007. It also extended the “useful life” of any releases issued between January 1, 2007 and December 31, 2014. This means that the adoption of subsequent editions of the model codes, and the end of their associated grace periods, does not affect the validity of prototype releases issued during timeframe delineated in the PEA. All of these prototype releases remain valid until June 30, 2015.

NOTE: Prototype plan releases based on the 2012 editions of the national model codes (yet to be adopted) will remain valid until the end of the grace period following the adoption of a subsequent edition(s) of the model code(s). Remember that the PEA says June 30, 2015 *or the date when the release would otherwise expire*, whichever is longer.

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

Source: John N. Terry
Manager, Construction Code Enforcement



Rehab Subcode

Continued from left

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

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

Source: Rob Austin
Code Assistance Unit

Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) Contractors License Update

This article is an update to the HVACR license. On December 20, 2007, legislation was signed into law establishing a new State Board of Examiners of Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) Contractors and requiring licensure to work in New Jersey as a Master HVACR contractor.

At N.J.S.A. 45:16A-26, the law includes a “grandfather” provision, which authorizes the Board to issue a Master HVACR license based on experience without examination for a limited time.

A six-month “Grandfather” period, during which individuals currently practicing as HVACR contractors may obtain licensure without meeting education or examination requirements, will begin to run on the effective date of regulations to be adopted by the State HVACR Contractors Board. The regulations will prescribe the application procedure and application fee.

The adoption date was April 15, 2013 with an effective date of October 15, 2013. In the July 1, 2013 *New Jersey Register* (NJR), the effective date was extended from October 15, 2013 to January 1, 2014. This extension will give the Board sufficient time to develop its licensing examination prior to implementing the license. January 1, 2014 the Board will begin to accept applications for the HVACR license. January 1, 2014 will start the “grandfather” period. The applications will be able to be filed online only.

Further information concerning licensure of HVACR contractors, including the application process, will be posted on the Board’s website at:

www.nj.gov/lps/ca/HVACR/

as it becomes available.

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

Source: Thomas C. Pitcherello
Code Assistance Unit

Air Barrier, What Is It?

The term “air barrier” is used in the energy subcode for limiting air infiltration of the building thermal envelope in accordance with Section 402.4.1 of the International Energy Conservation Code/2009 (IECC/2009). It is defined as “Material(s) assembled and joined together to provide a barrier to air leakage through the building envelope. An air barrier may be a single material or a combination of materials.” For those of you that think this

See Air Barrier at right

Air Barrier

Continued from left

definition needs work, especially in determining what materials may be used...well, it doesn’t get better in the IECC/2012.

When reviewing the commercial side of the energy subcode, the ASHRAE Standard 90.1-2007 did not offer much help either. However, unlike the IECC/2012, ASHRAE 90.1- 2010 does offer help! The ASHRAE 90.1-2010 is not yet adopted, but is being proposed as part of the 2012 national model code proposal. Therefore, in an attempt to provide some guidance, Section 5.4.3.1.3, Acceptable Materials and assemblies, of ASHRAE Standard 90.1-2010 is provided below:

5.4.3.1.3 Acceptable Materials and Assemblies.

Continuous air barrier materials and assemblies for the opaque building envelope shall comply with one of the following requirements:

a. Materials that have an air permeance not exceeding 0.004 cfm/ft² under a pressure differential of 0.3” w.g. (1.57psf) when tested in accordance with ASTM E 2178. The following materials meet the requirements of 5.4.3.1.3 a:

1. Plywood—minimum 3/8 in.
2. Oriented strand board—minimum 3/8 in.
3. Extruded polystyrene insulation board—minimum 1/2 in.
4. Foil-faced urethane insulation board—minimum 1/2in.
5. Exterior gypsum sheathing or interior gypsum board—minimum 1/2 in.
6. Cement board—minimum 1/2 in.
7. Built up roofing membrane
8. Modified bituminous roof membrane
9. Fully adhered single-ply roof membrane
10. A Portland cement/sand parge, stucco, or gypsum plaster minimum 1/2 in. thick
11. Cast-in-place and precast concrete.
12. Sheet metal.
13. Closed cell 2 lb/ft³ nominal density spray polyurethane foam—minimum 1 in.

b. Assemblies of materials and components (sealants, tapes, etc.) that have an average air leakage not to exceed 0.04 cfm/ft² under a pressure differential of 0.3” w.g. (1.57psf) when tested in accordance with ASTM E 2357 ASTM E 1677, ASTM E 1680 or ASTM E283; The following assemblies meet the requirements of 5.4.3.1.3 b.

1. Concrete masonry walls that are:
 - i. Fully grouted, or
 - ii. Painted to fill the pores.

Although this is not yet adopted as part of the Uniform Construction Code (UCC), it does provide clear guidance on what the intended reference to what an air barrier may be composed of.

Source: Rob Austin
Code Assistance Unit

Retaining Walls in Series, or Not

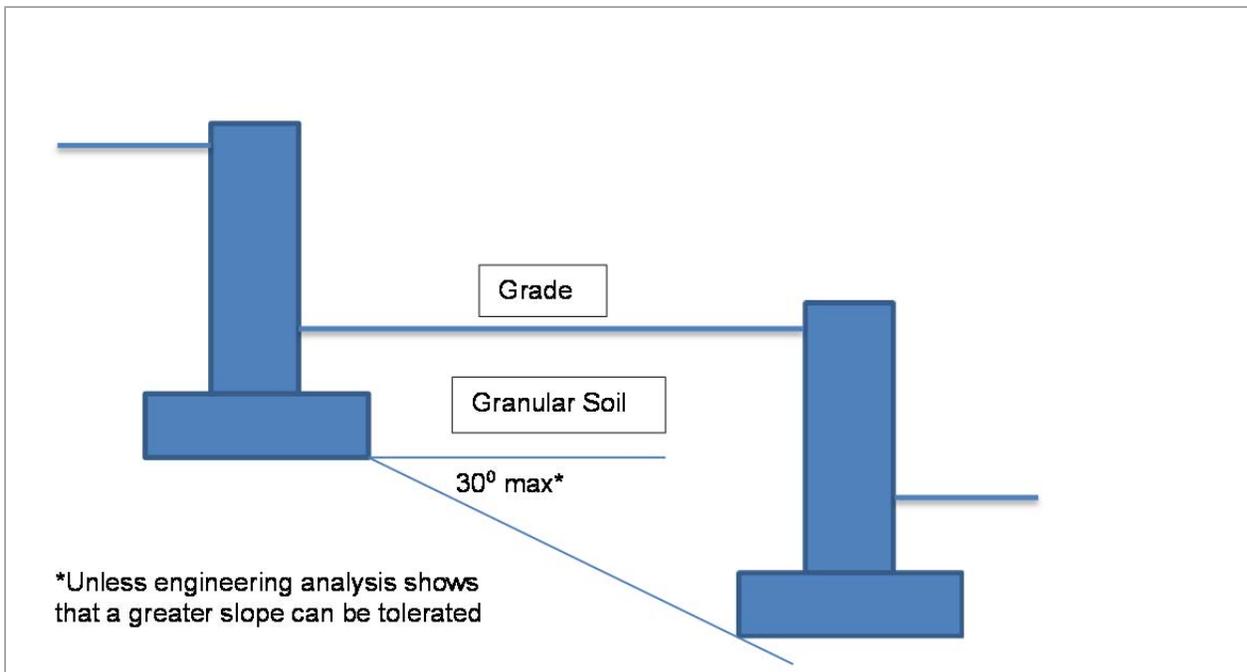


Recently, the Department has received a number of inquiries regarding retaining walls that are in series that measure a total height of 4 feet or greater. More specifically, the question asked is: At what horizontal distance can a series of retaining walls no longer be considered in series? That is, what horizontal distance between the walls 2 feet, 5 feet, 10 feet, 25 feet, etc. is no longer to be considered in series?

The Uniform Construction Code (UCC) does not provide an exact number. N.J.A.C. 5:23-2.14(g) states that no person shall construct, enlarge, alter, reconstruct, or demolish a retaining wall or series of retaining walls having a total height four feet or greater, or a retaining wall less than four feet having a negative impact on a foundation, without first obtaining a construction permit. The height of a retaining wall shall be the sum of the heights of all retaining walls on the same slope.

In order to determine where the upper retaining wall no longer has a negative impact on a lower retaining wall, one must start by measuring a 30 degree angle from the horizontal plane at the bottom of the upper foundation of the retaining wall to the bottom of the foundation of the lower retaining wall. If the line clears the lower retaining wall footing, then the upper retaining wall has no influence on the lower. Therefore, for analysis purposes, the walls are not considered in series.

See below:



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

Source: Marcel Iglesias
Code Assistance Unit

Fire Protection Equipment Contractor, NJ Division of Fire Safety Permit/Certification Numbers

It has come to the attention of the Department that some Fire Protection Subcode Officials are not verifying the New Jersey Division of Fire Safety (DFS) fire protection business permit contractor number being used on the Fire Protection Subcode Technical Form F140. These numbers must be verified to ensure the contractor performing the work is a valid contractor. The simple solution to this issue is to have the contractor supply a copy of their business permit when they submit form F140. When a licensed electrical contractor or licensed alarm contractor is installing fire alarms a copy of the identification card for licensed fire alarm contractor or a sealed application from a licensed electrical contractor must be provided.

N.J.A.C. 5:23-2.15(b)5. When the work involves fire protection equipment, any contractor performing such work shall have the appropriate business permit and certification issued pursuant to N.J.S.A. 52:27D-25q et seq and N.J.A.C. 5:74-2.1 Business permits. The business permit number of the contractor shall appear on the permit application. This law and rule requires that all fire protection contractors obtain a business permit from the New Jersey Division of Fire Safety.

There are some exceptions to these provisions and they are as follows;

- i. Certification shall not be required for licensed electrical contractors or for licensed alarm contractors installing fire alarms.
- ii. Certification shall not be required for homeowners performing work within their residences.
- iii. Certification shall not be required for in-house employees performing routine maintenance work such as monthly, weekly or

daily inspections, or testing of fire protection equipment. iv. Certification shall not be required for contractors who install water supply lines outside a building.

When you think that a false copy of a business permit has been submitted, the contractor number can be verified by going to the NJ Division of Fire Safety website at:

http://www.nj.gov/dca/divisions/dfs/pdf/fpe_contractor_list.pdf

The Contractor Certification Unit issues permits to businesses and certifies individuals involved in the installation, service, repair, inspection or maintenance of fire protection equipment. The above website lists the six certification categories as follows; ALL=All Fire Protection Equipment Contractor, FS=Fire Sprinkler System Contractor, SH=Special Hazard Fire Suppression System Contractor, FA=Fire Alarm System Contractor, PF=Portable Fire Extinguisher Contractor and KF=Kitchen Fire Suppression System Contractor. When contractors are not listed call/email the Contractor Certification Unit, Chris Michallis, Phone (609) 984-7860, Chris.Michallis@dca.state.nj.us.

When a contractor falsifies an application with an improper number or business name, the DFS contractor certification unit will investigate those individuals. The construction official may also issue a penalty pursuant to N.J.A.C. 5:23-2.31(e)4. for falsifying the permit application.

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

Source: Michael E. Whalen
Code Assistance Unit



See DFS Permit/Certification Numbers at right

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Volume 25, Number 3

Fall 2013

Base Flood Elevations: ABFEs, Preliminary, etc.

There are two sets of regulations governing the elevation of structures in designated flood zones: the State's Flood Hazard Area Control Act rules, N.J.A.C. 7:13, and the National Flood Insurance Program (NFIP) rules. As discussed below, these two sets of regulations may now be relying on different maps.

As some of you may recall, with the emergency adoption of changes to the Department of Environmental Protection's (DEP) Flood Hazard Control regulations, FEMA's advisory base flood elevations (ABFE) plus freeboard became the height for new construction and substantially damaged/improved buildings to meet. To refresh your memory, please feel free to visit the adoption at:

<http://www.nj.gov/dep/docs/20130124flood-hazard-emergency-rule.pdf>

As stated in the proposal/adoption, the amendments were enacted "to enable the use of the **best available flood elevation data** to determine the flood hazard area design flood elevation for a given site, including FEMA's recently released advisory flood maps for New Jersey's coast." I bring this to your attention as the ABFE's may not be the best available data now. Most of the Jersey

See ABFEs - page 2

The Definition of a Basement: UCC, DEP and FEMA/NFIP

As we all know, when applying rules and regulations, one must apply the definitions associated with those rules separately. So please note, the definition of a basement per the Uniform Construction Code (UCC) is not same as the definition in the Department of Environmental Protection (DEP) or the Federal Emergency Management Agency (FEMA) and National Flood Insurance Program (NFIP) rules.

The UCC defines the term basement for one- and two-family detached dwellings through the referenced edition of the International Residential Code. However, the term basement in the DEP and FEMA/NFIP regulations is not used in the same way we as code officials use it. Why do I mention this? It's because, regardless of what the UCC says, through the prior approval process, the term "basement" is applied as that term is defined in these other rules.

FEMA/NFIP: A newly constructed or substantially improved (SI) home must have the lowest floor (including basements) elevated to or above the BFE. The NFIP regulations define a basement as "**any area of the building having its floor subgrade (below ground level) on all sides.**" If a local

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coast now has "preliminary work maps" which supersede ABFE mapping, as the ultimate goal is to get to finalized maps. For additional information on the applicability of preliminary work maps, please visit FEMA's website at:

http://www.region2coastal.com/faqs/work_map_faq.

Therefore, if preliminary work maps are available, they are required to be used, plus freeboard, for State flood hazard area permitting. However, as a minimum under the NFIP, municipalities are required by FEMA to regulate to the currently effective Flood Insurance Rate Map (FIRM) or a higher regulatory standard. Therefore, in communities that have adopted either the ABFE maps or the Preliminary Work Maps, if those elevations are lower or zones are less restrictive than the currently effective FIRM map, then local ordinances regulating to the effective map are still required.

This could be an issue with some municipalities and their adopted FIRM, as the effective FIRM is the official map that shows Special Flood Hazard Areas (SFHA) and the risk premium zones that are applicable to a community. These effective map risk zones indicated on FIRMs provide a basis for establishing flood insurance coverage premium rates offered through the NFIP. The preliminary work maps give an indication of the basis for future flood insurance premiums. Building to a higher standard will help to mitigate for future flood risk and future flood insurance premium rates.

Even with the ongoing challenges to the preliminary work maps, in areas where the preliminary work maps indicate a higher flood elevation or more restrictive flood zone, the best available data need to be used, regardless of the local adopted ordinance, so that building owners are rebuilding to the proper heights and allowing municipalities to continue to participate in the NFIP.

If you have further questions about proper elevation levels, please contact the State of NJ NFIP Coordinators Office at DEP (609) 292-2296. If you have questions regarding construction in the flood hazard areas, please contact the Code Assistance Unit at (609) 984-7609.

Source: Rob Austin
Code Assistance Unit



New One- or Two-Family Dwellings Installing NFPA 13D or P2904 Instead of NFPA 13R Sprinkler Systems

This article provides guidance on allowing the construction of three-story International Residential Code (IRC) structures with the use of a National Fire Protection Association (NFPA) 13D or IRC Section P2904 fire sprinkler system. It has become clear that these systems, which are designed specifically for use in one- or two-family dwellings, should be allowed to be used in new construction and in rebuilds. That the Uniform Construction Code (UCC) does not currently provide for their use is the result of amendments made to the International Residential Code (IRC)/2000 when it was adopted in 2003. An explanation of the technical reasoning follows.

To build a new dwelling or rebuild a demolished one- or two-family dwelling, the One-and Two-Family Dwelling Subcode of the Uniform Construction Code (UCC) needs to be followed. Currently, new homes of Type VB construction are limited to two stories, a maximum height of 35 feet and 4,800 square feet in floor area. (Type VB construction is wood frame without a fire resistance rating). In some cases, people rebuilding two story homes are required to elevate their homes to a height greater than 35 feet. In these instances, Type VB construction cannot be used unless a fire sprinkler system is installed. These homes are currently required to have a NFPA 13R fire sprinkler system installed or to be built of Type VA construction. (Type VA construction requires a one hour fire resistance rating on all load-bearing walls and floor/ceiling assemblies). *NOTE: This article addresses new construction and rebuilds. For elevating existing houses to greater than 35 ft., see Bulletin 13-1A.*

In 2003, when the Department proposed the adoption of the IRC/2000 with amendments, the unamended IRC/2000 allowed three story unlimited area dwellings without sprinkler protection. There were valid concerns about fire fighter safety in such a large dwelling. The Department agreed with these concerns and modified the proposal to maintain the suppression requirements of the Building Officials and Code Administrators (BOCA) National Building Code/1996. For Type VB construction, the thresholds of 4,800 sq. ft. in area and not more than two stories, 35 feet in height were retained; for Type VA construction, 10,200 sq. ft. in area and not more than three stories, 40 feet in height were retained. In addition, to address the concerns of the fire service, the height increase section of the BOCA National Building Code/1996 was also retained. The height of a building could be increased one story, up to three stories or 55 feet, when a National Fire Protection Association (NFPA) 13 or 13R system was installed.

Basements

continued from page 1

floodplain administrator determines that work constitutes SI of any building that has a basement, the building must be brought into compliance, which includes eliminating the below-grade area if that area constitutes a basement as defined in the NFIP regulations.

Measures to eliminate basements below the BFE will, in part, depend on the basement and surrounding ground elevations. Below are examples of measures that can be taken to meet the requirement:

- Fill in below-grade areas. This option is effective only if the elevation of the floor above the below-grade area is at or above the BFE. Compliance is achieved by filling in the below-grade area and converting the remaining space to a compliant enclosure.
- Convert walkout basements to compliant enclosures. Section 6.3.1 describes how a walkout basement can be modified to become a compliant enclosure (A zone only).

(The info above comes from Section 6.3.3, Basements, of FEMA P758 which can be viewed at:

http://www.fema.gov/media-library-data/20130726-1734-25045-3528/p758_ch6_r2.pdf.)

DEP: If the existing home is not substantially damaged and the owner chooses to elevate the home, please note that basements are not permitted under the DEP flood hazard area rules. **A basement is an enclosed area having a floor that lies below ground on all sides.** When elevating a building, the owner must fill in the basement so that its floor at a minimum matches the ground on at least one side. However, a building can have a crawl space or other enclosure beneath the lowest floor, provided it is useable solely for building access, storage and/or parking, and provided the enclosure is constructed in compliance with N.J.A.C. 7:13-11.5(n), (o) and (p).

(The info above comes from item #29 of a Frequently Asked Questions document posted on the DEP's website -- If I elevate my building, can I keep my basement?, which can be viewed at:

<http://www.nj.gov/dep/landuse/SandyFAQ.html>)

Additional information related to the above is available in FEMA's "Foundation Requirements and Recommendations for Elevated Homes," which may be viewed through the link below:

http://www.fema.gov/media-library-data/20130726-1916-25045-1195/fema_tarc_factsheet_open_foundation_final_508.pdf.

In short, homes that are newly constructed, substantially improved or those that are being elevated cannot have a basement, but can have an enclosure (which may be called a crawl space as there are no height requirements for this

See Basements -continued at right

Basements

continued from left

space) under the first floor of living space provided this enclosure has a floor matching the grade outside and is used solely for building access, storage and/or parking.

Source: Rob Austin
Code Assistance Unit

13D or P2904

continued from page 2

It has become clear that requiring the installation of a NFPA 13 or 13R system, rather than allowing the installation of a NFPA13D or IRC P2904 system, means that extra components are provided that do not result in an extra benefit for the evacuation of the occupants. The Department believes that the requirement to install NFPA 13 or 13R systems, with the associated higher costs, may actually discourage the installation of residential sprinkler systems.

The NFPA 13R and the 13D/P2904 systems essentially provide the same level of life safety protection for the occupants and they also provide some property protection for the building. None of the combustible concealed spaces are required to be protected unless they contain fuel-fired equipment, then only the area above the equipment needs sprinkler protection. While sprinklers are not required in garages of a dwelling with a NFPA 13D system, they are required with the use of a NFPA 13R system. However, the same residential-style sprinkler heads that were used inside the dwelling can be used in the garage. In Phoenix, Arizona and Prince Georges County, Maryland, the effectiveness of the installation of NFPA 13D systems in the protection of life and property has been demonstrated for over 20 years: There have been no deaths in those jurisdictions from accidental fires in dwellings with 13D systems installed, and, in many cases, the sprinklers extinguished the fires before the fire department arrived.

See 13D or P2904 - page 5



Construction Reporter: September 2013 Highlights

- \$936.6 million of construction was authorized in September based on building permits issued by 544 of New Jersey's 565 municipalities.
- New homes and home repair totaled \$506.0 million. This was 54 percent of all authorized construction.
- Office, retail, and other nonresidential work accounted for \$430.6 million (46 percent).
- Jersey City had the most work in September. Over one-third of the \$23.6 million of authorized construction was for an alteration of an existing warehouse.
- Robbinsville (Mercer County) had \$17.9 million of work. An addition to a public elementary school accounted for \$14.5 million.
- North Brunswick in Middlesex County reported \$17.4 million; the largest permit was for a Costco that will generate 152,000 square feet of new retail space.
- State buildings accounted for \$62.2 million of construction in September. The largest permit authorized was for \$47.7 million of construction for a new business school at Montclair State University. The new building will have total floor area of 144,000 square feet.

Year to Date

- With nine months of building permits, several things can be said about New Jersey's construction industry in 2013.
- The dollar amount of work should be significantly higher in 2013 than in previous years. Between January and September, municipalities issued building permits with an estimated dollar amount of work at \$9.784 billion. This is \$1.456 billion more than the same time last year, an increase of 17.5 percent. The last year with more activity was 2008.
- New houses play a key role in the construction industry's strong performance. The number of new dwellings authorized between January and September 2013 was 14,123. This is 2,954 more than the same time last year, an increase of 26.4 percent. The last year with more new housing was 2007.
- Jersey City continues to build more new houses than any other locality. Between January and September, the City's construction office issued building permits for 1,150 new dwellings. Since 2001, no other municipality has built more.

Major Construction Indicators, New Jersey: Nine-Month Comparison				
Period	Estimated Cost of Construction	Authorized Housing Units	Authorized Office Space (square feet)	Authorized Retail Space (square feet)
Jan – Sept 2013	\$9,783,747,987	14,123	3,892,759	1,628,143
Jan – Sept 2012	8,328,001,736	11,169	5,592,167	1,767,287
Jan – Sept 2011	8,262,435,231	8,304	4,145,208	1,296,264
Jan – Sept 2010	7,213,619,571	8,602	3,798,816	1,635,869
Jan – Sept 2009	7,180,090,779	7,750	3,023,110	1,833,320
Jan – Sept 2008	11,083,588,256	13,048	5,983,442	4,978,343
Jan – Sept 2007	11,195,090,903	19,219	6,670,238	3,238,879
Jan – Sept 2006	11,882,033,473	24,842	8,777,597	4,527,828
Jan – Sept 2005	11,366,934,642	28,887	8,563,380	5,380,197
Jan – Sept 2004	10,128,167,925	28,703	8,280,276	4,086,071
Jan – Sept 2003	8,513,886,239	25,405	7,200,118	4,379,191

The following is a list of differences between a NFPA 13 or 13R and a 13D/P2904 system:

	NFPA 13 and NFPA 13D	NFPA 13D/P2904
1	Fire Department Connection (FDC)	No FDC
2	Separate Water Supply Connection	Allowance for a Combined Plumbing and Sprinkler Water Supply
3	Four Sprinkler Head Design	Two Head Design
4	30 Minute Water Supply	10 Minute Water Supply
5	Monitored	No Monitoring

NOTE: Installers of fire sprinklers need Division of Fire Safety certification.

The unamended IRC/2009 requires the installation of a NFPA 13D or P2904 fire sprinkler system in a one- or two-family dwelling that is limited to three stories in height and may be unlimited in area. Under the current One- and Two-Family Dwelling Subcode of the UCC, the construction of a new dwelling or increase the height of an existing Type VB dwelling beyond 35 feet, requires the installation of a monitored NFPA 13 or 13R system. Since, with the adoption of both the IRC/2006 and IRC/2009, the UCC retained the sprinkler system requirements of the BOCA National Building Code/1996 and did not include scoping for the use of the NFPA 13D/IRC P2904, many new dwellings are not being built with fire sprinkler systems. It is possible that the higher cost of the NFPA 13R system may be discouraging people from installing sprinkler systems; in fact, many of these newly constructed or rebuilt homes are moving to Type VA construction despite the higher level of life safety provided by the sprinkler system

The Department recommends granting a variation to allow the construction of dwellings in accordance with the unamended IRC/2009; the Department recommends that a NFPA 13D or IRC/P2904 sprinkler system be allowed in a one- or two-family dwelling that is limited to a maximum height of three stories and may be unlimited in area.

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

Source: Michael E. Whalen
Code Assistance Unit

Use of NFPA 14 Manual Wet Fire Standpipes

This article provides guidance on allowing the installation of an NFPA 14, Class I, manual wet standpipe system in a building when either a NFPA 13, (Installation of Sprinkler Systems), or 13R, (Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height), sprinkler system is installed. Currently, through modifications that were made in the

See Standpipes -continued at right

International Building Code (IBC)/2000, Section 905, (Standpipe Systems), requirements were adopted for the residual water pressure required at the topmost outlet when a Class I standpipe is allowed to be installed. This happened when the requirements for automatic water supplies from the Building Officials and Code Administrators (BOCA) National Building Code/1996 were adopted as part of the IBC/2000. Section 905.2.2.1, (Automatic Water Supply), requires an automatic water supply to the standpipe that complies with Section 905.2.1, (Piping Design), when the building is not equipped with a NFPA 13 fire sprinkler system. A 65 psi residual pressure is required at the topmost outlet while flowing the required gpm for the specific occupancy, ranging from 750 gpm to 1250 gpm. Only buildings with NFPA 13 fire sprinkler systems installed are exempt from the 65 psi residual requirement due to the modification made in the IBC/2000. This modification has been brought forward in the adoptions of the IBC/2006 and the IBC/2009.

IBC, Section 905.3.1, (Building Height), requires a Class III system to be installed when a building has a floor located 30 feet or more above or below the level of fire department vehicle access. When NFPA 13 or 13R fire sprinkler systems are installed, a Class I fire standpipe system can be installed. When a Class I system is installed, there are no requirements for fire hose to be installed; only 2½ inch hose valves for the fire department to use are required.

The unamended IBC has a requirement to install standpipe systems in accordance with IBC Section 905, (Standpipe Systems), and NFPA 14. The currently referenced NFPA 14, 2007 edition, defines six different types of standpipes at Section 3.3.12, (Standpipe Systems). Section 3.3.15.1, (Class I System) defines Class I standpipes as providing 2 ½ inch valves for fire department use. Section 5.4.1.1 allows a Class I standpipe to be any one of the five listed in Section 5.2. Section 5.2.5 manual wet standpipes are very similar to our current requirement in Section 905.2.1 that only applies to NFPA 13 systems. Manual wet standpipes are required to have the water pressure available only for the sprinkler system and are not required to supply the gpm demand of the standpipe. Simply put, once the fire department arrives, they can tie into the fire department connection and supply the standpipe with the required pressure to meet the demand of the hose they will be bringing to connect to the 2½ inch hose valves.

As such, the Department recommends the granting of variations to allow the use of NFPA 14 Class I manual wet standpipes when a building is equipped with a NFPA 13R fire sprinkler system.

Source: Mike Whalen
Code Assistance Unit

Highlights

continued from page 4

Major Construction Indicators, New Jersey: Nine-Month Comparison				
Period	Estimated Cost of Construction	Authorized Housing Units	Authorized Office Space (square feet)	Authorized Retail Space (square feet)
Jan – Sept 2013	8,999,773,233	25,351	7,727,817	6,286,676
Jan – Sept 2012	9,342,508,663	25,419	15,411,962	5,382,939
Jan – Sept 2011	7,903,432,878	26,486	9,917,532	3,838,654
Jan – Sept 2010	7,914,223,933	27,654	9,297,792	5,115,191
Jan – Sept 1998	6,678,258,864	24,609	8,647,701	5,745,808
<i>difference between 2012 and 2013</i>				
2012 – 2013	\$1,455,746,251	2,954	-1,699,408	-139,144
Percent Change	17.5%	26.4%	-30.4%	-7.9%
<i>difference between 2011 and 2012</i>				
2011 – 2012	\$65,566,505	2,865	1,446,959	471,023
Percent Change	0.8%	34.5%	34.9%	36.3%
<i>difference between 2010 and 2011</i>				
2010 – 2011	1,048,815,660	-298	346,392	-339,605
Percent Change	14.5%	-3.5%	9.1%	-20.8%
Source: N.J. Department of Community Affairs, 11/7/13				

- Not every sector of the building industry showed signs of recovery. Office and retail development in 2013 is down. Nearly 3.9 million square feet of new office space was authorized between January and September 2013. This is 30.4 percent less than last year at this time. Newark accounted for 748,000 square feet of all new office space authorized between January and September 2013. Almost all of this is for the new headquarters for Prudential Insurance, which broke ground in February.
- Just over 1.6 million square feet of new retail space was authorized between January and September 2013. This is 7.9 percent below last year at this time.
- Super Storm Sandy had severe and measureable effects on New Jersey’s construction industry, especially for homebuilders and remodelers.
- The storm’s early impact was disruptive. Some of the sharpest drops in monthly building activity in recent years came in November 2012, the first month immediately after the storm.
- Sharp increases in home repairs and housing demolitions didn’t begin to appear until 2013.

Housing Demolitions, January – September 2005-13: New Jersey and Ocean and Monmouth County				
Period	New Jersey	Ocean County	Monmouth County	Ocean & Monmouth as % of NJ
Jan – Sep 2013	5,382	2,544	631	59.0%
Jan – Sep 2012	2,278	279	244	23.0%
Jan – Sep 2011	2,118	290	228	24.5%
Jan – Sep 2010	3,216	312	238	17.1%
Jan – Sep 2009	1,995	245	171	20.9%
Jan – Sep 2008	3,441	428	300	21.2%
Jan – Sep 2007	3,528	362	283	18.3%
Jan – Sep 2006	4,758	468	339	17.0%
Jan – Sep 2005	4,882	501	301	16.4%
Source: N.J. Department of Community Affairs, 11/7/13				

Highlights

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- 5,382 housing demolitions were authorized between January and September 2013. This was 3,104 more than this time last year, an *increase of more than one and one-third (136.3 percent)*.
- Ocean County had 2,544 authorized demolitions, 47.3 percent of the total for the entire State. Toms River in Ocean County had 900 authorized demolitions, 16.7 of New Jersey's total.
- 57.9 percent of all the authorized house demolitions between January and September 2013 were in twenty municipalities. Eleven of them were in Ocean County. Five more were in Monmouth or Atlantic Counties.
- Nine counties were designated disaster areas: Atlantic; Bergen; Cape May; Essex; Hudson; Middlesex; Monmouth; Ocean; and Union. The dollar amount of construction for home additions and alterations in "Sandy" counties was \$1.88 billion between January and September 2013. For the same time in 2012, it was \$1.44 billion. Home repairs grew by 30.3 percent in these nine counties.

Housing Units Demolished, Top Municipalities, January-September 2013						
Municipality	County	Total	1&2 family	Multifamily	Mixed use	
Toms River Township	Ocean	900	892	5	3	
Stafford Township	Ocean	356	317	0	39	
Little Egg Harbor Twp.	Ocean	242	242	0	0	
Ocean City	Cape May	194	172	22	0	
Brick Township	Ocean	190	190	0	0	
Union Beach Borough	Monmouth	185	185	0	0	
Long Beach Township	Ocean	167	167	0	0	
Lavallette Borough	Ocean	107	107	0	0	
Camden City	Camden	100	100	0	0	
Manasquan Borough	Monmouth	83	83	0	0	
Berkeley Township	Ocean	79	79	0	0	
Jersey City	Hudson	74	60	14	0	
Mantoloking Borough	Ocean	69	69	0	0	
Point Pleasant Beach	Ocean	65	65	0	0	
Lakewood Township	Ocean	64	64	0	0	
Wayne Township	Passaic	55	55	0	0	
Margate City	Atlantic	48	48	0	0	
Brigantine City	Atlantic	47	47	0	0	
Lacey Township	Ocean	47	47	0	0	
Rumson Borough	Monmouth	46	46	0	0	
Top Municipalities		3,118	3,035	41	42	
New Jersey		5,382	5,138	156	88	
Top as a % of State		57.9%	59.1%	26.3%	47.7%	

N.J. Department of Community Affairs, 11/7/13

See Highlights - page 8

Welcome Dave Greenhill 

Welcome *continued from left*

The Code Assistance Unit has a new electrical subcode official. Dave Greenhill joined us recently and is responsible for all things electrical. He is also responsible for solar and wind power matters.

the State, Dave worked on the new MetLife Stadium, and he worked in several municipalities for Superstorm Sandy recovery.

Dave joins us after many years as a union electrician. Additionally, he has worked as an electrical inspector at the local level. While an electrical subcode official for

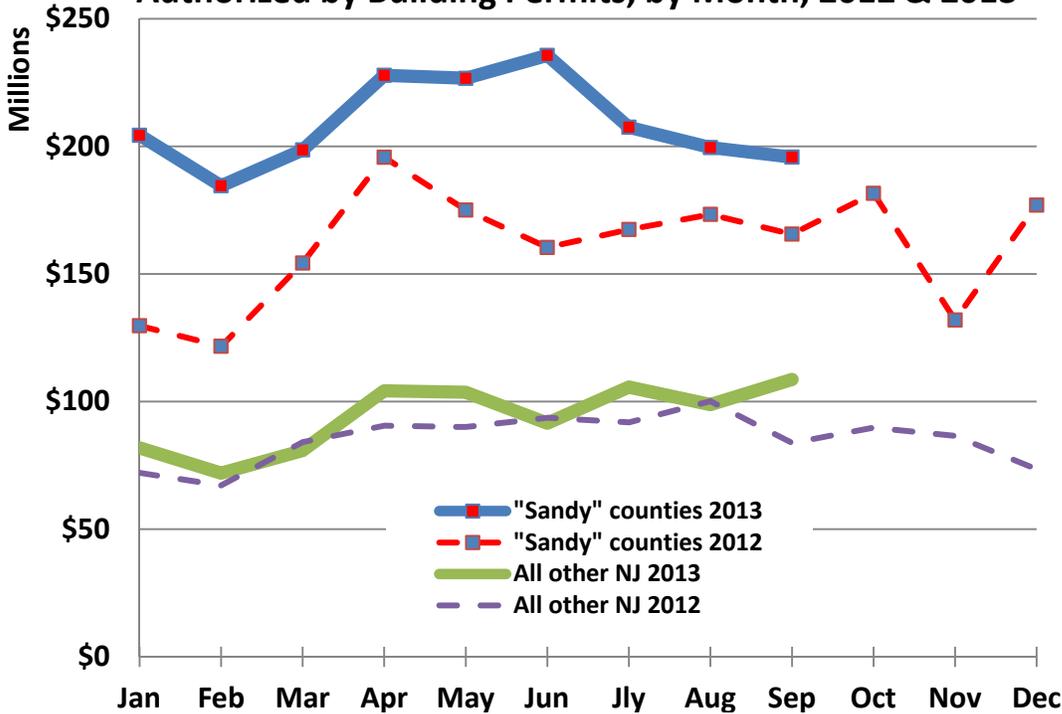
Feel free to reach out to Dave with any of your electrical questions.

Source: John N. Terry
Code Assistance Unit

See Welcome -continued at right

Highlights *continued from page 7*

Dollar Amount of Residential Additions & Alterations Authorized by Building Permits, by Month, 2012 & 2013



- For the rest of New Jersey, home renovations also grew between 2012 and 2013, but only by 9.5 percent.

New House Prices

- It got more expensive to buy a new house according to third quarter data provided by the new home warranty companies that do business in New Jersey.
- Most new, for-sale houses built in the State must have a new home warranty. The exceptions are rental units and those dwellings where the homeowners acted as their own general contractor.
- 1,811 new houses were built and began enrollment in a new home warranty program in July, August, or September 2013. Half of them cost more than \$407,794. This median sales price was 1.4 percent more than the median price for the second quarter of 2013.
- The counties with the highest priced new houses were Morris, Somerset, Bergen, and Hudson.

New House Prices, by Quarter			
Period	Number of New Houses	Median Sale Price	% Change in Price
3 rd Quarter 2013(p)	1,811	\$407,794	1.4
2 nd Quarter 2013(p)	1,781	402,000	1.8
1 st Quarter 2013(p)	1,277	395,000	2.6
4 th Quarter 2012	1,746	384,845	-3.7
3 rd Quarter 2012	1,899	399,699	-6.4
2 nd Quarter 2012	2,089	427,000	10.9
1 st Quarter 2012	1,431	385,000	0.1
4 th Quarter 2011	1,718	384,500	-3.7
3 rd Quarter 2011	1,765	399,100	-0.5

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Highlights

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New House Prices, by Quarter			
Period	Number of New Houses	Median Sale Price	% Change in Price
2 nd Quarter 2011	1,955	400,972	7.7
1 st Quarter 2011	1,401	372,350	-2.9
4 th Quarter 2010	1,976	383,642	-2.9
3 rd Quarter 2010	2,105	395,000	3.8
2 nd Quarter 2010	2,811	380,360	0.5
1 st Quarter 2010	1,820	378,442	8.5
4 th Quarter 2009	2,476	348,721	-6.0
3 rd Quarter 2009	2,494	370,873	-3.0
2 nd Quarter 2009	2,375	382,382	3.6
1 st Quarter 2009	1,816	369,150	-2.9
4 th Quarter 2008	2,760	380,000	-6.2
3 rd Quarter 2008	3,204	405,000	-14.7
2 nd Quarter 2008	4,240	475,000	25.0
1 st Quarter 2008	2,760	380,000	-7.3
4 th Quarter 2007	4,155	410,000	

Note: 2013 quarterly figures are preliminary.
 Source: N.J. Department of Community Affairs, 11/7/13

New House Prices, by Year					
Period	Number of New Houses	Median Sale Price	Change in Sale Price	Median Sale Price in Adjusted 1996 \$	Change in Adjusted Sale Price
2012	7,165	\$399,900	2.5%	\$273,284	0.5%
2011	6,839	390,000	1.3%	272,034	-1.8%
2010	8,712	384,899	4.4%	276,950	2.8%
2009	9,161	368,512	-13.3%	269,508	-13.0%
2008	13,841	425,000	0.1%	309,715	-3.6%
2007	18,397	424,570	2.6%	321,281	-0.2%
2006	22,697	413,825	9.2%	322,069	5.8%
2005	24,571	378,992	8.3%	304,474	4.8%
2004	23,844	349,900	13.9%	290,626	11.0%
2003	22,226	307,168	11.8%	261,927	9.3%
2002	23,647	274,705	8.3%	239,584	6.6%
2001	23,372	253,670	9.5%	224,736	6.4%
2000	25,058	231,728	3.2%	211,139	-0.1%
1999	24,479	224,496	6.9%	211,425	4.6%
1998	23,884	209,980	10.5%	202,122	8.8%
1997	21,640	190,000	3.7%	185,738	1.3%
1996	20,903	183,300		183,300	

N.J. Department of Community Affairs, 5/7/13

These highlights are from the September issue of the New Jersey Construction Reporter, an on-line publication from the New Jersey Department of Community Affairs. Data from monthly building permits and certificates are available at <http://www.nj.gov/dca/divisions/codes/reporter>.

Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) Contractors License Update

This article is an update on the HVACR license. On December 20, 2007, legislation was signed into law establishing a new State Board of Examiners of Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) Contractors and requiring licensure to work in New Jersey as a Master HVACR contractor.

The law includes a "grandfathering" provision, N.J.S.A. 45:16A-26, authorizing the Board to issue a Master HVACR license based on experience without examination for a limited time.

A six-month "Grandfathering" period, during which individuals currently practicing as HVACR contractors may obtain licensure without meeting education or examination requirements, will begin to run on the effective date of regulations adopted by the State HVACR Contractors Board. The regulations prescribe the application procedure and application fee.

The adoption date was April 15, 2013 with an effective date of October 15, 2013. In the July 1, 2013 *New Jersey Register* (NJR), the effective date was extended from October 15, 2013 to January 1, 2014. This extension was to allow the Board the time necessary to develop its licensing examination prior to implementing the license.

In the December 16 issue of the *New Jersey Register*, the Board published a Notice extending the operative date to March 1, 2014. The deadline for those wishing to apply under the "grandfathering" provision has been extended to September 1, 2014. The applications will be required to be filed online. According to the HVACR Board website, applications will not be accepted until the operative date, March 1.

Further information concerning licensure of HVACR contractors, including the application process, will be posted on the Board website at: www.nj.gov/lps/ca/HVACR/ as it becomes available.

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

Source: Thomas C. Pitcherello
Code Assistance Unit

Should I purchase the 2012 Codes?

This is a recurring question being asked of the Code Assistance Unit. Simply put, no. At this point, the Division has yet to be authorized to propose the 2012 Code package. If and when we get authorization to propose, you will have plenty of time to purchase the documents you need. We will keep you all updated on the status of the code adoption over the next few months. In the meantime, be patient and continue to use your 2009's.

Source: John N. Terry
Code Assistance Unit



Residential Health Care Facilities: Plan Review by Department

This article is to inform you that the article that appeared in the Summer/Fall 2005 edition of the *Construction Code Communicator*, entitled "Plan Review Authority for Residential Health Care Facilities," is hereby rescinded.

Plans for residential health care facilities must be submitted to the Department's Bureau of Construction Project Review. The regulations under which these facilities are licensed, N.J.A.C. 5:27A, reflect this requirement for State review of the plans. More importantly, the licensing regulations contain physical facility requirements which must be met.

Bulletin 98-3 is being updated to reflect the need for State review of these plans the fact that these are no longer licensed by the Department of Health notwithstanding.

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

Source: John N. Terry
Manager, Code Assistance Unit

Lowest Floor Level in Flood-resistant Construction

(reprint from Volume 21 Number 1, Spring/Summer 2009 with updated references)

Question: How does R300 of the International Residential Code/2009 (IRC/2009) apply to the lowest floor level of a home to be constructed in a flood zone that has vehicle parking only on the first level, two levels of living space above and a habitable attic above that?

Background: Section R322.1.5 of the IRC/2009 states that the lowest floor is the floor of the lowest enclosed area, including basement, but excluding any unfinished flood-resistant enclosure that is usable solely for vehicle parking, building access, or limited storage.

Answer: If the 1st level is truly an unfinished flood-resistant enclosure that is usable solely for vehicle parking, building access, or limited storage, then, as per Section R322.1.5 of the IRC/2009, that level does not count as a story. Therefore, Section R300 may still be used to design this residence. Remember that

See *Lowest Floor Level* -continued at right

Lowest Floor Level

continued from left

when the design is VB construction without a sprinkler system, the height limitation of 35 feet of Section R300 still applies. However, if a higher height were desired, 40 feet is allowable by using VA construction (Section R300.3) or 55 feet can be obtained by using VB construction in conjunction with a sprinkler system (Section R300.1).

If you have any questions on this matter, you may contact me at (609) 984-7609.

Source: Rob Austin
Code Assistance Unit



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Volume 25, Number 4

Winter 2013

The Winter Communicator: A Reminder

The final (Winter) issue of the *Construction Code Communicator* each year now consists of a collection of Alerts, Hot Topics, Letters from the Director, guidance documents, and other information items that were posted on the Division's website during the calendar year. This year, we are including articles that were printed in earlier editions of the *Construction Code Communicator* on topics that continue to generate questions. As noted on the last page, once this edition of the *Construction Code Communicator* has been posted, these individual Alerts, Hot Topics, Letters from the Director, guidance documents, and other information items will be removed from those sections of Division's website. There is one exception: the materials related to Superstorm Sandy will remain in place. In short, there are no new articles in this issue.

Please note that, although the documents will be removed from the Alerts and Hot Topics, it will still be possible to access them through Division's Document Library or through the "Topics A-Z" tab on the Division's website: www.nj.gov/dca/divisions/codes/.

Also, the Index for all four issues of the *Construction Code Communicator* 2013 is included in this issue as a handy reference.

Prospectively, the *Construction Code Communicator* will follow this same format: three issues, Spring, Summer, and Fall, that contain new articles and a Winter issue that will provide in one place all the Alerts, Hot Topics, Letters from the Director, guidance documents, and other information items that were posted on the Division's website in that calendar year with previously printed articles where the topic continues the generate questions.

If you have any questions about the *Construction Code Communicator*, or if you have any recommendations for articles, please feel free to contact me at (609) 984-7609 or at Emily.Templeton@dca.state.nj.us.

Source: Emily W. Templeton
Division of Codes and Standards



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Shop Drawing Revisited

(Reprint with updated references -- Volume 17 Number 2 Summer/Fall 2005)

Over the past few years, code officials have handled the submittal of documents for engineered lumber in a multitude of ways. The following are three separate scenarios that are intended to provide direction as to how design documents or shop drawings should be handled.

In the first scenario, the design professional of record has provided sufficient detail on the original design documents to determine compliance with the requirements of the code for the engineered wood product. If the design professional provides sufficient specification and detail (depth, width, joist series, on-center spacing), there is no need for a shop drawing to be submitted by the manufacturer. Any additional information that is needed to determine compliance with the code should be requested of, and provided by, the design professional of record.

In the second scenario, the design professional of record does not provide sufficient information on the design documents to determine compliance with the requirements of the code. When the design professional of record does not include detail on the original design documents, signed and sealed shop drawings are required. As per *N.J.A.C. 5:23-2.15(f)1xi*, any deferred submittal must be reviewed and accepted by the design professional of record.

In the third scenario, engineered wood products are used in place of other specified products. In this instance, the documents submitted by the engineered wood product manufacturer are required to be signed and sealed. This is a deviation from the original design and must be approved by the design professional of record.

These three scenarios should guide you in determining the need for your documents to be signed and sealed, as well as by whom. If you have further questions on this matter, please feel free to contact the Code Assistance Unit at (609) 984-7609.

Source: John N. Terry
Code Assistance Unit

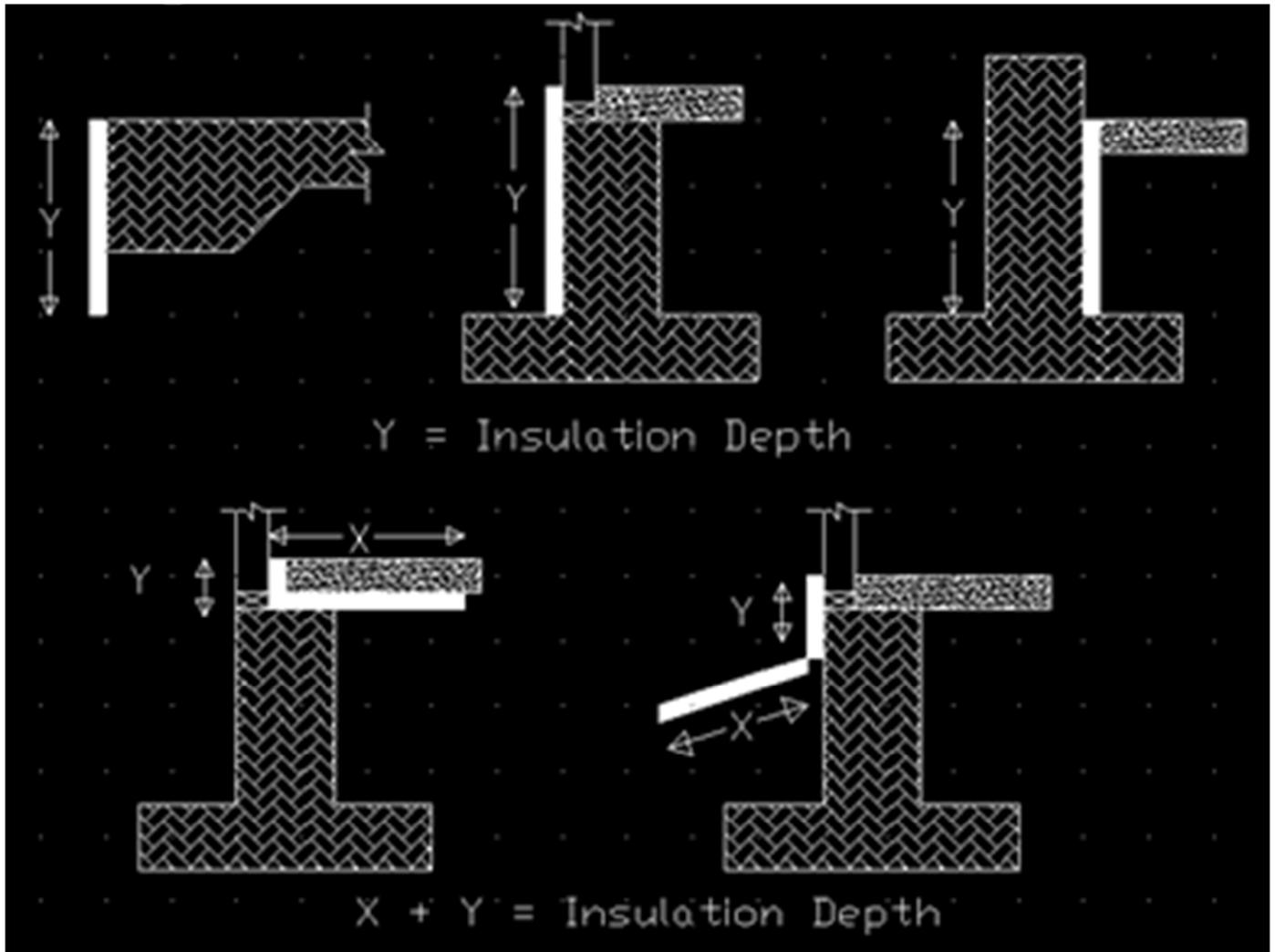
Slab-on-Grade Floors – Perimeter Insulation

(Reprint with updated references -- Volume 17 Number 1 Spring 2005)

When a design utilizes slab-perimeter insulation based on the International Energy Conservation Code/2009, Section 402.2.8 and Table 402.1.1, entitled "Slab-on-Grade Floors" and "Insulation And Fenestration Requirements by Component" respectively, the insulation may be placed on the outside OR on the inside of the foundation wall. Since the State of New Jersey is in Zones 4 and 5, all slab-perimeter insulation is required either to (1) extend downward from the elevation of the top of the slab for a minimum distance of 24 inches, OR (2) extend downward to at least the bottom of the slab and then horizontally to the interior or exterior for a minimum total distance of 24 inches. Also, the horizontal insulation extending outside of the foundation wall must be covered with a minimum of 10 inches in thickness of pavement and/or soil. Lastly, the top edge of the insulation installed between the exterior wall and the edge of the interior slab shall be permitted to be cut at a 45-degree angle away from the exterior wall. NOTE: All insulation shall be of an approved type.

Since the International Energy Conservation Code/2009 does not pictorial guidance, the attached drawing should be helpful in checking for the installation of slab-perimeter insulation.

Source: Rob Austin
Code Assistance Unit



Backflow Preventers – What Type is Required? 

(Reprint with updated references -- Volume 20 Number 2 Summer/Fall 2008)

The Department of Community Affairs has become aware of questions concerning the type of backflow preventer that is required by water utilities or authorities to be installed on a water service that serves either a combination domestic and fire-protection system or a dedicated fire-protection system.

Some water utilities are requiring, at a minimum, a reduced pressure zone backflow preventer on the water services supplying water to any fire-protection system when the system is supplied from a public water main. This brings up two questions: First, what does the Plumbing Subcode require? Second, can a water utility or authority be more stringent than the Plumbing Subcode?

What does the Plumbing Subcode require? The 2009 National Standard Plumbing Code (NSPC) requires a reduced pressure zone backflow preventer on any fire protection system that has a fire-department siamese connection.

Can a water utility or authority be more stringent than the Plumbing Subcode? This requires a lengthy response because there are two laws that apply. The adopted Plumbing Subcode states the type of backflow preventer required and the location. But, the Safe Drinking Water Act regulates water utilities and authorities, and requires them to protect the potable water from any backflow into the public water supply.

N.J.A.C. 5:23-3.15(b)10.iii amends Section 10.4.3 of the NSPC/2009 as follows: “Section 10.4.3 is amended to read: “potable water supplies shall be protected in accordance with the provisions of this code *and, where applicable*, the Safe Drinking Water Regulations (*N.J.A.C. 7:10*). The requirements of this code shall establish requirements for individual outlet protection. The requirements of the Safe Drinking Water Act shall establish the requirements for containment.” (Emphasis added.)

So, the answer to the second question is: Yes, the water utility or authority can be more stringent than the Plumbing Subcode. Therefore, as stated in the amendment to the Plumbing Subcode, the containment backflow preventer on the incoming water service is regulated by the water utility or authority, which would have the final decision as to what type of backflow preventer is required.

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

Source: Thomas C. Pitcherello
Code Assistance Unit



Foundation Drains in Residential Crawl Spaces: Are They Needed? 

(Reprint with updated references -- Volume 17 Number 2 Summer/Fall 2005)

Section 406.1 of the New Jersey Edition of the 2009 International Residential Code requires walls or portions thereof that retain earth, and that enclose interior spaces and floors below grade, to be waterproofed or dampproofed in accordance with Section 406. This applies only when the floor of the crawl space is below the adjacent grade. Assuming there is no hydrostatic pressure condition, Section 406.4 requires dampproofing and also requires a drain to be installed around the foundation perimeter. The requirements for the drain are found in Section 406.4.2. Remember, the drain does not always require a pipe.

So, the short answer to the question “Are foundation drains needed in residential crawl spaces?” is yes. If you have any questions regarding this matter, please contact the Code Assistance Unit at (609) 984-7609.

Source: John N. Terry
Code Assistance Unit

Determining the Fixture Count

(Reprint with updated references -- Volume 19 Number 1 Spring 2007)

Determining the population for the plumbing fixture requirement is one of the most frequently asked questions the Code Assistance Unit receives from architects, engineers, and code officials. This article is an effort to try to clear up some of the confusion there seems to be with determining the population count and the number of plumbing fixtures required by the National Standard Plumbing Code (NSPC). [NOTE: See accompanying article on "use group" designations in the NSPC 2009 and the International Building Code (IBC) 2009.]

➔ NSPC 2009, Section 7.21.2, Occupant Load, states that "The minimum number of plumbing fixtures shall be based on the number of persons to be served by the fixtures, as determined by the person responsible for the design of the plumbing system."

This section makes it clear that the design professional is responsible for determining the number of persons to be served by the fixtures. If the design professional knows the actual number of persons that will occupy the building, that number can be used to determine the number of plumbing fixtures.

➔ NSPC 2009, Section 7.21.2.b states that "Where the occupant load is not established and is based on the egress requirements of a building code, the number of occupants for plumbing purposes shall be permitted to be reduced to two-thirds of that for fire- or life-safety purposes."

Paragraph b states that, if the occupant load is based on the building code egress calculations of the number of persons per square foot permitted for that use, the egress number can be reduced by two-thirds for the purpose of determining the plumbing fixture count.

➔ NSPC 2009, Section 7.21.2.c states that "Whenever both sexes are present in approximately equal numbers, the total occupant load shall be multiplied by 50 percent (changed from 60 percent in the 2003 NSPC) to determine the number of persons of each sex to be provided for, unless specific information concerning the percentage of male and female occupants is available."

As paragraph c states, if the percentage of male and female occupants is NOT known, the 50 percent rule applies.

➔ NSPC 2009, Section 7.21.4, Separate Facilities, includes Exceptions (2), (3), and (4). Exception (2) states that "In occupancies serving 15 or fewer people (changed from 10 in the 2003 NSPC), one toilet facility, designed for use by no more than one person at a time, shall be permitted for use by both sexes." Exception (3) states that "In business occupancies with a total floor area of 1500 square feet or less, one toilet facility, designed for use by no more than one person at a time, shall satisfy the requirements for servicing customers and employees of both sexes." Exception (4) is the same as Exception (3) and applies to mercantile occupancies.

Exception (2) is very clear. If you have 15 or fewer people, one unisex toilet facility is permitted. Questions remain pertaining to Exceptions (3) and (4). If you have a business use that is more than 1500 square feet and the known population 15 or fewer employees or customers, can you provide only one unisex toilet facility? The answer is YES. This is because the population complies with Exception (2) – there are 15 or fewer people. However, when the actual population is not known, and the occupancy is based on the building code egress calculations and the occupant load and exceeds 15 people, after the two-thirds reduction, then separate toilet facilities for each sex are required.

Another frequently asked question is how to perform the calculations when the male/female ratio is not known. When the population calculations are based on the building code egress, the total egress population is permitted to be reduced by two-thirds, and that population is then multiplied by 50 percent to determine the male/female population numbers for purposes of determining the fixture count. There has been some confusion that the two-thirds reduction and the 50 percent ratio could not be used together. They must be used together to correctly calculate the fixture requirement using the building code egress calculations. Refer to NSPC, Section 7.21.2.b and c.

An example is provided on the following page...

EXAMPLE

Use Group: Business

Floor Area: 2575 square feet, single story

Population: Based on building egress calculations

(IBC/2009, Table 1004.1.1, Business Use; 100 square feet per occupant, gross floor area)

2575 | 100 = 25.75, rounded to 26 persons

26 persons x .67 (two-thirds reduction) = 17.42, rounded to 18 persons total

Because there are more than 15 persons, separate male and female toilet facilities are required (based on the 18-person total).

NEXT: To determine the male/female fixture requirement:

18 x .5 (50%) = 9 male and 9 female

Plumbing fixtures required are based on NSPC 2009, Table 7.21.1, Business Use. Therefore, the fixtures required are:

Male: 1 water closet and 1 lavatory

Female: 1 water closet and 1 lavatory

NOTE: 1 drinking water facility and 1 service sink are also required.

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

Source: Thomas C. Pitcherello
Code Assistance Unit



Use Group Classifications: Building Subcode and Plumbing Subcode



(Reprint with updated references -- Volume 19 Number 1 Spring 2007)

The following is based on the 2009 edition of the National Standard Plumbing Code (NSPC), New Jersey's adopted Plumbing Subcode.

First, let's touch base on the issue of the proper group classification. In the Spring 2005 *Construction Code Communicator*, I wrote an article addressing the different group classifications in the International Building Code (IBC) and the NSPC. The Department of Community Affairs is still receiving many calls from architects, engineers, and code officials as to the proper group to use for determining the required number of plumbing fixtures. A couple of examples might help: Restaurants are Group A-2 in the IBC, but are Group A-3 in the NSPC; higher education facilities are Group B in the IBC, but are Group E in the NSPC.

I would like to emphasize that the descriptions of the building use (as set forth in the Building and Plumbing Subcodes), and NOT simply the group classification, must be used.

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

Source: Thomas C. Pitcherello
Code Assistance Unit

Use of a Backflow Preventer in Boiler Applications

(Reprint with updated references -- Volume 19 Number 1 Spring 2007)

The Department of Community Affairs (DCA) has been receiving many calls pertaining to the requirement for a check valve in the domestic water supply for the boiler water makeup, in addition to the backflow preventer as required by the Plumbing Subcode. The check valve violation is being issued by an insurance company's inspector or by an inspector from the New Jersey Department of Labor and Workforce Development, Bureau of Boiler and Pressure Vessel Compliance (BB&PVC.)

A check valve and stop valve or cock are required by the American Society of Mechanical Engineers (ASME) standard, which is referenced through *N.J.A.C. 12:90, Boilers, Pressure Vessels, and Refrigeration Compliance Regulations*. ASME Section IV, HG-705(a) and (b), states that a check valve must be installed in the boiler water makeup system supply line. Also, a stop valve or cock must be installed between the check valve and the boiler. The ASME standard is enforced by the BB&PVC.

The BB&PVC has determined that a standard backflow preventer, as required by the Plumbing Subcode, would not prevent the backflow of water from a boiler into the potable water system due to the fact that the seats on the backflow preventer check valves would not be able to withstand the high-temperature hot water from the boiler should there be a break in the water supply system which would cause a back siphonage from the boiler into the potable water system. Typically, backflow preventers are rated at 140 degrees to 180 degrees Fahrenheit. Check valves are rated at 250 degrees Fahrenheit. The ratings of the backflow preventers and check valves were verified through the manufacturer of the devices.

Also, with the use of a reduced-pressure backflow preventer assembly, should the check valve in the backflow preventer fail due to the high-temperature water backflow from the boiler, the backflow would discharge through the relief vent, which puts the boiler at risk for a dry-firing condition and could result in a catastrophic failure or a boiler explosion. This would also apply to a double check valve assembly should the assembly check valves fail due to the high-temperature water which would backflow into the potable water supply.

DCA-licensed plumbing subcode officials are to ensure that the proper required backflow preventer is installed on the potable water supply for a boiler water makeup, per the Plumbing Subcode. The plumbing subcode official should not approve the installation unless the proper additional check valve and stop valve or cock are installed in the boiler water makeup supply, as required by *N.J.A.C. 12:90* through ASME, which is enforced by the BB&PVC. During the plan review stage and during your inspection of a boiler which would be regulated by the BB&PVC, you should bring to the attention of the contractor that an additional check valve and stop valve or cock will be required per the *N.J.A.C. 12:90* regulations in order to pass the BB&PVC inspection.

If you notice any problems, please report them to Milton Washington, Chief of the BB&PVC, at (609) 292-2921.

To help DCA inspectors, the following is the text of the scope of the BB&PVC regulations, which are found at *N.J.A.C. 12:90-4: N.J.A.C. 12:90-4.1(b)* This subchapter shall not apply to:

1. Steam boilers having adequate relief devices set to discharge at a pressure not greater than 15 psig when such boilers serve buildings of less than six dwelling units or other dwellings with accommodations for less than 25 persons;
2. Hot-water boilers having relief devices set to discharge at a pressure not greater than 160 psig and hot-water boilers limited to temperatures not exceeding 250 degrees Fahrenheit when such boilers serve buildings of less than six dwelling units or other dwellings with accommodations for less than 25 persons;
3. Any steam or hot-water boiler having less than 10 square feet of surface;
4. Any steam or hot-water boiler having a heat input of less than 10 kilowatts or less than 40,000 BTU per hour;
5. Any steam or hot-water boiler under the jurisdiction and control of the United States Government when actively regulated by a federal agency; and
6. Any steam or hot-water boiler used solely for the propulsion of a motor vehicle regulated by the Motor Vehicle Act, Title 39 of the Revised Statutes.

As stated above, these regulations do not apply to boilers in buildings with fewer than six dwelling units.

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

Source: Thomas C. Pitcherello
Code Assistance Unit

What is a Commercial Farm Building?

(Reprint with updated references -- Volume 20 Number 2 Summer/Fall 2008)

At N.J.A.C. 5:23-3.2(d), the Uniform Construction Code (UCC) has regulations that apply to commercial farm buildings. At N.J.A.C. 5:23-3.2(d)1, a commercial farm building is defined as “any building located on a commercial farm which produces not less than \$2,500 worth of agricultural or horticultural products annually, which building’s main use or intended use is related to the production of agricultural or horticultural products produced on that farm.”

Commercial farm buildings do not fit into any group pursuant to the Building Subcode; they are themselves a classification. At N.J.A.C. 5:23-3.2(d)2, the UCC states buildings that meet the definition of commercial farm building “shall be classified as commercial farm buildings.” The UCC further states, “For those provisions not covered by this section, commercial farm buildings shall comply with the construction code provisions applicable to Group S-2.” The UCC does not say that commercial farm buildings are designated as Group S-2. It says that, with certain specific exceptions, commercial farm buildings meet the requirements for Group S-2.

To ensure that the classification of commercial farm buildings is well understood, the UCC contains exceptions for specific aspects of commercial farm buildings. These include provisions for pre-engineered grain bins and other storage equipment used on the farm [N.J.A.C. 5:23-3.2(d)3], and temporary greenhouses, also called “hoophouses” [N.J.A.C. 5:23-3.2(d)4]. In addition, the UCC provides standards for the amount of hazardous materials that may be stored in a commercial farm building [N.J.A.C. 5:23-3.2(d)7] and sets limitations on the use of commercial farm buildings as places of public assembly [N.J.A.C. 5:23-3.2(d)8].

If you have questions about commercial farm buildings, their classification, or specific exceptions, please contact the Code Assistance Unit at (609) 984-7609.

Source: Emily W. Templeton
Code Development Unit

Garden-Type Utility Sheds and Similar Structures – Clarification

(Reprint with updated references -- Volume 21 Number 1 Spring/Summer 2009)

On April 20, 2009, the Department repealed N.J.A.C. 5:23-9.9, Foundation systems for garden type utility sheds and similar structures. The provisions of this section were moved within the applicable chapters of the building and one-and two-family dwelling subcodes. Therefore, the exceptions in Section 1809.4 of the International Building Code/2009 (IBC/2009) and Section R403.1.4 of the International Residential Code/2009 (IRC/2009) have been modified to reflect old N.J.A.C. 5:23-9.9. Both the IBC/2009 and IRC/2009 allow free standing storage-type buildings to be built without a foundation to frost-depth as long as the building meets the following three conditions:

- 1) The building presents a low hazard to human life in the event of failure; these include, but are not limited to, agricultural buildings, temporary buildings, and minor storage facilities;
- 2) The building has an area of 600 square feet or less for light framed construction (LFC), or 400 square feet or less for other than light-framed construction (OTLFC); and
- 3) The building has an eave height of 10 feet or less. However, unlike old N.J.A.C. 5:23-9.9, footings were required in all cases to be at least 12 inches in depth. A brief summary follows (all 10 feet or less in height):
 - 100 ft² or less – footings of 12 inches deep not required provided the structures do not contain utility connections and are of sufficient weight to remain in place or be anchored to the ground (like old N.J.A.C. 5:23-9.9(a))
 - More than 100 ft² up to 200 ft² – footings of 12 inches deep not required provided the structures are dimensionally stable without the foundation system and do not contain utility connections. A structure shall be considered dimensionally stable if it is provided with a floor system that is tied to the walls of the structure such that it reacts to loads as a unit. These structures shall be of sufficient weight to remain in place or shall be anchored to the ground (like old N.J.A.C. 5:23- 9.9(b))
 - Buildings of more than 200 ft² up to 600 ft² LFC or 400 ft² OTLFC – Footings of 12 inches deep required
 - Buildings of more than 600 ft² LFC or 400 ft² OTLFC – Footings to frost required

(continued on next page)

Garden-type utility sheds require a construction permit for building work unless the structure is 100 square feet or less in area, and 10 feet or less in height, and accessory to buildings of Group R-2, R-3, R-4, or R-5, and does not contain a water, gas, oil or sewer connection. A construction permit for electrical work shall be required, when applicable (N.J.A.C. 5:23-2.14(b)8).

For commercial farm buildings, the permit requirements are slightly different. As per N.J.A.C. 5:23-3.2(d)6, Garden-type utility sheds and similar structures are exempt from permit requirements provided the structure is 200 square feet or less in area, 10 feet or less in height, has no utility (water, gas, oil, sewer or electric) connections and the shed is dimensionally stable without the foundation system. A shed is to be considered dimensionally stable if it is provided with a floor system that is tied to the walls of the structure such that it reacts to loads as a unit. Also, as per N.J.A.C. 5:23-3.2(d)5, a three-sided turn-out shed used to shelter livestock is exempt from permit requirements provided there is no permanent foundation or floor and provided the structure is 250 square feet or less in area, and 14 feet or less in height, and has no utility (water, gas, oil, sewer or electric) connections. In both cases, the structure has to be of sufficient weight to remain in place or has to be anchored to the ground (concrete is not be required for anchoring).

Source: Rob Austin
Code Assistance Unit



Requirement for Overflow Roof Drains



(Reprint with updated references -- Volume 19 Number 2)

The Department of Community Affairs has been receiving many telephone calls asking where to find the requirement for overflow roof drains.

With the adoption of the 2009 National Standard Plumbing Code (NSPC) (and the previous editions of the NSPC dating back to the adoption of the NSPC/1996), Section 13.1.10.2, Secondary Roof Drainage, has been deleted in N.J.A.C. 5:23-3.15(b)13.iii.

Section 13.1.10.2, Secondary Roof Drainage, required an independent secondary roof drainage system. Despite the deletion of the section, some type of relief would still be required should the primary roof drains become blocked. To clarify, even with the deletion of the independent secondary roof drainage system requirement from the NSPC, a secondary relief system is still required.

The 2009 International Building Code, Section 1611, Rain Loads, requires that relief be provided should the primary roof drains become blocked. The building code also mentions a secondary drainage system.

Relief would be required where parapet walls or other construction extend above the roof where stormwater would become trapped. Relief could be scuppers or overflow drains. The overflow drains are permitted to be connected to the primary system. This may be considered a relief drainage system.

An independent secondary drainage system can be installed, but it would be a redundant system and is not required by code.

There are no code requirements that would prohibit the overflow drains from connecting to the primary roof drainage system.

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

Source: Thomas C. Pitcherello
Code Assistance Unit

For your information, Alerts and Issues listed at <http://www.nj.gov/dca/divisions/codes/alerts/> will be periodically moved to the Division's "Topics A-Z" at <http://www.nj.gov/dca/divisions/codes/topics/>. The current list is as follows:

Superstorm Sandy Information

- For Plan Review or Inspection Assistance with SANDY-related permitting Please have the local Construction Official contact:

Toms River DCA Codes Field Office
 236 Main Street, 2nd Floor
 Toms River, NJ 08753
 Hours: Monday-Friday 8:30-4:00
 732-736-7108 or 7109
 FAX 732-736-7112
 TomsRiverCodesOffice@dca.state.nj.us

- Protection of Adjoining Property
- Guidance for 1&2 Family Homes Sprinkler Systems Options [pdf 71kB]
- Breakaway Walls in the V Zone
- "Mold Guidelines for New Jersey Residents" pamphlet and upcoming training dates
- Foundation Guidance [pdf 8.52kB]
- DEP Flood Elevation Rule FAQs [pdf 153kB]
- Elevating existing homes, Guidance to code officials [pdf 29kB]
- Disposing of Asbestos from Sandy-Impacted Structures [pdf 198kB]
- Temporary Employment (building, electrical and plumbing) [pdf 179kB]
- Storm Recovery Information [pdf 31kB]
- Permit Fees [pdf 79kB]
- Electrical Systems Guidance [pdf 66kB]
- Mechanical.Plumbing Guidance for Code Officials [pdf 74kB]
- Boilers, Pressure Vessels, Refrigeration Systems or other Appliances [pdf 126kB]
- Landlords And Tenants [pdf 46kB]
- 01-02-2013(Advisory Base Flood Elevations and Construction Req.) [pdf 45kB]
- Accessing Flood Zone maps through FEMA's website(s) [pdf 196kB]
- DEP Emergency Rule.Prior Approvals Misc Info [pdf165kB]
- DEP Frequently Asked Land Use Permitting Questions

Press Release on need for recovery workers to wear protective gear and protect themselves while working with mold:
<http://nj.gov/health/news/2013/approved/20130213a.html>

- Flyer on Mold/Asbestos Safety: http://nj.gov/health/er/documents/prepare_before_cleanup_flyer.pdf

- Temporary Use of Buildings to House Sandy Volunteers
 Buildings housing volunteers CO-FO Doc Final
 Buildings housing volunteers Host Site Final
 Buildings housing volunteers cover memo signed

Other

Lead Free Fixtures & Piping Memo 2/24/14
 Avalon Parking notice of receipt of application
 Local Review of School Plans
 Amusement Ride Safety Tips
 Flood Permit Surcharge Fee
 The Flood Hit! Now what
 Permit Extension Act Updated Guidance 2012
 PL2012,C.48 Permit Extension Act
 Child Care Centers
 Infill Development Standards and Policy Guidance
 Recreational Park Trailers, A Guidance Document
 School Construction, Best Practices Standards
(continued on next page)

Carnival & Amusement Rides
Model Letter for adding a serial number to the type certification
Model Letter for adding a serial number to the type certification (inflatable)
Model Fabrication (manufacturing) Certification
Model Testing Certification
Model Erection/Assembly Certification
Model Design Certification
Model Cert Oper-Trng Template

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