

CODE CHANGE PROPOSAL FORM

Code: IBC-09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2); Sections 2303.3, 2304.6.2, and Chapter 35

Proponent: Tom Neltner, National Center for Healthy Housing, representing National Center for Healthy Housing and Alliance for Healthy Homes.

1. Revise as follows:

CHAPTER 23
WOOD

SECTION 2303
MINIMUM STANDARDS AND QUALITY

2303.1.7 Particleboard. Particleboard shall conform to ANSI A208.1. Particleboard shall be identified by the grade mark or certificate of inspection issued by an approved agency. Particleboard shall not be utilized for applications other than indicated in this section unless the particleboard complies with the provisions of Section 2306.4.3.

2303.1.7.1 Floor underlayment. Particleboard floor underlayment shall conform to Type PBU of ANSI A208.1. Type PBU underlayment shall not be less than 1/4-inch (6.4 mm) thick and shall be installed in accordance with the instructions of the Composite Panel Association.

2303.3 Hardwood and plywood. Hardwood and decorative plywood shall be manufactured and identified as required in ANSI/HPVA HP-1.

2304.6.2 Interior paneling. Softwood wood structural panels used for interior paneling shall conform with the provisions of Chapter 8 and shall be installed in accordance with Table 2304.9.1. Panels shall comply with DOC PS 1 or PS 2. Prefinished hardboard paneling shall meet the requirements of ANSI A135.5. Hardwood plywood shall conform to ANSI/HPVA HP-1.

2. Revise as follows:

Chapter 35

ANSI

American National Standard Institute
25 West 43rd Street, Fourth Floor
New York, NY 10036

A208.1—992009 Particleboard 2303.1.7, 23031.7.1
ANSI/HP-1—20002009 The American National Standard
for Hardwood and Decorative Plywood. 2303.3, 2304.6.2

Reason: The proposal updates the reference to the ANSI standards for composite wood standards to reflect the latest versions of those standards. Those standards were updated to include the 2008 California standards for formaldehyde emissions from composite wood products. Most construction uses few products that are regulated by these new standards as little particleboard or hardwood or decorative plywood is used in construction.

Regulating the emission levels at the manufacturing facility, the primary prevention approach, is the least burdensome approach, and avoids many confounding factors, in particular, in comparison with the alternative of a criterion of meeting a formaldehyde-in-air threshold in a room where the product has already been installed and formaldehyde levels are affected by consumer products or occupant behaviors that are beyond the control of the designer or builder.

Cost Impact: The code change proposal will not increase the cost of construction.

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IEBC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

NEW 704.4.4 Carbon monoxide alarms, NEW 704.4.4.1 Alarm Requirements and NEW Chapter 15 UL 2034-08.

Proponent: Tom Neltner, National Center for Healthy Housing, representing National Center for Healthy Housing and Alliance for Healthy Homes.

Revise as follows:

1. Add new text as follows:

704.4.4 Carbon monoxide alarms. Where work requiring a permit occurs, carbon monoxide alarms shall be provided outside of each separate sleeping area in the immediate vicinity of the bedroom(s) in dwelling units within which a fuel burning appliance, including a portable fuel burning space heater, exist or in dwelling units that have an attached garage.

704.4.4.1 Alarm requirements. Single station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.

2. Add new standard as follows:

Chapter 15 Referenced Standards

**Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, IL 60062**

UL 2034-2008 Standard for Single- and Multiple-station Carbon Monoxide Alarms.

Reason: Carbon monoxide (CO) is an odorless, tasteless, invisible gas that kills more than 300 people in homes each year. Thousands more are admitted to the hospital with carbon monoxide poisoning. This is a serious issue that effects people nationwide in all regions of the country.

This proposal provides consistency between the IEBC and the International Residential Code. The IRC was amended in the 2007/2008 cycle with similar language to require CO alarms whenever a building permit is issued in an existing residence within which fuel-fired appliances exist or have or attached garages. This proposal expands on the IRC requirement to specifically include portable fuel burning space heaters. Portable fuel burning space heaters may not normally be considered an appliance.

The following states require CO alarms in existing residences: Alaska, Colorado, Illinois, Massachusetts, Michigan, Minnesota, Montana, New Jersey, New York, Oklahoma, Rhode Island, Vermont and Wisconsin. While these are cold weather states, the deaths from CO are spread throughout the country as residents unwittingly use dangerous methods to stay warm in unusually cold weather.

Cost Impact: Yes, this code change proposal will increase the cost of construction. Carbon monoxide alarms typically cost approximately \$25.00 each.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IEBC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

NEW Section 502.1.1 Lead safe work practices during additions, alterations and repairs.

Proponent: Name/Company/Representing (3.3.1): Jane Malone, Alliance for Healthy Homes, representing National Center for Healthy Housing and Alliance for Healthy Homes.

Add new text as follows:

SECTION 502 BUILDING ELEMENTS AND MATERIALS

502.1 Existing buildings materials. Materials already in use in a building in conformance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the code official to render the building or structure unsafe or dangerous as defined in Chapter 2.

502.1.1 Lead safe work practices during additions, alterations and repairs. Unless it is determined by an approved test that lead-based paint is not present on the surfaces where paint is disturbed, addition, alteration, and repair activities that disturb painted surfaces in structures built before 1978 shall be performed using lead safe work practices by a certified renovation firm in accordance with U.S. Environmental Protection Agency requirements for renovation activities in 40 CFR 745.

Exceptions:

1. Structures built after 1977 (or earlier date, if applicable to the jurisdiction of the structure), when lead-based paint was banned.
2. Structures with documentation from an approved test in accordance with 40 CFR 745 that proves that the painted surfaces to be disturbed contain no lead-based paint.

Reason: The purpose of this proposed code language is to incorporate lead-safe work practices in work that disturbs paint known or presumed to be lead-based paint in order to reflect current knowledge and to promote consistency with imminent federal regulations. These changes would only affect structures likely to contain lead-based paint. Multiple studies have demonstrated that lead dust caused by deteriorated lead-based paint and repair activity is the major source of lead exposure for young children. The dangers associated with exposure to lead based paint hazards are well-known: lead is associated with a range of serious health effects on children, including detrimental effects on cognitive and behavioral development with serious personal and social consequences that may persist throughout their lifetime. More than 36 million pre-1978 US housing units contain lead-based paint.

Section 302 requires that all alteration and addition jobs comply with the IBC new construction and that alteration, addition, and repair jobs in flood hazard areas comply with flood design requirements, but fails to require, in structures that are likely to contain lead-based paint, the use of precautionary practices to prevent the dispersal of lead before, during, and after the addition, alteration, and repair work in structures likely to contain lead-based paint. The addition of the proposed new language will protect children from lead poisoning by specifying compliance with federal requirements for lead safe work practices and the use of certified renovators working for certified renovation firms when conducting addition, alteration, or repair work in such structures. The related EPA certification requirements take effect April 22, 2010. In the jurisdiction of a State or Federally-recognized Tribe that obtains EPA authorization to administer the renovation program, the requirements of that State or Tribe will take effect on or after April 22, 2010.

The proposed new sub-sub-section contains two exceptions to the requirement: structures built after lead was banned from paint used in residential structures (1977 US; earlier in some US cities; 1909 France, Belgium, Austria), and where the deteriorated paint has been documented to not contain lead (such as by a lead-based paint inspection or risk assessment, use of an approved test kit by a certified renovation firm, or through completion of another government-approved test method or ANSI standard).

Cost Impact: This code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IEBC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

NEW Section 602.1.1 Interior Surfaces

Proponent: Tom Neltner, National Center for Healthy Housing, representing National Center for Healthy Housing and Alliance for Healthy Homes.

1. Revise as follows:

602.1.1 Interior surfaces. All interior surfaces, including windows and doors, shall be maintained in good, clean and sanitary condition. Peeling, chipping, flaking or abraded paint shall be repaired, removed or covered. Cracked or loose plaster, decayed wood and other defective surface conditions shall be corrected. Surfaces of porous or water permeable materials made of or containing organic materials, such as but not limited to wood, textiles, paint, cellulose insulation, and paper, including paper-faced gypsum board, that have visible signs of mold or mildew shall be removed and replaced or remediated in an approved manner.

Exception: Porous materials that do not contain organic materials, such as clean unpainted bricks and concrete.

Reason: Mold typically grows in buildings affected by water damage. According to the Institute of Medicine of the National Academies' *Damp Indoor Spaces and Health* (2004), mold and damp indoor environments are associated with asthma symptoms in sensitized persons, coughing, wheezing, and upper respiratory tract symptoms. See www.nap.edu/books/0309091934/html/

In December 2007, the National Center for Healthy Housing (NCHH) and the U.S. Centers for Disease Control and Prevention (CDC) convened an Expert Panel consistent with National Institute of Health guidelines to assess the effectiveness of various interventions to make homes healthier and safer. NCHH and CDC published the report of the experts in January 2009. See www.nchh.org/LinkClick.aspx?fileticket=2IvaEDNBldU%3d&tabid=229 for the full report.

The Expert Panel reviewed five peer-reviewed research studies on the issue of mold and allergens and concluded that "when implemented together, eliminating moisture intrusion and leaks and removal of moldy items were found to be effective in reducing asthma triggers and reducing exposures." Other provisions of the IPMC address eliminating moisture intrusion. But no provisions require the removal, replacement or remediation of the mold.

This proposal implements the Expert Panel's recommendation while allowing the option of remediation in an approved manner. To ensure the health of the building's occupants, mold mitigation measures must be a part of the code.

Water damage, if left unattended for any period of time, may lead to mold growth. Molds typically grow in buildings affected by water damage and are a potential cause of many health problems including asthma, sinusitis, and infections. Water infiltration of the building envelope due to damage or deterioration is the primary contributor to mold. To ensure the health of the buildings occupants mold mitigation measures must be a part of the code.

Cost Impact: This code change proposal will increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IEBC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

NEW Section 710.2 Water heating facilities.

Proponent: Tom Neltner, National Center for Healthy Housing, representing National Center for Healthy Housing and Alliance for Healthy Homes.

1. Add new text as follows:

710.2 Water heating facilities. Water heating facilities shall be properly installed, maintained and capable of providing an adequate amount of water to be drawn at every required sink, lavatory, bathtub, shower and laundry facility at a temperature of not less than 110°F (43°C). A combustion water heater shall not be located in any bathroom, toilet room, bedroom or other occupied room normally kept closed, unless adequate combustion air and exhaust ventilation are provided. An approved combination temperature and pressure-relief valve and relief valve discharge pipe shall be properly installed and maintained on water heaters. In dwelling units, the temperature of the water at the spout in a bathtub or shower shall not exceed 120°F (49°C).

Reason: The current code does not set a maximum water temperature for bathtubs and showers. However, the American Society of Sanitary Engineering recommends a maximum mixed water temperature setting of 120°F (49°C). This code change makes the IEBC consistent with the ASSE recommendations and the requirements of the *International Residential Code* and the *International Plumbing Code*.

According to the Consumer Products Safety Commission, “Each year, approximately 3,800 injuries and 34 deaths occur in the home due to scalding from excessively hot tap water. The majority of these injuries involve the elderly and children under the age of five. The U.S. Consumer Product Safety Commission (CPSC) urges all users to lower their water heaters to 120 degrees Fahrenheit. In addition to preventing injuries, this decrease in temperature will conserve energy and save money.

CPSC goes on to state “Most adults will suffer third-degree burns if exposed to 150 degree water for two seconds. Burns will also occur with a six-second exposure to 140 degree water or with a thirty second exposure to 130 degree water. Even if the temperature is 120 degrees, a five minute exposure could result in third-degree burns.” See www.cpsc.gov/CPSCPUB/PUBS/5098.pdf.

In addition, in December 2007, the National Center for Healthy Housing (NCHH) and the U.S. Centers for Disease Control and Prevention (CDC) convened an Expert Panel consistent with National Institute of Health guidelines to assess the effectiveness of various interventions to make homes healthier and safer. NCHH and CDC published the report of the experts in January 2009. See www.nchh.org/LinkClick.aspx?fileticket=2lvaEDNBldU%3d&tabid=229 for the full report.

The Expert Panel reviewed the peer-reviewed research on the issue of maximum safe water temperature. The experts found two significant studies.

- 80% of children hospitalized for scald burns lived in homes with unsafe bathtub water temperatures of 130°F or higher (Feldman K, Schaller R, Feldman J, McMillon M. 1978. Tap water scald burns in children. *Pediatrics* 62: 1–7.)
- Five years after a 1983 Washington State law required new water heaters to be pre-set at 120°F at the factory, 77% of homes tested had safe tap water temperatures and there was a reduction in the frequency, morbidity and mortality of tap water burn injuries in children (Erdmann TC, Feldman KW, Rivara FP, Heimbach DM, Wall HA. 1991. Tap Water Burn Prevention—The Effect of Legislation. *Pediatrics* 88(3): 572–577.)

Setting the water heater at 120°F raises questions about *legionnaires* disease. The ASSE approved water mixers provide the safety without raising the threat of *legionnaires* disease

Cost Impact: This code change proposal will increase the cost of construction.

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IPMC –09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

NEW Section 705.1 Carbon monoxide alarms, New Section 705.2 Alarm requirements and New Chapter 8 Standard UL 2034-08.

Proponent: Tom Neltner, National Center for Healthy Housing, representing National Center for Healthy Housing and Alliance for Healthy Homes.

Revise as follows:

1. Add new text as follows:

705.1 Carbon monoxide alarms. An approved carbon monoxide alarm shall be installed outside of every separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which a fuel-fired appliance, including a portable fuel burning space heater, exists and in dwelling units that have an attached garage.

705.2 Alarm requirements. Single station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer’s installation instructions.

2. Add new standard as follows:

Chapter 8 Referenced Standards

Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, IL 60062

UL 2034-2008 Standard for Single- and Multiple-station Carbon Monoxide Alarms.

Reason: Carbon monoxide (CO) is an odorless, tasteless, invisible gas that kills more than 300 people in homes each year. Thousands more are admitted to the hospital with carbon monoxide poisoning. This is a serious issue that effects people nationwide in all regions of the country.

The International Residential Code was amended in the 2007/2008 cycle with similar language to require CO alarms whenever a building permit is issued in an existing residence within which fuel-fired appliances exist or have or attached garages. This proposal expands on the requirement to specifically include portable fuel burning space heaters. Portable fuel burning space heaters may not normally be considered an appliance.

The following states have required CO alarms in existing residences: Alaska, Colorado, Illinois, Massachusetts, Michigan, Minnesota, Montana, New Jersey, New York, Oklahoma, Rhode Island, Vermont and Wisconsin. While these are cold weather states, the deaths from CO are spread throughout the country as residents unwittingly use dangerous methods to stay warm in unusually cold weather.

Cost Impact: Yes, this code change proposal will increase the cost of construction. Carbon monoxide alarms typically cost approximately \$25.00 each.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IPMC –09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

NEW Chapter 8 HEALTH AND SANITATION

Proponent: Jane Malone, Alliance for Healthy Homes, representing National Center for Healthy Housing and Alliance for Healthy Homes.

Add New as text as follows:

CHAPTER 8 **HEALTH AND SANITATION**

SECTION 801 **GENERAL**

801.1 Scope. The provisions of this chapter shall govern the minimum sanitation required to occupy a structure and prevention and elimination of health hazards.

801.2 Responsibility. The owner of the structure shall provide and maintain the sanitation of the structure, premises or portion thereof in compliance with these requirements for the health, safety, and welfare of the occupants. A person shall not occupy as owner-occupant or permit another person to occupy any structure or premises which does not comply with the requirements of this chapter.

SECTION 802 **GENERAL REQUIREMENTS FOR MAINTAINING HEALTH AND SANITATION**

802.1 Performance of structure, premises or portion thereof. Elements and components of a structure, premises or portion thereof shall be maintained in accordance with this section to provide a healthy and sanitary condition and shall not be allowed to deteriorate to an extent that it poses a threat to any occupant's health, safety or welfare. Elements and components of the structure, premises or portion thereof are determined to be unsafe shall be replaced or repaired according to Section 802.2.

802.2 Elements and components. Elements and components of a structure, premises or portion thereof determined to be unsafe shall be replaced or repaired by the owner according to the provisions of the *International Building Code*, *International Existing Building Code* or *International Residential Code*.

Exception: Where repair of the element or component to its original sanitary and health standards will not pose a threat to any occupant's health, safety or welfare.

802.2.1 Equipment. Equipment associated with a structure, premises or portion thereof that poses a threat to public health, safety or welfare, shall be determined to be health hazards and shall be replaced or repaired according to the provisions of Section 802.2.

802.3 Health and sanitary conditions. The conditions described below shall be determined by a trained professional. These conditions are health hazards and shall be mitigated in an approved manner.

1. Asbestos in heating or ventilation components, insulation, siding, roofing, or other materials where the asbestos is friable.
2. Carbon Monoxide at levels that exceed any of the following:
 - 2.1. 100 milligrams per cubic meter (90 parts per million) for 15 minutes;
 - 2.2. 60 milligrams per cubic meter (50 parts per million) for 30 minutes;
 - 2.3. 30 milligrams per cubic meter (25 parts per million) for 1 hour; or
 - 2.4. 10 milligrams per cubic meter (10 parts per million) for 8 hours.
3. Radon at levels that exceed four picocuries of radon per liter in the lowest occupied level.
4. Lead under any of the following conditions:
 - 4.1. Peeling, flaking, chipping, cracking, or chalking paint on a dwelling unit built before 1978 unless the paint has been determined to have less than 0.5 percent or 1 milligram per square centimeter of lead;

- 4.2. Lead dust at levels greater than 10 micrograms of lead per square foot on the floor;
- 4.3. Lead dust at levels greater than 100 micrograms of lead per square foot on an interior window sill;
- 4.4. Lead contamination in exposed soil at levels greater than 400 mg of lead per kilogram of soil in children's play areas or 1200 mg of lead per kilogram of soil in other areas.
- 5. Potable water contamination at levels that exceed that for potable water as defined by the *International Plumbing Code*.
- 6. Arsenic-treated lumber that shows evidence of splintering

802.3.1 Written report. Where the conditions specified in Section 802.3 identify threshold levels, information shall be provided to the code official in accordance with Section 105.3.

Reason: Asbestos products were extensively used in building materials. They continue to be legal to sell and to use. Intact asbestos is not a hazard. It becomes a hazard when damaged or deteriorated and releases friable asbestos. See www.epa.gov/asbestos/pubs/ashome.html for details. The U.S. Environmental Protection Agency (EPA) and most states license asbestos inspectors.

Radon is the leading cause of lung cancer in people who have never smoked. U.S. Environmental Protection Agency (EPA) has established a recommended maximum exposure level of four picocuries of radon per liter of air in occupied areas. This level can be achieved through established technology in a cost effective manner. The radon controls also reduce moisture and soil gas intrusion. See www.epa.gov/radon/pubs/newconst.html. Two national organizations and some states certify radon professionals to measure radon levels in residences.

Lead can cause permanent damage to a child's brain that is manifested as lower IQ levels, learning disorders and violent behavior. In adults, it can cause hypertension. The levels for lead in dust on floor and window sills are expected result in less than 5% of the children younger than six years of age playing on the floor to be lead poisoned. The current EPA standards of 40 micrograms of lead per square foot on the floor and 100 micrograms of lead per square foot on an interior window sill at 40 CFR Part 745 Subpart D . These levels are expected to result in 15 to 20% of the children playing on the floor to be lead poisoned. See Dixon SL, Gaitens JM, Jacobs DE et al. (2009) Exposure of U.S. children to residential dust lead, 1999-2004: II: The contribution of lead-contaminated dust to children's blood lead levels. *Environmental Health Perspectives* 117(3):468-474 at www.nchh.org/LinkClick.aspx?fileticket=4Q/PvfvDTIs=&tabid=165.

EPA and many states certify lead risk assessors, lead inspectors and dust sampling technicians to take the dust samples and make the determination.

Drinking water contamination at levels that exceed the contaminant standards established by EPA are unhealthy and can be dangerous. See U.S EPA standard at 40 Code of Federal Regulations Part 141 or www.epa.gov/safewater/contaminants. EPA and many states certify drinking water testing laboratories.

Arsenic is a known carcinogen and can be toxic. When properly sealed, the health risk is relatively low. However, arsenic from splinters that penetrate the skin can be a serious health problem that can be avoided by repairing wood that shows evidence of splintering.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IPMC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

NEW 305.4 Pre-1978 Structures.

Proponent: Jane Malone, Alliance for Healthy Homes, representing National Center for Healthy Housing and Alliance for Healthy Homes.

Add new text as follows:

305.4 Pre-1978 Structures. Deteriorated paint in structures built before 1978 shall be repaired in accordance with the work practice standards for renovations in 40 CFR 745.85(a).

Exceptions:

1. Structures built after 1977 (or earlier date, if applicable to the jurisdiction of the structure), when lead-based paint was banned.
2. Structures with documentation from an approved test in accordance with 40 CFR 745 that proves that the deteriorated paint contains no lead-based paint.

Reason:

The purpose of this proposed code language for the surfaces of the interior structure is to incorporate measures that reflect current knowledge about working with paint that may contain lead-based paint and thereby prevent lead poisoning. These changes would only affect structures likely to contain lead-based paint to promote the safe repair of deteriorated paint that is likely to contain lead. Multiple studies have demonstrated that lead dust, which is caused by deteriorated lead-based paint and some methods of paint repair, is the major source of lead exposure for young children. The dangers associated with exposure to lead based paint hazards are well-known: lead is associated with a range of serious health effects on children, including detrimental effects on cognitive and behavioral development with serious personal and social consequences that may persist throughout their lifetime. More than 36 million pre-1978 US housing units contain lead-based paint.

Section 305.3 Interior surfaces of the current property maintenance code fails to specifically require, in older structures that are likely to contain lead-based paint, the use of precautionary practices in order to prevent the dispersal of lead before, during, and after the repair work, in the course of complying with the code requirement to repair peeling, chipping, flaking or abraded paint. The proposal improves the current Code by adding a health-protective requirement to perform the repair safely around lead-based paint, a subject currently acknowledged in the Commentary but not in the Code. The addition of the proposed new language will protect children from lead poisoning by specifying the use of federally – or state - approved lead safe work practices in making the required repairs. As noted under exceptions, the requirement is not in effect if the paint has been tested using an approved test and proven to not be lead-based paint. The lead-safe work practices are required by EPA effective April 22, 2010, for most renovation, repair and painting work in pre-1978 homes.

The proposed new sub-sub-section contains two exceptions to the requirement: structures built after lead was banned from paint used in residential structures (1977 US; earlier in some US cities; 1909 France, Belgium, Austria), and where the deteriorated paint has been documented to not contain lead (such as by a lead-based paint inspection or risk assessment, by the use of a test kit by a certified renovator, or through completion of another government-approved test method or ANSI standard).

Cost Impact: This code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

CODE CHANGE PROPOSAL FORM

Code: IPMC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

Section 305.3 Interior Surfaces

Proponent: Tom Neltner, National Center for Healthy Housing, representing National Center for Healthy Housing and Alliance for Healthy Homes.

1. Revise as follows:

305.3 Interior surfaces. All interior surfaces, including windows and doors, shall be maintained in good, clean and sanitary condition. Peeling, chipping, flaking or abraded paint shall be repaired, removed or covered. Cracked or loose plaster, decayed wood and other defective surface conditions shall be corrected. Surfaces of porous or water permeable materials made of or containing organic materials, such as but not limited to wood, textiles, paint, cellulose insulation, and paper, including paper-faced gypsum board, that have visible signs of mold or mildew shall be removed and replaced or remediated in an approved manner.

Exception: Porous materials that do not contain organic materials, such as clean unpainted bricks and concrete.

Reason: Mold typically grows in buildings affected by water damage. According to the Institute of Medicine of the National Academies' *Damp Indoor Spaces and Health* (2004), mold and damp indoor environments are associated with asthma symptoms in sensitized persons, coughing, wheezing, and upper respiratory tract symptoms. See www.nap.edu/books/0309091934/html/

In December 2007, the National Center for Healthy Housing (NCHH) and the U.S. Centers for Disease Control and Prevention (CDC) convened an Expert Panel consistent with National Institute of Health guidelines to assess the effectiveness of various interventions to make homes healthier and safer. NCHH and CDC published the report of the experts in January 2009. See www.nchh.org/LinkClick.aspx?fileticket=2lvaEDNBldU%3d&tabid=229 for the full report.

The Expert Panel reviewed five peer-reviewed research studies on the issue of mold and allergens and concluded that "when implemented together, eliminating moisture intrusion and leaks and removal of moldy items were found to be effective in reducing asthma triggers and reducing exposures." Other provisions of the IPMC address eliminating moisture intrusion. But no provisions require the removal, replacement or remediation of the mold.

This proposal implements the Expert Panel's recommendation while allowing the option of remediation in an approved manner. To ensure the health of the building's occupants, mold mitigation measures must be a part of the code.

Cost Impact: This code change proposal will increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IPMC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2); Sections 102.5 and 308.4

Section 102.5 Workmanship Section 308.4 Multiple occupancy

Proponent: Tom Neltner / National Center for Healthy Housing / Representing the National Center for Healthy Housing and the Alliance for Healthy Homes.

Revise as follows:

102.5 Workmanship. Repairs, maintenance work, alterations or installations which are caused directly or indirectly by the enforcement of this code shall be executed and installed in a workmanlike manner and installed in accordance with the manufacturer's installation instructions. Where pest elimination is ordered, application of pesticides to control cited pests must be performed by a company authorized to perform pest management by the state or territory lead agency under the Federal Insecticide, Fungicide, and Rodenticide Act as amended.

308.4 Multiple occupancy. The owner of a structure containing two or more dwelling units, a multiple occupancy, a rooming house or a nonresidential structure shall be responsible for pest elimination in the public or shared areas of the structure and exterior property. If infestation is caused by failure of an occupant to prevent such infestation in the area occupied, the occupant shall be responsible for pest elimination. Where pest elimination is ordered, application of pesticides to control cited pests must be performed by a company authorized to perform pest management by the state or territory lead agency under the Federal Insecticide, Fungicide, and Rodenticide Act as amended.

Reason: As amended in the 2007/2008 cycle, Section 202 of the IPMC defines "pest elimination" as the "control and elimination of insects, rodents or other pests by eliminating their harborage places; by removing or making inaccessible materials that serve as their food or water; by other approved pest elimination methods."

In situations where the code official has to order pest elimination, the owner's and occupant's current pest control practices have clearly failed. The owner and occupant are unlikely to improve their practices without expert assistance. They are likely to simply apply pesticides while not eliminating the pest's harborage places and eliminating the pests' access to food and water.

They need a professional who has the training and oversight to do the work properly consistent with the law working for a company that is authorized by the state to manage pests. All states license or otherwise authorize companies to perform pest management. If a state drops its program, EPA is required to administer the program until the state resumes it. Under these authorized programs, pest management professionals must be employed by state-authorized companies. These employees of these companies must meet specific training, continuing education, and work practice standards established in state regulations and law. The state conducts inspections and takes enforcement actions to ensure compliance by these companies. The code official can rely on the state agency to be more confident that the order will be fully complied with the first time.

The National Pest Management Association supports this proposal. It represents more than 5000 companies providing structural pest control services.

Cost Impact: The code change proposal will not increase the cost of construction. While the professional may initially cost more than "do-it-yourself" pest control, it will avoid the need for repeated orders and inspections if they fail to achieve pest elimination the first time.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IPMC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

Section 602.2 Residential occupancies.

Proponent: Tom Neltner, National Center for Healthy Housing, representing National Center for Healthy Housing and Alliance for Healthy Homes.

Revise as follows:

602.2 Residential occupancies. Dwellings shall be provided with heating facilities capable of maintaining a room temperature of 68°F (20°C) in all habitable rooms, *bathrooms* and *toilet rooms* based on the winter outdoor design temperatures for the locality indicated in Appendix D of the *International Plumbing Code*. ~~Cooking appliances shall not be used to provide space heating to meet the requirements of this section.~~ Cooking appliances shall not be used, nor shall portable unvented fuel-burning space heaters be used as the primary means, to provide comfort heating.

Exception: In areas where the average monthly is above 30°F(-1°C), a minimum temperature of 65°F(18°C) shall be maintained.

Reason: A fuel-burning space heater generates nitrogen oxides and carbon monoxide. Typically, the label on these space heaters calls for them to be used in well-ventilated areas. When properly used according to the label, they may not be hazardous. However, like cooking appliances, they can be dangerous, especially when used as the primary means to provide heat. In addition, when used as a primary means to provide heat, they are less likely to be used in well-ventilated areas. Finally, their sustained use creates a potential fire hazard.

Cost Impact: This proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IRC–09/10 (IBC, IEBC, IECC, IFC, IFGC, IMC, IPC, IPSCDC, IPM, IRC, ICCPC, IWUIC, IZC)

Code Sections/Tables/Figures Proposed for Revision (3.3.2); Note: *If the proposal is for a new section, indicate (new).*

NEW Section R325 Radon Control

Proponent: Name/Company/Representing (3.3.1): (NOTE: DO NOT USE ACRONYMS FOR YOUR COMPANY OR ORGANIZATIONAL NAME)

Jane Malone, Alliance for Healthy Homes, representing National Center for Healthy Housing and Alliance for Healthy Homes.

Add new text as follows:

SECTION R325 **RADON CONTROL METHODS**

R325.1 General. The following radon-resistant new construction techniques are intended to prevent radon entry as required in areas designated by the jurisdiction as having high or moderate potential risk of radon exposure. Such areas shall be designated as high potential (Zone 1) or moderate potential (Zone 2) using the map contained in Figure R325.1, the list contained in Table R325.1, or locally available data.

R325.2 Active sub-slab soil depressurization radon reduction (fan-powered), as specified by ASTM E1465, *Standard Practice for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings*, shall be installed in areas having high potential (Zone 1).

R325.3 Passive sub-slab soil depressurization system, as specified by ASTM E1465, shall be installed in areas having moderate potential (Zone 2).

INSERT FIGURE 325.1 EPA MAP OF RADON ZONES Page 786 of the 2009 IRC (first printing), currently Figure AF101.

INSERT TABLE R325.1, Pages 787-788 of the 2009 IRC (first printing), currently Table AF101(1).

Reason: The purpose of this requirement is to protect occupants from deadly exposure to radon gas. In the current code, provision for radon control, commonly known as radon-resistant new construction, is contained in the optional Appendix F. This proposal to elevate radon control to a requirement in areas documented to have high or moderate potential for exposing occupants to radon is in response to the dramatic impact of radon exposure. Radon is the second leading cause of lung cancer – second only to smoking – and more significant than secondhand smoke. In the US alone, 18,000-21,000 lung cancer deaths each year are caused by radon exposure. The World Health Organization estimates that between 6% and 15% of lung cancer cases worldwide are caused by radon exposure.

Radon is a tasteless, colorless and odorless gas that is a decay product of uranium and occurs naturally in soil and rock. The main source of high-level radon pollution in buildings is surrounding uranium-containing soil such as granite, shale, phosphate and pitchblende. Radon enters a home through cracks in walls, basement floors, foundations and other openings.

Under this proposal, the most recently updated ASTM consensus standard for radon control would be added to the code. Among the advantages of the more health protective ASTM standard over the optional Appendix F is its specification for an active fan-powered radon control system. The US Environmental Protection Agency recommends this standard as the approach for radon resistant new construction; through agreement with ASTM, EPA can provide a free copy of the standard - see <http://www.epa.gov/radon/pubs/index.html>.

Cost Impact: This code change proposal will increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IRC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2); Note:

NEW Section R324 SWIMMING POOLS, SPAS AND HOT TUBS

NEW Section R325 BARRIER REQUIREMENTS

NEW Section R326 ENTRAPMENT PROTECTION FOR SWIMMING POOL AND SPA SUCTION OUTLETS

Proponent: Tom Neltner, National Center for Healthy Housing, representing National Center for Healthy Housing and Alliance for Healthy Homes.

1. Add new definitions as follows:

ABOVE-GROUND/ON-GROUND POOL. See “Swimming pool.”

BARRIER. A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

HOT TUB. See “Swimming pool.”

IN-GROUND POOL. See “Swimming pool.”

RESIDENTIAL. That which is situated on the premises of a detached one- or two-family dwelling or a one-family townhouse not more than three stories in height.

SPA. A structure intended for recreational bathing, in which all controls, water-heating and water-circulating equipment are an integral part of the product. A spa may be either a nonportable spa or a portable spa.

SPA, NONPORTABLE. See “Swimming pool.”

SPA, PORTABLE. A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating equipment are an integral part of the product.

SWIMMING POOL. Any structure intended for swimming or recreational bathing that contains water over 24 inches (610 mm) deep. This includes in-ground, above-ground and on-ground swimming pools, hot tubs and spas.

SWIMMING POOL, INDOOR. A swimming pool which is totally contained with a structure and surrounded on all four sides by the walls of the enclosing structure.

SWIMMING POOL, OUTDOOR. Any swimming pool that is not an indoor swimming pool.

2. Add new text as follows:

SECTION R324 **SWIMMING POOLS, SPAS AND HOT TUBS**

R324.1 General. The provisions of this section shall control the design and construction of swimming pools, nonportable spas and hot tubs installed in or on the lot of a one- or two-family dwelling.

R324.2 Pools in flood hazard areas. Pools that are located in flood hazard areas established by Table R301.2(1), including above-ground pools, on-ground pools and in-ground pools that involve placement of fill, shall comply with Sections R324.2.1 or R324.2.2.

Exception: Pools located in riverine flood hazard areas which are outside of designated floodways.

R324.2.1 Pools located in designated floodways. Where pools are located in designated floodways, documentation shall be submitted to the *building official*, which demonstrates that the construction of the pool will not increase the design elevation at any point within the *jurisdiction*.

R324.2.2 Pools located where floodways have not been designated. Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.

R324.3 In-ground pools. In-ground pools shall be designed and constructed in conformance with ANSI/NSPI-5 as listed in Chapter 35.

R324.4 Above-ground and on-ground pools. Above-ground and on-ground pools shall be designed and constructed in conformance with ANSI/NSPI-4 as listed in Chapter 35.

R324.5 Pools in flood hazard areas. In flood hazard areas established by Table R301.2(1), pools in coastal high hazard areas shall be designed and constructed in conformance with ASCE 24.

R324.6 Permanently installed spas and hot tubs. Permanently installed spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-3 as listed in Chapter 35

R324.7 Portable spas and hot tubs. Portable spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-6 as listed in Chapter 35.

SECTION R325 **BARRIER REQUIREMENTS**

R325.1 Application. The provisions of this chapter shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near drownings by restricting access to swimming pools, spas and hot tubs.

R325.2 Outdoor swimming pools. An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa, shall be surrounded by a barrier which shall comply with the following:

1. The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an above-ground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).
2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.
3. Solid barriers which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.
4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1 ¾ inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ inches (44 mm) in width.
5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ inches (44 mm) in width.
6. Maximum mesh size for chain link fences shall be a 2 ¼ - inch (57 mm) square unless the fence has slats fastened at the top or the bottom which reduce the openings to not more than 1 ¾ inches (44 mm).

7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1 ¾ inches (44 mm).
8. Access gates shall comply with the requirements of Section R325.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:
 - 8.1 The release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate; and
 - 8.2 The gate and barrier shall have no opening larger than ½ inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.
9. Where a wall of a dwelling serves as part of the barrier, one of the following conditions shall be met:
 - 9.1 The pool shall be equipped with powered safety cover in compliance with ASTM F 1346; or
 - 9.2 Doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed and labeled in accordance with UL 2017. The deactivation switch(es) shall be located at least 54 inches (1372 mm) above the threshold of the door; or
 - 9.3 Other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body, shall be acceptable as long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 described above.
10. Where an above-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps:
 - 10.1 The ladder or steps shall be capable of being secured, locked or removed to prevent access; or
 - 10.2 The ladder or steps shall be surrounded by a barrier which meets the requirements of Section R325.2, Items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

R325.3 Indoor swimming pool. Walls surrounding an indoor swimming pool shall comply with Section R325.2 Item 9.

R325.4 Prohibited locations. Barriers shall be located to prohibit permanent structures, equipment or similar objects from being used to climb them.

R325.5 Barrier exceptions. Spas or hot tubs with a safety cover which complies with ASTM F1346, as listed in Chapter 35, shall be exempt from these barrier requirement provisions.

SECTION R326 **ENTRAPMENT PROTECTION FOR SWIMMING** **POOL AND SPA SUCTION OUTLETS**

R325.6 General. Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

3. Add new standards as follows:

ANSI/NSPI

ANSI/NSPI-3-99 Standard for Permanently Installed Residential Spas.

ANSI/NSPI-4-99 Standard for Above-ground/On-ground Residential Swimming Pools.

ANSI/NSPI-5-2003 Standard for Residential In-ground Swimming Pools.

ANSI/NSPI-6-99 Standard for Residential Portable Spas.

ANSI/APSP

ANSI/APSP-7-06 Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs and Catch Basins.

ASCE

ASCE/SEI-24-05 Flood Resistant Design and Construction.

ASTM

ASTM F 1346-91 (2003) Performance Specifications for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs.

UL

UL 2017-2000 Standard for General-purpose Signaling Devices and Systems-with Revisions through June 2004.

4. Delete Appendix G.

Reason:

In December 2007, the National Center for Healthy Housing (NCHH) and the U.S. Centers for Disease Control and Prevention (CDC) convened an Expert Panel consistent with National Institute of Health guidelines to assess the effectiveness of various interventions to make homes healthier and safer. NCHH and CDC published the report of the experts in January 2009. See www.nchh.org/LinkClick.aspx?fileticket=2lvaEDNBldU%3d&tabid=229 for the full report.

The Expert Panel reviewed the peer-reviewed research on the topic and concluded that that 4-sided isolation pool fencing significantly reduces childhood drowning, and that this type of fencing performs significantly better than 3-sided perimeter fencing. The studies showed the following:

- The risk of drowning in a fenced pool was about three times lower, compared to an unfenced pool (Fergusson DM, Horwood LJ. 1984. Risks of Drowning in Fenced and Unfenced Domestic Swimming Pools. New Zealand Medical Journal 97(767): 777–779. Fergusson and Horwood 1984). See also Pitt WR, Balanda KP. 1991. Childhood Drowning and Near-Drowning in Brisbane—The Contribution of Domestic Pools. Medical Journal of Australia 154(10): 661–665.)
- Four-sided isolation fencing is about five times more effective than three-sided perimeter fencing (Intergovernmental Working Party on Swimming Pool Safety. 1988. Pre-School drowning in private swimming pools. Perth: Health Department of Western Australia.

One study (Morgenstern H, Bingham T, Reza A. 2000. Effects of pool fencing ordinances and other factors on childhood drowning in Los Angeles County, 1990-1995. American Journal of Public Health 90(4): 595–601) failed to show that an ordinance requiring pool fencing in Los Angeles reduced drowning significantly. It is possible that this study was confounded by a public education campaign, the fact that the legislation only required 3-sided fencing, possible inadequate enforcement, and other factors.

Consistent with the Expert Panel conclusion, this code change proposal brings the requirements for swimming pools, spas and hot tubs out of Appendix G and into the body of the code text. Safety requirements for pools should not be optional they need to be mandatory.

Cost Impact: This code change proposal will increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

(See instructions on page 2)

Code: IRC–09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

NEW Section 325 Radon Control Methods

Proponent: Jane Malone, Alliance for Healthy Homes, representing National Center for Healthy Housing and Alliance for Healthy Homes.

1. Add new definitions as follows:

DRAIN TILE LOOP. A continuous length of drain tile or perforated pipe extending around all or part of the internal or external perimeter of a basement or crawl space footing.

RADON GAS. A naturally-occurring chemically inert, radio-active gas that is not detectable by human senses. As a gas, it can move readily through particles of soil and rock and can accumulate under the slabs and foundations of homes where it can easily enter into the living space through construction cracks and openings.

SOIL-GAS-RETARDER. A continuous membrane of 6-mil (0.15 mm) polyethylene or other equivalent material used to retard the flow of soil gases into a building.

SUBSLAB DEPRESSURIZATION SYSTEM (Active). A system designed to achieve lower sub-slab air pressure relative to indoor air pressure by use of a fan-powered vent drawing air from beneath the slab.

SUBSLAB DEPRESSURIZATION SYSTEM (Passive). A system designed to achieve lower sub-slab air pressure relative to indoor air pressure by use of a vent pipe routed through the conditioned space of a building and connecting the sub-slab area with outdoor air, thereby relying on the convective flow of air upward in the vent to draw air from beneath the slab.

SUBMEMBRANE DEPRESSURIZATION SYSTEM. A system designed to achieve lower-sub-membrane air pressure relative to crawl space air pressure by use of a vent drawing air from beneath the soil-gas-retarder membrane.

2. Add new text as follows:

SECTION R325 **RADON CONTROL METHODS**

R325.1 General. The following construction techniques are required to resist radon entry and prepare the building for post-construction radon mitigation in areas designated by the jurisdiction as having high and moderate potential risk of radon exposure. The determination for designating such areas shall be made using the map contained in Figure 325.1, the list contained in Table 325.1, or locally available data.

R325.2 Subfloor preparation. A layer of gas-permeable material shall be placed under all concrete slabs and other floor systems that directly contact the ground and are within the walls of the living spaces of the building, to facilitate future installation of a sub-slab depressurization system, if needed. The gas-permeable layer shall consist of one of the following:

1. A uniform layer of clean aggregate, a minimum of 4 inches (102mm)thick. The aggregate shall consist of material that will pass through a 2-inch (51mm)sieve and be retained by a 1/4-inch (6.4 mm) sieve.
2. A uniform layer of sand (native or fill), a minimum of 4 inches (102 mm) thick, overlain by a layer or strips of geotextile drainage matting designed to allow the lateral flow of soil gases.
3. Other materials, systems or floor designs with demonstrated capability to permit depressurization across the entire sub-floor area.

R325.3 Soil-gas-retarder. A minimum 6-mil (0.15 mm) [or 3-mil (0.075 mm) cross-laminated] polyethylene or equivalent flexible sheeting material shall be placed on top of the gas-permeable layer prior to casting the slab or placing the floor assembly to serve as a soil-gas-retarder by bridging any cracks that develop in the slab or floor assembly and to prevent concrete from entering the void spaces in the aggregate base material. The sheeting shall

cover the entire floor area with separate sections of sheeting lapped at least 12 inches (305 mm). The sheeting shall fit closely around any pipe, wire or other penetrations of the material. All punctures or tears in the material shall be sealed or covered with additional sheeting.

R325.4 Entry routes. Potential radon entry routes shall be closed in accordance with Sections R325.4.1 through R325.4.10.

R325.4.1 Floor openings. Openings around bathtubs, showers, water closets, pipes, wires or other objects that penetrate concrete slabs or other floor assemblies shall be filled with a polyurethane caulk or equivalent sealant applied in accordance with the manufacturer's recommendations.

R325.4.2 Concrete joints. All control joints, isolation joints, construction joints and any other joints in concrete slabs or between slabs and foundation walls shall be sealed with a caulk or sealant. Gaps and joints shall be cleared of loose material and filled with polyurethane caulk or other elastomeric sealant applied in accordance with the manufacturer's recommendations.

R325.4.3 Condensate drains. Condensate drains shall be trapped or routed through nonperforated pipe to daylight.

R325.4.4 Sumps. Sump pits open to soil or serving as the termination point for sub-slab or exterior drain tile loops shall be covered with a gasketed or otherwise sealed lid. Sumps used as the suction point in a sub-slab depressurization system shall have a lid designed to accommodate the vent pipe. Sumps used as a floor drain shall have a lid equipped with a trapped inlet.

R325.4.5 Foundation walls. Hollow block masonry foundation walls shall be constructed with either a continuous course of solid masonry, one course of masonry grouted solid, or a solid concrete beam at or above finished ground surface to prevent passage of air from the interior of the wall into the living space. Where a brick veneer or other masonry ledge is installed, the course immediately below that ledge shall be sealed. Joints, cracks or other openings around all penetrations of both exterior and interior surfaces of masonry block or wood foundation walls below the ground surface shall be filled with polyurethane caulk or equivalent sealant. Penetrations of concrete walls shall be filled.

R325.4.6 Dampproofing. The exterior surfaces of portions of concrete and masonry block walls below the ground surface shall be dampproofed in accordance with Section R406 of this code.

R325.4.7 Air-handling units. Air-handling units in crawl spaces shall be sealed to prevent air from being drawn into the unit.

Exception: Units with gasketed seams or units that are otherwise sealed by the manufacturer to prevent leakage.

R325.4.8 Ducts. Ductwork passing through or beneath a slab shall be of seamless material unless the air-handling system is designed to maintain continuous positive pressure within such ducting. Joints in such ductwork shall be sealed to prevent air leakage. Ductwork located in crawl spaces shall have all seams and joints sealed by closure systems in accordance with Section M1601.3.1.

R325.4.9 Crawl space floors. Openings around all penetrations through floors above crawl spaces shall be caulked or otherwise filled to prevent air leakage.

R325.4.10 Crawl space access. Access doors and other openings or penetrations between basements and adjoining crawl spaces shall be closed, gasketed or otherwise filled to prevent air leakage.

R325.5 Passive submembrane depressurization system. In buildings with crawl space foundations, the following components of a passive sub-membrane depressurization system shall be installed during construction.

Exception: Buildings in which an approved mechanical crawl space ventilation system or other equivalent system is installed.

R325.5.1 Ventilation. Crawl spaces shall be provided with vents to the exterior of the building. The minimum net area of ventilation openings shall comply with Section R408.1 of this code.

R325.5.2 Soil-gas-retarder. The soil in crawl spaces shall be covered with a continuous layer of minimum 6-mil (0.15mm) polyethylene soil-gas-retarder. The ground cover shall be lapped a minimum of 12 inches (305 mm) at joints and shall extend to all foundation walls enclosing the crawl space area.

R325.5.3 Vent pipe. A plumbing tee or other approved connection shall be inserted horizontally beneath the sheeting and connected to a 3- or 4-inch-diameter (76 mm or 102 mm) fitting with a vertical vent pipe installed through the sheeting. The vent pipe shall be extended up through the building floors, terminate at least 12 inches (305 mm) above the roof in a location at least 10 feet (3048 mm) away from any window or other opening into the conditioned spaces of the building that is less than 2 feet (610 mm) below the exhaust point, and 10 feet (3048 mm) from any window or other opening in adjoining or adjacent buildings.

R325.6 Passive subslab depressurization system. In basement or slab-on-grade buildings, the following components of a passive sub-slab depressurization system shall be installed during construction.

R325.6.1 Vent pipe. A minimum 3-inch-diameter (76 mm) ABS, PVC or equivalent gas-tight pipe shall be embedded vertically into the sub-slab aggregate or other permeable material before the slab is cast. A “T” fitting or equivalent method shall be used to ensure that the pipe opening remains within the sub-slab permeable material. Alternatively, the 3-inch (76 mm) pipe shall be inserted directly into an interior perimeter drain tile loop or through a sealed sump cover where the sump is exposed to the sub-slab aggregate or connected to it through a drainage system. The pipe shall be extended up through the building floors, terminate at least 12 inches (305 mm) above the surface of the roof in a location at least 10 feet (3048 mm) away from any window or other opening into the conditioned spaces of the building that is less than 2 feet (610 mm) below the exhaust point, and 10 feet (3048 mm) from any window or other opening in adjoining or adjacent buildings.

R325.6.2 Multiple vent pipes. In buildings where interior footings or other barriers separate the sub-slab aggregate or other gas-permeable material, each area shall be fitted with an individual vent pipe. Vent pipes shall connect to a single vent that terminates above the roof or each individual vent pipe shall terminate separately above the roof.

R325.7 Vent pipe drainage. All components of the radon vent pipe system shall be installed to provide positive drainage to the ground beneath the slab or soil-gas-retarder.

R325.8 Vent pipe accessibility. Radon vent pipes shall be accessible for future fan installation through an attic or other area outside the habitable space.

Exception: The radon vent pipe need not be accessible in an attic space where an approved roof-top electrical supply is provided for future use.

R325.9 Vent pipe identification. All exposed and visible interior radon vent pipes shall be identified with at least one label on each floor and in accessible attics. The label shall read: “Radon Reduction System.”

R325.10 Combination foundations. Combination basement/crawl space or slab-on-grade/crawl space foundations shall have separate radon vent pipes installed in each type of foundation area. Each radon vent pipe shall terminate above the roof or shall be connected to a single vent that terminates above the roof.

R325.11 Building depressurization. Joints in air ducts and plenums in unconditioned spaces shall meet the requirements of Section M1601. Thermal envelope air infiltration requirements shall comply with the energy conservation provisions in Chapter 11. Fireblocking shall meet the requirements contained in Section R302.11.

R325.12 Power source. To provide for future installation of an active sub-membrane or sub-slab depressurization system, an electrical circuit terminated in an approved box shall be installed during construction in the attic or other anticipated location of vent pipe fans. An electrical supply shall also be accessible

INSERT FIGURE 325.1 EPA MAP OF RADON ZONES Page 786 of the 2009 IRC (first printing), currently Figure AF101.

INSERT TABLE R325.1, Pages 787-788 of the 2009 IRC (first printing), currently Table AF101(1).

INSERT FIGURE 2 RADON-RESISTANT CONSTRUCTION DETAILS FOR FOUR FOUNDATION TYPES, Page 789 of the 2009 IRC (first printing), currently Figure AF102.

3. Delete Appendix F Radon Control Procedures.

Reason: The purpose of this requirement is to protect occupants from deadly exposure to radon gas. In the current code, provision for radon control, commonly known as radon-resistant new construction, is contained in the optional Appendix F. This proposal to elevate radon control to a requirement in areas documented to have potential for exposing occupants to radon is in response to the dramatic impact of radon exposure. Radon is the second leading cause of lung cancer – second only to smoking – and more significant than secondhand smoke. In the US alone, 18,000-21,000 lung cancer deaths each year are caused by radon exposure. The World Health Organization estimates that between 6% and 15% of lung cancer cases worldwide are caused by radon exposure.

Radon is a tasteless, colorless and odorless gas that is a decay product of uranium and occurs naturally in soil and rock. The main source of high-level radon pollution in buildings is surrounding uranium-containing soil such as granite, shale, phosphate and pitchblende. Radon enters a home through cracks in walls, basement floors, foundations and other openings.

Cost Impact: This code change proposal will increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

CODE CHANGE PROPOSAL FORM

Code: IRC-09/10

Code Sections/Tables/Figures Proposed for Revision (3.3.2);

Sections R502.12.1 and Chapter 43

Proponent: Tom Neltner, National Center for Healthy Housing representing the National Center for Healthy Housing and the Alliance for Healthy Homes.

1. Revise as follows:

CHAPTER 5 FLOORS

SECTION R503 FLOOR SHEATHING

R502.12.1 Materials. Draftstopping materials shall not be less than 1/2-inch (12.7 mm) gypsum board, 3/8-inch (9.5 mm) wood structural panels, ~~3/8-inch (9.5 mm) Type 2-M-W particleboard,~~ or other approved materials adequately supported. Draftstopping shall be installed parallel to the floor framing members unless otherwise approved by the building official. The integrity of all draftstops shall be maintained.

R503.3 PARTICLEBOARD

R503.3.1 Identification and grade. Particleboard shall conform to ANSI A208.1 and shall be so identified by a grade mark or certificate of inspection issued by an approved agency.

CHAPTER 6 WALL CONSTRUCTION

SECTION R605 PARTICLEBOARD

R605.1 Identification and grade. Particleboard shall conform to ANSI A208.1 and shall be so identified by a grade mark or certificate of inspection issued by an approved agency. Particleboard shall comply with the grades specified in Table R602.3(4).

CHAPTER 7 WALL COVERING

R702.5 Other finishes. Wood veneer paneling and hardboard paneling shall be placed on wood or cold-formed steel framing spaced not more than 16 inches (406 mm) on center. Wood veneer and hard board paneling less than 1/4 inch (6 mm) nominal thickness shall not have less than a 3/8-inch (10 mm) gypsum board backer. Wood veneer paneling not less than 1/4-inch (6 mm) nominal thickness shall conform to ANSI/ HPVA HP-1. Hardboard paneling shall conform to ANSI/AHA A135.5.

2. Revise as follows:

Chapter 44

ANSI

American National Standard Institute
25 West 43rd Street, Fourth Floor
New York, NY 10036

A208.1—~~99~~2009 Particleboard

R503.3.1, R605.1

Reason: The proposal updates the reference to the ANSI standards for composite wood standards to reflect the latest versions of those standards. Those standards were updated to include the 2008 California standards for formaldehyde emissions from composite wood products. Most construction uses few products that are regulated by these new standards as little particleboard or hardwood or decorative plywood is used in construction.

Regulating the emission levels at the manufacturing facility, the primary prevention approach, is the least burdensome approach, and avoids many confounding factors, in particular, in comparison with the alternative of a criterion of meeting a formaldehyde-in-air threshold in a room where the product has already been installed and formaldehyde levels are affected by consumer products or occupant behaviors that are beyond the control of the designer or builder.

Also, Type 2-M-W particleboard no longer exists in the ANSI A208.1-2009 Particleboard Standard.

Referenced Standards:

ANSI A208.1-2009 Particleboard

ANSI A208.2-2009 Medium Density Fiberboard (MDF) for Interior Applications

ANSI/HPVA HP-1-2009 American National Standard for Hardwood and Decorative Plywood

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF