

## **Evidence-based Strategies: Promulgation of Laws, Regulations, Codes and Standards to Promote Fire Prevention and Detection**

### ***Fire Prevention***

#### **NEW YORK STATE**

##### **Uniform Fire Prevention Building Code**

Safer building codes result in safer buildings and reduce both firefighter and civilian casualties. The Uniform Fire Prevention Building Code in New York State (NYS) (Title 19 NYCRR, xxxiii subchapter (a) of the Rules and Regulations in New York State) **is** based on the International Code Conference (ICC) Code. The ICC Code is the closest standard that the United States has to a national code.

The NYS Uniform Fire Prevention Building Code addresses building methods and materials as well as such fire safety strategies as smoke alarms, smoke alarm placement and residential sprinklers. The Code is composed of nine different volumes which can stand alone but also complement and reference each other.

The volumes include the residential code (requirements for one and two family homes and townhouses); the building code (requirements for all other types of buildings); the fire code; the property maintenance code (this code applies retroactively to all properties which have a Certificate of Occupancy); and the existing building code that deals with requirements related to the rehabilitation of existing structures.

In NYS, communities have the option to adopt stricter standards than those contained in the Uniform Fire Prevention Building Code. The NYS Fire Prevention and Building Codes Council must approve any such variations on building code standards.

The State Energy Conservation Construction Code also contains references to fire safety.

##### **Low Ignition Propensity Cigarettes**

In June 2004, NYS became the first state to pass a safety standard mandating the sale of safer cigarettes. The New York Fire Safety Standards for Cigarettes (FSSC), Part 429 of Title 18 of the Official Compilation of Codes, Rules and Regulations of the State of New York, require the sale of low ignition propensity cigarettes (sometimes called “fire safe,” self-extinguishing,” or “fire resistive” cigarettes.) These cigarettes are designed to self-extinguish if not puffed on regularly. They contain a layer of less porous cigarette paper that reduces the chances of their burning to the end and igniting household items such as furniture and mattresses.

Following the implementation of this standard, the Office of Fire Prevention and Control (OFPC) reported a 40% decrease in the number of fires caused by cigarettes in NYS between 2005 and 2007.

## NATIONAL

### Child-Resistant Disposable and Novelty Cigarette Lighters

The US Consumer Product Safety Commission (CPSC) developed the *Safety Standard for Cigarette Lighters* (16 CFR Part 1210) which applies to products manufactured or imported after July 12, 1994. The standard requires that disposable and novelty cigarette lighters contain a child resistant mechanism that makes them resistant to operation by children under age five. The definition of disposable lighters includes non-refillable lighters and inexpensive refillable lighters. Novelty lighters are lighters that either resemble or depict articles appealing to children under age five or that have entertaining audio or visual effects.

### Flammability Standard for Fabrics

The Flammable Fabrics Act authorizes the CPSC to issue flammability standards for wearing apparel made from fabric to protect the public against unreasonable risks related to the occurrence of fire leading to death, injury or significant property damage. (Section 30 (b) of the Consumer Product Safety Act (CSPA) (15 U.S.C. 2079 (b) Sections 1191-1204).

### Flammability Standard for Children's Sleepwear

Children's sleepwear regulations are contained in Title 16 Code of Federal Regulations (CFR) (Parts 1615 and 1616.) These federal standards give the CPSC the authority to issue standards to protect young children from death and serious burn injuries associated with ignition of sleepwear garments by small open flame sources.

These rules require that children's sleepwear must be flame resistant and self-extinguish if a flame from a candle, match, lighter or a similar item causes it to catch fire. The rules cover all children's sleepwear above size 9 months and up to size 14 and require that (1) the fabric and garments must pass certain flammability tests; or (2) be "tight fitting" as defined by specified dimensions. Children's sleepwear is defined as garments such as nightgowns, robes, pajamas and loungewear intended primarily for sleeping or activities related to sleeping.

### Flammability Standard for Mattresses Related to Open Flame Sources

CPSC oversees a federal performance standard for flammability to reduce the severity of mattress fires. This federal standard (16 CFR Part 1633, the *Standard for the Flammability (Open-Flame) of Mattress Sets*) went into effect on July 1, 2007. The standard, which addresses mattress fires ignited by open flame sources, including matches, candles and lighters, requires new mattresses to be constructed to limit the spread and intensity of a mattress fire.

### Flammability Standard for Mattresses Related to Cigarette Ignition

The *Standard for the Flammability of Mattresses and Mattress Pads* (16 CFR Part 1632) gives CPSC the authority to issue a standard that addresses cigarette ignition of mattresses. This standard, which provides a test to determine the ignition resistance of a mattress or mattress pad,

reduces the risks of death, personal injury and property damage associated with fires that result from the ignition of mattresses by cigarettes.

### Household Electric Storage Tank Water Heaters

The Underwriters Laboratories Inc.'s Standard for Safety for Household Electric Storage Tank Water Heaters, UL 174 (23.3) requires that the temperature-regulating thermostat or control on these devices shall be set before leaving the factory to a control position corresponding to a temperature no higher than 51.7°C (125°F).

Research has demonstrated that the most dramatic reductions in scald injury have been associated with changes in standards and regulations which target setting hot water heaters to a temperature less than or equal to 120 degrees Fahrenheit.(48 degrees Centigrade)

## ***Fire Detection***

### **NATIONAL**

#### Smoke Alarms

The Uniform Fire Prevention Building Code in NYS references the National Fire Protection Association (NFPA) 72®: National Fire Alarm and Signaling Code which addresses placement and type of smoke alarms. Newly constructed homes are required by NYS building codes to have hardwired interconnected smoke alarms with battery back-up.

NFPA recommends that smoke detectors be installed inside every bedroom, outside each separate sleeping area and on every level of the home; that they be tested on at least a monthly basis; that both ionization and photoelectric technology be used in the home; and that all smoke alarms throughout the home be interconnected so when one sounds, they all sound.

Smoke alarms have been shown to save lives. Almost 66% of home fire deaths resulted from fires in homes with no smoke alarms or no working smoke alarms. No smoke alarms were present in 40% of the home fire deaths. In 23% of the home fire deaths, smoke alarms were present but did not sound.

## Fire Escape Planning

NFPA states that home residents' ability to escape from a fire depends on advance warning from smoke alarms and advance planning, including the development of a drawn home fire escape plan that includes two means of egress from every room, if possible, which is practiced at least twice a year.

## Residential (Home) Fire Sprinklers

The Underwriters Laboratory Standard 626 regulates residential sprinklers. (UL1626: Standard for Residential Sprinklers for Fire-Protection Service) The standards require that residential fire sprinklers activate quickly to suppress fires and prevent flashover in the room where the fire originates; provide sprinkler coverage during a fire for a period of 10 minutes for multiple story homes and seven minutes for one-story homes; and perform in such a manner that the levels of carbon monoxide do not exceed the lethal levels. (Flashover is the temperature point at which the heat in an area or region is high enough to simultaneously ignite all flammable material.)

The following codes require automatic residential fire sprinklers in all new one- and two- family dwellings: the 2006 and 2009 editions of NFPA 1, Uniform Fire Code, NFPA 101, Life Safety Code and NFPA 5000 Building Construction and Safety Code. The 2009 edition of the ICC's International Residential Code, which becomes effective on January 1, 2011, requires that residential sprinklers be placed in newly constructed one-and two-family dwellings.

Residential sprinklers provide a life-saving cushion of time for occupants to escape and reduce the danger of death and injury to firefighters. When used alone, residential sprinklers have been shown to reduce risk of dying in a fire by 69%. When used in tandem with smoke alarms, residential sprinklers reduce the risk of dying in a home fire by 82% relative to having neither system.

## New York State

Consistent with the recommendations of the 2003 ICC code, the current NYS Uniform Fire Prevention and Building Code mandates the placement of automatic fire sprinklers in newly constructed residential buildings which are three or more stories high (not including the basement level) installed in accordance with NFPA 13D. (The standard for installation of sprinkler systems in one and two family homes and manufactured homes)