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[Connecticut.]
THE [STATE FIRE MARSHAL]

Fire Safety Code

Effective December 15, 1953

Sections 172-1-2, 172-1-57, 172-2-58* (172-1-58) and 172-1-61 of the Fire Safety Code as prepared by the Editor of the Connecticut Law Journal for submission to the 1953 General Assembly by the Secretary of the State, which Code and amendments thereto were filed with the Secretary on September 23, 1947, December 30, 1947 and June 9, 1948 and published in the said Journal on September 29, 1947, January 19, 1948 and June 28, 1948, respectively, are amended to read as follows:

SEC. 172-1-2. GENERAL APPLICATION

This Code shall specify reasonable minimum requirements for fire safety in new and existing buildings and facilities, except in private dwellings occupied by one or two families, premises used for manufacturing, or places requiring special state license used for the exhibition of motion pictures. It should be noted, however, that municipalities may enact ordinances and orders relating to fire safety provided they specify requirements equal to, additional to or more stringent than those contained in this Code.

SEC. 172-1-57. ENCLOSURES FOR NEW BUILDINGS

In new buildings containing places of assembly, hospitals, convalescent homes and hotels, central heating plants and steam boilers shall be within rooms or compartments segregated from the rest of the building by noncombustible walls, ceiling and floor with a fire-resistant rating of not less than two hours, providing a reasonably smoke-tight enclosure. In all other buildings regulated by this Code, such central heating plants and steam boilers shall be mounted on the ground or on floors of noncombustible construction with noncombustible flooring and surface finish.

SEC. 172-1-58. ENCLOSURES AND PROTECTION FOR EXISTING BUILDINGS

In existing buildings containing places of assembly, hospitals, convalescent homes, hotels and buildings converted to such use, central heating plants and steam boilers shall be within rooms or compartments segregated from the rest of the building by noncombustible walls, ceiling and floor, with a fire-resistant rating of not less than 30 minutes, providing a reasonably smoke-tight enclosure. In all other existing buildings regulated by this Code, such central heating plants and steam boilers shall be mounted on the ground or on

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floors of noncombustible construction with noncombustible flooring and surface finish.

SEC. 172-1-61. SPACE HEATERS

Space heaters or above-the-floor devices for direct heating of the space in and adjacent to that in which the device is located, without external heating pipes or ducts, shall not be used in buildings regulated by this Code, excepting apartment and lodging houses, the first story of existing mercantile and office establishments having a total possible occupancy of not more than 75 persons.

The subsection in Section 172-1-5 of the said Code defining "Place of Assembly" is amended to read as follows:

Place of Assembly. The term "place of assembly" shall mean a room or space within a building in which more than 75 persons assemble for religious, recreational, educational, political, fraternal, social or amusement purposes, or for the consumption of food or drink, except school classrooms, libraries, courtrooms, places requiring special state license used for the exhibition of motion pictures, or any portion of a private dwelling. Such room or space shall include adjacent rooms with intervening partitions, open or capable of being opened so as to allow for occupancy with a common purpose.

Said Section 172-1-5 as a whole is amended by inserting among the definitions therein, in alphabetical order, the definitions of the following terms:

Classroom. The term "classroom" shall mean a room used by a group of students to receive instructions or pursue studies.

Occupancy. The term "occupancy" shall mean the use of space or rooms within a building by a person or group of persons.

Schools. The term "school" shall mean a room or group of rooms or spaces within a building used as a place for group instruction or study in any branch or branches of knowledge.

The Fire Safety Code is further amended by the addition of the following regulations:

ARTICLE VII SCHOOLS

SEC. 172-1-135. GENERAL

a. The regulations contained in this Article shall apply to all buildings or portions thereof used for school or classroom purposes, as defined in Section 172-1-5.

b. Fire-escapes and other outdoor stairways, oil burners, heating, cooking and ventilating facilities, and the use of electric appliances, shall be in accordance with separate Articles of this Code as well as with provisions for same.

SEC. 172-1-136. CONSTRUCTION OF NEW BUILDINGS (INCLUDING ADDITIONS TO EXISTING BUILDINGS)

a. *Buildings more than two stories in height* above the basement or ground shall be as follows:

1. Construction shall be noncombustible throughout.
2. Stairways shall be enclosed in noncombustible construction having a fire-resistant rating of not less than 45 minutes, except as noted in Section 172-1-146, subsection c.
3. Corridors shall be enclosed in noncombustible construction having a fire-resistant rating of not less than 45 minutes, except as noted in Section 172-1-143, subsections d, e and f.
4. Flooring over accessible spaces which are more than five feet in clear height shall have a fire-resistant rating of not less than 45 minutes.

b. *Buildings two stories in height* above the basement or ground shall be as follows:

1. Exterior load bearing walls and/or structural supporting members shall be of noncombustible construction.
2. Stairways shall be enclosed in noncombustible construction having a fire-resistant rating of not less than 45 minutes, except as noted in Section 172-1-146, subsection c.
3. Corridors shall be enclosed in noncombustible construction having a fire-resistant rating of not less than 45 minutes, except as noted in Section 172-1-143, subsections d, e and f.
4. Flooring over accessible spaces which are more than five feet in clear height shall have a fire-resistant rating of not less than 30 minutes.

c. *Buildings only one story in height* above the basement or ground shall be as follows:

1. Corridors shall be enclosed at sides and beneath by construction having a fire-resistant rating of not less than 45 minutes, except when all pupil occupancies have direct means of egress to the outside, independent of all corridors.
2. Flooring over accessible spaces which are more than five feet in clear height, shall have a fire-resistant rating of not less than 30 minutes.

d. *Adjacent Buildings*—No school building shall be constructed within 10 feet of another building of combustible construction, unless the exposed walls, sash and doors of such school are of noncombustible construction and all exposed glazing is of wired glass, or unless the exposed walls of such school building are protected by an approved sprinkler system or water curtain.

e. *Roofing*—Roofs of school buildings shall be covered with roofing which is not readily flammable and does not carry or communicate fire.

SEC. 172-1-137. HEATING EQUIPMENT

a. Central heating plants, steam boilers, and oil-fired water heaters shall be segregated from all other occupancies by noncombustible construction having a fire-resistant rating of not less than two hours, and which provides a reasonably smoke-tight enclosure.

b. Such enclosures for heating equipment and incinerator enclosures shall be provided with adequate vents direct to the outside, sufficient for proper combustion and exhaust. Ventilating openings shall be provided having a total area equivalent to not less than twice the area of the flue outlet of the heating plant. Such openings shall be maintained in an open position with fixed louvers.

c. Heater rooms shall only contain equipment for heating, hot water supply, switchboard or facilities for unloading an incinerator, and shall not be used for any other purposes.

d. Interior doors shall be Class B type doors swinging *into* the heater room and equipped with a positive self-closing device without a hold-open device. Frames of doors shall be kalamein, steel buck, or structural steel.

e. Furnaces, boilers and other fired units shall be vented by means of reasonably gas-tight smokepipes or breechings connected properly to a chimney constructed of brick, solid block masonry, or reinforced concrete, with suitable flue lining, properly erected and maintained in safe condition.

f. Oil burners. See Section 172-1-60.

SEC. 172-1-138. SERVICE AREAS

Certain spaces shall be segregated from pupil-occupied spaces, as follows:

a. Incinerators within buildings shall be segregated from all other occupancies by noncombustible construction having a fire-resistant rating of not less than two hours, with a Class B type door having a positive closing device. Access to incinerator rooms for loading and firing same will not be permitted through heater rooms. Frames of doors shall be kalamein, steel buck or structural steel.

b. Spaces used for storage of tractors, power mowers, or other equipment having an internal combustion engine shall be segregated from all other occupancies by noncombustible construction having a fire-resistant rating of not less than two hours and be accessible only from outside the building.

c. Maintenance and storage rooms for maintaining combustible materials shall be segregated from all other occupancies by construction having a fire-resistant rating of not less than one hour.

d. Trash or rubbish chutes not connected directly to an incinerator shall not be permitted.

SEC. 172-1-139.. ELEVATORS AND DUMB-WAITERS

a. Shafts and control rooms thereof shall be of noncombustible construction, having a fire-resistant rating of at least two hours. No opening shall be allowed through the shaftway for ventilating or other purposes except necessary doors. All doors shall be of closed or solid construction and reasonably smoke-tight when closed.

(Note: State Department of Labor regulations pertaining to the construction, operation, and maintenance of elevators and dumb-waiters must also be complied with.)

SEC. 172-1-140. VERTICAL OPENINGS

a. No vertical interior opening will be permitted in any shaft except for elevator doors, dumb-waiter doors, and doors to pipe shafts. Pipe shafts shall be enclosed with 45 minute fire-resistant construction and doors to pipe shafts $1\frac{3}{4}$ inches thick solid core or noncombustible construction. (For elevator and dumb-waiter doors see Note, Section 172-1-139, subsection a.)

b. *Ventilating ducts*—Except in one-story school buildings all flues shall be noncombustible material and shall be continuous from room grills to points of intake and all exhaust outside of the building. Flexible connections shall be of flameproof material.

SEC. 172-1-141. GYMNASIUMS

a. Gymnasiums, whether or not provided with spectator seating, auditoriums and cafeterias are classed as "places of assembly" and are to be in accordance with Article I of this Code.

(Note: Auditoriums or other spaces where it is intended to show 35 mm. moving pictures must be in accordance with the "Rules and Regulations Governing Picture Exhibitions" as published by the State Department of Police.)

SEC. 172-1-142. EXITS

a. Each floor level of a school shall have exits or stairs in sufficient total width to fulfill the requirements of Section 172-1-148 (Exit determination).

b. Exits or stairways shall be so located that no doorway of a pupil-occupied space shall be more than 100 feet from one such exit or stairway, and so that there is a minimum of two such stairways or exits from each story, located as remotely as possible from each other. The 100 foot requirement will be waived only in cases where all pupil-occupied areas have direct means of egress to the outside.

c. All classrooms designed as industrial arts shops shall have two separate and distinct means of egress, one of which shall be direct to the outside or through an adjoining room

and thence to the outside. The other means of egress may be by common use corridor to the outside.

d. Homemaking kitchens, chemistry laboratories, arts and crafts rooms, and all classrooms designed to accommodate 40 or more persons shall have two separate means of egress, remote as practicable from each other, which lead to the common use corridor or to an adjoining room and thence to the corridor.

e. In one-story buildings having corridor partitions or floors of non-rated construction, there shall be at least two means of egress from each classroom, reasonably remote from each other, one of which shall be direct to the outside, or through an adjoining room and thence directly to the outside. The other means of egress may be by common use corridor to outside.

f. No pockets or dead ends shall be permitted in corridors, except that when all stairways are enclosed at that floor level, such pockets or dead ends may be permitted when they do not exceed 40 feet in length and do not serve a total occupancy of more than 60 pupils.

g. Multiple story fire-escapes on the exterior of a new building shall not be permitted.

h. Where courts occur enclosed on all sides and required exits from rooms or spaces exit into the court, an exit from the court to the exterior perimeter of the building shall be provided. This exit shall be segregated from all building occupancies by noncombustible construction having a fire-resistant rating of not less than 45 minutes.

SEC. 172-1-143. CORRIDORS (INCLUDING EGRESS PASSAGEWAYS)

a. Corridors used as means of egress from pupil-occupied areas shall be not less than 6 feet in unobstructed width. This minimum width shall exist at all points measured at right angles to the length of the corridor, and to the nearest point of extended locker doors, fully opened doors from occupied spaces, drinking fountains, fire extinguishers, or other projecting objects. Clear headroom shall be at least 7 feet 6 inches.

b. *Smoke barriers*—All corridors served by stairs unenclosed at that level and being over 300 feet in length shall be divided into approximately equal sections not over 300 feet in length by smoke barriers. Such barriers shall be similar in construction to the partitions and doors separating stairways from corridors, except that 50% of the doors therein shall swing in each direction.

c. Stairs of less than 3 risers shall not be used in corridors. Ramps shall be used for necessary small changes in level. Where ramps are used, rise shall not exceed 1 foot per 10 feet of run.

d. Where corridor walls of schoolrooms are required to have fire-resistant rating, transoms or similar openings in corridor walls of schoolrooms shall not be used except as follows: glazing of wired glass in panes not exceeding 9 square feet in area each and securely mounted in noncombustible frames, or glass blocks set in noncombustible frame and mortar will be permissible. Such glazing shall be not more than 36 inches in height nor be below 4 feet from the finished corridor floor. The total area of such glazing shall not exceed 25 per cent of the area of a corridor partition of the classroom, the height being measured from the corridor side. This does not apply to corridor walls of offices, cafeterias or libraries.

e. Corridor walls of offices may be constructed of glass unlimited in area and type.

f. Corridor walls of cafeterias and libraries may be constructed of glass unlimited in area. Such glass, however, shall be wired glass in panes not to exceed 9 square feet each in area and set in noncombustible frames.

g. *Decorative and Acoustical Material*—All combustible decorative and acoustical material, including textile floor coverings and curtains located in corridors, passageways, stairways and lobbies, shall be rendered and maintained flame resistant. This regulation shall not be construed to prohibit the use of wall or ceiling coverings affixed directly to the wall or ceiling, provided the surface will not be readily flammable and will not carry or communicate fire.

SEC. 172-1-144. DOORS

a. All doors from pupil-occupied spaces, except toilets, shall swing in the direction of egress travel with hinges on jamb nearest to the closest stairway or exit. Minimum door dimensions shall be 36 inches wide, except that doors in multiple may be 30 inches wide.

b. Locks on interior doors from all pupil-occupied spaces shall be of the "schoolhouse type"; that is, they shall lock by key only and shall be operative from the inside at all times by the turning of the knob only.

c. No sliding door, vertical-lift door, revolving door, or folding partition shall be used as a closure for a required means of egress; except folding gates may be used to segregate portions of the building.

d. Doors swinging in two directions, known as "double-swing," shall not be used as closures for required means of egress.

e. All interior egress doors, providing access to corridors, which are required to have a fire-resistant rating, shall be 45 minute fire resistant. Such doors may be of solid wood planking or built-up plywood with solid core, not less than $1\frac{3}{4}$ inch thick. Wired glass $\frac{1}{4}$ inch thick, in single pane or

smaller panes totaling not over 6 square feet, may be used in such doors.

f. Egress doors from corridors or stairway enclosures, which have locking or latching devices, shall have panic hardware which will permit the door to open with a single motion when pressure is applied to the releasing device in the direction of egress travel.

g. Where double-leaf doorways are used in stairway enclosures they shall be equipped with a mullion or astragal which will provide reasonably tight closure, but which will not interrupt a complete self-closing operation.

h. Interior doors to stairways shall provide as a minimum one 30-inch leaf for each 22 inches of stairway width.

i. Doors from corridors into stair enclosures shall be 45-minute fire resistant. Such doors may be of solid wood planking or built-up plywood with solid core, not less than $1\frac{3}{4}$ inches thick. Wired glass $\frac{1}{4}$ of an inch thick in single pane or smaller panes totaling not over 6 square feet may be used in such doors. These doors shall be equipped with suitable self-closing devices, maintained in operating condition to keep the doors closed. No such door shall be equipped with a device for holding them in an open position. Double-leaf doorways shall be equipped with a mullion or astragal which will provide reasonably tight closure, but which will not interrupt a complete self-closing operation.

SEC. 172-1-145. STAIRWAYS

a. All required stairways shall lead directly to an outside area having unrestricted access to the exterior perimeter of the building.

b. All stairs (and platforms, landings, etc., used in connection therewith) shall be of noncombustible construction throughout. Treads of stairs and landings shall be solid (without perforations). Handrails are exempted from the above requirements, also short non-exit stairs serving stages, platforms, etc.

c. There shall be no variation in the width of treads and the height of risers in any flight. Where variation in riser heights in different flights is necessary because of varying story heights, such variation shall not exceed $\frac{3}{16}$ of an inch. All treads shall be not less than 10 inches in width, exclusive of nosing, and risers shall be not more than 7 inches in height. In general, treads and risers shall be so proportioned that the sum of two risers and one tread, exclusive of nosing, is not more than 25 inches and not less than 24 inches.

d. Treads and landing shall have non-slip surfaces.

e. There shall be no occupied spaces, closets, or other storage areas within stair enclosures. Spaces shall be left entirely open or shall be entirely enclosed, without door or other opening into the enclosure. Access doors to pipe-

tunnels and similar non-storage spaces will be permitted, provided they are of 45-minute fire-resistant construction and kept locked.

f. No arrangement of treads known as "winders" shall be allowed.

g. Where doors open into stairways, there shall be a minimum clearance of 18 inches between the edge of the door in any position and the nosing of a riser.

h. All egress stairways shall have suitable handrails on both sides and at center of stairs wider than 88 inches. There shall be no more than 66 inches between adjacent handrails. Balustrades shall be not less than 3 feet high, and handrails shall be attached at a height of between 2 feet 6 inches and 2 feet 9 inches vertically above intersections of treads and risers.

i. No stairway shall be less than 44 inches in width, and no flight of stairs shall have a vertical rise of more than 9 feet.

j. Landings at turns shall be at least 44 inches in length, measured along the line of travel, and 18 inches from the inside handrail, except that right angle turns may be made with a square platform the width of the stairway. Intermediate landings on straight stairs shall have a length of at least 44 inches.

k. Ramps may be substituted for stairs, provided surfaces are non-slip and rise does not exceed 1 foot in 10 feet of run.

SEC. 172-1-146. STAIRWAY ENCLOSURES

a. Stairways serving one or more stories *above the first* shall be segregated from corridors at all floor levels, except the uppermost floor, by means of a smoke barrier.

b. Stairways from basements shall be segregated from first floor corridors and means of egress by a smoke barrier.

c. The smoke barrier between stairways and corridors shall be constructed of noncombustible materials, and may have securely mounted wired glass panes not exceeding 9 square feet each in area.

SEC. 172-1-147. STAGES

a. Auditorium stages having a fly loft or grid above or below the structural opening between the stage and the auditorium, dressing rooms or storage rooms on the stage, shall be built of noncombustible construction throughout. The structure supporting the stage flooring above the normal auditorium floor level may be of combustible construction. Ventilation shall be provided by means of louvers, in the side walls or collapsible skylight in the roof, having an area equal to at least 10% of the floor area within the stage walls.

b. All drapes and scenery shall be rendered and maintained flame resistant.

SEC. 172-1-148. EXITS DETERMINATION

a. Required widths of exits and stairs shall be computed in accordance with the following:

1. Occupancy shall be determined by actual count of pupils, or where this is impracticable, assume one pupil for 40 square feet of gross floor area, not including places of assembly (which are to be computed according to Article I of this Code).

2. Stairs shall provide total aggregate width in 22 inch increments, in accordance with the following table:

<i>Number of Pupils in Area of Greatest Occupancy Served by Stairs</i>	<i>Total Width of Stairs</i>
120	44"
180	66"
240	88"
300	110"
360	132"
420	154"
480	176"
540	198"
600	220"
660	242"
720	264"
780	286"

3. Exits to the outside shall provide one door for each 100 persons or major fraction thereof on that floor, plus one door for each 100 persons or major fraction thereof that required stairs are designed to accommodate.

4. No required exit doorway serving a stairway or corridor shall consist of less than two 30-inch leaves.

5. Exits required for places of public assembly may, if appropriately located, be used jointly as required exits for ordinary school occupancy where total occupancy of the building at any one time will not exceed the largest capacity calculated under either Article I or this Article.

SEC. 172-1-149. FIRE ALARM SYSTEMS

a. A fire alarm system shall be installed in every school building.

b. All fire alarm systems shall be of the closed circuit type, supervised against opens and grounds, and shall function as follows:

1. The operation of any manual fire alarm sending station or automatic fire detecting unit shall cause the simultaneous operation of all alarm sounding devices continually until the tripped station is restored to normal operation or the simultaneous operation of all alarm sounding devices for a complete cycle of not less than thirty seconds has taken place.
2. The power supply shall be taken from a point located between the meter and main switch.
3. All wiring for fire alarm systems shall be run in raceways properly protected from vandalism or injury.
- c. Alarm sending stations shall be located in each corridor of each story so that from any corridor door not more than 100 feet will have to be traversed in order to reach a sending station. In buildings of more than 100 feet in length, alarm sending stations shall be located at exits in the natural path of egress from the building.
- d. All manual sending stations shall be located not more than 5 feet above the floor and at ready, accessible and visible points which shall not be obstructed. All alarm sending stations shall be clearly marked "FIRE ALARM" and shall be painted a distinctive red color.
- e. An alarm sending station shall also be provided adjacent to the places of assembly and on all stages near the stage lighting control board.
- f. Automatic fire detectors shall be installed in boiler rooms, kitchens, and other hazardous areas where it is deemed necessary. Automatic fire detectors will not be required in buildings completely protected by an automatic sprinkler system.
- g. Alarm sounding devices shall be horns used for no other purpose and of such character and so located as to be effectively heard above all other sounds by all occupants in every occupied space in the building.
- h. All sounding devices in the alarm system shall be of the same type and all fire alarm sounding devices shall be used for fire alarm purpose only. No fire alarm sounding device shall be located in places of public assembly except those already located in existing buildings.
- i. Bells or gongs, distinctive in tone and pitch from other sounding devices, will be approved in existing systems or in extensions to existing systems where such equipment is already in use.
- j. Connections of school fire alarm systems to municipal alarm systems, central stations, or direct connected supervised systems, shall be located on the outside of the building. If located in the building, the alarm sending station shall be designed to sound the school alarm system when actuated.

k. Fire drills shall be conducted at least once each month, by use of the fire alarm system.

SEC. 172-1-150. EXIT SIGNS

a. For places of assembly see Section 172-1-19.

b. Signs bearing the word "EXIT" shall be placed at each exit from a corridor. Where an exit and/or its sign are not clearly visible from every point in the corridors served, an adequate number of directional signs shall be provided bearing the word "EXIT" and an arrow pointing in the direction of such exit.

c. Exit and directional signs shall have letters at least $4\frac{1}{2}$ inches high, with strokes and arrows at least $\frac{3}{4}$ of an inch in width.

d. Exit and directional signs shall be clearly legible at all times.

SEC. 172-1-151. EMERGENCY LIGHTING

a. Adequate artificial lighting shall be provided for the lighting of all places of assembly, corridors, passageways, stairways, ramps, fire-escapes, and other means of egress leading direct to the outside.

b. An automatic, independent, secondary source of power for illumination shall be provided for the reasonable lighting of all places of assembly, and the corridors, passageways, stairways, ramps, fire-escapes, and other means of egress direct to the outside from such places of assembly. This secondary lighting system shall be termed herein as emergency lighting.

c. Emergency lighting shall not be required for places of assembly which are not used in the night season, or for places which do not exceed 1500 square feet of floor area and so located that at least one exit is direct to the outside and within 5 feet of grade.

d. Acceptable types of emergency lighting systems are as follows:

TYPE A—A self-contained unit with attached heads, powered by dry cell batteries, wired to circuits supplying energy for normal lighting in the areas being protected.

TYPE B—A self-contained unit with a storage battery of 12 volts or less with an automatic charger, attached heads and wired to circuits supplying energy for normal lighting in the areas being protected.

TYPE C—A self-contained unit of storage batteries of 24, 36, or 48 volts, operating completely with relays and automatic charger for remote lighting.

TYPE D—A centrally located storage battery of 120 volts, complete with automatic transfer switch.

TYPE E—An automatically started engine generator set, of the correct capacity for generating the energy required for the full emergency illuminating load.

e. Wiring of all emergency lighting systems shall be so arranged as to throw on the emergency lighting automatically which protects the places of assembly and all exit passageways, corridors, stairways, ramps, fire-escapes and all other means of egress direct to the outside from such places of assembly when the artificial lighting for any such areas fails.

f. All wiring for emergency lighting shall be in separate raceways independent of all other wiring, and shall comply in every respect with proper and accepted standards.

g. All emergency lighting systems shall be designed and maintained to provide not less than 30 minutes of reasonable illumination at all locations required to be lighted under this section. Equipment for such power shall include a volt meter or hydrometer and a switch so arranged and located as to be reasonably convenient and reliable for the testing of available power.

h. *Battery Systems of Over 50 Volts*—In such systems the battery and charging equipment shall be housed in a separate room of noncombustible construction, adequately vented directly to the out-of-doors, and secure against unauthorized entry.

i. *Motor generator sets*—Motor generator sets shall be housed in a separate masonry enclosure of two-hour fire-resistant construction with a Class B type door secured against unauthorized entry. Frames of doors shall be kalamein, steel buck, or structural steel. The door sill shall be 6 inches above the floor. The room shall be adequately ventilated directly to the out-of-doors, and the exhaust from the motor shall be installed in accordance with accepted safe practices.

SEC. 172-1-152. HOUSEKEEPING

a. All school buildings shall be kept clean and in tidy condition, and free from accumulation of combustible debris or other waste material.

SEC. 172-1-153. STORAGE OF FLAMMABLE LIQUIDS

a. See Regulations Covering the Storage and Transportation of Flammable Liquids, Department of State Police.

SEC. 172-1-154. FIRE EXTINGUISHERS

a. A 2½ gallon soda acid or equivalent Class A fire extinguisher shall be located in corridors so that a person will

not have to travel more than 100 feet from any room door to reach the nearest extinguisher.

b. A 2½ gallon soda acid or equivalent Class A fire extinguisher shall be located on the stage and in the boiler room; except in boiler rooms using oil-fired equipment, a 2½ gallon foam or equivalent Class B extinguisher shall be provided.

ARTICLE VIII

EXISTING SCHOOL BUILDINGS

SEC. 172-1-155. CONSTRUCTION

a. No building not now a school building may hereafter be converted for school purposes unless it complies, after conversion, with the provisions of Article VII for new buildings, Sections 172-1-135 to 172-1-154, inclusive.

SEC. 172-1-156. SPRINKLER REQUIREMENTS

a. All existing school buildings wholly or in part of combustible construction, which have student occupancy above the second story, shall be protected by a system of automatic sprinklers, installed and maintained in accordance with proper standards.

b. Such buildings having noncombustible construction of 45-minute fire-resistant rating enclosing all required stairways and protecting corridors at sides and beneath shall be exempt from the requirements for sprinklers.

SEC. 172-1-157. HEATING EQUIPMENT

a. Central heating plants, steam boilers and oil-fired water heaters shall be segregated from all other occupancies by walls, ceiling and floor having a fire-resistant rating of not less than 30 minutes, which shall provide a reasonably smoke-tight enclosure.

b. Such enclosures for heating equipment and incinerators shall be provided with adequate vents direct to the outside, sufficient for proper combustion and exhaust. Ventilating openings shall be provided having a total area equal to not less than twice the flue outlet of the heating plant. Such openings shall be maintained in an open position with fixed louvers.

c. Heater rooms shall only contain equipment for heating, water supply, switchboard, or facilities for unloading an incinerator, and shall not be used for any other purpose.

d. Interior doors to heater rooms shall be of the same fire resistancy required for the segregating partitions, and shall be equipped with a positive self-closing device. Such doors shall have no hold-open devices, and shall be kept closed at all times.

e. Furnaces, boilers and other fired units shall be vented to a chimney by means of a reasonably gas-tight smoke pipe. The chimney shall be properly constructed of brick, solid block masonry, or reinforced concrete.

f. Oil burners—See Section 172-1-60.

g. Space heaters—See Section 172-1-61.

SEC. 172-1-158. SERVICE AREAS

a. Incinerators within buildings shall be segregated from all other occupancies by construction having a fire-resistant rating of not less than 30 minutes, with a door of the same fire resistancy having a positive self-closing device.

b. Space used for storage of tractors, power mowers, or other equipment having internal combustion engines shall be segregated from all other occupancies by construction having a fire-resistant rating of not less than one hour, and shall be accessible only from outside the building.

c. Trash and rubbish chutes not connected directly to an incinerator in combustible buildings shall be protected by automatic sprinklers, and the doors shall be of not less than 30-minute fire-resistant construction, equipped with self-closing devices; or the shaft shall be discontinued from use and sealed horizontally at each floor level by construction equal to the adjacent floor.

SEC. 172-1-159. ELEVATORS AND DUMB-WAITERS

a. Shafts and control rooms thereof shall be of noncombustible construction having a fire-resistant rating of at least two hours. No openings shall be allowed through the shaft for ventilator or other purposes, except necessary doors. All doors shall be of closed or solid construction, and shall be reasonably smoke-tight when closed.

(Note: State Department of Labor regulations pertaining to the construction, operation and maintenance of elevators and dumb-waiters must also be complied with.)

SEC. 172-1-160. VERTICAL OPENINGS

a. *Abandoned ducts, ventilating ducts and shafts*

No vertical shaftway shall be used for storage purposes. Access doors to same shall be 30-minute fire resistant, and shall be kept locked.

b. *Light wells*

Open light wells, or other similar openings, within a school building shall not be permitted. Any such openings now existing shall be enclosed vertically at each floor level with construction having a fire-resistant rating of not less than 30 minutes; except that such enclosures may contain panes of quarter-inch wired glass not over nine square feet each in area, securely mounted in noncombustible frames; or may be

floored over horizontally by construction equal to the adjacent floor.

SEC. 172-1-161. GYMNASIUMS

Gymnasiums, whether or not provided with spectator seating, auditoriums and cafeterias, are classed as places of assembly, and are to be in accordance with Article I of this Code.

SEC. 172-1-162. EXITS

a. Each floor level of a school shall have two exits, stairways or approved fire-escapes, or combination thereof, in sufficient total width to fulfill the requirements of Section 172-1-169, EXITS DETERMINATION.

b. Exits or stairs shall be so located that no doorway of a pupil-occupied space shall be more than 100 feet from one such exit or stairway. There shall be a minimum of two such stairways or exits from each story, located as remotely as possible from each other.

c. No pockets or dead-ends shall be permitted in corridors, except when all stairways are enclosed at each floor level. Such pockets or dead-ends may be permitted when they do not exceed 40 feet in length and do not serve a total occupancy of more than 60 pupils.

d. Where courts occur which are enclosed on all sides, and the required exits from rooms or spaces exit into the courts, an exit from the court to the exterior perimeter of the building shall be provided. This exit shall be segregated from all building occupancies by construction having a fire-resistant rating of not less than 30 minutes.

SEC. 172-1-163. CORRIDORS (INCLUDING EGRESS PASSAGEWAYS)

a. Corridors used as a means of egress from pupil-occupied areas shall not be less than 36 inches in unobstructed width.

b. Decorative and acoustical materials

All combustible decorative and acoustical material, including textile floor coverings and curtains, located in corridors, passageways, stairways and lobbies, shall be rendered and maintained flame resistant. This regulation shall not be construed to prohibit the use of wall or ceiling coverings and effective decoration of the wall or ceiling, provided the surface will not be readily flammable and will not carry or communicate fire.

SEC. 172-1-164. DOORS

a. All doors from pupil-occupied spaces, except toilets, shall swing in the direction of egress travel. Minimum door dimensions shall be not less than 30 inches wide.

b. Doors leading from school rooms or pupil-occupied spaces into a hall or corridor shall not, during school hours, be locked, bolted or secured in any other manner than by a spring which will readily yield to pressure from the inside or by the turning of a knob.

c. No sliding door, vertical lift door, revolving door or folding partition shall be used as a closure for a required means of egress; except folding gates may be used to segregate portions of the building.

d. Doors swinging in two directions, known as a double-swing, shall not be used as closures for a required means of egress.

e. Egress doors from corridors or stairway enclosures, which have locking or latching devices, shall have panic hardware which will permit the door to open with a single motion when pressure is applied to the releasing device in the direction of egress travel.

f. Where double-leaf doorways are used in stairway enclosures, they shall be equipped with a mullion or astragal which will provide a reasonably tight closure, but which will not interrupt a complete self-closing operation.

g. Interior doors to stairways 44 inches or over in width shall provide as a minimum one 30-inch leaf for each 22 inches of stairway width. Where stairs are less than 44 inches in width, a single-leaf door shall be not less than 30 inches in width.

h. All interior doors in stairway enclosures required to have a fire-resistant rating shall be not less than 30-minute fire resistant. Such doors may be of solid wood planking or built-up plywood with solid core, not less than $1\frac{3}{4}$ inches thick. Wired glass $\frac{1}{4}$ inch thick in a single pane, or smaller panes totaling not over 6 square feet, may be used in such doors. These doors shall be equipped with suitable self-closing devices, maintained in operating condition to keep the doors closed. No such door shall be equipped with a device for holding same in an open position.

SEC. 172-1-165. STAIRWAYS

a. All required egress stairways shall lead directly to the outside or to a protected passageway which connects the stairs directly to the outdoors. Such stairways and protected passageways shall be enclosed and segregated from other portions of buildings by materials with a fire-resistant rating of not less than 30 minutes.

b. All existing stairways approved as an inside means of egress shall have stair treads not less than 8 inches in width, exclusive of nosing, and risers shall not exceed $8\frac{1}{2}$ inches in height.

c. All stairways in approved egress passages shall be provided with landings at least 30 inches in depth between the nosing of the top or bottom stair and the door opening.

d. Winding stairs shall not be allowed in approved means of egress.

e. All egress stairways shall have suitable handrails on both sides, and at the center of stairs that are wider than 88 inches. There shall be no more than 66 inches between adjacent handrails, except stairways less than 3 feet in width may have but one handrail. Handrails shall be attached at a height of between 2 feet 6 inches and 2 feet 9 inches vertically above the intersection of the treads and risers.

f. There shall be no closets or other storage areas within stair enclosures or beneath stairways used for storage purposes of any kind.

SEC. 172-1-166. SMOKE BARRIERS

a. Stairways serving one or more stories above the first shall be segregated from the corridors at all floor levels, except the uppermost floor, by means of a smoke barrier.

b. Stairways from basements shall be segregated from the first floor corridor and means of egress by a smoke barrier.

c. The smoke barrier between stairways and corridors shall be constructed of 30-minute fire-resistant material, and may have securely mounted wired glass panes not exceeding 9 square feet each in area.

d. All corridors served by stairs, unenclosed at that level and being over 300 feet in length, shall be divided into two approximately equal sections by smoke barriers. Such barriers shall be similar in construction to partitions and doors separating stairways from corridors, except that 50 per cent of the doors therein shall swing in each direction.

SEC. 172-1-167. FIRE-ESCAPES

Fire-escapes on existing buildings shall be designed and erected in conformance with Section 4093 of the 1949 revision of the General Statutes and Article III, Section 172-1-43 through 172-1-56, inclusive, of the Fire Safety Code.

SEC. 172-1-168. STAGES

All drapes and scenery shall be rendered and maintained flame resistant.

SEC. 172-1-169. EXITS DETERMINATION

a. Required width of exits and stairs or fire-escapes shall be computed in accordance with the following:

(1) Occupancy shall be determined by actual count of pupils or, where this is impracticable assume one pupil for 40 square feet of gross floor area, not including places of assembly (which are to be computed according to Article I of this Code).

(2) Approved egress stairways or fire-escapes shall provide a total aggregate width in 22-inch increments, in accordance with the following table:

Number of Pupils in Area

*of Greatest Occupancy
Served by Stairs*

*Total Width
of Stairs*

60	22"
120	44"
180	66"
240	88"
300	110"
360	132"
420	154"
480	176"
540	198"
600	220"
660	242"
720	264"
780	286"

(3) Exit to the outside shall provide one door for each 100 persons or major fraction thereof on that floor, plus one door for each 100 persons or major fraction thereof that required stairs are designed to accommodate.

(4) Exits required for places of public assembly may, if appropriately located, be used jointly as required exits for ordinary school occupancy where total occupancy of the building at any one time will not exceed the largest capacity calculated under either Article I or this Article.

SEC. 172-1-170. FIRE ALARM SYSTEMS

a. A fire alarm system shall be installed in every school building.

b. The operation of any manual fire alarm sending station or automatic fire detecting unit shall cause the simultaneous operation of all alarm sounding devices continually, until the tripped station is restored to normal operation, or the simultaneous operation of all alarm sounding devices for a complete cycle of not less than 30 seconds has taken place.

c. Alarm sending stations shall be located in each corridor of each story, so that from any corridor door not more than 100 feet will have to be traversed in order to reach a sending station.

d. All manual sending stations shall be located not more than 5 feet above the floor, and at ready, accessible and visible points, which shall not be obstructed. All alarm sending stations shall be clearly marked "FIRE ALARM" and shall be painted a distinctive red color.

e. Automatic fire detectors shall be installed in boiler rooms, kitchens, and other hazardous areas where it is deemed necessary. Automatic fire detectors will not be required in buildings completely protected by an automatic sprinkler system or in one-story buildings having an occupancy of not more than 75 pupils.

f. Connections of school fire alarm systems to municipal alarm systems, central stations or direct connected supervised systems shall be located on the outside of the building. If located in the building, the alarm sending station shall be designed to sound the school alarm system when actuated.

g. Fire drills shall be conducted at least once each month by use of the fire alarm system.

h. New fire alarm systems shall comply with Section 172-1-149.

SEC. 172-1-171. EXIT SIGNS

a. For places of assembly see Section 172-1-19.

b. Signs bearing the word "EXIT" shall be placed at each exit from a corridor. Where an exit and/or its sign is not clearly visible from every point in the corridors served, an adequate number of directional signs shall be provided, bearing the word "EXIT" and an arrow pointing in the direction of such exit.

c. Exit and directional signs shall have letters at least $4\frac{1}{2}$ inches high, with strokes and arrows at least $\frac{3}{4}$ inch in width.

d. Exit and directional signs shall be clearly legible at all times.

SEC. 172-1-172. EMERGENCY LIGHTING

a. Adequate artificial lighting shall be provided for the lighting of all places of assembly, corridors, passageways, stairways, ramps, fire-escapes and other means of egress leading directly to the outside.

b. An automatic, independent, secondary source of power for illumination shall be provided for the reasonable lighting of all places of assembly and the corridors, passageways, stairways, ramps, fire-escapes and other means of egress direct to the outside from such places of assembly. This secondary lighting system shall be termed herein as emergency lighting.

c. Emergency lighting shall not be required for places of assembly which are not used in the night season, or for places which do not exceed 1500 square feet of floor area and are so located that at least one exit is direct to the outside and within five feet of grade.

d. Acceptable types of emergency lighting systems are as follows:

TYPE A—A self-contained unit with attached heads, powered by dry cell batteries, wired to circuits supplying energy for normal lighting in the areas being protected.

TYPE B—A self-contained unit with a storage battery of 12 volts or less with an automatic charger, attached heads and wired to circuits supplying energy for normal lighting in the areas being protected.

TYPE C—A self-contained unit of storage batteries of 24, 36 or 48 volts operating completely with relays and automatic charger for remote lighting.

TYPE D—A centrally located storage battery of 120 volts complete with automatic charging panel and automatic transfer switch.

TYPE E—An automatically started engine generator set, of the correct capacity for generating the energy required for the full emergency illuminating load.

e. Wiring of all emergency lighting systems shall be so arranged as to throw on the emergency lighting automatically which protects the places of assembly and all exit passageways, corridors, stairways, ramps, fire-escapes and all other means of egress direct to the outside from such places of assembly when the artificial lighting for any such area fails.

f. All wiring for emergency lighting shall be in separate raceways independent of all other wiring, and shall comply in every respect with proper and accepted standards.

g. All emergency lighting systems shall be designed and maintained to provide not less than 30 minutes of reasonable illumination at all locations required to be lighted under this section. Equipment for such power shall include a volt meter or hydrometer and a switch, so arranged and located as to be reasonably convenient and reliable for the testing of available power.

h. *Battery systems of over 50 volts.*

In such systems the battery and charging equipment shall be housed in a separate room of noncombustible construction, adequately vented directly to the out-of-doors and secure against unauthorized entry.

i. *Motor generator sets.*

Motor generator sets shall be housed in a separate masonry enclosure of 2-hour fire-resistant construction with a kalamein door secure against unauthorized entry; the door sill shall be 6 inches above the floor; the room shall be adequately ventilated directly to the out-of-doors and the exhaust from the motor shall be installed in accordance with accepted safe practices.

SEC. 172-1-173. HOUSEKEEPING

All school buildings shall be kept clean and in tidy condition and free from accumulation of combustible debris or other waste material.

SEC. 172-1-174. STORAGE OF FLAMMABLE LIQUIDS

See Regulations Covering the Storage and Transportation of Flammable Liquids, Department of State Police.

SEC. 172-1-175. FIRE EXTINGUISHERS

a. A 2½ gallon soda acid or equivalent Class A fire extinguisher shall be located in corridors so that a person will not have to travel more than 100 feet from any room door to reach the nearest extinguisher.

b. A 2½ gallon soda acid or equivalent Class A fire extinguisher shall be located on the stage and in the boiler room; except in boiler rooms using oil-fired equipment, a 2½ gallon foam or equivalent Class B extinguisher shall be provided.

Be it known that the within and foregoing rules and regulations are made and promulgated by the undersigned, pursuant to Section 3665 of the 1949 General Statutes, as an amendment to the Fire Safety Code.

In Witness Whereof, I have hereunto set my hand and seal this 4th day of November 1953.

JOHN C. KELLY,
Commissioner.

Received and filed in triplicate, this 6th day of November 1953, in accordance with Section 281 of the General Statutes, Revision of 1949, Alice K. Leopold, Secretary of the State; By: Louis J. Tapogna.
Approved: William L. Beers, Attorney General, December 3, 1953.