

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

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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

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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.

Disposing of Asbestos

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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.

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**

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- 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

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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

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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.

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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

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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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Please direct any comments or suggestions to the NJDCA, Division of Codes and Standards, Attention: Code Development Unit, PO Box 802, Trenton, NJ 08625-0802.

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