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## FIRE CODE ISSUES IN EDUCATIONAL OCCUPANICES

The State of NH adopts the State Fire Code and references a number of national codes to develop a set of requirements for fire and life safety in each type of occupancy. The codes are broken up by occupancy in an attempt to address the needs and requirements of each type of use based on what the space is used for and the safety concerns that it presents. The local fire department is the authority charged with enforcing these requirements. Although most schools have an area that is classified as assembly occupancy, such as the gym or auditorium, we will address the Educational Occupancy in this bulletin. All of the code cites come from NFPA 101, *The Life Safety Code®*, 2003 ed. These issues are often misunderstood and not consistently enforced. NFPA 101, Chapters 14 and 15 deal with the fire safety issues faced in the educational environment. These chapters are some of the longest in the book, but only the ones most commonly misunderstood are mentioned here. Please make sure the proper authorities are involved to make a full inspection of the school each year to ensure a safe environment for the children and staff. If you have any question about what you read here, please call your local fire department or the State Fire Marshal's Office at (603) 271-3294.

**Codes and the Education Environment:**

Artwork and teaching material shall not exceed 20 percent of the wall area when attached to the wall. This is most often a concern in classrooms for younger children and in art rooms. Although we all understand the need and desire to have the children display their work, and for teachers to use posters and displays in their lessons, but these loose combustibles are such a fire hazard that this cannot be overlooked. It is important to understand that there are ways to ensure the 20% rule is not exceeded and to display more than the allowed 20% if needed. Bulletin boards are highly recommended because it is easy to determine how much of the wall is allowed to be covered as long as only the face of the board is used. And if non-combustible display cases (glass) were used, these areas would not count against the 20%. Glass cases are highly recommended in art classrooms because of the constant need for display space. In addition, if children's work is attached to the wall, there should be separations between large concentrations. A small bulletin board or section of hanging paper is preferable to a string of papers going all the way around the room. It should be noted that the percentage is increased to 50% in a fully sprinklered building. (101:14/15.7.4.3)

Because hallways and means of egress are an integral part of the fire safety of any building, it is imperative that they be maintained. These shall be continuously monitored to ensure that they are free of all obstructions or impediments to full and instant use. No furniture, storage, decorations, or other objects shall obstruct exits, access thereto, egress therefrom, or visibility thereof. (101:7.1.10) In addition, the code prohibits the storage of clothing and personal effects in corridors, please contact your local fire department if your school has this situation as there are a number of exceptions depending on the construction. (101:14/15.7.4.2)

Although the desire to bring a touch of home into the classroom is understood, very few of the furniture and draperies that you would want in your home are suitable for the classroom. There are strict requirements for furniture and draperies' fire retardant ability and resistance to cigarette ignition. In addition, the foam cushions must be resistant to flame spread and be certified to comply with strict regulations. Unless the documentation for the furniture can be produced and approved by the local fire department, it cannot be allowed in a classroom. Please have the local fire department review any household furniture's use in the classroom (101:10.3)

Although not expressly disallowed by the code, the use of cooking appliances in the classroom is not recommended. In addition to inherent fire safety concerns, a carafe of boiling hot coffee or water is not good to have around small children, and we have all had experiences with the extreme heat that can be produced in food that has been microwaved. All appliances, including microwaves and coffee machines shall be listed by an approved laboratory and should be in good working order. They must be listed for use in a classroom area, and very few are. In addition, the teacher who brings them in assumes all liability for their use and misuse. Their use should be approved by the local fire department. If a stove is installed in a classroom, the cook top shall be disconnected unless there is a hood system installed above the stove.

Most schools have some sort of stage or platform for performances. If this area is over 1,000 square feet in area, it is a "legitimate stage" and there are a number of requirements that must be met. The stage must have a sprinkler system, standpipes, and a proscenium wall. In addition, all curtains and scenery must meet strict flame test requirements. Without these protections, it would be extremely easy for a plywood set from "Our Town" or similar production to overwhelm a fire suppression system and compromise the entire building. If you have a stage that is existing and over 1,000 square feet and without standpipes, please contact our office to apply for a variance in accordance with the NH State Fire Code. Similar variances have been granted in the past, and if the lack of standpipes is known the fire department can develop ways to compensate. (101:14/15.3.2.3 and 13:4.5.10)

**Fire Drills:**

NFPA 101 requires an Emergency Egress and Relocation Drill (Fire Drill) be conducted once a month while school is in session, with one drill being held within the first 30 days of school. The NH State Fire Code amends this to allow the drills to be suspended during the winter months after at least four drills have been held. In addition, no more than two of the fire drills can be replaced by drills that test emergency response to other hazards when the local fire department and NH Office of Emergency Management are involved in their planning. In addition, it is required that all occupants participate in the drill. This includes not only all the students, but office and kitchen staff as well as the administration. (101:14/15.7, Saf-C 6008.04)

**Storage and Egress Issues:**

As mentioned before, storage is not allowed in any means of egress. There can be no enclosed, usable space within an exit enclosure (to include stairwells), nor shall any open space within the enclosure be used for any purpose that has the potential to interfere with egress. (101:7.2.2.5.3) The responsibility falls to the principal to conduct daily checks for these items. (101:14/15:7.3.1) It is also important that any hazardous materials being stored within the building be reported to the fire department. The fire department should have an up to date list of the chemicals and materials kept within the school. This is especially important in high school biology and chemistry laboratories and vocational auto body shops. This is required of both public and private schools.

**System Maintenance and Testing:**

With any mechanical system, without maintenance it will fail. This is of course true of fire alarm, emergency lighting, and sprinkler systems. The NH State Fire Code provides guidelines for each of these systems, and the most efficient way to achieve this is to have a trained and competent contractor test and repair the system as required. To often, untrained maintenance staff attempt to fix these systems, and they become compromised. The sprinkler system and fire alarm system should be checked and inspected by the local fire department once a year, and the emergency lighting should be tested once a month with a full battery discharge once a year (NFPA 25 table 5.1, 72, and 101) It is also extremely important that sprinkler heads be protected during painting as they are easily compromised when painted or damaged.

**Fire Safety vs. Security Concerns:**

Schools have more threats than ever imagined before when constructing and operating a building. It has become a balancing act between security and fire safety. Unfortunately there are too many issues to properly discuss here. Please contact your school department, local police and fire departments, or this office to address any specific issues you may have. And if you want to look into these issues further, you may want to take a look at **www.sfpe.org**, and click on the Fall 2003 edition of Fire Protection Engineering. There are a number of articles about this very subject available there.