



*Fire Marshal's Office*  
*San Mateo County Fire*  
**CAL FIRE**

Date: Jan. 28, 2010

Revised: New

Number: *CFS-0020*

*320 Paul Scannell Drive, San Mateo, California 94402 (650) 573-3846*

Title: *Educational Facilities (Schools)*

Approved: *Clayton Jolley*

**Purpose:**

This Standard Detail and Specification will identify some common fire regulations applicable to educational occupancies (Schools).

**General:**

This standard detail is intended for the use of managers of educational occupancies to assist them in ensuring their facilities are in compliance with state regulations concerning fire safety. The Regulations of the State Fire Marshal, Title 19, California Code of Regulations (T-19) and the 1991 California Fire Code, Title 24, Part 9, California Code of Regulations (CFC), are the principal documents upon which the inspections will be based. Not every requirement will apply in every situation. Existing conditions and specific uses will determine the level to which the minimum requirements will apply.

**Definitions:**

For the purposes of this document, the following definitions shall apply:

Group **E** Occupancy:

Use of a building or structure by six or more persons at any one time for educational purposes through the 12<sup>th</sup> grade. An E occupancy also includes the use of a building or portion thereof for educational, supervision or personal care service for more than 5 children older than 2 ½ years of age.

**Fire Access:**

- ✘ An approved fire apparatus access shall be provided as outlined in CFC §503.1.1 Access roads shall have an unobstructed width of not less than 20 feet with vertical clearance of not less than 13 feet 6 inches and shall provide access to within 150 feet of all portions of the building.
- ✘ Gates serving Fire Access roads shall open to the required width of the road, Fire access roads shall not be obstructed in any manner, including the parking of vehicles. C.F.C. 503.4

***ACCESS ROADWAY WIDTH***

***PARKING RESTRICTIONS ON  
ROADSIDE***

Less than twenty-seven (27) feet

No parking  
either side

27 – 35 feet

Parallel  
parking one side only

Over thirty-six (36) feet

Parking  
allowed both sides

## **Fire Lane Identification Requirements**

The following methods of fire lane identification are taken from Section 22300.1 of the California Vehicle Code and one of the three methods presented below must be present when enforcing a fire lane violation:

- ✘ Posting of a sign immediately adjacent to, and visible from the designated place clearly stating in letters not less than one inch in height that the place is a fire lane.
- ✘ By outlining or painting the pavement with red paint and, in contrasting color, marking the pavement with the words "FIRE LANE" which are clearly visible from a vehicle.
- ✘ By a red curb or red paint on the edge of the roadway upon which is clearly marked the words. "FIRE LANE".

Roads that are unduly restricted by traffic calming devices can result in a delayed response from the Department due to difficult access for apparatus. Any delayed response can result in a major impact on the property involved or the person having a fire, rescue or medical emergency.

## **Traffic Calming Measures:**

Location of Traffic Calming Measures must be proposed, approved and documented as follows:

- ✘ Proposed locations must be shown on site plan submitted for approval.
- ✘ Proposed locations must be approved by Fire Chief or his representative.
- ✘ Approved document must be filed with Fire Department and with County Planning Division.

## **Outdoor Fairs and Carnivals:**

All outdoor fairs and carnivals taking place on school grounds are required to comply with the California Fire Code and receive a inspection prior to operation from the San Mateo County Fire Department.

## **Maximum Occupant Capacity:**

1. Occupant capacity requirements shall be in accordance with the provisions of Section 1004 of the CFC, and shall be posted in a conspicuous location near the main exits.

- ✘ OVERCROWDED OCCUPANCIES - No occupancy shall have more people in it than is allowed by its posted room capacity. (Title 19, 3.27 & CFC Appendix Chapter 1 107.5)
- ✘ THE CHIEF, or his/her designated representative upon findings any overcrowding condition or obstruction in aisles, passageways, or other means of egress; or upon finding any condition which constitutes a serious menace to life,

shall cause the performance, presentation, spectacle, or entertainment to be stopped until such condition or obstruction is corrected. (CFC Appendix Chapter 1, 107.6).

- ❖ SMOKING OR OPEN FLAME - There shall be no smoking or open flame during any public assembly. "No Smoking" signs shall be posted in a conspicuous place inside the building. (Title 19, 3.32 & CFC 308.3, 310.2)
  - *Note:* As of June 1, 1995, all campuses are smoke free.

### **Exit Doors:**

#### **California Building Code 2007 Section 1007**

**EXIT** is a continuous and unobstructed means of egress to a public way and shall include intervening doors, doorways, corridors, exterior exit balconies, ramps, stairways, smoke proof enclosures, horizontal exits, exit passageways, exit courts and yards.

- ❖ Exit doors shall swing in the direction of exit travel whenever the occupancy load is 50 or more persons. C.F.C. 1008.1.2
- ❖ PANIC HARDWARE - Each door in a means of egress having an occupant load of 50 or more shall be provided with panic hardware. C.F.C. 1008.1.9.
- ❖ EXIT DOORS - Exit doors shall not be locked, bolted, fastened or otherwise obstructed, which would keep them from being opened from the inside without special use or knowledge. (Title 19 3.00, CBC Chapter 33 & CFC 1008.1.9)
- ❖ USE OF EXIT WAYS - Exit ways shall not be blocked in any way at anytime. (Title 19 3.11 & CFC 1007)

### **Maintenance of Means of Egress:**

The required width of exits, aisles and passageways shall be maintained at all times to a public way. C.F.C. 1028.2

### **Exit Illumination and Signage:**

- ❖ Exit signs shall be installed at required exit doorways and where otherwise necessary to clearly indicate the direction of egress when the exit serves an occupant load of 50 or more. C.F.C. 1011.1
- ❖ Means of egress shall be illuminated while the structure is occupied. Fixtures required for means of egress illumination shall be supplied from a separate circuit or source of power. C.F.C. 1011.4
- ❖ In the event of power supply failure, an emergency electrical system shall automatically illuminate aisles, stairways, corridors and other egress components in areas that require two or more exits for at least 90 minutes. C.F.C. 1006.3  
C.F.C. 1011.5

### **Seating Arrangements and Aisle Spacing:**

Seating arrangements shall be in accordance with Chapter 10 of the California Fire Code and ICC 300 if applicable, aisle spacing shall be in accordance with Chapter 24 of the California Fire Code and the following:

- ❖ When there are more than 300 seats, loose seats, folding chairs, or similar seating facilities that are not fixed to the floor they shall be bonded together in groups of

three or more. Bonding of chairs is not required when tables are provided for dining or similar purposes.

- ✘ Spacing of tables: Tables used for dining shall be placed not less than 54 inches apart and not less than 36 inches from walls.
- ✘ Seat Spacing: - With standard seating, the spacing of rows of seats from back to back shall be not less than 33 inches. (CFC 1025 & CBC Chapter 33)

#### **Portable Fire Extinguishers:**

- ✘ One class 2A:10B:C shall be provided for each 3,000 square feet, travel distance to the extinguisher shall not exceed 75 feet. T19 Sec 906.3
- ✘ The extinguisher shall be manually inspected at least monthly by the building owner or occupant, or electronically monitored. T19 Sec. 574.1
- ✘ The extinguisher must have a current State Fire Marshal's tag attached indicating that it has been serviced within one year of the date listed on the tag. T19 Sec. 575.1
- ✘ Extinguishers must be placed in a location that is readily available and not be obstructed or obscured from view in any manner. T19 Sec. 906.6
- ✘ A 40B:C Type "K" fire extinguisher shall be provided for each kitchen, power generator, or transformer, and at locations where flammable or combustible liquids are used, stored, or dispensed.

#### **Electrical:**

- ✘ Temporary wiring is allowed for a period not to exceed 90 days. C.F.C. 605.9
- ✘ Extension cords and flexible cords shall not be used as a substitute for permanent wiring. C.F.C. 605.5
- ✘ Multiplug adapters, such as cube adapters, unfused plug strips or other such devices not complying with the California Electrical Code shall be prohibited C.F.C. 605.4
- ✘ Relocatable power strips shall be permitted if of the grounded type, equipped with overcurrent protection and listed in accordance with UL 1363. C.F.C. 605.4
- ✘ Relocatable power strips shall be directly connected to a permanently installed receptacle. C.F.C. 605.4.2F Appliance cords and extension cords shall be maintained in good condition without splices, deterioration or damage. C.F.C. 605.5
- ✘ Power strips and extension cords shall not be affixed to structures, extended through walls, ceilings or floors, or under doors, floor coverings and not be subjected to physical impact. C.F.C. 605.5
- ✘ A working space of not less than 30 inches in width, 36 inches in depth and 78 inches in height shall be provided in front of electrical service equipment. Storage is prohibited within the designated workspace. C.F.C. 605.3

#### **Housekeeping:**

- ✘ Storage of combustible materials in buildings shall be orderly, with storage separated from heating devices by distance or shielding so that ignition cannot occur. C.F.C. 315.2
- ✘ Combustible waste containers larger than 40 gallons shall be constructed of

- noncombustible material or approved combustible material with a lid. C.F.C. 304.3
- ⊗ Combustible waste containers larger than 1.5 cubic yards shall not be stored in buildings or placed within 5 feet of combustible walls, openings or combustible roof eave lines. C.F.C. 304.3
  - ⊗ Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container. C.F.C. 304.3
  - ⊗ Combustible materials shall not be stored in boiler rooms, mechanical rooms or electrical equipment rooms. C.F.C. 315.2.3
  - ⊗ Storage shall be maintained 2 feet or more below the ceiling in nonsprinklered areas of buildings or a minimum of 18 inches below sprinkler deflectors in sprinklered areas of buildings. C.F.C. 315.2.1
  - ⊗ All trash cans on school grounds must be flame retardant UL listed. (Title19 3.19 b)

### **Fire Alarm:**

- ⊗ Every person managing or in charge of any public, private or parochial school shall cause the fire alarm signal to be sounded not less than once every calendar month at the elementary and intermediate school levels, and not less than twice yearly at the secondary level. T19 Sec.3.13
- ⊗ Fire Alarm systems shall be tested and maintained in working condition in accordance with Chapter 10 of NFPA 72. C.F.C. 907.20
- ⊗ Fire Alarm Systems in new construction and schools subject to a modernization program of greater than \$200,000, upon activation of an initiating device, shall alert all occupants and shall transmit the alarm signal to an approved supervising station. **See Appendix 1,** Education Code Section 17074.50-17074.56.

### **Miscellaneous:**

- ⊗ Artwork and teaching materials shall be limited on the walls of corridors to not more than 20 % of the wall area. C.F.C. 807.4.3
- ⊗ Natural cut Christmas Trees shall not be displayed except in areas protected by a sprinkler system. C.F.C. 806.1.1
- ⊗ All drapes, hangings, curtains and other decorative material, including Christmas trees, that would tend to increase the fire and panic hazard shall be made from a nonflammable material or shall be treated and maintained in a flame retardant condition with a flame-retardant solution approved by the State Fire Marshal. T19 Sec. 3.08
- ⊗ New & existing buildings shall have approved address numbers or building numbers placed to be plainly legible from the street fronting the property. CFC Sec.505.1
- ⊗ USE OF CANDLES / OPEN FLAME - are “prohibited”. Contact the authority having jurisdiction for special uses. The authority having jurisdiction may approve on a case-by-case basis. (Title 19, 3.25 & CFC 308.3)

## **Appendix 1:**

### **EDUCATION CODE**

#### **SECTION 17074.50-17074.56**

**17074.50.** (a) On and after July 1, 2002, all new construction projects submitted to the Division of the State Architect pursuant to this chapter, including, but not limited to, hardship applications, that require the approval of the Department of General Services shall include an automatic fire detection, alarm, and sprinkler system as set forth in Section 17074.52 and approved by the State Fire Marshal.

These provisions shall entitle the school district to all applicable reductions in code requirements, as provided in the California Building Standards Code (Title 24 of the California Code of Regulations).

(b) On and after July 1, 2002, all modernization projects that have an estimated total cost in excess of two hundred thousand dollars (\$200,000) submitted to the Division of the State Architect pursuant to this chapter, including, but not limited to, hardship applications, that require the approval of the Department of General Services shall include an automatic fire detection and alarm system as set forth in Section 17074.52 and approved by the State Fire Marshal. For a modernization project that is to be completed in more than one phase, the school district may defer installation of the system until the final phase of the modernization project. Solely for purposes of this section, "modernization" means any modification of a permanent structure or construction of a new building on an existing campus.

(c) The Department of General Services shall administer this section based upon the standards adopted by the State Fire Marshal pursuant to Section 17074.52.

**17074.52.** (a) For modernization projects, the automatic fire detection and alarm system required pursuant to subdivision (b) of Section 17074.50 shall consist of smoke or heat detectors, or a combination thereof, as determined by the State Fire Marshall, installed in the school building. The alarm, upon activation of an initiating device, shall alert all occupants and shall transmit the alarm signal to an approved supervising station.

(b) For new construction projects, the automatic fire detection, alarm, and sprinkler system required pursuant to subdivision (a) of Section 17074.50, shall in addition to compliance with subdivision (a), include an automatic fire sprinkler system installed in the school building including, but not necessarily limited to, attic spaces.

(c) Notwithstanding Section 17074.50 or subdivisions (a) or (b) of this section, for a stand alone portable building, the system required pursuant to this article shall consist of an automatic fire detection and alarm system. For the purposes of this subdivision a "stand alone portable building" means a portable building that is used as a single classroom and that is sited more than 25 feet from any other building, including, but not limited to, any other portable building.

(d) Except as required for automatic fire detectors and waterflow detection devices, manual fire alarm boxes shall not be required throughout the school building.

(e) The entire system shall be installed, tested, and maintained in accordance with the regulations of the State Fire Marshal.

**17074.54.** (a) A portable building that is sited with the intent that it be at the site for less than three years and is sited upon a temporary foundation in a manner that is designed to permit easy removal, is exempt from Sections 17074.50 and 17074.52 for a period of three years from the date of siting.

(b) After the three-year exemption set forth in subdivision (a), a school district may request an extension of the exemption for an additional period not to exceed three additional years. The board shall grant the request if the school district presents convincing evidence demonstrating to the satisfaction of the board that the extension is necessary.

(c) For purposes of this section, "portable building" means a classroom building of modular design and construction that meets all of the following criteria:

(1) It is designed and constructed to be relocatable and transportable over public streets.

(2) It is designed and constructed for relocation without detaching the roof or the floor from the building.

(3) It has a floor area of 2,000 square feet or less when measured at the most exterior walls.

**17074.56.** (a) The State Allocation Board shall adjust the per-pupil grant amount set forth in Section 17072.10 as necessary to accommodate 50 percent of the increased costs due to the automatic fire detection, alarm, and sprinkler system required pursuant to subdivision (a) of Section 17074.50. The board shall adjust the per-pupil grant amount set forth in Section 17074.10 as necessary to accommodate 80 percent of the increased costs due to the automatic fire detection and alarm system required pursuant to subdivision (b) of Section 17074.50. The board shall establish a method to provide

up to 100 percent of the increased costs of the automatic fire detection, alarm, and sprinkler, if applicable, systems for school districts which qualify for hardship assistance pursuant to paragraph (1) of subdivision (b) of Section 17075.10.

(b) By July 1, 2003, the board shall review the adequacy of the per-pupil grant adjustments made pursuant to subdivision (a) and shall increase or decrease those adjustments as determined to be necessary.

(c) Any project submitted to the Division of the State Architect on or after September 1, 2001, that includes a qualifying fire detection, alarm, and sprinkler, if applicable, system, and that has not been fully funded prior to July 1, 2002, shall be eligible for grant or eligibility adjustments as set forth in this article.