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Air Leakage and the Building Envelope

There are many sources of air leakage in a building thermal envelope. Typically, people think of recessed luminaires in a ceiling assembly below an attic space (conditioned space vs. unconditioned space), which is addressed specifically in Section 502.4.7 of the International Energy Conservation Code (IECC) 2006. However, there are many other locations in a building envelope that are considered an air leakage problem. Section 402.4.3 of the IECC/2006 follows, for your convenience:

402.4.3 RECESSED LIGHTING

Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces by being:

1. IC-rated and labeled with enclosures that are sealed or gasketed to prevent air leakage to the ceiling cavity or unconditioned space; or
2. IC-rated and labeled as meeting American Society for Testing and Materials Standard E283 when tested at 1.57 psi (75 Pa) pressure differential with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity; or
3. Located inside, and labeled for an airtight sealed box with clearances of at least 0.5 inch (12.7 mm) from combustible material and 3 inches (76 mm) from insulation.

Air leakage in a building envelope can be minimized in many ways. Openings and penetrations are required to

be sealed with caulking materials, or closed with a gasketing system compatible with the construction materials. Joints and seams are required to be sealed in the same manner, or taped or covered with moisture vapor-permeable wrapping material. Keep in mind, sealing materials spanning joints should allow for expansion and contraction.

Here's an example of when air leakage needs to be minimized: The exterior wall of a house is insulated to create a portion of the building envelope. This wall is covered with a moisture vapor-permeable house wrap on the exterior for joints and seams. The batt insulation used has a moisture vapor retarder, as per Section R318 of the International Residential Code 2006, installed against the interior drywall. However, there are some receptacles and light switches installed in the interior of this wall. Where the backing of the insulation or moisture vapor retarder is penetrated by the device box, a gasketed cover is required. (Typically, this is an exterior wall issue; however, an example of an interior wall where this would apply is an interior wall between a conditioned house and an unconditioned garage.)

Note: For projects under the previous Energy Subcode, Section 502.3.3 of the Council of American Building Officials Model Energy Code 1995 would apply in the same manner.

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

Source: Rob Austin
Code Assistance Unit

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Use of a Backflow Preventer in Boiler Applications

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

Determining the Fixture Count

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 2006 and the International Building Code (IBC) 2006.]

- ☞ NSPC 2006, 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 2006, 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 2006, 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 2006, 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.

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EXAMPLE

Use Group: Business

Floor Area: 2575 square feet, single story

Population: Based on building egress calculations (IBC/2006, Table 1004.1.1, Business Use; 100 square feet per occupant, gross floor area)

$$2575 \div 100 = 25.75, \text{ rounded to } 26 \text{ persons}$$

$$26 \text{ persons} \times .67 \text{ (two-thirds reduction)} = 17.42, \\ \text{rounded to } 18 \text{ persons total}$$

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:

$$18 \times .5 \text{ (50\%)} = 9 \text{ male and } 9 \text{ female}$$

Plumbing fixtures required are based on NSPC 2006, 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

Energy Requirements Now in Rehab Subcode

Previously, the Rehabilitation Subcode, N.J.A.C. 5:23-6, did not reference any requirements from the Energy Subcode other than the underlying notion that one could not reduce the level of existing energy conservation. Now, in times of higher fuel prices, the following two new provisions have been added to N.J.A.C. 5:23-6 for repair, renovation, alteration, and reconstruction projects.

1. When the work exposes the entire framing of any wall, floor, ceiling, or roof assembly that is part of the building thermal envelope (encloses conditioned space) and there is no insulation in the cavities, insulation that meets an R-value shall be installed that fills the cavities of the framed assembly.

- i. If only a small amount of interior finish remains on the framed assembly, the installation of insulation applies; or

- ii. If high-efficiency equipment is installed as per the Energy Subcode, the above requirement for installation of insulation does not apply to the basement.

2. When window assemblies are replaced, the U-factor (thermal transmittance) cannot exceed 0.5 or the U-factor of the window assembly being replaced, whichever is lower.

To put this in perspective, an example might help:

Picture a 1920's home. Typically, these homes were not initially built with wall insulation. So, if the owner of this home decides to tear down the old plaster and expose the entire wall, or nearly, to put up sheetrock in its place, the first above requirement would require insulation to be installed where there was none before.

Since different insulation manufacturers make R-value insulation in many different shapes and sizes, it is safe to say the insulation R-value a code official should look for in a 2x4 wall is an R-13; 2x6 walls should be R-19. Of course, if a greater R-value is used and properly fits in the wall with no or minimal compression, this is also acceptable.

With regard to the windows of the same 1920's home, it is very possible that there are some old single-pane windows. So again, if the owner decides to replace the old windows, the new replacement windows should have a U-factor of 0.50 or lower (the lower the number, the better in this case). If for some reason, this home already has a window better than 0.50, say 0.33 U-factor for a triple-pane window, then the 0.33 should be maintained if they decide to replace this specific window also.

Please note that the compliance documentation of N.J.A.C. 5:23-2.15(e)1.vi does not apply to rehabilitation projects; this specific documentation applies to new construction and additions only.

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

Source: Rob Austin
Code Assistance Unit

Efficiency Upgrades in ASHRAE Standard 90.1-2004

Based on recent federal energy requirements, minimum equipment energy efficiencies have changed, and the following tables of your American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 90.1-2004 need to be updated. Because ASHRAE does not print updated editions of its standards, but instead provides "addenda," the ASHRAE tables that contain the changes to minimum efficiency requirements in ASHRAE 90.1 are being provided here for the convenience of code users. The usefulness of the tables is that they provide all the changes to minimum efficiency requirements that have been made since the last published edition. By using these tables, code users can determine whether their edition, including addenda, contains the most up-to-date information. It is important to note that these tables contain only the portions of each table that have been changed; the remainder of each table remains unchanged:

TABLE 6.8.1A – Electrically Operated Unitary Air Conditioners and Condensing Units

Equipment Type	Size Category	Heating Section Type	Sub-Category or Rating Condition	Minimum Efficiency ^b	Test Procedure ^a
Air conditioners, air cooled	<65,000 Btu/h ^c	All	Split system	10.0 SEER (before 1/23/2006) 12.0 SEER <ins>13.0 SEER</ins> (as of 1/23/2006)	ARI 210/240
			Single package	9.7 SEER (before 1/23/2006) 12.0 SEER <ins>13.0 SEER</ins> (as of 1/23/2006)	
Small duct high velocity, air cooled	< 65,000 Btu/h ^c	All	Split system	10 SEER	

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Fire Sprinklers and Half Ceilings

It has come to the Department of Community Affairs' attention that designers are designing half ceilings (which are also called "clouds") without providing protection for the area above the half ceiling (clouds).

Some engineers believe sprinklers are only required at the ceiling of the lowest area, and not in the concealed space between a full ceiling and half ceiling. That is not correct. In National Fire Protection Association (NFPA) Standard 13, Section 5-13.23, Spaces Above Non-Storage Areas, requires the installation of sprinklers in the concealed spaces. The requirement is more clearly stated in the NFPA 13/2002 edition, where a language change specifies "any concealed ceiling area."

Source: Gerry Grayce
Office of Regulatory Affairs

Fire Sprinklers and Elevator Shafts

The installation of fire sprinklers in elevator shafts has once again caused a lot of questions.

National Fire Protection Association (NFPA) Standard 13, Section 5-13.6.1 exempts fire sprinklers at the bottom of elevator shafts if the shaft does not contain combustible hydraulic fluids. Section 5-13.6.3 exempts the shaft from sprinklers when the elevator car enclosure material meets requirements of American Society of Mechanical Engineers (ASME) A17.1, Safety Code for Elevators and Escalators. The fire subcode official has jurisdiction with regard to fire sprinkler requirements.

NOTE: NFPA 13/2002, the referenced standard in the recently adopted International Building Code 2006, has the same requirement as above.

Source: Gerry Grayce
Office of Regulatory Affairs

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TABLE 6.8.1A -- Electrically Operated Unitary Air Conditioners and Condensing Units (continued)

Equipment Type	Size Category	Heating Section Type	Sub-Category or Rating Condition	Minimum Efficiency ^a	Test Procedure ^b
Air conditioners, air cooled	$\geq 65,000 \text{ Btu/h}$ and $< 135,000 \text{ Btu/h}$	Electric resistance (or none)	Split system and single package	10.3 EER <u>(before 1/1/2010)</u> 11.2 EER (as of 1/1/2010)	ARI 340/360
				10.1 EER <u>(before 1/1/2010)</u> 11.0 EER (as of 1/1/2010)	
	$\geq 135,000 \text{ Btu/h}$ and $< 240,000 \text{ Btu/h}$	Electric resistance (or none)	Split system and single package	9.7 EER <u>(before 1/1/2010)</u> 11.0 EER (as of 1/1/2010)	
				9.5 EER <u>(before 1/1/2010)</u> 10.8 EER (as of 1/1/2010)	
	$\geq 240,000 \text{ Btu/h}$ and $< 760,000 \text{ Btu/h}$	Electric resistance (or none)	Split system and single package	9.5 EER <u>(before 1/1/2010)</u> 10.0 EER (as of 1/1/2010) 9.7 IPLV	
				9.3 EER <u>(before 1/1/2010)</u> 9.8 EER (as of 1/1/2010) 9.5 IPLV	
	$\geq 760,000 \text{ Btu/h}$	Electric resistance (or none)	Split system and single package	9.2 EER <u>(before 1/1/2010)</u> 9.7 EER (as of 1/1/2010) 9.4 IPLV	
				9.0 EER <u>(before 1/1/2010)</u> 9.5 EER (as of 1/1/2010) 9.2 IPLV	

GFCI Receptacles to be Ordinary Maintenance

On February 5, 2007, the Department of Community Affairs published in the *New Jersey Register* an adoption of a rule providing that the replacement of standard receptacles with those that are required to be Ground-Fault Circuit Interrupter (GFCI) -protected (in accordance with Section 210.8 of the Electrical Subcode) is ordinary electrical maintenance. Therefore, no permit is required. This rule was adopted with an "operative" date. That means that this requirement will not be effective until

July 1, 2007. At that time, you will receive this amendment with your Uniform Construction Code subscription service. Why the two dates, you ask? Well, industry has recently introduced a "fail-safe" type GFCI receptacle and the operative date allows these new devices to become readily available. Therefore, the rule treating the replacement of outlets with GFCI receptacles as ordinary maintenance is as follows:

N.J.A.C. 5:23-2.7(c)3.i – Prior to July 1, 2007:
Ordinary electrical maintenance shall include the

TABLE 6.8.1B – Electrically Operated Unitary and Applied Heat Pumps

Equipment Type	Size Category	Heating Section Type	Sub-Category or Rating Condition	Minimum Efficiency ^b	Test Procedure ^a
Air cooled, (cooling mode)	<65,000 Btu/h ^c	All	Split system	10.0 SEER (before 1/23/2006) 12.0-13.0 SEER (as of 1/23/2006)	ARI 210/240
			Single package	9.7 SEER (before 1/23/2006) 12.0-13.0 SEER (as of 1/23/2006)	
Small duct high velocity (air cooled, cooling mode)	< 65,000 Btu/h ^c	All	Split system	10 SEER	
Air cooled, (heating mode)	<65,000 Btu/h ^c (cooling capacity)	-	Split system	6.8 HSPF (before 1/23/2006) 7.4-7.7 HSPF as of 1/23/2006)	
			Single package	6.6 HSPF (before 1/23/2006) 7.4-7.7 HSPF as of 1/23/2006)	
Small duct high velocity (air cooled, heating mode)	< 65,000 Btu/h ^c (cooling capacity)	-	Split system	6.8 HSPF	

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Discount on ASHRAE Standards

We are happy to inform you that the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) has agreed to continue the "Code Official's Discount" when purchasing any of the ASHRAE standards.

In order to receive the discount, "CODE OFFICIAL DISCOUNT" must be indicated clearly on the order form. All orders must be submitted on letterhead imprinted with the name of the municipality and title. A government purchase order and government check must be included.

Please mail your order to:

ASHRAE
1791 Tullie Circle, NE
Atlanta, Georgia 30329
Attention: Customer Service Manager

Don't forget to indicate "CODE OFFICIAL DISCOUNT" on the order form!

Should you need to contact ASHRAE, the telephone number is (800) 527-4723. Should you have any questions, you may contact me at (609) 984-7609.

Source: Thomas C. Pitcherello
Code Assistance Unit

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TABLE 6.8.1B -- Electrically Operated Unitary and Applied Heat Pumps (continued)

Equipment Type	Size Category	Heating Section Type	Sub-Category or Rating Condition	Minimum Efficiency ^a	Test Procedure ^b
Air cooled (cooling mode)	$\geq 65,000 \text{ Btu/h}$ and $< 135,000 \text{ Btu/h}$	Electric resistance (or none)	Split system and single package	10.1 EER <u>(before 1/1/2010)</u> 11.0 EER (as of 1/1/2010)	ARI 340/360
		All other	Split system and single package	9.9 EER <u>(before 1/1/2010)</u> 10.8 EER (as of 1/1/2010)	
	$\geq 135,000 \text{ Btu/h}$ and $< 240,000 \text{ Btu/h}$	Electric resistance (or none)	Split system and single package	9.3 EER <u>(before 1/1/2010)</u> 10.6 EER (as of 1/1/2010)	
		All other	Split system and single package	9.1 EER <u>(before 1/1/2010)</u> 10.4 EER (as of 1/1/2010)	
	$\geq 240,000 \text{ Btu/h}$	Electric resistance (or none)	Split system and single package	9.0 EER <u>(before 1/1/2010)</u> 9.5 EER <u>(as of 1/1/2010)</u> 9.2 IPLV	
		All other	Split system and single package	8.8 EER <u>(before 1/1/2010)</u> 9.3 EER <u>(as of 1/1/2010)</u> 9.0 IPLV	
Air cooled (heating mode)	$\geq 65,000 \text{ Btu/h}$ and $< 135,000 \text{ Btu/h}$ (cooling capacity)	—	47°F db/43°F wb outdoor air	3.2 COP <u>(before 1/1/2010)</u> 3.3 COP (as of 1/1/2010)	ARI 340/360
			17°F db/15°F wb outdoor air	2.2 COP	
	$\geq 135,000 \text{ Btu/h}$ (cooling capacity)	—	47°F db/43°F wb outdoor air	3.1 COP <u>(before 1/1/2010)</u> 3.2 COP (as of 1/1/2010)	
			17°F db/15°F wb outdoor air	2.0 COP	

Residential Fire Sprinklers

Hurray, my job just got easier. I've already done two articles explaining the exceptions to the fire sprinkler requirements of the International Building Code (IBC) for Group R-2 occupancies and explaining why a two-story R-2 is not required to have fire sprinklers, while the same building with a basement does require fire sprinklers. Now I do not ever have to do another one.

Why, you ask? Because the IBC/2006, New Jersey Edition, Section 903.2.7 now requires automatic fire sprinklers to be installed throughout all buildings with a Group R fire area. There are no longer any exceptions.

If you have any questions, and you shouldn't, you can call me at (609) 984-7672.

Source: Gerry Grayce
Office of Regulatory Affairs

TABLE 6.8.1D – Electrically Operated Packaged Terminal Air Conditioners, Packaged Terminal Heat Pumps, Single-Package Vertical Air Conditioners, Single-Package Vertical Heat Pumps, Room Air Conditioners, and Room Air-Conditioner Heat Pumps

Equipment Type	Size Category (Input)	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure
SPVAC (Cooling Mode)	All Capacities ≤65,000 Btu/h	95°F db/ 75°F wb Outdoor Air	8.6 EER 9.0 EER	ARI 390
	≥65,000 Btu/h and ≤135,000 Btu/h	95°F db/ 75°F wb Outdoor Air	8.9 EER	
	≥135,000 Btu/h and ≤240,000 Btu/h	95°F db/ 75°F wb Outdoor Air	8.6 EER	
SPVHP (Cooling Mode)	All Capacities ≤65,000 Btu/h	95°F db/ 75°F wb Outdoor Air	8.6 EER 9.0 EER	
	≥65,000 Btu/h and ≤135,000 Btu/h	95°F db/ 75°F wb Outdoor Air	8.9 EER	
	≥135,000 Btu/h and ≤240,000 Btu/h	95°F db/ 75°F wb Outdoor Air	8.6 EER	
SPVHP (Heating Mode)	All Capacities ≤65,000 Btu/h	47°F db/ 43°F wb Outdoor Air	2.7 COP 3.0 COP	
	≥65,000 Btu/h and ≤135,000 Btu/h	47°F db/ 43°F wb Outdoor Air	3.0 COP	
	≥135,000 Btu/h and ≤240,000 Btu/h	47°F db/ 43°F wb Outdoor Air	2.9 COP	

In reference to the equipment above, add the following definitions:

Single-Package Vertical Air Conditioner (SPVAC) is a type of air-cooled, small or large commercial package air-conditioning and heating equipment; factory assembled as a single package, having its major components arranged vertically, which is an encased combination of cooling and optional heating components; is intended for exterior mounting on, adjacent interior to, or through an outside wall; and is powered by single or three-phase current. It may contain separate indoor grille(s), outdoor louvers, various ventilation options, indoor free air discharge, ductwork, wall plenum, or sleeve. Heating components may include electrical resistance, steam, hot water, gas, or no heat, but may not include reverse cycle refrigeration as a heating means.

Single-Package Vertical Heat Pump (SPVHP) is an SPVAC that utilizes reverse cycle refrigeration as its primary heat source, with secondary supplemental heating by means of electrical resistance, steam, hot water, or gas.

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replacement of any receptacle, switch, or lighting fixture, rated at 20 amps or less and operating at less than 150 volts to ground, with a like or similar item. Replacement of receptacles in locations where GFCI protection is required by the Electrical Subcode shall not be considered ordinary maintenance.

N.J.A.C. 5:23-2.7(c)3.i – On and after July 1, 2007: Ordinary electrical maintenance shall include the replacement of any receptacle, switch, or lighting fixture rated at 20 amps or less and operating at less than

150 volts to ground with a like or similar item, including receptacles in locations where GFCI protection is required.

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

Source: Rob Austin
Code Assistance Unit

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TABLE 6.8.1F – Gas- and Oil-Fired Boilers

Equipment Type ^a	Size Category (Input)	Subcategory or Rating Condition	Minimum Efficiency ^b	Test Procedure ^c
Boilers, Gas-Fired	300,000 Btu/h	Hot Water	80% AFUE	DOE 10 CFR Part 430
		Steam	75% AFUE	
	300,000 Btu/h and ≤2,500,000 Btu/h	Maximum Capacity ^d	75% E_t^b <u>and</u> <u>80% E_c</u>	<u>H.I. Htg Boiler Std.</u> <u>DOE 10 CFR Part 431</u>
		Hot Water	80% E_c	
	>2,500,000 Btu/h ^a	Steam	80% E_c	
		Hot Water	80% AFUE	DOE 10 CFR Part 430
Boilers, Oil-Fired	300,000 Btu/h	Maximum Capacity ^d	78% E_t^b <u>and</u> <u>83% E_c</u>	<u>H.I. Htg Boiler Std.</u> <u>DOE 10 CFR Part 431</u>
	300,000 Btu/h and ≤2,500,000 Btu/h		80% AFUE	
	Hot Water	83% E_c		
	>2,500,000 Btu/h ^a	Steam	83% E_c	
		Hot Water	83% E_c	DOE 10 CFR Part 430
Boilers, Oil-Fired (Residual)	300,000 Btu/h and ≤2,500,000 Btu/h	Maximum Capacity ^d	78% E_t^b <u>and</u> <u>83% E_c</u>	<u>H.I. Htg Boiler Std.</u> <u>DOE 10 CFR Part 431</u>
	>2,500,000 Btu/h ^a		80% AFUE	
	Hot Water	83% E_c		
	>2,500,000 Btu/h ^a	Steam	83% E_c	
		Hot Water	83% E_c	

A These requirements apply to boilers with rated input of 8,000,000 Btu/h or less that are not packaged boilers, and to all packaged boilers. Minimum efficiency requirements for boilers cover all capacities of packaged boilers

B E_t = thermal efficiency. E_c = combustion efficiency. See reference document for detailed information.

C Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.

D Minimum and maximum ratings as provided for and allowed by the unit's controls.

These changes (in I-P units) and others (such as S1 units) can be found at <http://www.ashrae.org> under the "Standards Addenda" link.

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

Source: Rob Austin
Code Assistance Unit

Home Improvement Contractors

Home improvement contractors who had applied for registration prior to the December 31, 2005 deadline, but had not yet received their registrations from the Division of Consumer Affairs, were allowed to sign a certification indicating that they had applied prior to the deadline and that the application had not been denied. This was done by the Division of Consumer Affairs by rule so that contractors could continue to obtain permits while their applications were pending, since there were so many applications filed just prior to the deadline.

This rule is still in place. However, more than a year later, there should be few, if any, contractors who applied before the deadline and have not received registrations. To try to identify and resolve any outstanding issues with the remaining few, the Division of Consumer Affairs has asked that code officials take the following additional steps. If a contractor applies for a permit with the certification that application was made before the December 31, 2005 deadline, then please check the Division of Consumer Affairs web site for the contractor's name. The web site is:

<http://www.njconsumeraffairs.com/contractor>

Please note that there are two lists to check: the list of registered home improvement contractors and the list of home improvement contractor applications denied or withdrawn. (There are only about 30 names on the second list.) If you do not find the name on the web site and the contractor is still trying to use the 2005 certification to pull permits, please e-mail Veronica Hursthause at the Division of Consumer Affairs with the contractor's name, date of application, and business address. Her e-mail address is Hursthousev@dca.lps.state.nj.us. She will review what has happened with the application and advise you as to how to proceed.

Thank you for your continuing cooperation in the enforcement of this (relatively) new law.

Source: Amy Fenwick Frank
Division of Codes and Standards

New Jersey Register Adoptions

Date: January 2, 2007
Adoption: 39 NJR 28(b)
Summary: The adopted amendments to N.J.A.C. 5:23-6.3, 6.22; 5:70-1.5, 4.3, and 4.7 require the installation of automatic sprinkler protection throughout all existing nursing homes. This retrofit requirement is in the Uniform Fire Code (UFC). The amendments in the Uniform Construction Code (UCC) apply to projects subject to the Rehabilitation Subcode. The adopted amendments eliminate the exception for nursing homes of noncombustible construction.

Date: January 16, 2007
Adoption: 39 NJR 370(b)
Summary: The adopted amendments to N.J.A.C. 5:23-2.18, 2.31, and 4.5 permit a construction official to issue and enforce a stop construction order for an entire residential development upon a written, documented finding of a pattern or practice of similar violations affecting framing, fire safety, or structural safety in most or all of the units.

Date: February 5, 2007
Adoption: 39 NJR 370(a)
Summary: The adopted amendment to N.J.A.C. 5:23-2.7 designates as "electrical ordinary maintenance" the replacement of a receptacle in a location that requires ground-fault circuit-interrupter protection, and eliminates the permit and inspection requirements under the UCC. NOTE: The operative date of this rule is July 2007. Please take note of the companion article in this *Construction Code Communicator*.

Date: February 5, 2007
Adoption: 39 NJR 363(b)
Summary: The adopted amendments at N.J.A.C. 5:10-27.1 and 27.4 delete the requirement that the bars of window guards have a dimension of one-half inch. The requirement that window guards allow for natural light and ventilation has been retained. The adopted amendments provide for the acceptance of window guards that meet the American Society for Testing and Materials standards as complying with the requirements of the Regulations for Maintenance of Hotels and Multiple Dwellings (N.J.A.C. 5:10).

Date: February 5, 2007
Adoption: 39 NJR 371(a)
Summary: The adopted amendments to N.J.A.C. 5:23-3.14, 6.13, 6.13A, 6.31; 5:70-1.5, 4.3, 4.7, 4.9, and 4.11 adopt more stringent requirements for nightclub occupancies under the UFC and the UCC. The adopted amendments define "nightclub." The adopted amendments require an automatic fire-suppression system in nightclubs, or portions thereof, with an occupant load of 300 or more. The adopted amendments require the installation of an automatic fire-alarm system in nightclubs, or portions thereof, with an occupant load of 100 or more that are not otherwise required to have an automatic fire-suppression system. The adopted amendments require that nightclubs, or portions thereof, with an occupant load of more than 300, have a main entrance with an egress capacity of at least two-thirds of the total occupant load.

Date: February 5, 2007
Adoption: 39 NJR 376(a)
Summary: The adopted new rule at N.J.A.C. 5:23-9.3 is an interpretation which clarifies that recreational park trailers are subject to the adopted subcodes of the UCC. Additionally, as part of this interpretation, the Department of Community Affairs will be withdrawing UCC Bulletin Nos. 93-6 and 90-2.

Grill Safety Information Available

Spring is a time when many of us return to the outdoors to grill. Nationally, there are about 600 grill accidents a year. The Liquefied Petroleum Gas Education and Safety Board and the Department of Community Affairs are trying to educate consumers on measures to take to grill more safely. A brochure on grilling safety tips, which can be used as a counter document, is available on the Department's web site. It's available in pdf format and can be downloaded at www.nj.gov/dca/codes/.

Source: Michael Baier
Bureau of Code Services

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Permits Not Required

As we all know, the list for when a Uniform Construction Code (UCC) permit is not required is a lot smaller than the list for when a permit is required. This list can be found at N.J.A.C. 5:23-2.14. This section is entitled "Construction Permits — When Required" and the following are the exceptions, or when a permit is not required.

1. A permit is not required for ordinary maintenance, as defined in N.J.A.C. 5:23-2.7. There is no requirement to provide notice to the enforcing agency. Sections 2.7(c)1 through (c)6 contain specific maintenance items that are considered ordinary maintenance for the building, plumbing, electrical, fire protection, mechanical, and elevator subcodes, respectively.
2. A permit is not required for temporary structures (excluding tents, tensioned-membrane structures, canopies, and greenhouses) covering an area less than 120 square feet, including all connecting areas or spaces with a common means of egress or entrance that remain in place for less than 180 days.
3. Although the tents, tensioned-membrane structures, and canopies that meet all of the criteria below do not require a UCC permit, they are subject to the permitting requirements of the Uniform Fire Code (UFC) (N.J.A.C. 5:70-2.7).

- ☞ The tent, tensioned-membrane structure, or canopy is 140 feet or less in any dimension and 16,800 square feet or less in area, whether it is one unit or is composed of multiple units;
- ☞ The tent, tensioned-membrane structure, or canopy remains in place or will remain in place for fewer than 180 days;
- ☞ The tent, tensioned-membrane structure, or canopy is used or occupied only between April 1 and November 30;
- ☞ The tent, tensioned-membrane structure, or canopy does not have a permanent anchoring system or foundation; and
- ☞ The tent, tensioned-membrane structure, or canopy does not contain platforms or bleachers greater than 11 feet in height.

4. A permit is not required for a temporary greenhouse, also called a "hoophouse" or "polyhouse," that meets the criteria of N.J.A.C. 5:23-3.2(d).

NOTE for #3 and #4: Regardless of whether the structure of the tent, tensioned-membrane structure, canopy, or greenhouse requires a permit, a permit is required for any electrical equipment, electrical wiring, or mechanical

Peer Review Activities

Another year, another article, another busy year for Peer Review and the Office of Regulatory Affairs. This is the third consecutive year I have written this article with the hope of helping code officials understand that they are accountable for their actions and that their peers believe in high ethical standards. In 2006, the Office of Regulatory Affairs brought 19 individuals before Peer Review. In addition, 3 individuals surrendered their licenses and 42 received another sanction, including a Letter of Warning or a Letter of Reprimand. Following are brief synopses of several cases and the recommended sanctions:

The Office of Regulatory Affairs proposed a revocation of all the Uniform Construction Code (UCC) licenses held by a working official for submitting a false test result, which certified that he passed the Mechanical Test when he had failed the test. The Plumbing Peer Review Committee affirmed the Office of Regulatory Affairs' recommendation.

The Office of Regulatory Affairs proposed a 10-day suspension of all UCC licenses held by an individual who submitted inconsistent statements in an application for licensure. The Building Peer Review Committee recommended a \$500 penalty and a Letter of Reprimand. The Penalty and Order issued were consistent with the Peer Review recommendation.

The Office of Regulatory Affairs proposed a 60-day suspension of all UCC licenses and a \$5,500 penalty for performing 70 inspections in one day, and for building code deficiencies subsequently uncovered. The Building Peer Review Committee recommended revocation of the Building Subcode Official and Building Inspector licenses, and a \$5,000 penalty. The Order to Revoke and Order to Pay Penalty issued were consistent with the Peer Review Committee's recommendation.

The Office of Regulatory Affairs proposed revocation of all UCC licenses held by an individual who, while performing inspections on a project, obtained trusses from the developer at a discounted price. The Building Peer Review Committee affirmed the Office of Regulatory Affairs' recommendation. The individual subsequently surrendered the licenses prior to a Revocation Order being issued.

The Office of Regulatory Affairs proposed revocation of all UCC licenses of an individual who provided architectural services in adjacent municipalities while working as a construction official, a clear violation of the Conflict-of-Interest provisions. The Building Peer Review Committee affirmed the Office of Regulatory Affairs' proposal. The Order to Revoke was issued and the case is currently awaiting a trial date.

We would like to remind you, if any official is not sure what to do in a certain situation, to please give us a call. We will attempt to help resolve any ambiguities. We also provide recommendations to ensure that the issues you face do not escalate into problems that could result in sanctions.

If you have any questions, please call the Office of Regulatory Affairs at (609) 984-7672.

Source: Louis Mraw
Office of Regulatory Affairs

Required Permits for Mechanical Equipment in R-3 or R-5 Dwellings

Back in 1994, Michael Baier wrote an article in the *Construction Code Communicator* entitled "How Many Permits Do I Need." I am now writing a follow-up article since the question regarding the replacement of furnaces, boilers, heating/air-conditioning equipment, and domestic water heaters in Group R-3 or R-5 dwellings is still popular.

In the 1990s, the Department of Community Affairs established a mechanical subcode inspector for the mechanical work in Group R-3 and R-5 dwellings. It was thought that a municipality would use the mechanical subcode official to review and inspect the mechanical work, and would require only one mechanical technical section, excluding the required electrical or plumbing technical sections, if applicable. Unfortunately, having a mechanical subcode official is voluntary and it never took off. Therefore, if a municipality did not use the mechanical subcode official, three or four technical sections were required for a simple furnace or boiler replacement.

The Department receives many calls complaining about the high cost of permit fees for a replacement because municipalities have set a minimum fee for each required technical section. Some municipal fees accumulate to over \$200 for a furnace replacement. It is hard for a homeowner to comprehend such an excessive permit fee for such a simple job.

N.J.A.C. 5:23-3.4(d) states:

"Any mechanical inspector employed by the Department or by a municipality, and so assigned by the construction official, shall have the responsibility for enforcement of the provisions of the code, except electrical, relating to the installation of mechanical equipment, such as refrigeration, air conditioning or ventilating

(continued from page 13)

- equipment that would otherwise require a permit.
- 5. A gas utility company is not required to obtain a permit, or give notice to the enforcing agency, for moving a meter (and related appurtenances) from the interior to the exterior of a building when that meter is owned by the gas utility company.
- 6. A permit is not required for a sign that meets all of the following conditions; however, the construction official has the authority to require the removal of any sign that creates an unsafe condition, or otherwise to require correction of any such condition:
 - ☞ It is supported by uprights or braces in or upon the ground surface;
 - ☞ It is not served by an electrical circuit directly connected to the sign;
 - ☞ It is not greater than 25 square feet in surface area (one side); and
 - ☞ It is not more than 6 feet above the ground (mounted height).
- 7. A permit is not required for lead abatement work performed on a steel structure or other superstructure, or in a commercial building.
- 8. A permit is not required for garden-type utility sheds and similar structures that are 100 square feet or less in area; 10 feet or less in height; and accessory to buildings of Group R-2, R-3, R-4, or R-5. Such garden-type utility sheds and similar structures are required to comply with the requirements at N.J.A.C. 5:23-9.9.
- 9. A permit is not required for fences 6 feet or less in height. This exception does not apply to barriers surrounding public or private swimming pools.
- 10. A construction permit is not required for an outdoor maze unless it is 6 feet or greater in height, or contains any electrical equipment. However, outdoor mazes that do not require a UCC permit are subject to the permitting requirements of the UFC (N.J.A.C. 5:70-2.7).

The above are exceptions from a UCC permit altogether. There are some instances where a UCC permit is required, but work may begin before the permit is obtained. These are:

1. Minor work, as defined by N.J.A.C. 5:23-2.17A, requires a permit. However, work may proceed, upon notice to the enforcing agency, before the permit is issued.

2. Emergency work that does not involve lead abatement requires a permit; the permit application may be provided as soon after the work begins as is practicable, but not later than 72 hours thereafter.

Anything not mentioned above must follow the normal UCC permit process to construct, enlarge, repair, renovate, alter, reconstruct, or demolish a structure; or to change the use of a building or structure, or portion thereof; or to install or alter any equipment for which provision is made, or the installation of which is regulated, by the UCC; or to undertake a project involving lead abatement in accordance with N.J.A.C. 5:17.

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

Source: Rob Austin
Code Assistance Unit

Use Group Classifications: Building Subcode and Plumbing Subcode

The following is based on the 2006 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

(continued from page 14)

apparatus, gas piping or heating systems, in Group R-3, R-4, or R-5 structures.

1. When assigned by the construction official, a plumbing subcode official shall have the responsibility for the enforcement of the provisions of the code, except electrical, for the replacement of heating or cooling equipment or water heaters in Group R-3, R-4, or R-5 structures. A plumbing subcode official need not be a mechanical inspector to perform these inspections."

N.J.A.C. 5:23-4.18(c)5, Standards for Municipal Fees, clearly states: "The municipality shall set a flat fee for a mechanical inspection performed by a mechanical inspector or a plumbing inspector in a structure of Group R-3, R-4, or R-5. No separate fee shall be charged for gas, fuel-oil, or water piping connections, including the bonding conductor (jumper), associated with the mechanical equipment inspected."

In order to avoid discouraging individuals from obtaining permits for projects involving the simple replacement of equipment due to the high cost of the permit fees, the Department encourages municipalities that do not employ a mechanical inspector to assign to the plumbing inspector enforcement responsibility for the Mechanical Subcode for direct replacement heating or cooling equipment. Also, the municipality needs to set a flat fee for mechanical inspections. In addition to establishing a reasonable cost for the work performed, this would eliminate the need for a homeowner to have to stay home for multiple inspections that may occur on different days.

As a guide, the following technical items require inspection whether there is a mechanical inspector, or enforcement responsibility is assigned to the plumbing inspector for replacement heating or cooling equipment applicable to work in buildings of Groups R-3 and R-5.

- ☞ Gas-Fired Furnace (replacement): mechanical and electrical
- ☞ Direct-Vent, Gas-Fired Furnace (replacement): mechanical and electrical
- ☞ Gas-Fired, Hot-Water Boiler (replacement): mechanical and electrical; plumbing, if a backflow preventer is required to be replaced

The following requires inspection by a mechanical inspector where a mechanical inspector is assigned for the installation of new heating or cooling equipment:

- ☞ New Direct-Vent, Gas-Fired Furnace: mechanical and electrical

- ☞ New Gas-Fired, Hot-Water Boiler: mechanical and electrical; plumbing, if a backflow preventer is required to be installed

For new heating and/or cooling equipment work in a building of Group R-3 or R-5, the following technical items require inspection as indicated where a mechanical inspector is not assigned:

- ☞ Gas-Fired Furnace: plumbing, fire, electrical, and possibly building, depending on the chimney type
- ☞ Direct-Vent, Gas-Fired Furnace: plumbing, electrical, and fire
- ☞ Gas-Fired, Hot-Water Boiler: plumbing, fire, electrical, and possibly building, depending on the chimney type

This should be considered a guide to help determine what technical sections are required for some equipment installations. This is not a total list. Also, check N.J.A.C. 5:23-3.4, Responsibilities, to verify responsibility for plan review and inspections for Group R-3 and Group R-5.

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

Source: Thomas C. Pitcherello
Code Assistance Unit

Visible Alarm Notification – IBC/2000 and ICC/ANSI A117.1-1998: Clarification of the Winter

2005 Communicator Article

In the *Construction Code Communicator* published in the winter of 2005, there was an article concerning visible alarm notification appliances in Group R-2 buildings. This article stated that Section 907.9.1.3 of the International Building Code (IBC) 2000 requires occupancies of Group R-2 that are required to have a fire-alarm system as per Section 907.2.10.1.2 to be provided with the capability to support visible alarm notification appliances within all of the dwelling units. An error was made referencing Section 907.2.10.1.2 for R-2 fire-alarm systems. Section 907.2.10.1.2 is for single- or multiple-station smoke alarms in Groups R-2, R-3, R-4, and I-1. **The correct section is 907.2.9. Section 907.9.1.3 changes to 907.9.1.4 in the International Code Council 2006 edition.**

Note: Section 907.2.10.1.2 requires Groups R-2, R-3, R-4, and I-1 to have single- or multiple-station smoke alarms installed and maintained, regardless of occupant load.

The device installation associated with the visible alarm notification appliance is an adaptable feature. This is similar to providing grab bars, which are an adaptable feature; the supportive blocking is installed in the wall and the actual grab bar is installed when needed by the occupant. Based on the same principle, the wiring for the notification appliance must be provided for the future installation of a visible alarm notification appliance.

Addition to this Article:

Some questions have arisen about number 1 of Section 907.2.9. This section requires manual alarms to be installed in buildings three or more stories above the lowest level of exit discharge. There is a question as to what is considered the lowest level of exit discharge. Any time this statement is used in the code, the floor count starts above the ground floor or the lowest level of exit discharge. In this case, a building with dwelling units or sleeping units four stories above grade must comply with this section and must be provided with the capability of supporting visible alarm notification appliances within all of the dwelling units.

Hopefully, this helps clarify this section. If you have questions, I may be reached at (609) 984-7609.

Source: Michael E. Whalen
Code Assistance Unit

NFPA 13R -- When It's Appropriate/When It's

Not



In both the International Building Code (IBC) and in the National Fire Protection Association (NFPA) standards itself, the scoping for an NFPA 13R sprinkler system limits the use of a 13R system to residential occupancies up to and including four stories in height (above grade). What happens when another group is located below a residential occupancy? Is a mixed system appropriate: NFPA 13 for the nonresidential use and NFPA 13R for the residential portion?

Example #1: A grade-level, nonresidential space is appropriately separated from three residential stories above (a four-story building). The grade level (nonresidential) is protected with an NFPA 13 system. Can

the three residential stories be protected with a 13R system? The answer is yes.

In the IBC, Section 903.3.1.2 (IBC/2000 and IBC/2006) limits an NFPA 13R system to Group R buildings that are up to and including four stories in height.

Therefore, in the example above, it would be permissible to install an NFPA 13 system on the first (nonresidential) floor and an NFPA 13R system in the three stories of Group R above. This is based on the fact that the total building does not exceed four stories in height.

Example #2: A grade-level, nonresidential space is appropriately separated from four residential stories above (a five-story building). The grade level is protected with an NFPA 13 system. Can the four residential stories be protected with a 13R system? The answer is no.

Based on the same code sections cited above, the required fire-sprinkler system for the entire building, including the residential portion, is NFPA 13. This is based on the fact that the total building is greater than four stories in height.

Example #3: A four-story residential occupancy is situated above a grade-level parking garage (S-2) and is appropriately separated. Can an NFPA 13 system be installed in the S-2 portion and can the residential portion be protected with an NFPA 13R sprinkler system? The answer is yes.

In the IBC, Sections 508.2 (IBC/2000) and 509.2 (IBC/2006) permit a Group S-2 enclosed parking garage to be separated in accordance with the provisions of the section, and to be considered a separate building from the occupancy above. Because the total building does not exceed four stories in height, the residential occupancy can be protected with an NFPA 13R system.

If you have any questions, please call me at (609) 984-7672.

Source: Gerry Grayce
Office of Regulatory Affairs

NOTES

NOTES

FIRST-CLASS MAIL

Department of Community Affairs
Division of Codes and Standards
101 South Broad Street
PO Box 802
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Construction Code Communicator



State of New Jersey
Jon S. Corzine, Governor
Volume 19 Number 2

Department of Community Affairs
Charles A. Richman, Acting Commissioner
Summer/Fall 2007

Liquefied Petroleum Gas Regulations Available

The Uniform Construction Code (UCC) enforcement agency and the Department of Community Affairs (which uses the Liquefied Petroleum Gas Regulations, N.J.A.C. 5:18) have joint responsibility for the inspection of Liquefied Petroleum Gas (LPG) systems. The UCC enforcement agency covers vapor systems 2000 gallons and under, while the Department is responsible for liquid withdrawal systems (primarily systems used to fill barbecue cylinders) and for vapor systems over 2000 gallons. The bulk of the technical requirements is the same because both sets of rules are based on National Fire Protection Association Standard 58. However, N.J.A.C. 5:18 also contains requirements for marking tanks and cylinders, provisions for licensing LPG marketers, and rules that restrict marketers from removing each other's tanks. For further explanation, please consult Bulletin No. 04-1, Liquefied Petroleum Gas Inspections.

Anyone interested may receive a copy of the regulations by writing to the following address:

Liquefied Petroleum Gas Safety Unit
Post Office Box 816
Trenton, New Jersey 08625-0816
Attention: Melinda Fields

Barrier-Free Electrical Items in Multifamily Dwellings

What items in the Electrical Subcode also have Barrier Free Subcode requirements in buildings of four or more dwelling units? For reference, see Section 1002.9, Operable Parts, of the International Code Council/American National Standards Institute (ICC/ANSI) A117.1-2003. This section references Section 309, Operable Parts, which in turn references Section 308, Reach Ranges.

Section 1002.9 of ANSI/2003, as amended by N.J.A.C. 5:23-7.2(b)23, states that lighting controls, electrical switches and receptacles, environmental controls, appliance controls, operating hardware for operable windows, plumbing fixture controls, and user controls for security or intercom systems shall comply with Section 309, with the following exceptions: 1) receptacle outlets serving a dedicated use; 2) (exception deleted); 3) floor receptacle outlets; 4) HVAC diffusers; 5) controls mounted on ceiling fans; and 6) where redundant controls other than light switches are provided for a single element, one control in each space shall not be required to be accessible.

Section 309.3 of ANSI/2003 states that the height of the operable part is required to be within one or more of the

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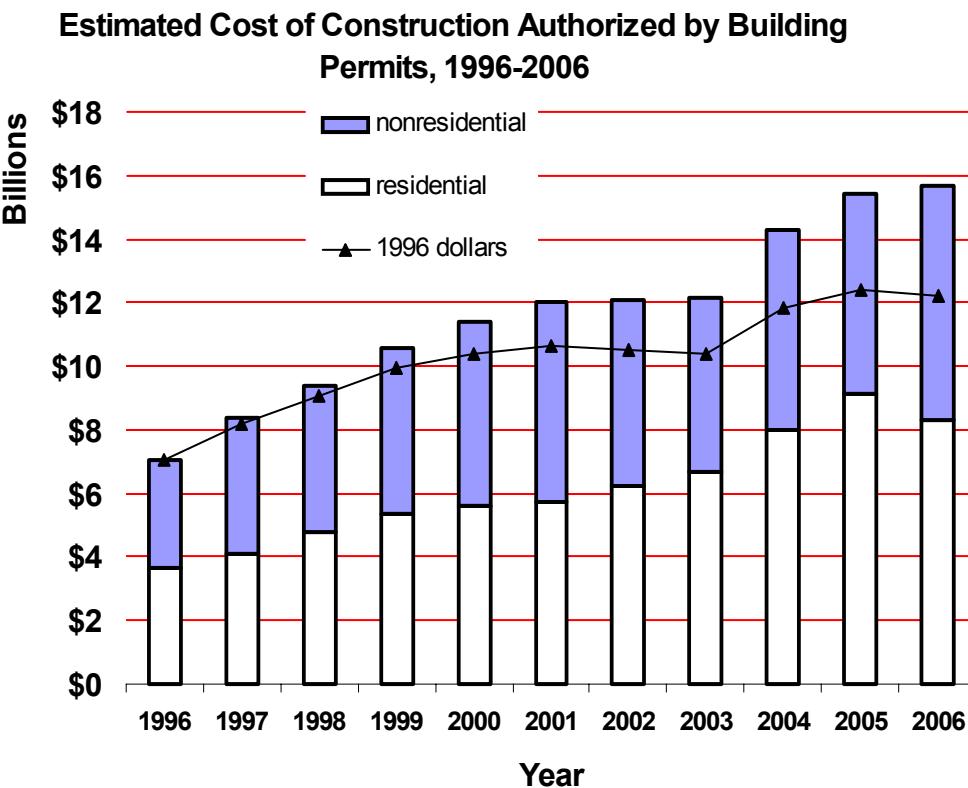
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2006 Highlights of the New Jersey Construction Reporter

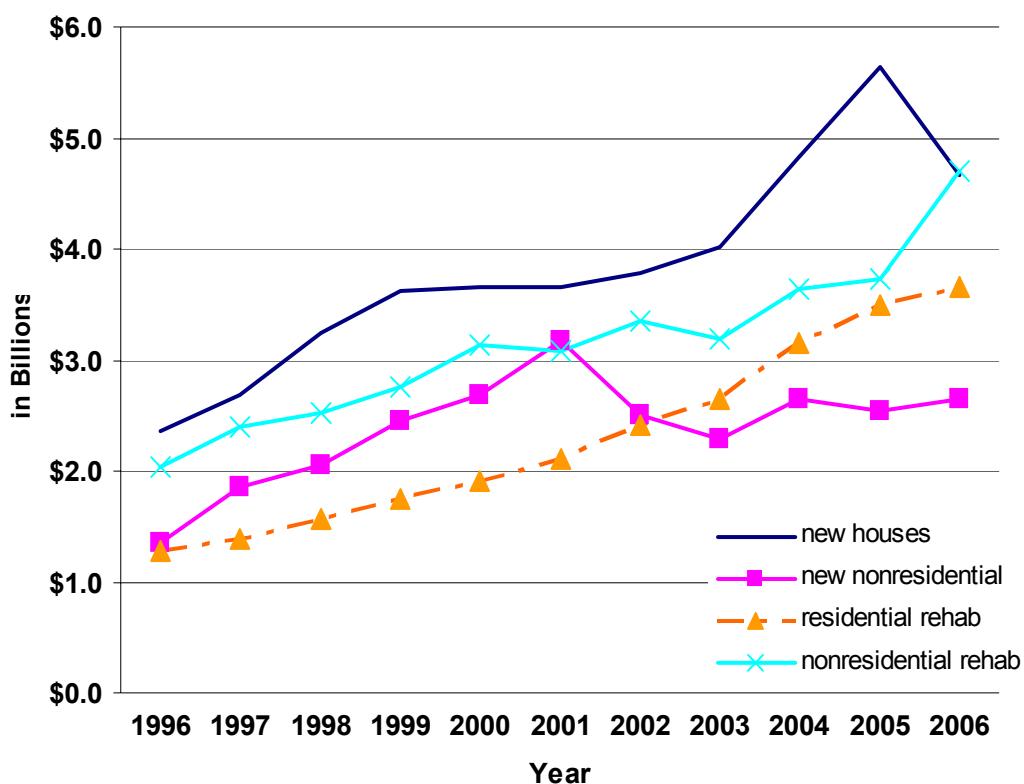
Below is a reprint of the Highlights article from the 2006 Annual issue of The New Jersey Construction Reporter, a publication of the New Jersey Department of Community Affairs that examines construction statistics derived from building permits and certificates issued throughout the State. The Reporter can be viewed online at <http://www.nj.gov/dca/codes/cr/conrep.shtml>. If you have any questions about the information in this report, contact John Lago at (609) 984-7609.

- Construction officials issued building permits for \$15.675 billion in 2006. This was \$277.6 million (1.8 percent) more than in 2005, which was a record high. In constant dollars, the amount of work in 2006 was 1.4 percent below 2005, based on an inflation rate of 3.2 percent.
- Residential construction was \$8.32 billion — 53.1 percent of all activity. Office, retail, and other nonresidential work totaled \$7.354 billion — 46.9 percent.



- While activity was about the same as in 2005, there was substantial change within the construction industry. Though still a major player, new home construction declined by nearly \$1 billion in 2006; this was 17.3 percent below the 2005 level. New commercial construction grew by \$110 million (4.3 percent) compared to 2005. Significant growth occurred in tenant fit-ups, and other additions and alterations to existing commercial buildings. Nonresidential additions and alterations increased by \$973.8 million, or 26.1 percent, compared to 2005. So, even though the dollar amount of all work was about the same in 2006, there were significant shifts in the types of construction.

Estimated Cost of Construction Authorized by Building Permits



- ♦ Authorized housing totaled 32,050 units; this was 7,638 dwellings less than in 2005, a decline of 19.2 percent.
- ♦ The amount of new office space was about the same as in 2005: 11.1 million square feet.
- ♦ New retail space declined by about 13.1 percent in 2006.

(continued from page 3)

New Jersey Construction Indicators				
	Estimated Construction Costs	Authorized Housing Units	Authorized Office Space (square feet)	Authorized Retail Space (square feet)
1996	\$7,028,424,990	27,577	6,229,515	4,880,139
1997	\$8,346,533,144	30,017	10,409,171	5,688,955
1998	\$9,396,755,517	35,676	12,703,824	7,921,892
1999	\$10,584,167,530	37,536	13,237,891	6,229,471
2000	\$11,387,683,514	38,065	15,531,039	6,063,412
2001	\$12,007,456,630	35,680	19,134,533	7,244,833
2002	\$12,079,942,099	34,589	9,261,054	7,560,913
2003	\$12,148,747,807	35,171	9,744,146	6,038,428
2004	\$14,274,331,850	39,254	12,219,068	4,911,257
2005	\$15,397,507,147	39,688	11,038,132	5,965,258
2006	\$15,675,107,955	32,050	11,113,555	5,186,662
<i>Change between 2005 and 2006</i>				
2005-2006	\$277,600,808	-7,638	75,423	-778,596
Percent Change	1.8%	-19.2%	0.7%	-13.1%
Source: N.J. Department of Community Affairs, 4/9/07				

- Northern New Jersey accounted for nearly \$7 billion of construction — 44.6 percent. A total of 14,346 dwellings were authorized in northern communities, 44.8 percent of the 32,050 dwellings statewide.
- Central New Jersey had nearly \$5 billion of construction (31.7 percent of all work) and accounted for 9,229 new dwellings — 28.8 percent of all the new homes authorized in the State. The central part of the State had 4.4 million square feet of new office space, or 39.3 percent of all new office space in 2006.
- Southern New Jersey had \$3.4 billion of construction (21.4 percent of all reported work). A total of 8,473 new houses were authorized — 26.4 percent of all new houses statewide. The southern part of the State had the most new retail space in 2006: 1.7 million square feet. In comparison, northern New Jersey had 1.1 million square feet.

Major Construction Indicators by Region				
Region	Estimated Cost of Construction	Authorized Housing Units	Authorized Office Space (square feet)	Authorized Retail Space (square feet)
North	\$6,988,637,770	14,346	4,303,558	1,128,090
Central	4,968,569,574	9,229	4,368,419	1,430,732
South	3,361,170,130	8,473	1,903,708	1,693,367
State Buildings	356,780,481	2	537,870	934,473*
New Jersey	\$15,675,107,955	32,050	11,113,555	5,186,662
<i>Percent Distribution by Region</i>				
North	44.6%	44.8%	38.7%	21.7%
Central	31.7%	28.8%	39.3%	27.6%
South	21.4%	26.4%	17.1%	32.6%
State Buildings	2.3%	0.006%	4.8%	18.0%
New Jersey	100.0%	100.0%	100.0%	100.0%
Source: N.J. Department of Community Affairs, 4/9/07				
Northern New Jersey: Bergen, Essex, Hudson, Morris, Passaic, Sussex, Union, and Warren Counties				
Central New Jersey: Hunterdon, Mercer, Middlesex, Monmouth, Ocean, and Somerset Counties				
Southern New Jersey: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, and Salem Counties				
*Includes the Meadowlands Xanadu entertainment and sports complex in East Rutherford Borough, Bergen County.				

- For over five years, much of the construction in New Jersey cities was in the big cities. This trend continued in 2006. Atlantic City in Atlantic County led all localities with \$614.9 million. Three large casino expansions accounted for much of this work: Harrah's Bayview Tower (975,000 square feet); the Borgata Hotel Casino and Spa expansion (841,000 square feet); and the Trump Taj Mahal expansion (725,000 square feet).

(continued from page 5)



Trump Taj Mahal expansion in Atlantic City. Photographed by Robert Brock, Department of Community Affairs.



Harrah's expansion in Atlantic City. Photographed by Robert Brock, Department of Community Affairs.



Borgata expansion in Atlantic City. Photographed by Robert Brock, Department of Community Affairs.

- The City of Newark in Essex County had \$421.1 million of construction, ranking second among municipalities. New houses accounted for 40 percent of the work reported. Newark had 2,125 authorized houses in 2006. Only Jersey City in Hudson County had more. Big commercial developments during the year included a new sports arena and renovation of an existing office building on Raymond Boulevard.



Newark's new sports arena. Photographed by Ganga Sivakumar, Department of Labor and Workforce Development.

- Jersey City had \$370.2 million of work. More than 61 percent of all authorized work was either to build new dwellings or fix up existing ones. The City had 2,578 new houses authorized for construction in 2006, top among municipalities.

(continued from page 7)

Authorized Housing in Newark and Jersey City, 2001-2006					
Year	Newark		Jersey City		All New Jersey
	Authorized Units	Rank	Authorized Units	Rank	Authorized Units
2001	1,066	2	2,009	1	35,680
2002	1,223	1	907	2	34,589
2003	1,730	1	969	2	35,171
2004	1,702	2	2,156	1	39,254
2005	2,611	2	3,778	1	39,688
2006	2,125	2	2,578	1	31,709

Source: N.J. Department of Community Affairs, 4/9/07

- For six years, Newark or Jersey City have ranked either first or second with the most new houses. Since 2001, New Jersey communities had a total of 216,432 authorized dwellings. Newark and Jersey City accounted for 22,854. Better than one in ten new houses were in these two cities.

Construction Indicators Top New Jersey Municipalities					
Municipality	County	Estimated Cost of Construction (dollars)	Authorized Housing Units	Authorized Office Space (square feet)	Authorized Retail Space (square feet)
Atlantic City	Atlantic	\$614,900,010	281	6,130	140,488
Newark City	Essex	421,116,901	2,125	102,215	9,241
Jersey City	Hudson	370,156,372	2,578	32,151	239,486
Woodbridge Township	Middlesex	226,944,804	48	11,965	28,160
Hoboken City	Hudson	225,012,224	995	27,480	0
Paramus Borough	Bergen	184,992,410	42	96,048	65,377
Camden City	Camden	161,339,497	270	105,000	1,525
Toms River Township	Ocean	155,546,121	254	230,770	14,800
West New York Town	Hudson	141,261,773	406	286	0
East Brunswick Township	Middlesex	137,340,651	23	0	0
Top Municipalities		2,638,610,763	7,022	612,045	499,077
New Jersey		\$15,675,107,955	32,050	11,113,555	5,186,662
Top as Percent of New Jersey		16.8%	21.9%	5.5%	9.6%

Source: N.J. Department of Community Affairs, 4/9/07

- ♦ Woodbridge Township in Middlesex County had \$226.9 million of construction. Most of this was for a regional wastewater treatment plant. Another large project reported this year was for an addition to a high school.
- ♦ The City of Hoboken in Hudson County had \$225 million of construction. Over 92¢ of every dollar of work was either to build new, or renovate existing, dwellings. Hoboken had 995 authorized dwellings in 2006, the third highest municipal total. One of the bigger housing developments this year was new condominiums on the site of the old Maxwell House Coffee factory.
- ♦ Paramus Borough in Bergen County had \$185 million of construction in 2006. Two major school expansions and additions to the Westfield Garden State Plaza shopping mall were among the larger projects reported.
- ♦ The City of Camden in Camden County had \$161.3 million of work in 2006 and much of this was for renovation of the Cooper University Hospital. Camden also had 270 new dwellings.
- ♦ The dollar amount of construction authorized for "State Buildings" was \$356.7 million. The category, State Buildings, refers to building permits issued on behalf of State government agencies or instrumentalities of the State like the New Jersey Economic Development Authority, New Jersey Transit, or State universities. Some of the larger State buildings reported in 2006 were renovation and expansion of the Liberty Science Center in Jersey City; new campus buildings at Montclair State University and Kean University; the Greystone Park Psychiatric Hospital in Parsippany-Troy Hills Township, Morris County; and the Preakness Healthcare Center in Wayne Township, Passaic County.

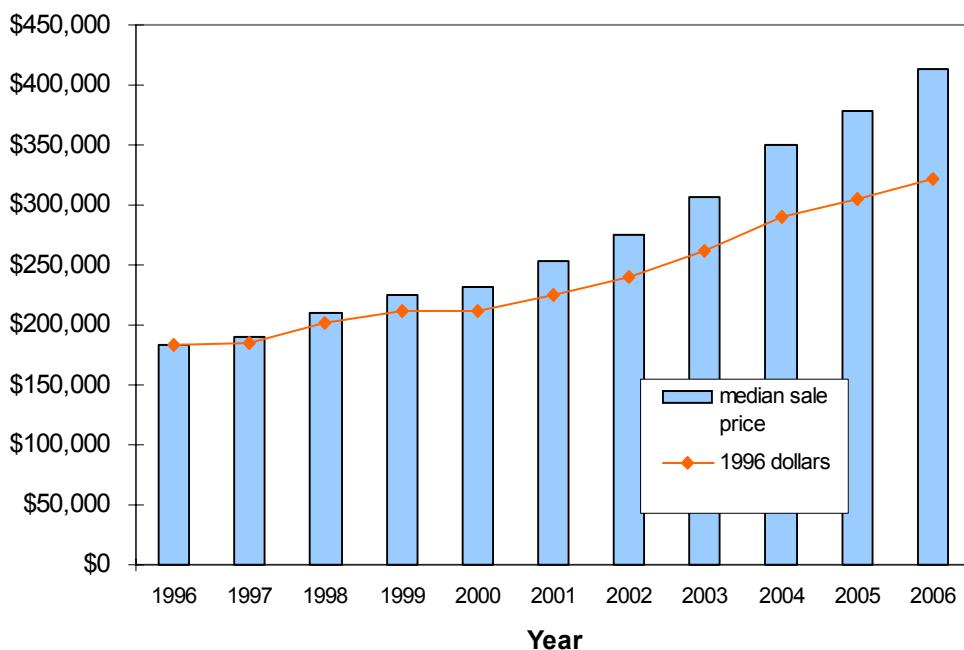
New House Prices			
Period	Number of New Houses	Median Sale Price	Percent Change in Sale Price
1996	20,903	\$183,300	
1997	21,640	\$190,000	3.7%
1998	23,884	\$209,980	10.5%
1999	24,479	\$224,496	6.9%
2000	25,058	\$231,728	3.2%
2001	23,372	\$253,670	9.5%
2002	23,647	\$274,705	8.3%
2003	22,226	\$307,168	11.8%
2004	23,844	\$349,900	13.9%
2005	24,571	\$378,992	8.3%
2006	22,697	\$413,825	9.2%
1 st Quarter 2005	5,205	\$367,900	
2 nd Quarter 2005	6,564	\$379,954	3.3%
3 rd Quarter 2005	6,207	\$378,554	-0.4%
4 th Quarter 2005	6,595	\$387,709	2.4%
1 st Quarter 2006	5,220	\$409,365	5.6%
2 nd Quarter 2006	6,319	\$425,000	3.8%
3 rd Quarter 2006	6,207	\$405,150	-4.7%
4 th Quarter 2006	6,595	\$413,500	2.1%

Source: N.J. Department of Community Affairs, 4/9/07

(continued from page 9)

- ♦ New home prices rose by 9.2 percent between 2005 and 2006. Half of the 22,697 new houses that started enrollment in a new home warranty program in 2006 cost more than \$413,825. The most expensive new homes were in Hunterdon, Morris, and Bergen Counties.

Median Sale Price of a New NJ House



Lavatory Drain Pipe and Valve Protection Kits for Barrier-Free Compliance -- Are They Required to be Rated?

Yes, these pipe insulation kits are required to be rated. We have all seen the coverings on the pipes and valves under the sinks for barrier-free compliance; these are the materials that I'm talking about. It came to my attention recently that there are materials being installed that don't meet the code or standard.

The insulation kits are required to meet the flame-spread index and smoke-development index of Section 719.7 of the Building Subcode. The material used for the protection of exposed pipes under sinks, such as supply pipes and drain pipes, must comply with Section 719. Sections 719.1 and 719.7 clearly specify that insulation and covering materials used for pipe and tubing must have a fire-spread index of not more than 25 and a smoke-development index of not more than 450. The section further states that any materials used must meet the

American Society for Testing and Materials E84 standard for flame-spread index or smoke-development index.

Source: Michael E. Whalen
Code Assistance Unit

(continued from page 1)

reach ranges specified in Section 308. The reach ranges are 15 inches minimum above the floor or ground in all cases, with all unobstructed high reach ranges at 48 inches maximum; obstructed high reach ranges are 44 inches maximum (forward reach) and 46 inches maximum (side reach).

Therefore, typical items of the Electrical Subcode such as light switches, receptacle outlets, and panelboards (topmost circuit) should be installed within the reach ranges listed above, as they are not adaptable features.

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

Source: Rob Austin
Code Assistance Unit

Code Assistance Welcomes Michael Whalen!

If you call the Code Assistance Unit with a fire protection question, you are likely to get an unfamiliar voice. That is because we have a new employee, Michael Whalen. Mike comes to us from the Township of South Brunswick, where he served as the Deputy Fire Marshal for over 15 years. Mike also has experience in fire protection, as he inspected and installed sprinkler systems in the private sector. He is currently licensed as a Construction Official, Subcode Official-Fire Protection, HHS Fire Protection Inspector, and Hotel and Multiple Dwelling Housing Code Official. He teaches Fire Official and Fire Inspector certification classes for several local community colleges.

Mike's broad-based experience will serve him well as he begins his career in the Code Assistance Unit.

Source: John Terry
Supervisor, Code Assistance Unit

Equipotential Bonding Grids -- All You Ever Needed to Know (Hopefully!)

As you know, the 2005 National Electrical Code (NEC) was adopted May 1, 2006 as the Electrical Subcode, N.J.A.C. 5:23-3.16. Since then, there has been much confusion about how to apply Section 680.26(C), Equipotential Bonding Grid, of the NEC/2005. The publishers of the NEC/2005, the National Fire Protection Association, realized this and published a Tentative Interim Amendment (TIA) to help clear things up; the adoption of the TIA by the Department of Community Affairs will be sometime this fall. However, there are still many questions, so further explanation is offered below.

The current text of Section 680.26(C) and (D) is below, with the TIA language in bold and underlined:

(C) EQUIPOTENTIAL BONDING GRID. The parts specified in 680.26(B) shall be connected to an equipotential bonding grid with a solid copper conductor, insulated, covered, or bare, not smaller than 8 AWG or rigid metal conduit of brass or other identified corrosion-resistant metal conduit. Connection shall be made by exothermic welding or by listed pressure connectors or clamps that are labeled as being suitable for the purpose and are of stainless steel, brass, copper, or copper alloy. The equipotential bonding grid shall **conform to the contours of the pool and shall extend within or** under paved walking surfaces for 1 m (3 ft.) horizontally beyond the inside walls of the pool and shall be permitted to be any of the following:

- (1) STRUCTURAL REINFORCING STEEL.** The structural reinforcing steel of a concrete pool **or deck** where the reinforcing rods are bonded together by the usual steel tie wires or the equivalent. **Where deck reinforcing steel is not an integral part of the pool, the deck reinforcing steel shall be bonded to other parts of the bonding grid using a minimum 8 AWG solid copper conductor. Connection shall be per 680.26(D).**
- (2) BOLTED OR WELDED METAL POOLS.** The wall of a bolted or welded metal pool.
- (3) ALTERNATE MEANS.** This system shall be permitted to be constructed as specified in (a) through (c):
 - a. MATERIALS AND CONNECTIONS.** The grid shall be constructed of minimum 8 AWG bare solid copper conductors. Conductors shall be bonded to each other at all points of crossing. Connections shall be made as required by 680.26(D).
 - b. GRID STRUCTURE.** The equipotential bonding grid shall cover the contour of the pool and the pool deck extending 1 m (3 ft.) horizontally from the inside walls of the pool. The equipotential bonding grid shall be arranged in a 300 mm (12 in.) by 300 mm (12 in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.).
 - c. SECURING.** The below-grade grid shall be secured within or under the pool and deck media.

Exception: The equipotential bonding grid shall not be required to be installed

(continued from page 11)

under the bottom of or vertically along the walls of vinyl lined polymer wall, fiberglass composite, or other pools constructed of nonconductive materials. Any metal parts of the pool, including metal structural supports, shall be bonded in accordance with 680.26(B). For the purposes of this section, poured concrete, pneumatically applied (sprayed) concrete, and concrete block, with painted or plastered coatings, shall be considered conductive material.

- (D) Where structural reinforcing steel or the walls of bolted or welded metal pool structures are used as an equipotential bonding grid for nonelectrical parts, the connections shall be made in accordance with 250.8.

Now the questions remain, how does one apply the above requirements to the paved walking surfaces and what are the options? The key here is whether there is a “paved,” conductive walking surface (including pavers) surrounding your pool, spa, or hot tub, located indoors or outdoors. If there is, you need to install an equipotential bonding grid. The proper installations are:

1. #8 AWG copper wire mesh, arranged in 12" x 12" sections (this is permitted to be in direct contact with the earth, directly under the paved surface); or
2. steel wire mesh, which is listed/labeled to be encased in concrete, is permitted and there is no specific size (this must be raised off the ground by “chairs” or other means to keep the mesh up to be encased).

Note: It has been determined that the deck reinforcing steel (wire mesh) is acceptable to be utilized for the equipotential bonding grid as per the TIA and Section 547.10(B) of the NEC/2005, which requires the wire mesh to be bonded to the grid.

In all cases, interconnection of the wire mesh to the bonding grid must be with a listed clamp or connector. This connection of the #8 AWG copper wire is required to be installed by a New Jersey licensed electrical contractor, except for the case of a homeowner performing his or her own installation.

The above installations are typical for all paved walking surfaces. Pavers being used as walking surfaces around pools, etc. must follow one of the installations above; however, #2 requires the pavers to be placed on top of concrete slurry that encases steel wire mesh.

Please keep in mind that packaged spas or hot tubs that will be installed on conductive paved surfaces with a “walking” surface around the packaged unit must also have an equipotential bonding grid installed to the extent of the paved walking surface.

Where the packaged spa or hot tub is installed on an existing paved area that constitutes a paved walking surface, the equipotential bonding grid is required as per Sections 680.42 and 680.43 of the NEC/2005, and it is not exempted by the Rehabilitation Subcode.

For packaged spas or hot tubs installed on new or existing paved areas, a nonconductive mat or wood is also permitted; it should be installed three feet from the wall of the spa or hot tub, or to the extent of the paved walking surface from the packaged spa or hot tub. These materials are nonconductive, which negates the requirements for the equipotential bonding grid.

Remember: NO paved walking surface, NO bonding grid required.

If you have any questions, you may contact us at (609) 984-7609.

Source: Suzanne Borek and Rob Austin
Code Specialists

Framing Checklist

The Department of Community Affairs has received a number of inquiries from builders and contractors as to whether they are required to complete a framing checklist. They claim that they have performed work in towns where the framing checklist was not required.

N.J.A.C. 5:23-2.18(b)2 requires that, prior to inspection, the responsible person in charge of work shall provide to the building inspector a signed framing checklist, which must be verified and initialed by the inspector. The framing checklist is then made part of the permit file.

To clarify, the framing checklist is required for new buildings and additions. It must be filled out by the person in charge of the work, and then verified and initialed by the inspector, after which it becomes part of the permit file as a record.

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

Source: Marcel Iglesias
Code Assistance Unit

Errata to the 2006 National Standard Plumbing Code

This article is to bring to your attention that the 2006 National Standard Plumbing Code (NSPC) has issued an errata sheet for both the non-illustrated and illustrated editions. The errata sheet pertains to Table 7.21.1, Assembly Use A-3, and corrects the entries under the Water Closets (Urinals) and Lavatories columns. The corrected chart is below.

Change Item No. 1 in Table 7.21.1 to read as follows

Table 7.21.1
MINIMUM REQUIRED NUMBER OF PLUMBING FIXTURES - Sheet 1

No.	Classification	Use Group	Description	No. of Persons of each Sex	Water Closets (Urinals)		Lavatories		Drinking Water Facilities	Bath or Shower	Other
					Male	Female	Male	Female			
1	Assembly	A-3	a) Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, restaurants other than nightclubs, food courts. b) Places of worship and other religious services. Churches without assembly halls.	1 - 50	1	1	1	1	1 per 1000 people		1 service sink/floor
				51 - 100	add 1	add 1	add 0	add 1			
				101 - 200	add 1	add 2	add 1	add 1			
				201 - 300	add 1	add 1	add 0	add 1			
			See Notes 4, 6, 9, 12, 16	ea. add'l 300 over 300	add 1	add 2	add 1	add 2			

Please note that the 2006 International Building Code (IBC), as did the 2000 IBC, lists restaurants as Assembly A-2. For the required plumbing fixture count in the NSPC, please use the description in Table 7.21.1 (A-3) for restaurants.

Also, referring to Figure 7.3.2, Minimum Fixture Clearances, "Water Closets or Bidets," "Water Closet Compartment," delete the "center line" reference. The clear dimension is 30" between partitions and not to the center of partitions.

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

Source: Thomas C. Pitcherello
Code Assistance Unit

Barrier Free Subcode and Balconies

When the International Code Council/American National Standards Institute Standard A117.1-2003 was adopted as the technical design standard for the Barrier Free Subcode on May 7, 2007, the reference to changes in level for access to balconies and patios should have been deleted. In an oversight, it was not. Consequently, at this time, the Barrier Free Subcode requires that a ramp be installed to bridge any level differential that exceeds one-half inch. This has not been required by previous editions of the Barrier Free Subcode and is not required by the applicable Federal law, the Federal Fair Housing Amendments Act. The Department of Community Affairs is in the process of correcting this oversight.

Because the Department is taking the required steps to amend the Barrier Free Subcode to match the

Federal Fair Housing Act in this regard, a variation could be issued to allow for compliance with the Federal law and the pending change. The change will provide an exemption for an accessible route for balconies and patios that are not more than four inches below the entrance door.

Should a question arise, we are willing to write to any code official who would like to have that opinion in writing. Alternatively, code officials should feel free to use this article as justification for granting the variation from the requirement for an accessible route to a patio or balcony that is not more than four inches below the entrance door.

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

Source: Emily W. Templeton
Code Development Unit

New Jersey Building Safety Conference: May 2, 3, 4, 2007

The opinion polls tell it all! Overall good seminars, good fellowship, good food, and good weather -- all taking place by the ocean -- what more could we ask? Bally's, Atlantic City, again outdid themselves with the service and the staffing of our event. Our attendance remained constant at around 600. We had 22 seminars, offering continuing education credits. The Crackerbarrel, which is always well attended, reached a high of 370 attendees. The variety of tables seemed to accommodate everyone's interests, although we're always looking for more!

This year was a special year for our awardees because it is the 30th anniversary of the Uniform Construction Code. The Commissioner of the Department of Community Affairs, Susan Bass Levin, was with us and she, along with William Connolly, Director of the Division of Codes and Standards, presented awards. The Inspectors and the Technical Assistant of the Year also received recognition from their respective organizations.

Norman M. Russell, Jr. received the award for Fire Inspector of the Year. He works in Glen Ridge Borough Township and Verona Township, both in Essex County. Joseph Scaramuzzo, who works in Middletown Township in Monmouth County, received the award for Plumbing Inspector of the Year. Stephen D. Jones, who works in Florham Park Borough in Morris County and in Millburn Township in Essex County, received the award for Building Inspector of the Year. Joseph L. Freeman, who works in Salem City and Penns Grove Borough, both in Salem County, received the award for Electrical Inspector of the Year. The award for Technical Assistant of the Year went to Valerie Waricka, who works in Marlboro Township, Monmouth County.

The Technical Assistant Association of New Jersey marked its tenth anniversary this year (1997-2007). Each of the seven chapters prepared gift baskets for a raffle. Proceeds of over \$1,000 from the raffle were donated to the Atlantic County Women's Center. What a nice way to recognize an anniversary! The organization also became an International Code Council chapter, and was awarded their plaque and banner at the luncheon.

An Awards reception was held on Thursday evening in the Ocean Ballroom to honor the recipients. Entertainment and music were provided by "The Party Dolls." It was an enjoyable evening.

Next year we will be meeting at the Trump Taj Mahal on April 30-May 2. We hope you will be able to join us!



From left to right: Joseph Albanese, President of the New Jersey Plumbing Inspectors Association; Joseph Scaramuzzo, Plumbing Inspector of the Year; William M. Connolly, Director of the Division of Codes and Standards, DCA.



From left to right: Art Londensky, President of the Fire Prevention and Protection Association; Norman M. Russell, Jr., Fire Inspector of the Year; William M. Connolly, Director of the Division of Codes and Standards, DCA.



From left to right: Linda Aiello, Vice-President of the New Jersey Association of Technical Assistants; Valerie Waricka, Technical Assistant of the Year; William M. Connolly, Director of the Division of Codes and Standards, DCA.

New Jersey Code Adoptions -- Elevator Safety Subcode

The following chart gives the adoption dates and the edition of the codes and standards used in connection with the Elevator Safety Subcode. Note: The grace period is covered at N.J.A.C. 5:23-1.6(a).

Edition Date for Building Subcode	Effective Date for Model Codes	BOCA Article Number for Elevators, Dumbwaiters, and Conveyor Equipment	ANSI A17 Safety Standard for Elevators and Escalators	ANSI A90.1 Safety Standard for Belt Manlifts	ASME A18.1 and A18.1a Safety Standard for Platform Lifts and Stairway Chairlifts
1975	01/01/77	16	A17.1 - 1971; A17.1a - 1972; A17.1b - 1973	A90.1-1969	
1976/S	12/01/77	16	A17.1 - 1971; A17.1a - 1972; A17.1b - 1973; A17.1c - 1974; A17.1d, e, f - 1975	A90.1 - 1969; A90.1a - 1972	
1978	10/01/78	16	A17.1 - 1971; A17.1a - 1972; A17.1b - 1973; A17.1c - 1974; A17.1d, e, f - 1975	A90.1 - 1969; A90.1a - 1972	
1981	05/07/81	21	A17.1 - 1978	A90.1 - 1976	
1983/AS	02/22/83*	21	A17.1 - 1981	A90.1 - 1976	
1984	08/06/84	21	A17.1 - 1981; A17.1a - 1982	A90.1 - 1976	
1985/S	04/01/85	21	A17.1 - 1984	A90.1 - 1976	
1986/AS	09/22/86	21	A17.1 - 1984	A90.1 - 1976	
1987	04/01/87	26	A17.1 - 1984 and 1985 Supplement	A90.1 - 1985	
1988/S	06/20/88	26	A17.1 - 1984 and 1985 Supplement	A90.1 - 1985	
1989/AS	11/01/89	26	A17.1 - 1987	A90.1 - 1985	
1990	07/01/90	26	A17.1 - 1987	A90.1 - 1985	
1991/S	03/04/91	26	A17.1 - 1987		
1993	05/01/93	Chapter 30	A17.1 - 1990	A90.1 - 1985	
1996	07/06/98	Chapter 30	A17.1 - 1993 and 1994, 1995 Supplements	A90.1 - 1992	
IBC-2000 New Jersey Edition	05/05/03	Chapter 30	A17.1 - 1996 and 1997, 1998 Supplements	A90.1 - 1997	A18.1 - 1999 and A18.1a - 2001
IBC-2006 NJ Edition	02/20/07	Chapter 30	A17.1- (2004-2005), including A17.1.S-2005	A90.1-2003	A18.1-2003

- 1) Consult construction files to determine under which elevator or building code the permit was taken out.
- 2) If code information is not available for existing elevators, apply the previous code. For example, when performing cyclical inspections, if the permit — or installation — date precedes or is within the grace period, apply the code edition immediately preceding the adoption of the new subcode. Example: A permit was issued on May 15, 1987. If the construction file does not have the information about the edition of the standard used, then ANSI A17.1 - 1984

is enforced. If the permit was issued on November 16, 1987, the ANSI A17.1 - 1984 with the 1985 supplement applies.

S = Supplement

AS = Accumulative Supplement

A = Amendments

* = Operative date

If you have any questions about the Elevator Safety Subcode, you may reach the Elevator Safety Unit at (609) 984-7833.

Source: Paulina Caploon
Elevator Safety Unit

New Jersey Register Adoptions

Date: February 20, 2007

Adoption: 39 NJR 633(a)

Summary: The adopted amendments at N.J.A.C. 5:23-3.14, 3.15, 3.17, 3.18, 3.20, 3.21, and 3.22 update the Building, Plumbing, Mechanical, and Fuel Gas Subcodes of the Uniform Construction Code (UCC) to implement the most recent published standards of the 2006 editions of the International Building Code (IBC), International Residential Code (IRC), National Standard Plumbing Code (NSPC), International Mechanical Code (IMC), and International Fuel Gas Code (IFGC).

Date: May 7, 2007

Adoption: 39 NJR 1669(a)

Summary: The adopted amendments at N.J.A.C. 5:23-2.15(e) allow homeowners who draw their own plans to hire a builder to construct the home and require notification that plans need to be reviewed by the Department of Community Affairs, where that is the case, no more than three business days after submission to the local enforcing agency.

The adopted amendment at N.J.A.C. 5:23-2.16(a)2 requires the local enforcing agency to act on a completed permit application within five business days for any plan that has been reviewed and released by the Department.

The adopted amendments at N.J.A.C. 5:23-2.30 clarify the assignment of construction and subcode officials' roles pertaining to the issuance of violation notices, orders, and penalties, and ensure that the signatures required on Form F211 and F212 are accurately accounted for in the rules.

Date: May 7, 2007

Adoption: 39 NJR 1671(a)

Summary: The adopted new rule at N.J.A.C. 5:23-2.23A and the adopted amendments at N.J.A.C. 5:23-2.15, 2.23, and 4.18 establish a framework and outline the requirements for Temporary Certificates of Occupancy (TCOs) for individual tenant spaces in multi-tenant buildings.

At N.J.A.C. 5:23-2.23A, the adopted rule outlines the requirements for TCOs for individual tenant spaces in multi-tenant buildings. A TCO may be issued for each tenant space provided that: 1) it may be occupied safely, 2) a TCO or Certificate of Occupancy (CO) has been issued for the common area(s), and 3) the unfinished portions of the building for which TCOs or COs have not been issued do not present life-safety hazards. In addition, the adopted rule would provide that TCOs may be issued floor by floor or tenant space by tenant space.

At N.J.A.C. 5:23-4.18, the adopted amendment provides that fees for permit updates shall be based on the cost of the work (or cost of equipment installed for electrical, fire, and plumbing work) if they are not included in the original permit application.

Date: May 7, 2007

Adoption: 39 NJR 1672(a)

Summary: The adopted amendment at N.J.A.C. 5:23-4.5(j)1 adds public officials and employees having direct or indirect control over the funding or operations of an enforcing agency, as well as their close relatives and household members, to the list of people who must have their plans reviewed and inspected by another enforcing agency in order to avoid actual or perceived conflicts of interest.

The adopted amendment at N.J.A.C. 5:23-4.4(c) expands the hours in which inspections may ordinarily be

(continued from page 17)

conducted from the period of 9:00 a.m. to 5:00 p.m. on business days, to the period from 7:00 a.m. to 6:00 p.m. on business days.

The adopted amendment at N.J.A.C. 5:23-4.13(f) requires that records shall be maintained at each on-site inspection agency office where meetings with the public take place.

Date: May 7, 2007

Adoption: 39 NJR 1673(a)

Summary: The adopted amendments at N.J.A.C. 5:23-6.2, 6.4 through 6.9, 6.12, 6.13 through 6.28, and 6.30 through 6.33 update the provisions of the Rehabilitation Subcode, and are the product of the Department's annual review. Recommendations submitted to the Department are included along with the changes made necessary by the adoption of the IBC/2006, the NSPC/2006, the IMC/2006, the 2006 International Energy Conservation Code, the IFGC/2006, and the 2003 International Code Council/American National Standards Institute (ICC/ANSI) A117.1.

The adopted amendments to N.J.A.C. 5:23-6.4(e)8, 6.5(e)9, 6.6(e)15, and 6.7(e)11 add insulation requirements for framed wall, floor, ceiling, or roof assemblies of a building thermal envelope that are opened or exposed as part of the scope of the work and found to contain no insulation.

The amendments to N.J.A.C. 5:23-6.9(a)9, 6.12(a)2, 6.14(a)2.ii, 6.15(a)2.ii, 6.16(a)2.ii, 6.18(a)2, 6.20(b)4, 6.22(b)2, and 6.23(b)2 add requirements to prohibit the use of ladders in Assembly Group A buildings.

The adopted amendments at N.J.A.C. 5:23-6.4(e)9, 6.5(e)10, 6.6(e)16, and 6.7(e)12 add window assembly performance requirements. When window assemblies are replaced, the U-factor (thermal transmittance) shall not exceed 0.5 or the U-factor of the window assembly being replaced, whichever is lower.

The adopted amendment at N.J.A.C. 5:23-6.4(e)7 adds the fire-blocking section of the IRC/2006 for an R-5 residence to correlate with the IBC/2006 fire-blocking sections, if applicable to the project.

The adopted amendment at N.J.A.C. 5:23-6.8(d)2 adds the requirement for proper work space about electrical equipment over 600 volts, nominal when equipment is increased in voltage.

The adopted amendment at N.J.A.C. 5:23-6.8(f)6 adds that the requirements of the Fuel Gas Subcode apply only when replacement fuel-fired equipment creates a higher output to the common venting system than the original equipment.

The adopted amendment at N.J.A.C. 5:23-6.9(a)20 adds the installation requirements for a receptacle outlet from the Electrical Subcode for newly installed (i.e., not replacing an existing device) heating, air-conditioning, or refrigeration equipment that would require examination, adjustment, servicing, or maintenance. Also, a lighting outlet would be required if the newly installed heating, air-conditioning, or refrigeration equipment is in an attic, under-floor space, utility room, or basement.

The adopted amendment at N.J.A.C. 5:23-6.27(a) adds the reference for smoke detection in Group R-5 to the one- and two-family dwelling basic requirements. This would make Group R-5 of the One- and Two-Family Dwelling Subcode correspond to Group R-3 of the Building Subcode.

The adopted amendment at N.J.A.C. 5:23-6.27(c) adds the private garage separation section of the IRC/2006 for an R-5 residence to correspond to the IBC/2006 private garage separation section.

Date: May 7, 2007

Adoption: 39 NJR 1683(a)

Summary: The adopted amendments at N.J.A.C. 5:23-7.2, 7.3, 7.4, 7.5, 7.6, 7.9, 7.11, and 12.12 replace the adopted technical standard for accessible design, ICC/ANSI A117.1-1998, with the most recent edition of the same technical standard, ICC/ANSI A117.1-2003. The adopted amendments include changes that are required to bring the UCC into compliance with P.L. 2005, c. 350, which amended the UCC to require that townhouses be adaptable if municipal credit is sought under the New Jersey Council on Affordable Housing's fair-share requirements. The adopted amendments establish specific provisions for site impracticality in new section N.J.A.C. 5:23-7.6, including requirements for when accessible entrances are required on a steeply sloped site or in a flood plain. The adopted amendments reorganize several sections of the Barrier Free Subcode for clarity, without changing requirements.

Nonmetallic-Sheathed Cable and Garages --

UPDATE 

The article published in the Summer/Fall 2006 *Construction Code Communicator* regarding nonmetallic-sheathed cable and garages was a literal interpretation of the 2005 National Electrical Code (NEC). The article was written to minimize confusion as to whether a 15-minute finish rating is required with the installation of nonmetallic-sheathed cable in a one- or two-family dwelling garage, attached or detached. Since then, the Department of Community Affairs has taken action which will make that article null and void.

In April 2007, the Uniform Construction Code Advisory Board approved a proposal to permit the installation of type NM, NMC, and NMS cables in buildings or structures accessory to one- and two-family dwellings. The proposal adds a change to the Electrical Subcode (NEC/2005), via N.J.A.C. 5:23-3.16, that states, "Item 1 of Section 334.10 is amended to add 'and accessory buildings or structures' after the word 'dwellings'." This is a pending adoption and the Department expects adoption before the year's end. In the meantime, if a permit applicant wishes to install the wiring methods discussed in an attached or detached garage for a one- or two-family dwelling, he or she must apply for a variation from the requirement to install a thermal barrier of a 15-minute finish rating, based on Item 1 of Section 336-4 in the NEC/1999.

If you have any further questions, you may contact us at (609) 984-7609.

Source: Rob Austin and Suzanne Borek
Code Assistance Unit

determine the approved means of abating the violation. Under the UFC, there are three methods to abate this type of violation. Each method is based on the area of the windowless story. Without coordination between the fire official and the construction department on this matter, the owner could install a system that does not abate the UFC violation. It is for this reason that communication between the two offices is essential.

In addition, we should be reminded that N.J.A.C. 5:23-2.4(c) only requires that work mandated by any housing, property, or fire-safety code, standard, or regulation, or other State or local law, conforms to the requirements of that code, standard, law, or regulation and is not required to conform to the subcodes adopted by the UCC, unless so provided by that housing, property, or fire-safety code or regulation.

If you have any questions on this matter, please contact me at (609) 292-7898.

Source: Carmine Giangeruso
Construction Official/Emergency Coordinator
Division of Codes and Standards

Projects Submitted in Order to Comply with Other Related Regulations

Tracking the many project applications that come across our desks can be an overwhelming task. Several retrofit regulations, including but not limited to the Uniform Fire Code (UFC) and the Hotel and Multiple Dwelling Law, mandate that work be undertaken in an existing structure. Some of this work requires a permit and compliance with the Uniform Construction Code (UCC). It is important to identify this type of work prior to completing plan review and/or issuing a permit to ensure that the work done results in correction of the violation cited.

Accomplishing this goal often requires a combined effort among the agency enforcing the regulation, the project applicant, and the UCC official reviewing the project application. A UCC official can do his/her part by requesting a copy of the Notice of Violation or regulation cited from the project applicant. With that information and the permit application in hand, the UCC official can determine what is required to abate the violation of the other code and whether the proposed work will actually abate that violation. This avoids the worst-case scenario of a well-intentioned project applicant ending up with (and paying for) a UCC permit and performing work that does not satisfy the underlying problem.

For example, the fire official cites the building owner for a UFC violation for a windowless story. The construction official needs to see a copy of the violation to

Records Retention: Storing Documents

Over the past few weeks, the Department of Community Affairs has been asked several times whether there is any prohibition against storing documents that are required to be retained in an electronic or digital format. At N.J.A.C. 5:23-2.16A(a)1, the Uniform Construction Code (UCC) requires that "Copies of the following documents shall be retained" It does not limit the retention to paper copies and, therefore, retaining copies in a digitized or electronic format is permitted.

A companion question is whether UCC fees may be used for the conversion of paper records to an electronic or digital format. The answer to that is yes, UCC fees may be used to convert required UCC records. However, UCC fees may not be used to convert other, non-UCC municipal records and a separate fee may not be charged.

If you have questions about records retention, contact the Office of Regulatory Affairs at (609) 984-7672.

Source: Emily W. Templeton
Code Development Unit

Requirement for Overflow Roof Drains

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 2006 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 2006 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

Garden-Type Utility Sheds and Similar Structures

Section 1805.2.1 of the Building Subcode (N.J.A.C. 5:23-3.14) and Section R403.1.4.1 of the One-and Two-Family Dwelling Subcode (as amended by N.J.A.C. 5:23-3.21) contain an exception regarding frost protection for foundation systems. Tie downs are not included in frost to foundation. The exception is as follows:

Free-standing buildings meeting all of the following conditions shall not be required to be protected:

1. Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to agricultural buildings, temporary buildings, and minor storage facilities;
2. Area of 600 square feet or less for light-framed construction, or 400 square feet or less for other than light-framed construction; and
3. Eave height of 10 feet (3048 mm) or less.

Typical buildings (this is not an all-inclusive list) that this exception applies to include a detached, garden-type utility shed; carport; deck; garage; gazebo; pavilion; playhouse . . . in short, a roofed-over, accessory structure (with the exception of a deck).

Note: This was previously covered in N.J.A.C. 5:23-9.9, and only applied to Groups R-2, R-3, R-4, and R-5. The requirements have changed and now apply to all building uses.

Lastly, as per N.J.A.C. 5:23-2.14(b)8, a building permit is not required for garden-type utility sheds and similar structures that are 100 square feet or less in area, 10 feet or less in height, and accessory to buildings of Group R-2, R-3, R-4, or R-5. Please note that if plumbing, electric, or gas is run to these structures, the applicable plumbing or electric permit would then be required.

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

Source: Rob Austin
Code Assistance Unit

Swimming Pools and the Energy Subcode

Sections 504.5 and 604.1.2.3 of the previous Energy Subcode (1995 Council of American Building Officials Model Energy Code) contained requirements for swimming pools for one- and two-family dwellings, and multiple-family dwellings with three stories or less, which included pool covers for heated pools and time clocks. However, with the adoption (on February 20, 2007) of the 2006 International Energy Conservation Code, those requirements no longer apply to these buildings. Typically, pools associated with these buildings are used four to five months of the year (i.e., open in May/June, closed in September) and it appears that, because of this, the requirements were removed in the newest national model energy conservation code.

Now, this does not mean that the Energy Subcode has gone completely soft on swimming pools; all buildings not described above still have requirements as per the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 90.1-2004, the referenced standard for commercial buildings. The requirements for pool covers, time switches, etc. were in Section 7.2.5 of the ASHRAE Standard 90.1-1999 and are now in Section 7.4.5 of the ASHRAE Standard 90.1-2004.

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

Source: Rob Austin
Code Assistance Unit

The Flood Hit! Now What?

When flooding causes damage throughout your community, as a local Uniform Construction Code (UCC) enforcement agency, you may be called on to assist in the process of returning building occupants safely back into their homes or businesses. UCC enforcement agencies should provide property owners with the necessary support to evaluate conditions in identified damaged buildings. Depending on the extent of damage to the building, examples of tasks that your agency might be asked to complete are:

- Assessment by building inspectors of damage to foundation walls and inspection for signs of structural damage
- Evaluation by electrical inspectors of the damage to the property's electrical system, including the electrical service and whether reconnection can be made by the utility provider

- Evaluation by plumbing inspectors of the condition of the property's piping and fuel service, including recommending when it is safe to turn service back on
- Evaluation by fire-protection inspectors of the status of fire-protection systems within buildings

Completing these tasks may be overwhelming to your agency, depending on the extent of flood damage in your community. The Department of Community Affairs, Division of Codes and Standards is able to provide assistance to local enforcement agencies in helping a community complete the above tasks during a disaster.

A brochure, "Flooding Hazards: What You Need to Know," is available on the Department's web site at: <http://www.nj.gov/dca/flood.pdf>.

Please feel free to reach out to me with questions or comments. I can be reached at (609) 292-7898 or cgiangeruso@dca.state.nj.us.

Source: Carmine Giangeruso
Division of Codes and Standards
Construction Official/Emergency Coordinator

Welcome, Debra!

The Code Development Unit has a new code writer. Debra McLoughlin joined us last December, and is responsible for writing rules, performing research, and serving as the staff liaison to the Uniform Construction Code Advisory Board. In addition, Debra edits the *Construction Code Communicator*.

Before coming to the Department of Community Affairs, Debra was an editor for LexisNexis, the legal publisher. She wrote case summaries and conducted Internet research on legal issues. We will put her skills and experience to good use on code issues!

Source: Emily Templeton
Code Development Unit

William Connolly's Retirement

William Connolly has announced his retirement as the Department of Community Affairs' Director of the Division of Codes and Standards, effective on August 1, 2007.

Mr. Connolly began working for the State of New Jersey in 1973. In the ensuing decades, he was instrumental in the development of the Uniform Construction Code Act and regulations, the Rooming and Boarding House Act and regulations, the New Home Warranty and Builder's Registration Act and regulations, the Uniform Fire Safety Act and regulations, the Residential Site Improvement Act and regulations, the award-winning Rehabilitation Subcode, and the Carnival and Amusement Ride Safety regulations. Mr. Connolly pioneered improvements in accessibility including Council on Affordable Housing's low- and moderate-income housing accessibility, and recreation accessibility. During his extraordinary tenure in public service, Mr. Connolly has worked tirelessly to improve the safety and security of State residents, and the resulting accomplishments were often groundbreaking and always forward thinking. They have created a model for the future. In keeping with the adage that imitation is the sincerest form of flattery, other states have gone on to imitate the progress made in New Jersey.

During the course of his public service, Mr. Connolly also served as Director of New Jersey's Division of Housing and Development, leading the development of programs including neighborhood preservation, affordable housing, homelessness prevention, and rental assistance for low-income families. He also served two years in construction operations with the United States Army Corps of Engineers, including one year in the Republic of Vietnam.

At the June 8, 2007 Uniform Construction Code Advisory Board meeting, Board members commended Mr. Connolly's hard work, leadership, dedication, professionalism, and above all, his willingness to listen. In response, Mr. Connolly noted his grandfather's advice, "If you have to work, do the best possible job and be the best there is at it." Mr. Connolly added, "We are the best and we will continue to be."

Our ability to continue to be the best is Mr. Connolly's legacy. He didn't just lead; he listened, he connected, and he shared. As writer Tom Peters said, "Leaders don't create followers; they create more leaders." That is the benchmark of progress.

In the final moments of the Board meeting, Mr. Connolly said, "My father told me that saying goodbye means you won't see people again, so I will say "so long" because I'm sure we will see each other again. Thank you for your support."

Thank you, Bill. And so long.

Prior Use of Buildings/Properties Where Day-Care Centers Are Located

As you know, a letter was sent out from the Department of Community Affairs (DCA) on October 27, 2006 explaining that, in order to receive or renew licensure to operate a child-care center from the Department of Children and Families (DCF), an applicant must show the building was not previously used and is not presently being used for any type of industry or storage that might have created contamination.

On January 31, 2007, another letter was mailed stating that a bill was signed into law requiring environmental investigations under defined circumstances prior to the issuance of a permit or a Certificate of Occupancy for child-care centers.

Both letters included a request that the construction official provide a letter to the applicant of the day-care center stating, based on the records available, what the previous use(s) was. There seems to be difficulty in understanding what information DCF needs in the prior-use letter.

On the next page is a memorandum from Cynthia Wilk, Director of the Division of Codes and Standards, along with a template and sample letters to assist in issuing the prior-use letters.

If you have any questions, you may contact us as (609) 984-7609.

Source: Suzanne Borek
Code Specialist



State of New Jersey
DEPARTMENT OF COMMUNITY AFFAIRS
101 SOUTH BROAD STREET
PO BOX 802
TRENTON NJ 08625-0802

August 24, 2007

Dear Construction Official:

As part of the rules adopted following the discovery of mercury at Kiddie Kollege last summer, the Department of Children and Families has been requiring child care operators to submit a letter from the construction official regarding the prior uses of the building. This letter is required in connection with the license renewal for the child care center.

This is not a certification by the construction official. It is meant to be a letter stating what the construction official's records show on the past use(s) of the property. Because there have been some problems, the Department of Children and Families asked that a template be supplied for construction officials to use.

Attached please find sample letters for your use as a guide for issuing the letter to the child care center licensee; the letter is not required to go to the property owner.

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

Sincerely,

Cynthia A. Wilk
 Director
 Division of Codes and Standards

Enclosures

• •

SAMPLE LETTER 1

Dear Child-Care Provider:

In response to your request, we have reviewed the files of the construction code enforcement agency of this municipality regarding the prior uses of the property located at [STREET ADDRESSS, BLOCK, LOT]. Our records reveal the following:

[LIST PRIOR USES, WITH DATES, IF POSSIBLE. THIS SHOULD INCLUDE THE GROUP DESIGNATION(S) AND A DESCRIPTION OR IDENTIFICATION OF THE BUSINESS OR USE, IF KNOWN. FOR EXAMPLE, GROUP M – CONVENIENCE STORE. IF THE BUILDING WAS USED FOR STORAGE, STATE WHAT WAS STORED, IF KNOWN. IF NO INFORMATION IS FOUND, STATE THAT.]

If you have any questions, please feel free to contact this office.

Sincerely,
 Construction Official

SAMPLE LETTER 2

Dear Little Children School:

In response to your request, we have reviewed the files of the construction code enforcement agency of this municipality regarding the prior uses of the property located at 824 Nothing Ave., BLOCK 1, LOT 1.1. Our records reveal the following:

- ◆ Use Group M – Convenience Store 6/1981 to 3/1987
- ◆ Use Group B – Real Estate Office 6/1988 to 4/1999
- ◆ Use Group S – Storage of Documents for Attorney's Office 2/2000 to 5/2001
- ◆ Use Group E – Day Care Center 8/2004 to present

If you have any questions, please feel free to contact this office.

Sincerely,
 Construction Official

SAMPLE LETTER 3

Dear Little Children School:

In response to your request, we have reviewed the files of the construction code enforcement agency of this municipality regarding the prior uses of the property located at 824 Nothing Ave., BLOCK 1, LOT 1.1.

Our records revealed that the property was not any of the following uses: factory/industrial (Group F), high hazard (Group H), storage (Group S), nail salon or dry cleaner (Group B), or gasoline station (Group M).

If you have any questions, please feel free to contact this office.

Sincerely,
 Construction Official

(continued from page 15)



From left to right: Martin Vogt, President of the Building Officials Association of New Jersey; Stephen D. Jones, Building Inspector of the Year; William M. Connolly, Director of the Division of Codes and Standards, DCA.



From left to right: Alan Wilkins, Municipal Electrical Inspectors Association; Joseph L. Freeman, Electrical Inspector of the Year; William M. Connolly, Director of the Division of Codes and Standards, DCA.

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State of New Jersey

Jon S. Corzine, Governor

Volume 19 Number 3

Department of Community Affairs

Joseph V. Doria, Jr., Commissioner

Winter 2007

Assembly Groups: Exceptions to be Business Groups

With the adoption of the International Building Code 2006 (IBC/2006), three new exceptions were added to Section 303.1, Assembly Group A. As you can see below, occupancy groups that would normally be considered Group A can now be classified as Group B, dependent on occupant load or area. Section 303.1 states:

"Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social, or religious functions; recreation, food or drink consumption; or awaiting transportation.

Exceptions:

1. A building or tenant space* used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy. (*first printing errata)
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet in area and is accessory to another occupancy shall be

classified as a Group B occupancy or as part of that occupancy."

Example of Exception #1: *A building or tenant space constructed to house only a karate institution with an occupant load of less than 50 persons.* In this situation, occupant load is to be analyzed as "Assembly Without Fixed Seats, Standing Space" from Table 1004.1.1 of the IBC/2006; and if less than 50 persons, the building may be classified as Group B.

Example of Exception #2: *A cafeteria/coffee shop with an occupant load of less than 50 persons constructed within an office building.* In this situation, occupant load is to be analyzed as "Assembly Without Fixed Seats, Unconcentrated (tables and chairs)" from Table 1004.1.1 of the IBC/2006; and if less than 50 persons, the space may be classified as part of the main Group B.

Example of Exception #3: *A conference room less than 750 square feet constructed within an office building.*

Note: Errata discussed in this article and other errata can be found at <http://www.iccsafe.org/cs/codes/errata.html>.

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

Source: Rob Austin
Code Assistance Unit

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Bulletin/FTO Update

Are your Uniform Construction Code (UCC) bulletins looking tattered and old? Do some of the code references look a little dated? Well, have I got good news for you! We have revised all UCC bulletins and formal technical opinions (FTOs). Each bulletin and FTO has been placed on the Internet, complete with up-to-date code references and new revised dates or updated code reference dates so you can tell what is old, what is new, or what was updated to reflect current model codes. So please, please, please . . . visit our web site at <http://www.nj.gov/dca/codes> and view, print, download, etc. the revised/updated bulletins and FTOs to update your UCC. The links to the bulletins and FTOs can be found in the middle column under the title "View the . . ." Follow this column alphabetically until you hit the "UCC Extras" box.

NOTE: Bulletins and FTOs that have updated code references will not be republished and will be posted on our web site only. Bulletins and FTOs that needed extensive revisions will be mailed as part of your update package at a later date and then placed on our web site.

Source: Rob Austin
Code Assistance Unit

Service Sink – What Type is Permitted?

There has been some confusion as to the type of sink that is permitted to be used as a service sink and also the minimum waste outlet size.

Referring to the National Standard Plumbing Code 2006, Table 7.21.1, under the "Other" column, one service sink per floor is required. In order to determine what type of fixture is permitted to be used as a service sink, you must refer to the definition of a service sink in Chapter 1, Definitions, Section 1.2, Definition of Terms. A service sink is defined as: "A sink or receptor intended for custodial use that is capable of being used to fill and empty a janitor's bucket. Included are mop basins, laundry sinks, utility sinks, and similar fixtures."

Therefore, any of the sinks listed in the definition of a "service sink" is permitted to be used as a service sink.

Also, to clear up any confusion as to the minimum size waste outlet connection required, it would be based on the type of fixture used as a service sink. If a laundry sink is used, the waste outlet connection must be not less than 1½" nominal size. If a service sink or mop receptor is used, the waste outlet connection shall be not less than 2" nominal size.

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

Source: Thomas C. Pitcherello
Code Assistance Unit

CCC Online

The Department of Community Affairs has decided that the *Construction Code Communicator* will become an online publication available only on the Division of Codes and Standards' web site (<http://www.nj.gov/dca/codes>). This article is to serve as an alert to all subscribers that this will be the last hard copy of the *Communicator*.

Any subscriber who would like to continue to receive a hard copy may exercise that option at an additional cost. However, the publication will be a simpler, black-and-white, stapled document -- not the familiar, two-color, professionally printed newsletter you now receive.

The Department will post new issues of the *Communicator* on our web site and will continue the initiative to post older copies, as well. We believe that this change will serve all code users more effectively and more efficiently.

Source: Emily W. Templeton
Division of Codes
and Standards

Congratulations to New ICC Board of Directors Member, Steven Jones

Steven Jones, Construction Official in Millburn Township, Essex County was recently elected to serve a three-year term on the International Code Council (ICC) Board of Directors. It took four years, but now New Jersey will be represented on the Board of the ICC. The Department of Community Affairs would like to congratulate Steve, and all those that worked on his campaign, on this accomplishment.

Source: John Terry
Supervisor, Code Assistance Unit

CSST Bonding – What is Required?

There is confusion on what is going on with CSST, flexible gas piping, since the manufacturers have been sending out revised installation instructions with their material. The revisions were a result of a lawsuit in which the court stated that the manufacturers must provide a means to protect the CSST from lightning. The revised instructions are requiring that the CSST be bonded to the grounding electrode conductor.

The installation instruction requirements are not in compliance with the currently adopted codes. The code requires that CSST be bonded, not grounded or used as a grounding electrode. Section 250.104(B) of the 2005 National Electrical Code (NEC) states that the equipment grounding conductor is permitted to serve as the bonding means for the gas piping. Otherwise, bonding is required to be from the CSST connector coupling to the water piping. The size of the bonding conductor is based on the rating of the circuit likely to energize the piping system. Table 250.122 in the 2005 NEC provides the conductor size based on the ampacity of the circuit. For example, if there is a gas heater with no electric at all to it and the service to the dwelling is 200 amperes, Table 250.122 states that 6 AWG copper or 4 AWG aluminum is required for the bonding conductor.

The clamps installed on the water and CSST pipes must be listed and labeled in accordance with Section 250.8 of the 2005 NEC. The clamps may be a dissimilar metal, provided they are approved and listed for the use.

In conclusion, no additional bonding is required where there is electric to any gas appliance, since Section 250.104(B) of the 2005 NEC permits the equipment grounding conductor to serve as the bonding means for a gas piping system.

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

Source: Suzanne Borek
Code Assistance Unit

Energy Subcode Mandatory Requirements

The Energy Subcode allows for trade-offs in insulation R-values and window U-values. However, Section 403 of the 2006 International Energy Conservation Code (IECC/2006), reprinted below, contains requirements that are mandatory at all times no matter which compliance path is chosen. This means that, whether a permit applicant chooses to do hand calculations, use REScheck, comply with NJ Energy Star Homes Program, or use a Prescriptive Package, this section will always be enforced as a minimum requirement (see Bulletin No. 07-2 for "low-rise residential" compliance options):

SECTION 403 -- SYSTEMS

403.1 Controls

At least one thermostat shall be provided for each separate heating and cooling system.

403.1.1 Heat Pump Supplementary Heat

Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

403.2 Ducts

403.2.1 Insulation

Supply and return ducts shall be insulated to a minimum of R-8. Ducts in floor trusses shall be insulated to a minimum of R-6.

EXCEPTION: Ducts or portions thereof located completely inside the building thermal envelope

403.2.2 Sealing

All ducts, air handlers, filter boxes, and building cavities used as ducts shall be sealed. Joints and seams shall comply with Section M1601.3.1 of the International Residential Code (IRC) (e.g., tapes, mastics, gasketing, or other approved closure systems, typically UL 181 tapes).

403.2.3 Building Cavities

Building framing cavities shall not be used as supply ducts.

403.3 Mechanical System Piping Insulation

Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-2.

(continued from page 3)

403.4 Circulating Hot-Water Systems

All circulating service hot-water piping shall be insulated to at least R-2. Circulating hot-water systems shall include an automatic or readily accessible manual switch that can turn off the hot water circulating pump when the system is not in use.

403.5 Mechanical Ventilation

Outdoor-air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

403.6 Equipment Sizing

Heating and cooling equipment shall be sized in accordance with Section M1401.3 of the IRC (e.g., ACCA Manual J).

Please take note that Section 403.2.1 requires R-8 insulation on supply and return ducts outside the thermal envelope. This is especially important for those of you who rely on the REScheck "inspection checklist" for assistance when doing plan review/inspections, as New Jersey uses a modified version of the software based on the 2003 code versus the adopted 2006 code. Here, the "Duct Insulation" category does not follow what the 2006 code states, as seen above.

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

Source: Rob Austin
Code Assistance Unit

Foundation Drains – Where Applicable?

The application of the requirement for foundation drains has been a question of contention lately. Permit applicants have been asking whether the requirements for foundation drains apply to all foundations of one- or two-family homes, or to only certain foundations.

As per N.J.A.C. 5:23-3.21(c)4.v, Section 1807, Damproofing and Waterproofing, from the 2006 International Building Code, shall be used in place of Sections R405, Foundation Drainage, and R406, Foundation Waterproofing and Damproofing, of the 2006 International Residential Code (IRC) when designing a one- or two-family home or townhouse.

To apply Sections R406.4.1 and R406.4.3 of IRC/2006, one has to visit Section R406.1, entitled "Where Required." Here it states in part, "Walls or portions thereof that retain earth, and enclose interior spaces and floors below grade, shall be waterproofed and damproofed in

accordance with this section." Both crawl spaces and basements retain earth, and enclose interior spaces. Therefore, as per Section R406.4, a drain is to be installed around the foundation perimeter. Slabs on grade typically do not retain earth, so no drain is required for a porch slab or garage slab, for example.

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

Source: Rob Austin
Code Assistance Unit

New Jersey Register Adoptions

Date: August 6, 2007

Adoption: 39 N.J.R. 3295(a)

Summary: The adopted amendment at N.J.A.C. 5:23-2.24(g) revises filing requirements for work involving certain liquefied petroleum gas (LPG) installations to conform to revisions in N.J.A.C. 5:18, the rules of the Department of Community Affairs' (DCA's) LPG regulatory program.

The adopted amendment at N.J.A.C. 5:23-4.20(c)2.iii(10) eliminates a cross-reference for fees for electrical work that involves the replacement of service entrance conductors or feeder conductors and replaces it with a restatement of the fees, thereby making it easier for users of the code to quickly determine what the fees are.

The adopted amendment at N.J.A.C. 5:23-4.20(c)2.iii(13) would establish fees for installation of photovoltaic equipment for which there are presently no fees.

The adopted amendments at N.J.A.C. 5:23-12.11 clarify reporting requirements in the event of elevator device malfunction.

The adopted amendment at N.J.A.C. 5:23-2.15(e) updates compliance documentation requirements to meet the newly adopted Energy Subcode, the 2006 International Energy Conservation Code for low-rise residential buildings, and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers Standard 90.1/2004 for all other buildings, thus allowing permit applicants to use a version of the software available free of charge from the United States Department of Energy to verify compliance with the requirements of the Energy Subcode (N.J.A.C. 5:23-3.18).

Date: October 1, 2007

Adoption: 39 N.J.R. 4113(b)

Summary: The adopted amendments revise the responsibilities section and the Radon Hazard Subcode

of the Uniform Construction Code (UCC) by designating the building subcode official as responsible for enforcement of the Radon Hazard Subcode. In addition, the adopted amendments update the Electrical Subcode with current National Electrical Code (NEC) numbering references and delete reference to the Nationally Recognized Testing Laboratory (NRTL) program to synchronize with its deletion from the NEC.

At N.J.A.C. 5:23-3.4(a), the proposed amendment specifies that the building subcode official would have sole enforcement responsibility of the Radon Hazard Subcode, except for the installation of an electrical receptacle, for which the electrical subcode official would have enforcement responsibility as provided at N.J.A.C. 5:23-10.4(b)14. An accompanying change at N.J.A.C. 5:23-10.3(b) would designate the electrical subcode official's responsibilities for electrical receptacles. At N.J.A.C. 5:23-3.8(d)2.i, the proposed amendment would update cross-references to the NEC. The proposed amendment would delete references to the NRTL program because it operates as an Occupational Safety and Health Administration testing program, and not as a construction industry testing program. The proposed amendment would also add language requiring testing laboratories to indicate on a product's markings that the product's approval is based upon applicable United States standards.

At N.J.A.C. 5:23-3.16(b)7.i, the proposed amendment would reflect the changes to Section 680.26(C) of the NEC, entitled "Equipotential Bonding Grid." The proposed amendment would add a requirement that equipotential bonding grids be required to conform to the contour of a pool. It would also add a provision to allow equipotential bonding grids to extend either within or under paved walking surfaces, supplanting the existing requirement that grids may extend only under paved walking areas. The proposed amendment would add an exception for pools constructed of nonconductive materials from the requirement that equipotential bonding grids be installed under the bottom of, or vertically along, the walls of all pools.

The adopted amendments revise the Electrical Subcode with changes made in the Tentative Interim Amendment of NFPA 70, NEC/2005 edition. These changes, which deal with equipotential bonding grids in swimming pools, increase protection against stray electrical current. At N.J.A.C. 5:23-3.16(b)7.ii, the proposed amendment would reflect the changes to Section 680.26(C)(1) of the NEC by adding bonding requirements for pool decks that are not integral parts of the pool.

The adopted amendments also add a provision to the standards for municipal fees section of the UCC allowing municipalities to establish an hourly fee for the review of substantial amendments or changes to plans that

HVACR Contractor Licensing

On December 20, 2007, new legislation was signed into law (P.L. 2007, c. 211), entitled "The State Heating, Ventilating, Air-Conditioning, and Refrigeration Contracting License Law." This law establishes a State Board of Examiners of Heating, Ventilating, Air-Conditioning, and Refrigeration Contractors that will operate under the purview of the New Jersey Department of Law and Public Safety's Division of Consumer Affairs. The Board will be comprised of nine members: two members of the public, one member from a State department (the Executive Branch of State Government), three members who are practicing Master Heating, Ventilating, Air-Conditioning, and Refrigeration (HVACR) contractors with at least ten years of experience, two members who are mechanical inspectors with at least ten years of experience, and one member who is an HVACR journeyman with at least ten years of experience. All of these members, with the exception of the individual from the Executive Branch, will be appointed by the Governor.

The Board must first be formed which will develop the rules for carrying out the purpose and intent of this new law. The rules will cover the process for applicant examination, the mechanism for evaluation, and the awarding of licenses to individuals who successfully qualify. A list will be published with the names and addresses of all persons statewide who are licensed under this Act. Then, when such rules have been adopted, the Uniform Construction Code (UCC) will be amended to state that a licensed HVACR contractor is required when a permit is issued to perform work covered under this law.

We will keep you apprised of the progress of the Board and notify you when the UCC is amended to incorporate this new requirement.

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

Source: Mary Ellen Handelman
Office of Planning and Operations

(continued from page 5)

have already been released and repeal a provision concerning a determination by the DCA that a code official who works in multiple jurisdictions is not a bona fide municipal employee. At N.J.A.C. 5:23-4.5 and 4.12, the proposed amendment would delete paragraph (h)2 of N.J.A.C. 5:23-4.12, which provides that "a person shall not be deemed a bona fide municipal employee if he holds two or more jobs which are determined by the Department to be incompatible by reason of conflicting time requirements," and replace it with an amendment to N.J.A.C. 5:23-4.5 that would make it clear that a code official or inspector may not accept employment in more municipalities than he can properly serve. The reason for this change is that the relevant issue in any such case would be whether the official is enforcing the code properly in all jurisdictions in which he is employed and it is not necessary for the DCA to attempt to monitor the person's work schedule, which is the responsibility of the employing municipalities, in order to determine whether the code is being properly enforced.

system, installed in accordance with National Fire Protection Association Standard 13, and the exterior openings are protected by an approved water curtain using automatic sprinklers approved for that use.

To apply an example to this, let's say we have a Group R-2 building to be built at a distance of 3 feet, 1 inch to the property line. As specified in the "unprotected" row of Table 704.8, the exterior wall parallel to the lot line would not be permitted to have any openings based on a fire separation distance, measured in feet, of "greater than 3 to 5." However, in a building equipped throughout with an automatic sprinkler system, the code user may take advantage of the exception discussed above and apply the "protected" row in this column, allowing 15 percent of the wall to be open.

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

Source: Rob Austin
Code Assistance Unit

Protected Openings vs. Construction

The Department of Community Affairs has received an increasing number of telephone calls regarding the maximum allowable area of openings in an exterior wall, Section 704.8 of the 2006 International Building Code (IBC/2006). The issue with this section is a misunderstanding of the word "protected" from Table 704.8 and how it applies to openings in an exterior wall; this is not the same type of protection referred to in the construction of the structure itself. Here's the breakdown:

1. PROTECTED AND UNPROTECTED CONSTRUCTION: This refers to Chapter 6 of the IBC/2006, Construction Classification (i.e., structural components); this is not a reference to fire-protection systems. For all but Type I construction, "unprotected" construction types are those with zero ratings in Table 601 (i.e., the "B" column); "protected" construction types are those with varied ratings in Table 601 (i.e., the "A" column).
2. PROTECTED AND UNPROTECTED EXTERIOR WALL OPENINGS: This refers to Section 704.8, Allowable Area of Openings, of the IBC/2006. This section regulates the maximum area of unprotected or protected openings permitted in an exterior wall in any story set forth in Table 704.8. "Protected" openings are those that meet Section 704.12 of the IBC/2006 (e.g., fire doors or shutters). This section provides an exception which allows openings not to be protected where the building is protected throughout by an automatic sprinkler

Q & A on the New Amendment to the UCC Act: Assignment of Inspectors for Reinspection of Single-Family Homes

What is P.L. 2007, c. 149?

On August 21, 2007, Governor Jon S. Corzine signed Assembly Bill 1323 into law as chapter 149 of the Laws of 2007. This law added the following paragraph d to the State Uniform Construction Code Act at N.J.S.A. 52:27D-132:

d. When an inspector or team of inspectors finds a violation of the provisions of a construction permit, the code, or other applicable laws and regulations at an owner-occupied, single-family residence, and issues a notice of violation and an order to terminate the violation, the enforcing agency shall require the same inspector or team of inspectors who found the violation to undertake any subsequent reinspection thereof at the premises. When the same inspector or team of inspectors cannot be assigned to undertake the reinspection, the enforcing agency may assign an available inspector, provided the scope of the reinspection shall be limited to the violation for which the reinspection is required. The requirements of this subsection shall not apply to violations of the Plumbing or Electrical Subcodes, or to fire-safety code violations, or to any

violation of any other subcode that the Department of Community Affairs determines to be a health or safety violation. Nothing in this subsection shall be construed to infringe upon the right of a property owner to request a different inspector, team of inspectors, or supervisor to perform any required reinspection.

What does this law apply to?

1. The law applies only to **owner-occupied, single-family dwellings**. There are no consequences for inspection of any other type of building or structure. Single-family dwellings that are being constructed are not affected, since they are not yet occupied.
2. The law applies only to **reinspections conducted after a violation has been cited**.

What does this law require?

1. **Whenever possible**, the enforcing agency **is required to assign the same inspector or team of inspectors who cited the violation**. The rationale here is that the inspector or inspectors who cited the violation would know what had been wrong and would therefore know whether or not it had been corrected.
2. If it is not possible to assign the same inspector or team of inspectors, another inspector may be assigned. However, that inspector is limited in the scope of his/her inspection to reinspection of the violation, **unless one of the exceptions applies**. (Note that this limitation applies **only if a new inspector is assigned**. If the enforcing agency assigns **the same inspector or team of inspectors**, the limitation does not apply.)

What are the exceptions?

1. **Plumbing, electrical, and fire-safety violations** are **never subject** to the limitations imposed by this law.
2. Violations of the **Building Subcode** (or any subcodes other than Plumbing, Electrical, and Fire Protection) are **not subject** to the limitations imposed by this law **if the Department determines the violation to be a health or safety violation**.

What about requests by homeowners for assignment of a different inspector?

1. The law preserves the right of a homeowner to ask that a different inspector be assigned, for

whatever reason. It does not, however, require the enforcing agency to comply with that request.

2. Since any assignment of a new inspector in response to a homeowner's request would not involve a situation where the original inspector(s) **cannot** be assigned, the **limitation established by this law** on what the new inspector(s) may or may not cite **would not apply**.

What, in summary, are the practical consequences of this law?

1. Whenever possible, and unless one of the exceptions applies, the same inspector should be assigned to reinspect any violation that he/she previously cited at an owner-occupied, single-family home.
2. If it is necessary to assign a different inspector in a case where no exception applies, that inspector should report to the construction official any observed violations that were not previously cited and that appear to be health or safety violations. The construction official can then contact the Office of Regulatory Affairs to obtain a determination from the Department as to whether those violations can be cited under the exception for health or safety violations.
3. There are no consequences at all for enforcement of the Plumbing, Electrical, or Fire Safety Subcodes, or for any inspections of premises that are not owner-occupied, single-family homes.

Residential Sprinkler Requirements

N.J.A.C. 5:23-3.14 adopts the 2006 International Building Code (IBC/2006) as the Building Subcode for the design of all new buildings, except Residential Group R-5. N.J.A.C. 5:23-3.21 adopts the 2006 International Residential Code (IRC/2006) as the One- and Two-Family Dwelling Subcode for the design of all new Residential Group R-5 buildings. As you can see, there is a distinct line drawn here for the design of certain buildings. Because of this, all Residential Group R, except Group R-5, must meet Section 903.2.7 of the IBC/2006. This section requires that an automatic sprinkler system be installed, in accordance with Section 903.3, and provided throughout all buildings with a Group R fire area. The "Group R fire area" this section refers to is all Residential Group R, except Group R-5 because of the reason stated above. This is further backed by Section 310, Group R-5, which states that these structures are to be constructed in accordance with the One- and Two-Family Dwelling Subcode.

Note: As per N.J.A.C. 5:23-3.21(c)3.i, Section R300 of the IRC/2006 contains the only requirements for a sprinkler system when designing a One- or Two-Family Dwelling Subcode building with three stories.

Source: Rob Austin
Code Assistance Unit

Special Inspector Certifications

The Department of Community Affairs adopted regulations concerning the certification of special inspectors in November of 2006. The certifications were initially required as of November 6, 2007, but that requirement has been delayed until November 6, 2008 to allow the industry additional time to meet the requirements for certification. In the interim, construction officials should continue to ensure that special inspectors are qualified.

These certifications are required only for special inspections in Class 1 buildings and for the specific areas to be certified. The classifications of these certifications are as follows: concrete placement, reinforced concrete, prestressed concrete, structural steel and bolting, structural welding, exterior insulation finish systems (EIFS), structural masonry, and spray-applied fireproofing.

The requirements for the certifications vary in some ways, but all have an experience and examination requirement. New Jersey licensed Professional Engineers with relevant experience to any one specific certification may be certified upon application and documentation of

that specific experience. Building and Fire Protection Inspectors HHS may qualify for the spray-applied fireproofing special inspector certification, provided they complete the required examination. Building Inspectors HHS may also qualify for the EIFS special inspector certification, provided they possess certification by either the Association of the Wall and Ceiling Industries or the Exterior Design Institute as an EIFS inspector. The other special inspector certifications require experience specific to the area of inspection and certification by examination in that specific area.

Specific information on the certifications can be obtained by contacting the Licensing Unit at (609) 984-7834 or by e-mail: codeslicensing@dca.state.nj.us.

Specific Safety Glazing Areas

This article is to address two specific "hazardous locations" in Section R308.4 of the 2006 International Residential Code and Section 2406.3 of the 2006 International Building Code that require safety glazing in accordance with Consumer Product Safety Commission regulations, 16 CFR 1201.

Item #6 requires safety glazing in individual, fixed or operable panels adjacent to a door, where the nearest vertical edge is within a 24-inch arc of the door in a closed position and the bottom edge of which is less than 60 inches above the floor or walking surface. The 24-inch arc is measured from both sides of a door (side-hinged or sliding).

Item #7 requires safety glazing in an individual, fixed or operable panel that 1) has an exposed area of an individual pane larger than 9 square feet, 2) has a bottom edge less than 18 inches above the floor, 3) has a top edge more than 36 inches above the floor, **and** 4) has one or more walking surfaces within 36 inches horizontally of the glazing. The key here is to apply all four criteria; if one is not met, then item #7 no longer applies.

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

Source: Rob Austin
Code Assistance Unit

Table 601 and Note C

Table 601 in the first printing of the 2006 International Building Code (IBC/2006), and the only printing of the New Jersey edition of the same code, have a note "C" in the Type IIB and IIIB columns for roof construction. However, the roof construction for Type IIB and IIIB is rated at zero hours. This, in turn, has made Note C confusing. The truth of the matter is that **Note C from Table 601 does not apply to Type IIB or Type IIIB construction**, as it is an error. The International Code Council has not yet issued an errata to the IBC/2006; however, subsequent printings of the document, including commentaries, do not include Note C in Type IIB and IIIB for roof construction. Please apply the code without Note C for Type IIB and Type IIIB for roof construction. All other errata can be viewed at:

<http://www.iccsafe.org/cs/codes/errata.html>

Source: Rob Austin
Code Assistance Unit

- ◆ Recently adopted rules
- ◆ Bulletins and formal technical opinions (with updated code references)
- ◆ *Construction Code Communicator* articles (2002 to present)
- ◆ The entire Uniform Construction Code (updated four times a year)
- ◆ Wind speed maps for those questionable, 100-mph municipalities (re: IRC/2006)

These are just some examples of what the Division's web site contains. A few other key links of interest:

- ◆ Child-care center information (environmental requirements)
- ◆ Home improvement contractor information (current registration)
- ◆ Permit application forms (any municipality can accept these)

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

Source: Rob Austin
Code Assistance Unit

Useful Tools on the Division's Web Site

Have you been to the Department of Community Affairs, Division of Codes and Standards' web site recently? If not, you should take a look! The Division has been working diligently to update and add useful information and tools to its web site to better serve the public. The web site address is: <http://www.nj.gov/dca/codes> — bookmark it and please use it! Here's a brief overview of what the web site offers:

- ◆ Listing of current codes, including the adoption dates and where to purchase them
- ◆ Links to International Codes; NSPL Code; and American Society of Heating, Refrigerating, and Air-Conditioning Engineers Code (adopted by New Jersey for users to view and use the 2006 codes)
- ◆ Technical amendments (changes) to adopted codes
- ◆ Listing of previous codes and adoption dates
- ◆ Barrier Free Subcode (Subchapter 7)
- ◆ Listing of all municipal code officials throughout the State
- ◆ Radon Hazard Subcode (Subchapter 10) and the municipalities that are subject to its requirements
- ◆ Listing of registered home builders
- ◆ Rehabilitation Subcode (Subchapter 6)
- ◆ Recently proposed rules

Yesterday's and Today's Model Codes

The chart on the following page displays all the codes the State of New Jersey has used since the introduction of the Uniform Construction Code on January 1, 1977. As you can see, 2007 was a big year for model code adoptions. This chart and other useful information can be viewed on our web site at <http://www.nj.gov/dca/codes>.

Source: Rob Austin
Code Specialist

(continued on page 10)

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New Jersey Model Code Adoptions

Building Subcode BOCA	Electrical Subcode IBC	Energy Subcode NEC	Fire Protection Subcode BOCA	Mechanical Subcode BOCA	Fuel Gas Subcode BOCA	IMC	CABO	IRC	Plumbing Subcode NSPC	1 & 2 Family Dwelling IFGC	Barrier Free (Sub 7) A117.1	Rehab (Sub 6) ICC/ANSI A117.1	Effective Date
1975	1975			1975					1975				01-01-77
1976/S	1978			1976/S									12-01-77
1978	1981			1978					1978				10-01-78
1981	1983/AS			1981					1980				05-07-81
1983/AS	1984			1983/AS					1981/82/S				02-22-83
1984	1985/S			1984					1983				08-06-84
1985/S				1985/S						1983			04-01-85
									1984/85/S				07-01-85
										1984/85/S			02-03-86
											1984/85/S		09-22-86
1986/AS	1987			1986/AS					1986/AS				04-01-87
1987				1987					1987				"25/50 Rule"
									1987				09-21-87
1988/S				1988/S					1988/S				06-20-88
									1987/88/A				08-15-88
										1988/S			09-06-88
1989/AS				1989/AS					1989/S				02-06-89
									1989/S				11-01-89
1990	1990			1990					1990				05-21-90
1991/S				1991/S					1991/S				07-01-90
									1990/91/A				03-04-91
1993	1993			1993					1993				05-20-91
				1989					1992				05-01-93
									1992				07-01-95
1996	1996			1996					1996				1998
	1999								1995				(updated yearly)
2000	2002								2000				02-07-00
									2000				06-18-01
2005									2003				09-17-01
2006	2006			2004					2006				01-16-02
										2006			11-04-02
										2006			05-05-03
										2003			01-18-05
										2003			05-01-06
										2006			02-20-07
										2003			05-07-07

S = Supplement AS = Accumulative Supplement A = Amendments

(Revised 5/7/07)

High-Intensity Discharge Luminaires

The letter below was mailed to local electrical subcode officials on January 17, 2008.

Dear Electrical Subcode Official:

The Department of Community Affairs is working in conjunction with the New Jersey Department of Environmental Protection (DEP) to publicize requirements for the protection of high-intensity discharge (HID) lamps for the safety of occupants in all buildings.

There are regulations contained in the Uniform Construction Code (UCC) that address the use of HID lamps, which are also called electric discharge lighting, when used in public schools. This includes mercury vapor, high-pressure sodium, and metal halide lamps. The requirements of N.J.A.C. 5:23-3.11A(c)3 state that all HID lamps are to be of the fail-safe type, which will permanently extinguish within 15 minutes after the outer glass of the bulb is broken, and that all lamps are to be provided with a glass or plastic lens to protect the bulb.

The 2005 National Electrical Code (NEC/2005) only addresses metal halide lamp containment. Section 410.73(F)(5) of the NEC/2005 states luminaires that use a metal halide lamp other than a thick-glass, parabolic reflector lamp (PAR) are to be provided with a containment barrier that encloses the lamp, or are to be provided with a physical means that only allows the use of a lamp that is Type O. For other types of HID lamps, the NEC relies on the manufacturer's installation instructions for the type, use, and protection of the lamps.

In addition to the rules described above that are part of the UCC, the DEP has rules which establish safety requirements for the indoor or outdoor use of mercury vapor or metal halide lamps (N.J.A.C. 7:28-41).

The DEP rules address the use of mercury vapor or metal halide lamps and protection from those lamps breaking, and from the harmful ultraviolet (UV) radiation that could be emitted.

There are two types of mercury vapor lamps which exist: the T-rated, self-extinguishing variety and the R-rated, non-extinguishing variety. T-rated bulbs self-extinguish within 15 minutes following breakage of the outer envelope of the bulb, thus limiting exposure to UV radiation. R-rated bulbs, on the other hand, do not self-extinguish upon fracture of the outer envelope. In fact, so long as the discharge tube remains intact, the lamp may continue to burn. R-rated bulbs can still be used if encased in a totally enclosed lighting fixture that absorbs UV radiation if the outer bulb is broken. However, a simple wire cage, as commonly seen around job sites, will not provide adequate shielding.

N.J.A.C. 7:28-41 permits only self-extinguishing lamps to be used in open, high-intensity or electric discharge lighting fixtures. The lamps, as well as the fixtures, are required by the NEC to be listed or labeled for the use. This means that the lamps for the fixture are required to be marked with the appropriate letter corresponding to the listed use. Self-extinguishing type lamps are marked with a "T." Lamps marked with an "O" must still be enclosed if they are not self-extinguishing. Likewise, lamps marked with "MP," "S," or "E" must be totally enclosed if they are not self-extinguishing. In summary, all types of lamps that are not self-extinguishing present a potential hazard and must be completely enclosed.

Please be sure to check the manufacturer's installation instructions, and make building owners and contractors aware of the DEP requirements. Should you need further assistance on this matter, please contact the Code Assistance Unit at (609) 984-7609.

Sincerely,

Cynthia A. Wilk
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FIRST-CLASS MAIL

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