

CHAPTER 50. GENERAL REQUIREMENTS—BUILDINGS**OCCUPANCY GROUP**

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Authority

The provisions of this Chapter 50 issued under act of April 27, 1927 (P. L. 465, No. 299) (35 P. S. §§ 1221—1235), unless otherwise noted.

Source

The provisions of this Chapter 50 adopted May 18, 1984, effective May 19, 1984, 14 Pa.B. 1765, unless otherwise noted.

Notes of Decisions*Single Family Residences*

Although the Department of Labor and Industry Industrial Board did not have jurisdiction over single family residences, the Department could enforce the Fire and Panic Act (35 P. S. 1221—1235), against a tax collector who maintained a public office in the residence. *Gnarra v. Department of Labor and Industry*, 658 A.2d 844 (Pa. Cmwlth. 1995); appeal dismissed 672 A.2d 1318 (Pa. 1996).

Cross References

This chapter cited in 7 Pa. Code § 82.17 (relating to safety—fire prevention and egress); 7 Pa. Code § 139.42 (relating to structures); 12 Pa. Code § 145.35 (relating to applicability of Fire and Panic Act); 22 Pa. Code § 31.43 (relating to buildings and equipment); 34 Pa. Code § 11.85 (relating to applicable provisions of other regulations); 34 Pa. Code § 47.125 (relating to stairs); 34 Pa. Code

§ 49.1 (relating to definitions); 34 Pa. Code § 49.2 (relating to jurisdiction and effective dates); 34 Pa. Code § 49.3 (relating to submission of plans); 34 Pa. Code § 49.5 (relating to certification of plans); 34 Pa. Code § 49.8 (relating to fees for building-plan examinations); 34 Pa. Code § 49.9 (relating to field inspection); 34 Pa. Code § 49.12 (relating to notice of violation and order to correct); 34 Pa. Code § 50.21 (relating to definitions); 34 Pa. Code § 50.24 (relating to exit doors and exit access doors); 34 Pa. Code § 50.92 (relating to historic building); 34 Pa. Code § 60.8 (relating to field inspection); 34 Pa. Code § 60.33 (relating to buildings); 55 Pa. Code § 5200.47 (relating to other applicable regulations); 55 Pa. Code § 5210.56 (relating to other applicable regulations); and 55 Pa. Code § 5320.54 (relating to seclusion and restraints).

OCCUPANCY GROUP

§ 50.1. Occupancy groups.

(a) *Class of building.* The Department will classify each building into one or more of the following occupancy groups according to the building use and the characteristics of the occupants.

(b) *Group A—Assembly.* Buildings primarily used or designed for the purpose of assembly of persons for amusement, entertainment, worship, transportation, recreation, sports, military drilling, dining or similar purposes shall be classified as Group A—Assembly Occupancies. Group A is divided into the following division:

<i>Division</i>	<i>Capacity</i>
A-1 (Chapter 51)	501 or more
A-2 (Chapter 52)	101 thru 500
A-3 (Chapter 53)	4 thru 100

(c) *Group B—Educational.* Buildings primarily used or designed for the purpose of education or instruction shall be classified as Group B—Educational Occupancies. Schools for business or vocational training shall be classified in the same occupancies and conform to the same requirements as the trade, vocation or business being taught. Nursery schools, day care centers, group day care homes and the like shall be classified as B occupancies. However, they may be housed in a building which has an A, C-1 or C-2 occupancy permit without submission of plans or approval as a B occupancy. Group day care homes and family day care homes may use the C-3 regulations for occupancies of eight or less children without a B occupancy approval. See Chapter 54 (relating to Group B—Educational).

(d) *Group C—Group habitation.* Buildings primarily used or designed for the purpose of habitation by four or more persons shall be classified as Group C—Group Habitation. Group C is divided into the following divisions:

(1) *Division C-1.* Health care institutions include buildings that provide sleeping facilities for four or more persons who are mostly incapable of self-preservation because of physical or mental illness or disease, or persons convalescing from physical or mental illness or disease. Hospitals, sanitariums,

nursing homes, convalescent homes, rest homes, and the like shall be classified as health care institutions. Personal care homes licensed by the Department of Public Welfare will not be considered health care institutions. Health care institutions shall comply with the following:

(i) Health care institutions which have plans approved by the Department after May 19, 1986, shall comply with NFPA-101, Life Safety Code, 1985 Edition published by the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.

(ii) Health care institutions or portions of health care institutions which have had plans approved by the Department from June 1, 1976, to May 19, 1986, shall be considered in compliance with this chapter as long as compliance is maintained in accordance with the provisions in force on the date of approval by the Department.

(iii) Health care institutions or portions of health care institutions which complied on May 31, 1976, with the requirements of NFPA-101, Life Safety Code, 1967 Edition will be considered in compliance with this chapter as long as compliance is maintained in accordance with NFPA-101, Life Safety Code, 1967 Edition published by the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.

(iv) Plan approval and field inspections for health care institutions, Division C-1, are conducted by the Department of Health.

(2) *Division C-2.* This division applies to a building, or a part thereof, where the occupants are in group habitation and are not included under Division C-1, C-3, C-4 or C-5. Hotels, apartment buildings, multiple dwellings, dormitories, lodging houses, orphanages, children's residential institutions, large personal care homes, group homes, group foster homes, and the like, shall be in this classification. See Chapter 55 (relating to Division C-2).

(3) *Division C-3.* This division applies to a building which only has a single living unit where four through eight residents are in group habitation. Small personal care homes, dormitories, lodging houses, orphanages, children's residential institutions, group homes, group foster homes, and the like having four through eight residents shall be in this classification. See Chapter 56 (relating to Division C-3).

(4) *Division C-4.* This division applies to apartment units which qualify for a single means of egress. See Chapter 57 (relating to Division C-4).

(5) *Division C-5.* This division applies to a building, or a part thereof, where the occupants are in group habitation, and are mostly incapable of self-preservation, because they are under restraint. Prisons, jails, reformatories, houses of correction and the like shall be in this classification. C-5 occupancies which have plans approved on or after November 30, 1998, shall comply with Chapters 3, and 14, and all other sections specifically referred to in Chap-

ters 3 and 14 of NFPA-101, Life Safety Code, 1997 Edition published by the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.

(e) *Group D—Commercial, Office, Industrial.* Buildings primarily used or designed for the purpose of commercial, storage, office or other like purposes shall be classified as Group D—Commercial, Office, Industrial Occupancies. Group D is divided into the following divisions:

(1) Division D-O (ordinary occupancy) includes occupancies involving the manufacture, assembling, warehousing, use, sale or storage of combustible but not highly flammable products and materials and buildings used for offices and the like. See Chapter 58 (relating to Division D-O).

(2) Division D-H (hazardous occupancies) includes occupancies involving highly combustible, explosive or unstable products or materials that constitute a special fire, life or toxic hazard because of the forms, characteristics or volume of the materials used. A building, structure or a part thereof used for storage, warehousing, manufacturing, processing, use or sale of highly combustible products or materials, including the following and those of equal fire and life hazard shall be classified under D-H hazardous occupancies. See Chapter 59 (relating to Division D-H).

(i) Chemicals which pose serious flame or explosive hazards upon coming into contact with water or moisture, such as aluminum powder, calcium carbide, red phosphorous, metallic sodium, metallic potassium, sodium peroxide, calcium phosphide, yellow phosphorous and metallic magnesium powder.

(ii) Processes which produce dust, lint or other particles or matter liable to instantaneous ignition or explosion.

(iii) Ammonia, chlorine, phosgene, carbon bisulphide and other toxic irritants or corrosive and fume hazard gases such as acetylene, ether, ethyl chloride, ethylene, liquified hydrocarbons, ethyl chloride gas and similar gases.

(iv) Naptha, ether, benzol, styrene, butadiene, collodion, ethyl, acetate, amyl acetone, amyl alcohol, kerosene, turpentine, petroleum paint, including paint mixing and spraying rooms, varnish, dryer, gasoline, alcohol, oil in bulk quantities and similar highly inflammable liquids. Paint spray booth approved by the Department will be classified as D-O occupancies.

(v) Manufacture and processing of imitation leather, paint and other pyroxylin products.

(vi) Storage of nitrocellulose, or products composed in whole or in part of nitrocellulose or similar flammable materials, such as films, combs, pens.

(vii) Hydrochloric, nitric, sulphuric and hydrofluoric acids.

(viii) Asphalt, tar pitch, resin, waxes and fats, either alone or combined with other materials.

(ix) Flammable fibrous materials such as hay, straw, broomcorn, hemp, tow, jute, sisal, excelsior, kapok, hair, oakum, and the like.

(x) Processing or storing of artificial flowers, matches, mattresses, rubber, cork, brooms, carpet linings, paper, pasteboard, feathers, cotton, including cotton rag sorting rooms, shoddy mills, oil refineries, distilleries, sugar refineries, cereal, flour, grist and starch mills, rendering plants, drying rooms, and occupancies of equal fire and life hazard.

Source

The provisions of this § 50.1 amended December 26, 1986, effective December 27, 1986, 16 Pa.B. 4973; amended November 27, 1998, effective November 28, 1998, 28 Pa.B. 5867. Immediately preceding text appears at serial pages (211213) to (211214) and (207379) to (207380).

Notes of Decisions

The guests of a "bed and breakfast" were "residents" for purposes of defining the use of the property and the building was used primarily as a bed and breakfast establishment. *Orth v. Department of Labor and Industry*, 588 A.2d 113 (Pa. Cmwlth. 1991) appeal denied 596 A.2d 801 (Pa. 1991).

Cross References

This section cited in 34 Pa. Code § 49.2 (relating to jurisdiction and effective dates).

§ 50.2. Occupancy separations and mixed occupancies.

When a structure contains two or more occupancy classes, the occupancy classes shall be governed in one of the following manners:

(1) *Separation*. When each occupancy class is separated from all other occupancy classes by 2-hour fire walls, each portion thus separated shall be considered a separate building, and limitations for separate buildings shall govern.

(2) *Mixed occupancy*. Structures with more than one occupancy class which are not separated shall be considered mixed occupancies and shall be governed by the most restrictive of the various limitations of the occupancies.

§ 50.3. Prohibited occupancy mixtures.

Group D-H, Hazardous Occupancies, shall not be permitted in the same structure housing Group A, B or C occupancies.

CONSTRUCTION TYPES

§ 50.11. Construction tables.

(a) *Fireresistive construction*. Fireresistive construction shall be the type of construction in which the walls, floors, roof and structural members are steel, iron, masonry, concrete or other noncombustible materials meeting all of the requirements of this chapter and having a minimum fireresistive rating as indicated in the construction table.

CONSTRUCTION TABLE

<i>Component Description</i>	<i>Minimum Fireresistive Rating</i>
<i>WALLS</i>	
Exterior bearing walls	3-hour Noncombustible
Exterior panel and curtain walls	1-hour Noncombustible
<i>PARTITIONS</i>	
Bearing partitions (1 1/2-hour B Label door assemblies)	2-hour Noncombustible
Nonbearing partitions (3/4-hour C Label door assemblies)	1-hour Noncombustible
Partitions enclosing stairs and other vertical openings (1 1/2-hour B Label door assemblies)	2-hour Noncombustible
Partitions enclosing exit access corridors (3/4-hour C Label door assemblies)	1-hour Noncombustible
<i>COLUMNS</i>	
Supporting Masonry	3-hour Noncombustible
Other	3-hour Noncombustible
Supporting roofs only	2-hour Noncombustible
<i>GIRDERS AND TRUSSES</i>	
Supporting masonry walls	3-hour Noncombustible
Other	3-hour Noncombustible
Supporting roofs only	1-hour Noncombustible
<i>FLOOR PANELS</i> —Including beams and joists	2-hour Noncombustible
<i>ROOF PANELS</i> —Including beams and joists	1-hour Noncombustible

EXCEPTIONS TO CONSTRUCTION TABLE

1. Structural steel and iron members which are used exclusively for elevators and are not part of the structural frame of the building may be unprotected.
2. Fire protective covering may be omitted from structural steel roof structures and members of concrete roof structures of buildings where every part of the roof structure is 20 feet or more above any floor and 10 feet above any balcony or gallery for A, B and C occupancy groups.
3. Nonbearing partitions subdividing an area of 10,000 square feet or less and occupied by a single tenancy may be of fire-retardant treated wood or metal panels without a fireresistive rating.
4. Bays, porches, exterior balconies, and any projections shall be constructed of noncombustible materials.
5. Penthouses and all other roof structures shall be considered part of the next lower story. Where the exterior wall of a penthouse is recessed five feet

or more from the next lower story's exterior wall and the exterior wall of the next lower story is required to have a fireresistive rating greater than 1 1/2 hours, the penthouse walls may be constructed of noncombustible materials with a minimum rating of 1 1/2 hours.

6. Panel walls of noncombustible construction attached to the structural frame may be used when no undue hazard is deemed to exist.

(b) *Noncombustible construction.* Noncombustible construction shall be the type of construction in which all structural members including walls, floors, roofs and their supports are steel, iron, masonry, concrete, or other noncombustible materials having a minimum fireresistive rating as indicated in the construction table.

CONSTRUCTION TABLE

<i>Component Description</i>	<i>Minimum Fireresistive Rating</i>
<i>WALLS</i>	
Exterior bearing walls	Noncombustible
Exterior panel and curtain walls	Noncombustible
Penthouse enclosure walls	Noncombustible
<i>PARTITIONS</i>	
Bearing partitions	Noncombustible
Nonbearing partitions	Noncombustible
Partitions enclosing stairs and other vertical openings	1-hour Noncombustible (3/4-hour C Label fire door assemblies)
Partitions enclosing exit access corridors	1-hour Noncombustible
<i>COLUMNS</i>	
Supporting Masonry	Noncombustible
Other	Noncombustible
Supporting roofs only	Noncombustible
<i>GIRDERS AND TRUSSES</i>	
Supporting masonry walls	Noncombustible
Other	Noncombustible
Supporting roofs only	Noncombustible
<i>FLOOR PANELS</i> —Including beams and joists	Noncombustible
<i>ROOF PANELS</i> —Including beams and joists	Noncombustible

EXCEPTIONS TO CONSTRUCTION TABLE

1. Nonbearing partitions subdividing an area and occupied by a single tenancy may be of fire-retardant treated wood or metal panels without a fireresistive rating.

- 2. Bays, porches, exterior balconies, and any projections may be constructed of noncombustible materials, or exterior fire-retardant treated wood.
- 3. Panel walls of fire-retardant treated wood attached to the structural frame may be used when no undue hazard is deemed to exist.
- 4. Roof construction, including beams and joists may be fire-retardant treated wood.

(c) *Protected heavy timber.* Protected heavy timber shall be the type of construction in which the exterior walls and fire walls are of masonry, reinforced concrete, or other approved noncombustible materials meeting the requirements of this chapter and having a fireresistive rating as indicated in the construction table. Heavy timber members of the following minimum nominal sizes may be used as an alternative to the construction table without meeting the minimum fire-resistive rating.

Columns	8" × 8"
Trusses supporting floors	6" × 6"
Trusses supporting roofs only	4" × 6"
Girders supporting floors	8" × 10"
Girders supporting roofs only	6" × 10"
Beams supporting floors	6" × 10"
Beams supporting roofs only	4" × 8"
Floor panels	3"
Roof panels	2"

CONSTRUCTION TABLE

<i>Component Description</i>	<i>Minimum Fireresistive Rating</i>
<i>WALLS</i>	
Exterior bearing walls	2-hour Noncombustible
Exterior panel and curtain walls	2-hour Noncombustible
<i>PARTITIONS</i>	
Bearing partitions (3/4-hour C Label door assemblies)	1-hour Noncombustible
Nonbearing partition. (3/4-hour C Label door assemblies)	1-hour Noncombustible
Partitions enclosing stairs and other vertical openings (3/4-hour C Label fire door assemblies)	1-hour Noncombustible
Partitions enclosing exit access corridors (3/4-hour C Label door assemblies)	1-hour Noncombustible

<i>Component Description</i>	<i>Minimum Fireresistive Rating</i>
<i>COLUMNS</i>	
Supporting Masonry	2-hour Noncombustible
Other	2-hour Noncombustible
Supporting roofs only	1-hour Noncombustible
<i>GIRDERS AND TRUSSES</i>	
Supporting masonry walls	1-hour Noncombustible
Other	1-hour Noncombustible
Supporting roofs only	1-hour Noncombustible
<i>FLOOR PANELS</i> —Including beams and joists	1-hour Noncombustible
<i>ROOF PANELS</i> —Including beams and joists	1-hour Noncombustible

EXCEPTIONS TO CONSTRUCTION TABLE

1. Timber arches or trusses may be used to support roof loads. The framing members shall be of not less than 4 inches by 6 inches nominal dimensions, except that spaced members may be composed of two or more pieces, each of not less than three inch nominal thickness when blocked solidly throughout their intervening spaces or when such spaces are tightly closed by a continuous wood cover plate of not less than 2 inch nominal thickness secured to the underside of the members. Splice scabs shall be not less than 3 inch nominal thickness. When protected by approved automatic sprinklers under the roof deck, the framing members may be reduced to not less than 3 inch nominal thickness.
2. Floors may be constructed of splined or tongue and groove plank of not less than 3 inch nominal thickness, covered with 1 inch flooring laid crosswise or diagonally or may be of laminated construction consisting of planks of not less than 4 inch nominal width, laid on edge and spiked together at intervals of 18 inches and covered with 1 inch flooring. Laminated floors shall be laid with staggered joints and shall not be spiked to the supporting girders.
3. Structural steel and iron members which are used exclusively for elevators and are not part of the structural frame of the building may be unprotected.
4. Fire protective covering may be omitted from structural steel roof structures and members of concrete roof structures of buildings where every part of the roof structure is 20 feet or more above any floor and 10 feet above any balcony or gallery for A, B and C occupancy groups.
5. Nonbearing partitions subdividing an area of 10,000 square feet or less and occupied by a single tenancy may be of fire-retardant treated wood or metal panels without a fireresistive rating.
6. Bays, porches, exterior balconies, and any projections shall be constructed of noncombustible materials.

7. Penthouses and all other roof structures shall be considered part of the next lower story. Where the exterior wall of a penthouse is recessed five feet or more from the next lower story's exterior wall and the exterior wall of the next lower story is required to have a fireresistive rating greater than 1 1/2 hours, the penthouse walls may be constructed of noncombustible materials with a minimum rating of 1 1/2 hours.

8. Panel walls of noncombustible construction attached to the structural frame may be used when no undue hazard is deemed to exist.

(d) *Ordinary construction.* Ordinary construction shall be the type of construction in which the exterior walls are of masonry, concrete or other noncombustible material meeting the requirements of this chapter and having a minimum fireresistive rating as indicated in the construction table. Interior framing may be partially or wholly of wood.

CONSTRUCTION TABLE

<i>Component Description</i>	<i>Minimum Fireresistive Rating</i>
<i>WALLS</i>	
Exterior bearing walls	2-hour Noncombustible
Exterior panel and curtain walls	Noncombustible
Penthouse enclosure walls	2-hour Noncombustible
<i>PARTITIONS</i>	
Bearing partitions	None
Nonbearing partitions	None
Partitions enclosing stairs and other vertical openings	1-hour (3/4-hour C Label fire door assemblies)
Partitions enclosing exit access corridors	1-hour (3/4-hour C Label fire door assemblies)
<i>COLUMNS</i>	
Supporting masonry	None
Other	None
Supporting roofs only	None
<i>GIRDERS AND TRUSSES</i>	
Supporting masonry walls	None
Other	None
Supporting roofs only	None
<i>FLOOR PANELS</i> —Including beams and joists	None
<i>ROOF PANELS</i> —Including beams and joists	None

EXCEPTIONS TO CONSTRUCTION TABLE

1. Structural steel and iron members which are used exclusively for elevators and are not part of the structural frame of the building may be unprotected.
 2. Firestopping shall be provided in all walls at each floor level to prevent the spread of fire. Horizontal concealed spaces shall be provided with draftstopping each 3,000 square feet. Draftstopping and firestopping materials shall be not less than 1/2 inch gypsum board, 3/8 inch plywood or other equivalent material.
 3. No wood framing shall be placed within two inches of the outside of chimneys. This distance may be reduced to 1/2 inch if the members are faced to their full depth with approved insulating material not less than 1/4 inch thick. No wood framing shall be placed within four inches of the backwall of any fireplace. Header beams supporting trimmer arches of fire places shall be not less than 20 inches from the face of the chimney breast.
 4. All wood shingles shall be pressure treated to meet the requirements for Class C roof covering in accordance with the Standard Test ASTM E-180 "Test for Roof Covering" including the weathering test.
 5. Solid core wood doors equal to or greater than a 20 minute fireresistive rating may be used for corridor partitions. These doors shall be self-closing and have positive latching.
- (e) *Wood frame construction.* Wood frame construction shall be the type of construction in which structural members and their support are constructed of wood or are dependent upon wood for support and having a minimum fireresistive rating as indicated in the construction table.

CONSTRUCTION TABLE

<i>Component Description</i>	<i>Minimum Fireresistive Rating</i>
<i>WALLS</i>	
Exterior bearing walls	None
Exterior panel and curtain walls	None
Penthouse enclosure walls	None
<i>PARTITIONS</i>	
Bearing partitions	None
Nonbearing partitions	None
Partitions enclosing stairs and other vertical openings	1-hour (3/4-hour C Label fire door assemblies)
Partitions enclosing exit access corridors	1-hour
<i>COLUMNS</i>	
Supporting Masonry	None

<i>Component Description</i>	<i>Minimum Fireresistive Rating</i>
Supporting roofs only.	None
General support.	None
<i>GIRDERS AND TRUSSES</i>	
Supporting masonry walls	None
Other	None
Supporting roofs only.	None
<i>FLOOR PANELS</i> —Including beams and joists.	None
<i>ROOF PANELS</i> —Including beams and joists.	None

CONSTRUCTION TABLE NOTES

1. Firestopping shall be provided in all walls at each floor level to prevent the spread of fire. Horizontal concealed spaces shall be provided with draftstopping each 3,000 square feet. Draftstopping and firestopping materials shall be not less than 1/2 inch gypsum board, 3/8 inch of plywood or other equivalent material.
2. All wood shingles shall be pressure treated to meet the requirements for Class C roof covering in accordance with the Standard Test ASTM E-180 “Test for Roof Covering” including the weathering test.
3. Solid core wood doors equal to or greater than 20 minute fireresistive rating may be used for corridor partitions. These doors shall be self-closing and have positive latching.

Cross References

This section cited in 34 Pa. Code § 49.1 (relating to definitions); 34 Pa. Code § 50.25 (relating to stair towers); and 34 Pa. Code § 50.43 (relating to classification).

MEANS OF EGRESS

§ 50.21. Definitions.

- (a) A means of egress is a continuous and unobstructed way of travel from a point in a building or structure to a safe area of refuge outside of the building or structure. A means of egress consists of three separate parts: the way of exit access, the exit, and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and includes intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts and yards.
- (b) Exit access is a path of travel which leads to an exit.
- (c) Exit is the portion of a means of egress which is separated from other spaces of the building or structure by construction as required in Chapters 49-59

(relating to administration—buildings; general requirements—buildings; A-1 assembly; Division A-2 assembly; Division A-3 assembly; Group B educational; Division C-1 health care institutions; Division C-2 hotels, motels, apartment buildings; Division C-3 small group habitation; Division C-4 single exit apartments; Division C-5 prisons, jails, reformatories, and houses of corrections; Division D-O ordinary commercial, industrial, office; and D-H hazardous commercial, industrial, office) to provide a way of travel to the exit discharge.

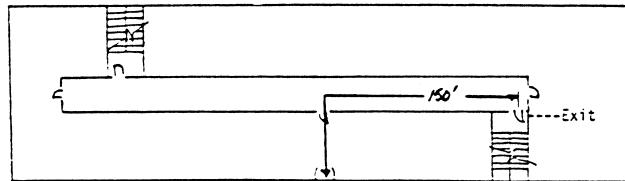
(d) Exit discharge is the portion of a means of egress between the termination of an exit and a safe area of refuge outside of the building or structure which has direct access to a public street or thoroughfare or an open area with unrestricted access to a public street or thoroughfare.

§ 50.22. Exit accessibility standards.

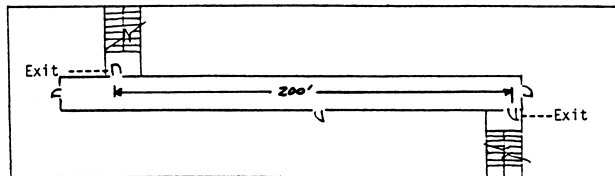
(a) Either direct access to exits or safe and continuous corridors or aisles leading directly to every exit and arranged so as to be conveniently accessible by every occupant shall be maintained and kept unobstructed on all floors of buildings.

(b) Travel distances shall be measured in the following manner:

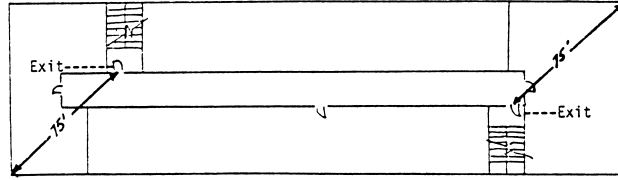
(1) Exits shall be so arranged that the total length of travel from any point to reach an exit will not exceed 150 feet.



(2) Exits shall be so arranged that one exit is not more than 200 feet from another exit.



(3) Dead ends and occupancy areas with access to a single exit shall not exceed 75 feet measured as a radius with the center of the circle being the exit.



(4) Travel distances may be increased to the following in buildings totally protected by an automatic sprinkler system installed in accordance with NFPA-13, 1983 Edition.

- (i) 200 feet from any point to an exit.
- (ii) 300 feet between exits.
- (iii) 100 feet for dead ends and areas with a single path of egress.

(c) Exit access corridor means a corridor which is separated from all other rooms or spaces by full height partitions (floor to ceiling). Exit access corridors shall lead directly to exits. This definition is not intended to restrict the use of open plan floor arrangements. It is intended to provide protected exit access where floor areas are separated from each other by floor to ceiling partitions.

(d) All means of egress shall be properly illuminated, either naturally or artificially, during all periods of occupancy.

(e) All exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible signs indicating the direction of travel where the exit or way to reach it is not immediately visible to the occupants.

(f) Every exit sign shall have "EXIT" printed in plainly legible letters not less than 6 inches high with the principal strokes of letters not less than 3/4 inch wide.

§ 50.23. Means of egress capacity.

(a) A unit of width is the required width for one person or a single line of persons to exit from a building.

(b) The units of width table shall be as follows:

<i>Units</i>	<i>Doorways (Width in inches)</i>	<i>Stairs & Corridors (Width in inches)</i>
1 1/2	32	36
2	40	44
2 1/2	50	50

An additional 10 inches shall be required for each 1/2 unit of width above 2 1/2 units. Credit for units of width shall not be given for a fractional part other than 1/2 unit.

(c) Doorways shall have a minimum clear opening of 32 inches except as indicated in §§ 50.25(q) (relating to stair towers) and 50.26(q) (relating to intercommunicating stairways).

(d) The capacity in number of persons per unit of width for approved components of means of egress shall be 60 persons. Buildings protected by automatic sprinkler systems shall be allowed 90 persons per unit of width.

(e) The following table lists the maximum permissible square feet per person for the purpose of determining the minimum number of units of exit:

Occupants Based on Net Floor Area

	<i>Square Feet Per Person</i>
All purpose rooms	10
Bowling alleys (exclusive of area occupied by the alleys)	10
Classrooms	28
Court rooms and other public rooms in public buildings (exclusive of seating)	40
Dance halls, lodge halls and similar occupancies	7
Dining areas	15
Dormitories and wards	75
Drafting rooms and engineering rooms	60
Factories for heavy manufacturing, garages, warehouses, etc.	300
Factories for light manufacturing	80
Hotels and apartments (the actual capacity of sleeping areas)	125
Laboratories	100
Libraries, reading rooms and museums	30
Main exercise rooms of gymnasiums	10
Markets and showrooms and mercantile establishments	50
Offices up to 400 square feet in area	100
Offices more than 400 square feet in area	60
Power houses, boiler rooms, and the like	500
Recreation rooms	10
Vocational shops and similar occupancies in schools	100
Rooms or areas with fixed seats—One occupant per seat	

1. Net floor area shall be taken to mean all usable floor space, including all areas occupied by equipment or furnishings, but not including corridors, toilet rooms, and such other accessory rooms as may be provided.

2. Bleachers or benches without arms between seats shall be computed on the basis of not more than one person for every 18 inches in length of the bleachers or bench.

Cross References

This section cited in 34 Pa. Code § 51.23 (relating to means of egress capacity); 34 Pa. Code § 52.23 (relating to means of egress capacity); 34 Pa. Code § 53.23 (relating to means of egress capacity); 34 Pa. Code § 54.23 (relating to means of egress capacity); 34 Pa. Code § 55.23 (relating to means of egress capacity); 34 Pa. Code § 56.23 (relating to means of egress capacity); 34 Pa. Code § 57.23 (relating to means of egress capacity); 34 Pa. Code § 58.23 (relating to means of egress capacity); and 34 Pa. Code § 59.23 (relating to means of egress capacity).

§ 50.24. Exit doors and exit access doors.

(a) Doors used in connection with exits, exit discharge or exit access shall be of substantial construction, installed in a workmanlike manner, fitted with reliable hardware and shall be of the side-hinged, vertical hung, swinging type.

(b) Exit, exit access and exit discharge doors shall swing out with the exit travel except that exit access doors from individual rooms need not swing with exit travel when the room occupancy is less than 50 persons.

(c) Doors which lead into the path of travel from other areas shall be located so that they do not encroach more than 8 inches upon the required width of such path of travel when at their full open position.

(d) All exit and exit discharge doors shall be provided with panic hardware or fire exit hardware.

(1) The actuating portion of the panic hardware or fire exit hardware shall be a minimum of 1/2 of the width of the door leaf and shall be mounted between 30 inches to 44 inches above the floor. The latch shall be released when a force not to exceed 15 pounds is applied to the actuating device in the direction of exit travel. No lock or other device which prevents egress shall be permitted on the doors during any period of occupancy.

(2) Main entrance doors do not require panic hardware when the doors are unlocked and ready for use when the building is occupied. Not more than one door or group of doors at one location can be considered as main entrance doors.

(e) All doors shall have a minimum clear width opening of 32 inches. All doors required by Chapters 49-59 (relating to administration—buildings; general requirements—buildings; A-1 assembly; Division A-2 assembly; Division A-3 assembly; Group B educational; Division C-1 health care institutions; Division C-2 hotels, motels, apartment buildings; Division C-3 small group habitation; Division C-4 single exit apartments; Division C-5 prisons, jails, reformatories, and houses of corrections; Division D-O ordinary commercial, industrial, office; and D-H hazardous commercial, industrial, office) shall be a minimum of 6 feet, 8 inches in height.

(f) All exterior doors leading to grade shall have a landing at least 3 feet square but in no case may the landing be smaller than the door which it serves.

(g) Stairs shall be provided where the exterior grade is more than 8 inches below the floor level. These stairs shall comply with § 50.26 (relating to intercommunicating stairway).

(h) Every door to a stairway shall have a landing on both sides of the door at least as wide as the stair.

(i) Approved collapsible revolving doors may be used as exits; however, they may not constitute more than 50% of the required exit width. The clear width of the opening, when the doors are in a collapsed position, shall be used in determining the number of units of width to be allowed for each revolving door.

Cross References

This section cited in 34 Pa. Code § 51.24 (relating to exit doors); 34 Pa. Code § 52.24 (relating to exit doors); 34 Pa. Code § 53.24 (relating to exit doors); 34 Pa. Code § 54.24 (relating to exit doors); 34 Pa. Code § 55.24 (relating to exit doors); 34 Pa. Code § 56.24 (relating to exit doors); 34 Pa. Code § 57.24 (relating to exit doors); 34 Pa. Code § 58.24 (relating to exit doors); and 34 Pa. Code § 59.24 (relating to exit doors).

§ 50.25. Stair towers.

(a) A stair tower shall be a stairway which is separated from all floors or areas of the building. Stair towers shall lead directly to grade by an exit discharge.

(b) Stair towers shall be Class A or Class B types in accordance with the following table:

	<i>Class A Stair</i>	<i>Class B Stair</i>
Minimum clear width in inches	40"	36"
Maximum height of riser	7 1/2"	8"
Minimum width of tread	10"	9"
Maximum angle of stairs in degrees	33°	40°
Required handrails	Both sides	One side under 40"
(Each handrail is allowed to project 3" without decreasing minimum clear width)		in width, both sides 40" or more in width
Maximum vertical distances between landings	9'	12'

(c) The minimum width of landings shall be the same width as the stairs they serve. Intermediate landings on straight run stairs shall have a minimum length of 3 feet.

(d) The narrowest width in a stairway or landing serving a stairway shall determine the units of width for the entire stairway.

(e) There shall be no variation in the width of treads or the height of risers in any flight. Variation in height of risers in adjacent flights shall not exceed 1/4 inch. All treads less than 10 inches, as measured horizontally between the face of risers, shall have an effective projection of approximately 1 inch beyond the face of the riser below.

(f) Where material of stair treads and landings is such as to present a danger of slipping, nonskid material shall be applied.

(g) No arrangement of treads known as winders shall be permitted in required exit stairways.

(h) Stairways, landings, balconies, open sided floors, and the like shall have well-secured handrails. The clear distance between handrail and wall or other obstruction shall be not less than 1 1/2 inches. Longitudinal rails or balusters or both shall be provided. Balusters shall be spaced not more than 6 inches apart. Longitudinal rails shall not exceed 6 inches measured at right angles to the rails. The lowest rail shall be measured vertically from the tread nosing.

(i) Handrails on stairs shall be not less than 30 inches nor more than 34 inches above the upper surface of the tread, measured vertically to the top of the rail, from a point on the tread 1 inch back from the leading edge.

(j) Handrails shall be provided on any stair landing, balcony, ramp, aisle, and the like located along the edge of open sided floors or mezzanines to prevent falls over the open side. Railings protecting open sides of landings, balconies, mezzanines, and the like shall be at least 42 inches high.

(k) Storage or obstructions of any kind shall not be permitted in stair towers.

(l) A door opening into a stair tower shall at no point in its swing reduce the required units of width of the stair or landing.

(m) Every door to a stairway shall open onto a landing at least as wide as the stairs.

(n) Doors and frames used in connection with stair towers shall be of approved label and be of substantial construction, installed in a workmanlike manner, fitted with reliable hardware of approved label and shall be of the side hinged, swing type.

(o) Stair tower doors shall swing with the exit travel.

(p) Stair tower doors shall be provided with fire exit hardware. Exterior doors from stair towers may have panic hardware instead of fire exit hardware. No lock or other device which prevents egress shall be permitted on the doors during any period of occupancy.

(q) Stair tower doors shall be a minimum of 32 inches in width. Doors used in connection with stair towers shall be a minimum of 6 feet, 8 inches in height.

(r) Outside stairs shall be considered an exit when they meet the following conditions:

(1) Outside stairs shall meet the conditions listed in subsections (b)—(d), (f)—(j) and (l)—(q).

(2) Outside stairs shall only serve as an exit for floors three or fewer stories above grade.

(3) Outside stairs shall be accessible and unobstructed at all times of occupancy.

(4) Outside stairs shall be of substantial construction and installed in a workmanlike manner. Combustible construction may be used when floor pan-

els are permitted to be combustible construction in the construction tables. Wood stringers shall be a minimum size of 2 inches by 10 inches stock material when treads are butt nailed or a minimum of 2 inches by 12 inches stock material when the stringers are sawed to accommodate the treads.

(5) Handrails shall be provided on both sides of outside stairs except that a handrail is not required along a solid wall when the dimensions from the exterior handrail to the solid wall is 36 inches or less.

(6) The building exterior wall shall be fire rated in accordance with the rating required for exterior walls in § 50.11 (relating to construction tables).

(7) All doors opening onto the outside stair and door assemblies located within 10 feet of any portion of the outside stair shall have a fire rating the same as the rating required for the exterior wall except that a door located at the top of the outside stair need not be fire rated. All other openings within 10 feet of either side or below the outside stair shall be glazed with 1/4 inch wire glass in steel frames.

Cross References

This section cited in 34 Pa. Code § 50.23 (relating to means of egress capacity); 34 Pa. Code § 51.25 (relating to stair towers); 34 Pa. Code § 52.25 (relating to stair towers); 34 Pa. Code § 53.25 (relating to stair towers); 34 Pa. Code § 54.25 (relating to stair towers); 34 Pa. Code § 55.25 (relating to stair towers); 34 Pa. Code § 56.25 (relating to stair towers); 34 Pa. Code § 57.25 (relating to stair towers); 34 Pa. Code § 58.25 (relating to stair towers); and 34 Pa. Code § 59.25 (relating to stair towers).

§ 50.26. Intercommunicating stairway.

(a) Intercommunicating stairways are stairways which connect two or more floor levels of a building. They may be open to one floor level. They are not required to discharge directly to grade. Intercommunicating stairways shall comply with subsections (b)—(q) when used as a required means of egress.

(b) Intercommunicating stairways shall be Class A or Class B types in accordance with the following table:

	<i>Class A Stair</i>	<i>Class B Stair</i>
Minimum clear width in inches	40"	36"
Maximum height of riser	7 1/2"	8"
Minimum width of tread	10"	9"
Maximum angle of stairs in degrees	33°	40°
Required handrails	Both sides	One side under 40"
(Each handrail is allowed to project 3" without decreasing the minimum clear width)		in width, both sides 40" or more in width

	<i>Class A Stair</i>	<i>Class B Stair</i>
Maximum vertical distances between landings	9'	12'

(c) The minimum width of landings shall be the same width as the stairs they serve. Intermediate landings on straight run stairs shall have a minimum length of 3 feet.

(d) The narrowest width in a stairway or landing serving a stairway shall determine the units of width for the entire stairway.

(e) There shall be no variation in the width of treads or the height of risers in any flight. Variation in height of risers in adjacent flights shall not exceed 1/4 inch. All treads less than 10 inches, as measured horizontally between the face of risers, shall have an effective projection of approximately 1 inch beyond the face of the riser below.

(f) Where material of stair treads and landings is such as to present a danger of slipping, nonskid material shall be applied.

(g) No arrangement of treads known as winders shall be permitted in required exit stairways.

(h) All stairways, landings, balconies, open sided floors, and the like shall have well secured handrails. The clear distance between handrail and wall or other obstruction shall be not less than 1 1/2 inches. Longitudinal rails or balusters or both shall be provided. Balusters shall be spaced not more than 6 inches apart. Longitudinal rails shall not exceed 6 inches measured at right angles to the rails. The lowest rail shall be measured vertically from the tread nosing.

(i) Handrails on stairs shall be not less than 30 inches nor more than 34 inches above the upper surface of the tread, measured vertically to the top of the rail, from a point on the tread 1 inch back from the leading edge.

(j) Handrails shall be provided on any stair landing, balcony, ramp, aisle, and the like located along the edge of open sided floors or mezzanines to prevent falls over the open side. Railings protecting open sides of landings, balconies, mezzanines, and the like shall be at least 42 inches high.

(k) Storage or obstructions of any kind shall not be permitted in stairways.

(l) A door opening into a stairway shall at no point in its swing reduce the required units of width of the stair or landing.

(m) Every door to a stairway shall open onto a landing at least as wide as the stairs.

(n) Doors and frames used in connection with stairways shall be of approved label and be of substantial construction, installed in a workmanlike manner, fitted with reliable hardware of approved label and shall be of the side hinged, swinging type.

(o) Stairway doors shall swing with the exit travel.

(p) Stairway doors shall be provided with panic hardware or fire exit hardware. No lock or other device which prevents egress shall be permitted on such doors during any period of occupancy.

(q) Stairway doors shall be a minimum of 32 inches in width. All doors used in connection with stairways shall be a minimum of 6 feet, 8 inches in height.

Cross References

This section cited in 34 Pa. Code § 50.23 (relating to means of egress capacity); 34 Pa. Code § 50.24 (relating to exit doors and exit access doors); 34 Pa. Code § 50.94 (relating to fixed seating); 34 Pa. Code § 53.26 (relating to intercommunicating stairways); 34 Pa. Code § 55.26 (relating to intercommunicating stairways); 34 Pa. Code § 56.26 (relating to intercommunicating stairways); and 34 Pa. Code § 58.26 (relating to intercommunicating stairways).

§ 50.27. Ramps.

(a) A ramp shall be permitted as a means of egress when it conforms to the following table:

Minimum clear width in inches	40 inches
Maximum slope	1 inch per foot (8.33%)
Maximum length between landings	30 feet
Required handrails	Both sides
(each handrail is allowed to project 3 inches without decreasing the minimum clear width)	

(b) Changes in direction of travel shall be made only at landings.

(c) Ramps which connect two or more floor levels shall comply with the same door, handrail and enclosure requirements as stair towers.

(d) Sloped surfaces of less than 5.0% shall not be considered ramps.

Cross References

This section cited in 34 Pa. Code § 51.27 (relating to ramps); 34 Pa. Code § 52.27 (relating to ramps); 34 Pa. Code § 53.27 (relating to ramps); 34 Pa. Code § 54.27 (relating to ramps); 34 Pa. Code § 55.27 (relating to ramps); 34 Pa. Code § 56.27 (relating to ramps); 34 Pa. Code § 57.27 (relating to ramps); 34 Pa. Code § 58.27 (relating to ramps); and 34 Pa. Code § 59.27 (relating to ramps).

§ 50.28. Horizontal exits.

(a) A horizontal exit is a 2-hour fire wall with one or more openings protected by 1 1/2-hour door assemblies which permit passage from one building or structure to another or area of refuge within the same building.

(b) Horizontal exits may constitute no more than 50% of the required units of exit.

- (c) Fire walls which serve as horizontal exits shall extend to exterior walls or 2-hour fire walls. They shall not be dependent on any structural members of less than 2-hour fire resistance.
- (d) A horizontal exit shall have at least one door which swings with the exit travel from each building section that it serves.

Cross References

This section cited in 34 Pa. Code § 51.28 (relating to horizontal exits); 34 Pa. Code § 52.28 (relating to horizontal exits); 34 Pa. Code § 53.28 (relating to horizontal exits); 34 Pa. Code § 54.28 (relating to horizontal exits); 34 Pa. Code § 55.28 (relating to horizontal exits); 34 Pa. Code § 56.28 (relating to horizontal exits); 34 Pa. Code § 58.28 (relating to horizontal exits); and 34 Pa. Code § 59.28 (relating to horizontal exits).

§ 50.29. Escalators.

Escalators used as a means of egress shall conform with all of the following standards:

- (1) Maximum uninterrupted vertical travel of one story.
- (2) An escalator 24 inches in width or larger shall be considered a maximum of one unit of width.
- (3) Escalators shall be of the horizontal tread type.
- (4) Escalators shall not exceed 50% of the required units of exit.

VERTICAL OPENINGS

§ 50.31. Vertical openings 9 square feet or more.

Walls and partitions enclosing vertical openings 9 square feet or more shall be constructed as set forth in the following table:

<i>Construction Type</i>	<i>Fireresistive Requirement</i>	<i>Fire Door Assembly</i>
Fireresistive	2-Hour Noncombustible	1 1/2-hour B Label
Noncombustible	1-Hour Noncombustible	3/4-hour C Label
Protected Heavy Timber	1-Hour Noncombustible	3/4-hour C Label
Ordinary	1-Hour	3/4-hour C Label
Wood Frame	1-Hour	3/4-hour C Label

Cross References

This section cited in 34 Pa. Code § 50.32 (relating to vertical openings less than 9 square feet); 34 Pa. Code § 51.31 (relating to vertical openings); 34 Pa. Code § 52.31 (relating to vertical openings); 34 Pa. Code § 53.31 (relating to vertical openings); 34 Pa. Code § 54.31 (relating to vertical openings); 34 Pa. Code § 55.31 (relating to vertical openings); 34 Pa. Code § 57.31 (relating to vertical openings); 34 Pa. Code § 58.31 (relating to vertical openings); and 34 Pa. Code § 59.31 (relating to vertical openings).

§ 50.32. Vertical openings less than 9 square feet.

Shafts less than 9 square feet in area not complying with § 50.31 (relating to vertical openings 9 square feet or more) shall have enclosing walls or be lined with sheet metal having lock jointed or riveted seams and joints. Combustible material, partitions, and floors through which shafts pass shall be kept at least 3 inches from the metal lining or shall be protected by the equivalent of 3/8 inch of plaster or plaster board. Openings between shafts and the floor construction through which they pass shall be filled with noncombustible material, securely held in place to prevent the passage of fire. Doors opening into the vertical shafts shall be of metal or shall be covered on the shaft side by the equivalent of 1/4 inch of asbestos and not less than 26 gauge steel turned around all edges and securely fastened to the door.

Cross References

This section cited in 34 Pa. Code § 51.31 (relating to vertical openings); 34 Pa. Code § 52.31 (relating to vertical openings); 34 Pa. Code § 53.31 (relating to vertical openings); 34 Pa. Code § 54.31 (relating to vertical openings); 34 Pa. Code § 55.31 (relating to vertical openings); 34 Pa. Code § 57.31 (relating to vertical openings); 34 Pa. Code § 58.31 (relating to vertical openings); and 34 Pa. Code § 59.31 (relating to vertical openings).

§ 50.33. Fire door assemblies.

Fire door assemblies in vertical openings shall be self-closing, latching, and normally kept closed. Electromagnetic hold open devices may be approved by the Department where all of the following conditions are met:

- (1) Upon release, the door becomes self-closing.
- (2) An approved release device is provided, so arranged that upon interruption of electric current, the door will be released.
- (3) The release device is so designed that the door may be instantly released manually by some simple and readily obvious operation, and upon release the door becomes self-closing.
- (4) The electric current will be positively interrupted by one or more of the following methods:
 - (i) The operation of an approved automatic sprinkler system which protects the entire building, including both sides of any horizontal exit.
 - (ii) The operation of an approved automatic fire alarm system installed to protect the entire building.
 - (iii) By the operation of approved smoke detectors installed in such a way to detect smoke or other products of combustion on either side of the door opening.

Cross References

This section cited in 34 Pa. Code § 51.31 (relating to vertical openings); 34 Pa. Code § 52.31 (relating to vertical openings); 34 Pa. Code § 53.31 (relating to vertical openings); 34 Pa. Code § 54.31 (relating to vertical openings); 34 Pa. Code § 55.31 (relating to vertical openings); 34

Pa. Code § 57.31 (relating to vertical openings); 34 Pa. Code § 58.31 (relating to vertical openings); and 34 Pa. Code § 59.31 (relating to vertical openings).

§ 50.34. Exterior openings.

Exterior openings in vertical shafts which require a minimum 1-hour fire-resistive rating shall be of incombustible construction with all glazed portions being 1/4 inch wire glass in steel frames when such openings are within 10 feet of any other openings in a vertical or horizontal plane.

Cross References

This section cited in 34 Pa. Code § 51.31 (relating to vertical openings); 34 Pa. Code § 52.31 (relating to vertical openings); 34 Pa. Code § 53.31 (relating to vertical openings); 34 Pa. Code § 54.31 (relating to vertical openings); 34 Pa. Code § 55.31 (relating to vertical openings); 34 Pa. Code § 57.31 (relating to vertical openings); 34 Pa. Code § 58.31 (relating to vertical openings); and 34 Pa. Code § 59.31 (relating to vertical openings).

INTERIOR FINISH

§ 50.41. Definitions.

Interior finish is the exposed interior surfaces of a building. Paint, wallpaper not more than 1/28 inch thick and similar wall finishes having no greater fire hazard than wallpaper shall not be considered interior finishes. Decorations and furnishings are not considered interior finishes.

§ 50.42. Basic material used.

The classification of interior finish materials shall be that of the basic material used without regard to subsequently applied paint or wallpaper not more than 1/28 inch thick.

§ 50.43. Classification.

(a) *NFPA Standard.* Interior finish materials shall be classified in accordance with NFPA Standard 255, tests of surface burning characteristics of building materials, 1979 Edition as listed in this section.

(b) *Class A Interior Finish.* Flame Spread 0-25 includes any material classified at 25 or less on the test scale. Any element thereof when so tested shall not continue to propagate fire.

(c) *Class B Interior Finish.* Flame Spread 26-75 includes any material classified at more than 25 but not more than 75 on the test scale.

(d) *Class C Interior Finish.* Flame Spread 76-200 includes any material classified at more than 75 but not more than 200 on the test scale.

(e) Exposed portions of structural wood members complying with the size requirements in § 50.11(c) (relating to construction tables) shall not be considered interior finishes.

MANUAL AND AUTOMATIC FIRE ALARM SYSTEMS**§ 50.51. Manual system.**

(a) A manual fire alarm system is a system that consists of manual pull stations, signaling devices, power source, control panel and other related components which is designed to provide notification to all building occupants.

(b) Manual pull stations shall be installed on each floor including basements, penthouses and equipment rooms. The pull stations shall be installed at each point of egress from a floor area within 5 feet of the exit.

(c) The manual pull stations shall be mounted between 36 inches and 44 inches above the finished floor.

(d) Noncoded, selective coded, or zone coded alarm systems may be installed. When coded systems are used, there shall be a minimum of four rounds of a four-pulse or more code that is indicative of the area of alarm initiation. The alarm system shall be installed in such a way that simultaneous alarms from different stations or zones will not cause a confused or jumbled code. The maximum number of different audible codes in any one facility shall be 150 except where the installation means would permit five or more simultaneously received alarms to sound successively without loss of a round from any alarmed station.

(e) All types of manual pull stations shall be wired and connected in such a way so that a single open will only indicate a trouble condition and not initiate a general alarm.

(f) Manual fire alarm systems shall comply with §§ 50.53, 50.55, and 50.56 (relating to general fire alarm requirements, maintenance, and testing new equipment).

§ 50.52. Automatic system.

(a) An automatic fire alarm system is a system designed to detect products of combustion and provide automatic notification to all building occupants. It shall be composed of detection devices, alarms, power source, wiring, and other related components as necessary. All detection devices shall be listed as meeting U.L. 268, 1981 Edition.

(b) Automatic detectors shall be installed to comply with the requirements of the applicable occupancy division.

(c) Automatic detectors shall be securely mounted on outlet boxes. Detectors shall not be recessed into the mounting surface unless they have been tested and listed for recessed mounting. Detectors may be ceiling or side wall mounted with a minimum of 4 inches clearance from a ceiling to wall jointure measured from the jointure to the top of the detector. Side wall mountings shall not exceed 12 inches measured from the ceiling and side wall jointure to the top of the detector.

(d) Automatic detectors shall be installed within the spacings or coverage used in the testing and listing of the detectors by any of the accepted independent testing agencies. The following considerations shall be made when determining spacing:

(1) *Smooth ceilings.* Normal spacings up to heights of 12 feet or less shall be used. Reduced spacing for areas over 12 feet in height shall be used.

(2) *Sloped ceilings.* Detectors within 3 feet of the peak, measured horizontally, with additional required detectors at normal spacings based on horizontal measurements shall be used.

(3) *Beamed ceilings.* Beams over 8 inches in depth shall reduce normal detector spacings. Beams over 18 inches in depth and on 8 feet or more centers shall have each bay treated as a separate area requiring a minimum of one automatic detector.

(4) *Partitions.* Partitions that extend to within 18 inches of the ceiling will not influence detector spacing. Partitions less than 18 inches from the ceiling may affect detection capabilities requiring reduced detector spacing.

(5) *Corridors.* When spacing detectors in corridors, the distance from the end wall of the corridor to the first detector shall not exceed 1/2 of the maximum distance allowed between first and second detectors in the corridor. The maximum distance allowed between the first and second detectors in a corridor shall be based on the spacing used when the detector was tested for listing by the accepted independent testing agency.

(6) *Detector spacing for electromagnetic hold open devices.* When doors are held open by electromagnetic devices, automatic detectors shall be installed at each location. A minimum of one automatic detector is required when the distance from the top of the door to the ceiling is 24 inches or less. Automatic detectors are required on both sides of the door when the distance from the top of the door to the ceiling is over 24 inches. The mounting distance of the automatic detector from the door shall not be less than the distance measured from the top of the door to the ceiling with a minimum distance of 12 inches and a maximum distance of 5 feet. The detectors may be side wall or ceiling mounted with a preference for ceiling mounting. Approved automatic closing devices with built-in hold open mechanism and detector may be used in lieu of wall or ceiling mounted devices.

(7) *Special areas.* The Department may approve alternative spacing of automatic detectors in special areas for specific hazards.

(e) Automatic fire detectors shall be classified into one of the four groups as follows:

(1) Heat fire detectors are devices that are designed to be sensitive to the rise in temperature produced by a burning substance. Heat detectors are generally classified as fixed temperature detection units, rate compensation detection units and temperature rate-of-rise detection units.

(i) Fixed temperature detection units may be the bimetallic, electrical conductivity, fusible alloy, heat sensitive cable, liquid expansion or other approved types that will respond when its operating element becomes heated to a predetermined level. When automatic fire detection is required, fixed temperature detection units shall be installed in boiler rooms, kitchens and other high heat or varying temperature areas where the normal or occasional environment prohibits the use of more sensitive fire detectors. The fixed temperature sensing setting shall be commensurate with the area installed.

(ii) Rate compensation detection units are to be considered for use in the same areas as required for fixed temperature detection units.

(iii) Rate-of-rise heat detection units may be the pneumatic spot-type or thermoelectric effective type heat detection units that respond when the temperature around the unit rises at a rate exceeding a predetermined amount. When automatic fire detection is required, rate-of-rise heat detection units shall be installed in lavatories, closets 25 square feet or less and other areas where the normal or occasional environment would prohibit the installation of more sensitive fire detectors. Rate-of-rise heat detection units may be installed with combination fixed temperature elements.

(2) Smoke detectors are devices which detect visible or invisible particles of combustion. Operating principles of smoke detectors may be the photoelectric light scattering type, photoelectric light obscuration type, projected beam type, ionization type utilizing radioactive material, resistance bridge type or cloud chamber type. When automatic fire detection is required, smoke detection units shall be installed in all occupied and unoccupied spaces not protected with other type fire detectors or fire suppression systems. Under certain hazards, the department may require smoke detectors in addition to a fire suppression system. Smoke detectors may be utilized as combination units with heat detectors or other fire detection units.

(3) Duct mounted fire detectors are devices designed to be sensitive to fire conditions in ducts utilized for heating, ventilating, air conditioning or other purposes. Duct mounted fire detectors may be classified as heat duct detectors or smoke duct detectors.

(i) When an automatic fire detection system is required in a building, air duct systems between 2,000 and 15,000 CFM shall have a heat detector installed at such a duct location that the flowing fire temperatures will be sensed during all modes of operation of the air duct system. Air duct systems over 15,000 CFM shall be equipped with duct heat detectors and smoke duct detectors, installed at such duct locations that the flowing fire temperatures will be sensed during all modes of operation of the air duct system. Not less than one heat detector and one smoke detector shall be installed in each system, additional detectors shall be added if needed to sense all modes of operation.

(ii) A smoke duct detector shall be installed in all ducts that penetrate a smoke barrier partition and connect to a smoke damper for automatically restricting the spread of smoke in that particular duct.

(iii) All duct mounted fire detectors shall be connected to the building manual or automatic fire alarm system. When a duct detector alarms, it shall automatically shut down its associated supply fan and any associated smoke dampers to restrict the spread of heat and smoke through the air duct system.

(iv) Ducts having an automatic extinguishing system shall not be required to have heat or smoke duct detectors but shall operate the fire alarm system, supply fans and dampers as described in this paragraph.

(4) The Department may require other detectors which would include fire detectors not mentioned in the above classifications such as flame detectors, fire-gas detectors or other fire detectors which are sensitive to a specific fire related phenomenon.

(f) Automatic fire alarm systems shall comply with §§ 50.53, 50.55 and 50.56 (relating to general fire alarm requirements; maintenance; and testing new equipment).

Cross References

This section cited in 34 Pa. Code § 55.52 (relating to automatic systems); 34 Pa. Code § 55.82 (relating to large personal care homes); and 34 Pa. Code § 57.52 (relating to automatic alarms).

§ 50.53. General fire alarm requirements.

(a) *Plan approval.* Approval for fire alarm systems shall be obtained at the same time as the building approval. See Chapter 49 (relating to administration). Three sets of plans showing the location of manual stations, automatic detection units, control or other panels, signaling devices and other required equipment shall be submitted for approval. The location of these devices may be incorporated on the architectural floor plans or may be on fire alarm or electrical wiring plans. The approval issued by the Department is only for the location of the equipment. Only equipment approved by the Department shall be used.

(b) *Control panels.* Control panels are required for manual and automatic fire alarm systems. A common control panel may be installed where both are used.

(1) *Operation.* The primary function of the fire alarm control panel is to monitor alarm initiating devices such as manual stations, automatic detectors, sprinkler flow switches or other devices and cause upon alarm activation the operating of signaling devices to alert building occupants of possible danger from fire. Auxiliary functions such as fire company reporting, air handling systems start-up or shutdown, smoke barrier door closing, elevator capture and return and remote annunciation are secondary functions of the system and shall be given lower priority within the control panel operations. The control panel shall be designed with sufficient power capacity to operate all primary and secondary functions of the system simultaneously. Wherever both a manual fire

alarm system and an automatic fire alarm system are used, all alarm indicating devices shall sound on an alarm origination in either system.

(2) *Location.* A fire alarm control panel shall be installed in a heated room with a clean, dry environment. The control panel shall be located in such a manner to protect it from tampering by installing it in a locked room or with a locked control panel door that is accessible only to authorized building personnel.

(c) *Zoning.*

(1) Manual and automatic fire alarm systems shall be designed with a minimum of one zone per floor. Manual and automatic devices may be connected to the same zone. Additional zones shall be provided for floor areas that exceed 20,000 square feet or areas exceeding 200 feet in any direction.

(2) When a zone is initiated, the zone indicator on the fire alarm control panel and any remote annunciators shall lock-in and continuously display the alarm condition until the actuated devices are reset and a system reset switch is activated.

(3) A maximum of 30 alarm initiating devices may be connected within a single zone.

(d) *Annunciators.*

(1) *When required.* Annunciators shall be installed in manual and automatic fire alarm systems when more than one zone is required.

(2) *Locations.* Annunciators shall be installed so that they are readily accessible for viewing alarm conditions. Annunciators shall not be in locked rooms, closets or other areas unless building personnel are available at all times to provide access.

(3) *Types.* Annunciators that indicate alarm zones may be one or a combination of the following types:

(i) *Lamp illumination type.* The actuation of an alarm zone illuminates the appropriate lamp. Each zone lamp shall be identified by a label or an adjacent zone chart describing the alarm zone.

(ii) *Graphic type.* The annunciator is represented by a panel that illustrates the building and zone layout. Either the graphic zone or adjacent lamp shall illuminate to designate the area of alarm.

(iii) *Window drop type.* The actuation of an alarm zone shall cause a window to mechanically or electrically drop to indicate the zone.

(iv) *Cathode Ray Tube (CRT) display.* A zone in alarm is represented by a numeric, English language or combination display on an electronic cathode ray tube.

(v) *Hard copy print-out.* The alarm zone is represented by a numeric, English language or combination print-out on hard copy paper. The printer shall include paper advance that would allow multiple zones to print without overprinting.

(4) *Operation.* Alarm conditions on any of the annunciators shall lock-in or maintain their alarm identification status until the device that initiated the alarm is reset and a system reset switch actuated. Control panels that indicate all the zones may serve as the annunciator if properly located for accessibility. Provisions shall be made to test all zone indicators without actuating the alarm devices. Trouble signals, system reset, bypass and other fire alarm system functions may be included with annunciator panels.

(5) *Hard copy printing.*

(i) *When required.* Hard copy printers shall be installed in manual and automatic detection fire alarm systems when 50 zones or more are required. If multi-function systems are used, fire alarm system alarms shall have priority and be readily distinguished from all other signals. If the multi-function system is not prioritized, a separate printer shall be used for fire alarm functions only. The order of priority shall be as follows:

- (A) Fire alarm and process alarm.
- (B) Supervisory and fire trouble signals.
- (C) Hold-up and burglar alarms.
- (D) Other signals.

(ii) *Locations.* Hard copy printers shall be installed in locations that are generally supervised by building personnel to prevent tampering and vandalism by unauthorized persons. If a printer is utilized for annunciation purposes, its accessibility to fire service and building officials shall be considered.

(iii) *Operation.* Hard copy printers shall provide positive documentation of all fire alarm conditions within the system. The documentation shall include a printed record of date, time of day, and a method of identifying the zone of alarm initiation. The zone identification may be by precoded punched holes, numeric or English language print. Printers shall be positive in operation with circuits designed to prevent confused documentation and shall store simultaneous alarm signals so that all alarm zones will be recorded.

(e) *Signalling devices.*

(1) Audible signalling devices shall be installed in all occupancies required to have a manual or automatic fire alarm system.

(i) *Types.* Audible signalling devices may be any approved bell, horn, chime, buzzer, siren or speaker. Signalling devices shall be electrically operated with wiring to the devices supervised for opens, shorts or grounds. Trouble conditions on the supervised circuits shall be indicated on the system fire alarm control panel.

(ii) *Locations.* Audible signalling devices shall be installed so that they can be heard above all other normal ambient noises in every occupied space of the facility. Calculations shall be made when placing audible signalling devices for a minimum of three decibels (dba) above the normal ambient

noise levels. Considerations shall be made for surrounding acoustics, ceiling heights, room door penetrations, and ambient noise levels.

(iii) *Usage.* Audible signalling devices shall be of a distinctive sound and pitch from any other signalling devices used in the area. No more than one type of fire alarm signalling device may be used in an area. Audible signalling devices may be used for other purposes, providing fire alarm signalling has priority, and the alternate use signal is of a different sound and pitch.

(iv) *Mounting.* Audible signalling devices shall be mounted as close as practical to the ceiling in areas with ceilings 8 feet or less. In areas with higher ceilings, the audible signalling devices shall be installed at 8 feet. Signalling devices that provide adequate sound levels may be installed above the 8 foot height in large open areas.

(2) Visual signalling devices may be required by the Department in occupancies that shelter, employ, treat or provide entertainment for persons with known hearing impairments.

(i) *Types.* Visual signalling shall flash on and off when activated or in a manner that clearly signifies an alarm condition. The visual indicators shall be red or white with "Fire" inscribed. Strobe flashing is permitted providing the flash rate is outside the rate that affects persons with epileptic conditions. Visual signalling devices may be installed as combination units with audible signalling devices.

(ii) *Locations.* Visual signalling devices shall be installed so that they can be seen during alarm conditions from any point within corridors and large open areas. If smoke barrier sections are provided, a minimum of one visual signalling unit shall be provided in each smoke barrier section. In addition, visual signalling devices shall be installed in classrooms, apartments or other areas where it is known that persons with hearing impairments will normally reside or function in without the presence of persons with normal hearing capabilities.

(iii) *Mounting.* Visual signalling devices in corridors may be side wall or ceiling mounted within a maximum height of 8 feet above the finished floor. Visual signalling units that are designed for large open areas may be above the 8 foot height providing they are visible from all points of the area they are intended to cover.

(3) Presignal systems may only be used in special applications approved by the Department. When presignal systems are used, a method of initiating a general alarm shall be provided at each pull station and the control panel location.

(f) *Supervision.* Fire alarm control panels shall provide electrical supervision for all alarm initiating circuits, signalling circuits and normal operating power supplies. Supervision shall include wiring from the control panel terminations to the terminations of all the devices on the circuits.

(1) Trouble signals shall comply with the following:

(i) An open or grounded condition in these circuits shall cause a trouble signal to sound at the control panel.

(ii) The trouble signal shall be distinctive in sound from alarm signals, continuous in operation and may be common to all supervised circuits in a single system.

(iii) A trouble signal silence switch is permitted providing its operation transfers the trouble indication to a lamp or other visible indicator that remains on until the trouble condition is corrected. The trouble signal silence switch shall be electrically arranged so that the trouble signal will sound if the switch is in the silence position and no trouble exists in the system.

(iv) Trouble signals shall be installed at each fire alarm control panel either mounted in the control panel or mounted adjacent thereto. If the control panel is located in an area not regularly frequented by building personnel, additional trouble signals shall be installed in areas where they will be readily heard by building authorities.

(2) A single break or a single ground fault in any of the electrically supervised alarm initiating circuits or interruption and restoration of the main or secondary source of power to the control panel shall not cause signalling devices to operate. Trouble signals shall operate only on any of the conditions in this paragraph.

(3) Two wire circuits utilizing end-of-line supervisory devices or four wire circuits allowing for McCulloh operation are permitted for alarm initiating circuits. When end-of-line devices (E.O.L.) are used, the alarm initiating units containing the E.O.L. devices shall be clearly marked.

(4) In voice communication systems where speakers are used to produce audible fire alarm signals, a failure of a pre-amp unit, tone generator or audio amplifier shall cause a trouble signal on the control panel except pre-amps, tone generators, or audio amplifiers enclosed as integral parts serving only a single speaker. In these systems, the wiring to speakers shall be electrically supervised as in other signalling devices.

(g) *Power source.* Fire alarm systems shall be powered from two sources of electrical supply voltages.

(1) The main source of operating voltage shall be connected to the load side of the main service of commercial power or the main distribution service of an isolated power plant located on the premises. The connection shall be made through an overcurrent protective device in an approved manner with the overcurrent protective device lockable and conspicuously identified with the designation "Fire Alarm Supply."

(2) The second source of power may be one of the following:

(i) A generator set approved for emergency lighting power sized to accommodate the total load of its intended use including the fire alarm sys-

tem. The fuel supply shall be sufficient to operate the auxiliary generator for a minimum of 12 hours with refueling available on short notice for an additional 12 hour period.

(ii) The second source or back-up power may be by the utilization of storage batteries located in the control panel or as near as possible in a separate cabinet adjacent to the control panel. Batteries used for fire alarm systems shall be designed for their intended use and shall not supply power or be used for other purposes. The transfer from loss of normal power to back-up battery source shall be automatic.

(A) Batteries shall be sized to operate the entire fire alarm system under normal load for a minimum of 24 hours during normal power outages with sufficient power to operate alarm signalling devices a minimum of 5 minutes after the 24 hour period.

(B) Automatic charging circuits shall be provided for recharging the batteries after use and for maintaining the batteries at full charge under conditions of normal power applied.

(h) *Approved equipment.* Detection devices, alarm indicating devices, control panels, and connected components of the fire alarm systems shall be listed by Underwriters' Laboratories or approved by Factory Mutual or other accredited agency accepted by the Board. All such items shall be listed or approved for the purpose of its intended use and shall be installed in a manner not to exceed the maximum approved specifications.

(i) *Wiring.* Wiring and installation work shall be performed in accordance with the 1981 National Electrical Code as adopted by the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.

(j) *Elevator detectors in a building that has a manual or automatic fire detection system.* Elevator recall detectors shall be interconnected to the fire alarm control panel for monitoring alarm and trouble conditions. This monitoring shall be in addition to the operation for elevator recall.

(k) *Automatic extinguishing systems.* Buildings required to have automatic extinguishing systems and fire alarm systems shall comply with the following:

(1) Operation of an automatic extinguishing system shall cause the initiation of the fire alarm system.

(2) The closing of shut off valves shall operate the fire alarm trouble signal in a manner that does not disturb supervision of an alarm initiating or indicating circuits.

Cross References

This section cited in 34 Pa. Code § 50.51 (relating to manual system); and 34 Pa. Code § 50.52 (relating to automatic system).

§ 50.55. Maintenance.

(a) Fire alarm systems shall be maintained in operating condition at all times. To assure operation, all items in the system shall be physically checked by persons who are familiar with the equipment and its proper operation.

(b) The following items shall be checked with a minimum of once each year. Documentation shall be maintained on the following and shall be available to the Department.

(1) *Fire alarm control panels.* Check supervisory operation in alarm initiating circuits, signalling circuits and operating power.

(2) *Manual pull stations.* Operate each manual pull station to test its alarm initiating capability. The test may be performed without operating signalling units or auxiliary functions.

(3) *Automatic fire detectors.* Operate each automatic detector that is not destroyed by testing. A minimum of 5.0% of fire detectors that are destroyed by testing shall be operated.

(4) *Audible signalling units.* Sound all audible signalling units to check that they can be heard in the area they are to cover. This test may be performed during scheduled fire drills.

(5) *Annunciators.* Operate all connected zone indicators.

(6) *Auxiliary functions.* Test all connected auxiliary functions such as elevator recall, fan shutdown, smoke barrier door closing, damper operation and any other required auxiliary functions for proper operation.

Cross References

This section cited in 34 Pa. Code § 50.51 (relating to manual system); and 34 Pa. Code § 50.52 (relating to automatic system).

§ 50.56. Testing new equipment.

(a) *New systems tests.* Before a fire alarm system is placed into service, all equipment, including new equipment added to existing systems, shall be thoroughly tested for proper operation. Documentation shall be made of the tested devices and be made available to representatives of the Department for their review.

(b) *Method of testing new equipment.* The testing of new fire alarm systems shall include the operation of all manual pull stations, automatic fire detectors, audible signalling units, visual signalling units, control panels, annunciators, trouble signals, and required auxiliary function devices. Automatic fire detectors that are destroyed when tested or used shall have a minimum of one such device tested in each zone in such a way to assure proper circuit operations.

Cross References

This section cited in 34 Pa. Code § 50.51 (relating to manual system); and 34 Pa. Code § 50.52 (relating to automatic system).

§ 50.57. Fire drills.

Fire drills should be conducted in all buildings required to have a manual or automatic fire alarm system. The drills should include the actuation of any of the alarm initiating devices, operation of signalling units and all required auxiliary functions. Fire drills conducted in hotels, motels and similar buildings are for staff training purposes and general alarms that would cause building evacuation should not be initiated during drills.

- (1) Fire drills should be performed a minimum of once every 6 months. All drills should be held during normal occupancy times.
- (2) Documentation should be kept of all fire drills indicating the date, time of day, system operation and occupant response remarks. This documentation should include the signature of the person conducting the fire drill.

§ 50.58. Inspection and maintenance of detection devices in apartments.

(a) The owner, or the owner's agent, shall inspect the automatic fire alarm devices located in individual apartments every 12 months to ensure that the devices are functioning properly.

(b) The following is the responsibility of the tenant, unless specified otherwise in the lease agreement. The tenant shall:

- (1) Inspect and test the operation of the automatic fire alarm device at the beginning of the tenant's occupancy and monthly thereafter.
- (2) Replace batteries, if necessary, to keep the automatic fire alarm device operable and functioning properly.

(c) The tenant shall notify the owner, or the owner's agent, if the automatic fire alarm device is not functioning properly.

(d) The owner, or the owner's agent, shall notify tenants of their responsibilities under this section by delineating those responsibilities in the lease or rental agreement, or by written notice at the time the lease or rental agreement is presented to the tenant for signing, or by written notice prior to occupancy or release renewal where there is no written lease agreement.

(e) An owner of a building having one or more apartments who complies with the requirements of these regulations concerning automatic fire alarm systems is not responsible for damage or injury to a person or property due to, or as a result of, the misuse or tampering with the automatic detection device caused by a person other than the owner or the owner's agent.

Source

The provisions of this § 50.58 adopted August 7, 1992, effective August 8, 1992, 22 Pa.B. 4091.

Cross References

This section cited in 34 Pa. Code § 49.2 (relating to jurisdiction and effective dates).

EMERGENCY LIGHTING SYSTEMS**§ 50.61. General requirements.**

(a) *Approval.* All emergency lighting systems installed to provide emergency illumination as required by this chapter shall be approved.

(b) *Location.* The emergency source of energy for illumination shall be a device installed within the building. Special permission may be granted by the Department to locate the emergency lighting system on the premises when not located within the building. The device shall be either an approved engine generator or approved battery system.

(c) *Automatic control.* The control of the emergency source shall be fully automatic and not dependent upon the manual operation of any switch or device. The emergency source shall supply power when a loss of normal source power occurs on any phase or line to a panel serving an area requiring emergency lighting due to breaker opening, fuse failure or removal, cable failure or similar conditions.

(d) *Control panel functional requirement.* Each emergency lighting system shall include an approved control panel for area protection. The control panel shall include low voltage sensing devices (three for three phase and one for one phase systems) capable of detecting a reduction in normal source voltage to approximately 80% of rated source voltage, coded visual indication of the space experiencing the power failure and isolated means for activating the emergency source. A break in any conductor feeding the control panel shall cause a failure indication.

(e) *Control panel location.* The control panel shall be of an approved type and shall be enclosed in a metal cabinet having a hinged door equipped with an effective lock and catch. The visual indicators of a failure shall be visible with or without opening the cabinet door. A nameplate affixed to the door of the cabinet shall designate the equipment as the area protection control panel. Suitable marking plates shall be provided at visual indicators to enable field marking of areas protected. The control panel shall be securely mounted in a clean dry location where it will be conspicuous and readily accessible at all times. Nonlocking type over-current devices are acceptable in all circuits to the control panel.

(f) *Full illumination within 15 seconds.* Emergency lighting systems shall provide full illumination within 15 seconds after normal source power failure.

(g) *Nameplate.* Emergency lighting systems shall be provided with a nameplate setting forth the name of the manufacturer, model number, and such other details as may be specifically mentioned in the special requirements for the different types of equipment. The nameplate shall be securely fastened to the equipment and shall not be removed.

(h) *Permissible load.* The total connected emergency load shall not be greater than that which the system is designed to carry for a period of 1 hour.

(i) *Connection with normal supply.* Except unit systems, emergency systems utilizing a device which makes the system inoperative when the building is not occupied shall be connected so that some of the normal circuits necessary for illumination, in each location requiring emergency illumination, cannot be used unless the emergency source is ready for use.

(j) *Switches.* No protective or disconnecting devices other than the following shall be permitted to be installed in the emergency lighting circuits:

(1) Panelboards for emergency lighting distribution may contain circuit breakers, each of which shall be equipped with a handle locking device to prevent unauthorized operation of the breaker and disconnection of the circuit. The panelboards shall be clearly marked with the legend "emergency lighting."

(2) Location disconnecting devices, such as wall switches, designed to disconnect the emergency supply from rooms which are not being used shall also disconnect the entire normal supply to the rooms, but they may not cut off the emergency source from the hallways, stairways, ramps and similar passageways leading to outside building exits.

(k) *Submission and approval of plans.* No device or system required by this chapter shall be installed until floor plans or sketches have been filed with and approved by the Department. The plans or sketches shall be in triplicate and shall show the proposed location of the equipment, the location of all exit or other lights connected to the emergency system and other information which the Department may request. The Department approval denotes approval only of the location of emergency fixtures throughout the building. The information required by this subsection may be included on the general building plans and submitted for approval.

(l) *Testing required.* Systems shall be proved with a test switch to simulate a power failure to the emergency throwover switch or equipment. A complete test of all emergency lighting systems and inspection of all circuits for satisfactory operation shall be made at least once each week, except that when buildings or rooms are used less than once a week, tests may be made within 1 hour prior to the opening of the room or building on each day of use. A record of tests shall be maintained and shall be available for inspection. No building or room within the scope of this chapter shall be used unless both regular and emergency sources of illumination are available.

(m) *Interlocks required.* Emergency throwover switches and equipment shall be interlocked so that no line or phase of the emergency source of supply shall be connected to a line or phase of the normal supply. Grounded neutrals may be interconnected.

(n) *Transfer switch capability to withstand high-fault currents.* The transfer switch or switchgear shall be capable of carrying the maximum fault current available on the load side of the transfer switch or switchgear for the time required for circuit to be cleared of the fault current by fuses or circuit breakers on the service sides of the transfer switch or switchgear. The ability of the switch

to carry rated current within recognized temperature rise limits shall be unimpaired after being subjected to one operation at the maximum fault current available.

(o) *Minimum intensity of illumination.* Emergency lighting systems, other than unit systems utilizing floor or spot light type of distribution, shall produce and maintain for at least 1 hour a minimum intensity of illumination, measured on a horizontal plane 30 inches above the floor as follows:

(1) An intensity of 5/10 of a footcandle at exit doors, hallways, corridors, passageways, stairways, runways, ramps and the like, leading to the outside building exits.

(2) An intensity of 25/100 of a footcandle at other locations requiring emergency lighting.

(3) An intensity of 15/100 of a footcandle, with special permission from the Department, in theaters and motion picture theaters where arrangements have been made to automatically continue the performance even though a power failure has occurred.

(p) Where unit storage battery systems utilizing flood or spot light type of distribution are used, the distance between adjacent units shall not exceed 50 feet. The projectors shall be directed towards the exits and located so as to provide distribution of light over the entire floor area. Glare and sharp shadows shall be held to a minimum. The minimum total operating lamp load measured after 1 hour of battery operation shall be in accordance with the following:

(1) A rating of 1/10 watt per square foot of floor area of hallways, passageways, stairways, ramps, corridors, and the like, leading to the outside building exits.

(2) A rating of 5/100 watt per square foot at other locations requiring emergency lighting.

Cross References

This section cited in 34 Pa. Code § 50.62 (relating to storage battery systems); 34 Pa. Code § 50.63 (relating to unit systems); and 34 Pa. Code § 50.64 (relating to internal combustion engine generator systems).

§ 50.62. Storage battery systems.

(a) *Types of batteries permitted.* When lead acid storage batteries are provided as the emergency source of supply, they shall be designed and constructed to adequately meet the requirements of emergency lighting service and shall be contained in sealed glass or heat resistant plastic jars except as otherwise noted in this chapter. The cells shall be assembled with an electrolyte having full charge specific gravity of 1.200-1.225.

(b) *Battery charging equipment.* Storage battery emergency lighting systems shall be equipped with a device for maintaining the batteries in a fully charged condition. No switch which may render this device ineffective is permitted. Each

time the emergency lighting system is used because of the failure of the main supply, a charge at maximum rate shall be given to the battery immediately. The same rate of charge shall be given to the battery as often as necessary to assure its maintenance in a fully charged condition. The charging device shall be capable of placing the batteries in a state of full charge with 12 hours after restoration of power following a power failure.

(c) *Care of batteries.* Storage batteries used in emergency lighting systems shall be mounted in a well ventilated room or cabinet, and will be maintained at a temperature of not less than 65° F. The mounting of the cells shall be of ample strength and rigidity to carry the weight without appreciable sagging. Batteries shall not be located in places where they would be subject to deterioration through dampness.

(d) *Voltmeter required.* Storage battery systems shall be provided with a voltmeter having a guaranteed accuracy of 1% of full scale, except that a voltmeter having a guaranteed accuracy of 2% of full scale may be used if the voltmeter received a special calibration at the normal float charge value so that the accuracy of indication at this point on the scale is not less than 1.0% of full scale value. The voltmeter shall indicate the voltage of the battery at all times.

(e) *Nameplate.* The nameplate required by § 50.61 (g) (relating to general requirements) shall also contain the final rated voltage of the battery under load at the end of the one hour period, the specific gravity of the electrolyte when the batteries are fully charged, capacity of system in watts, rated nominal voltage and current.

(f) *Capacity.* The capacity of the storage battery when fully charged shall be sufficient to carry the connected emergency load for a period of not less than 1 hour with a final voltage not less than 87% of the nominal lamp voltage.

(g) *Trouble indications.* Storage battery systems shall be provided with a device that gives an audible and visual signal when there is an open circuit between the trickle charger and the battery. Such signals shall be located so that they may be seen and heard by a responsible person. In place of the signals the voltmeter required in subsection (d) shall have plainly marked zones as follows:

- (i) A marked zone to indicate proper trickle (float) charge voltage.
- (ii) A marked zone to indicate a failure of the trickle charger or that the battery is discharging into the emergency lighting circuit.
- (iii) A marked zone to indicate during normal float charge operation that there is an open circuit between the trickle charger and battery.

(h) *Hydrometer.* The manufacturer of storage battery emergency lighting systems shall supply with each device a hydrometer and directions for its use in order that the owner may be in a position to test the specific gravity of the electrolyte. Such a test shall be made at least once every 2 weeks, a record of test shall be maintained and shall be available for inspection.

(i) *Other use of batteries.* The batteries of emergency lighting systems may not be used for any other purpose unless approved by the Department.

(j) *Modified low voltage systems.* Battery operated emergency lighting systems, not less than 12 volts or more than 24 volts may be used with the special approval of the Department when the emergency lighting illumination required does not necessitate a battery capacity in excess of 250 watts at the rated voltage for a period of 1 hour.

§ 50.63. Unit systems.

(a) *Limitations.* Unit battery systems shall provide the required intensity of illumination for a minimum period of 1 hour.

(b) *Cabinet design.* Emergency lighting units of this class shall be compact and self-contained. Batteries, relays, charging equipment and controls shall be assembled in a substantial metal cabinet. The cabinet shall be well ventilated and designed so that the equipment can be easily maintained. The emergency lighting load shall be connected automatically to the battery in the event of power failure.

(c) *Type of batteries.* Lead acid batteries shall be the glass jar or the heat resistant plastic jar type or other approved types assembled with 1.200-1.225 specific gravity, full charge electrolyte. At least one pilot cell shall contain a suitable means for indicating the approximate state of charge, which shall be visible from outside the unit case. Other types of batteries may be approved.

(d) *Battery charger.* Units shall contain a suitable dry disc type of charger capable of charging the battery at a high rate and also at a suitable maintenance of trickle rate. The high rate charge shall be capable of replacing the maximum charge taken out in 1 hour emergency discharge period within 12 hours. The unit shall be designed to provide for automatic high rate charging and restoration to trickle rate. After power failure or when the battery becomes discharged so that the unit cannot provide 1 hour of illumination of required intensity, the battery shall be charged at a high rate, until it becomes fully charged at which time the charging rate shall be reduced to the trickle rate. No device which could render the charger ineffective shall be permitted.

(e) *Test switch.* All units shall be equipped with a suitable test switch mounted outside of the cabinet and connected to simulate a power failure to the unit.

(f) *Signals.* All units shall be equipped with a visual signal to indicate when the battery is being charged at the high rate. Units equipped with a switch to disconnect the emergency lamp load in the event of power failure when the building is not occupied shall have a visual signal to indicate when the switch is in the normal position and the equipment is ready to provide emergency lighting.

(g) *Wiring and mounting.* All units and lamps connected remote from the units shall be permanently mounted. Units shall be mounted so that they may be readily tested, inspected, and serviced and shall be maintained in satisfactory working condition. When remote lamps are used, wiring shall be of sufficient diameter to provide not less than the minimum required illumination. No switch shall be used to cut off the remote lamps.

(h) *Hydrometer.* A hydrometer shall be available, and the batteries shall be tested with the hydrometer at least once every month. A record of tests shall be maintained and shall be available for inspection.

(i) *Nameplate.* The nameplate required by § 50.61(g) (relating to general requirements) shall also contain the capacity of the system in watts, rated nominal voltage and current.

§ 50.64. Internal combustion engine generator systems.

(a) *Adequate combustion air.* Internal combustion engine generator systems shall be provided with adequate combustion air from the exterior of the building.

(b) *Gasoline engine systems.* Gasoline operated engine generator systems shall be placed in a room or compartment separated from the remainder of the building by 1 hour partitions. Any doors opening into the room or compartment shall be C-label 3/4 hour fire door assemblies. Such rooms or compartments shall not be located beneath an assembly room or corridor leading therefrom unless separated by a concrete slab of at least 4 inches in thickness.

(1) *Main fuel supply.* If located in the building, the main fuel supply shall be buried at least 2 feet under ground, or located within a fireproof enclosure at least 12 inches in thickness; 6 inches shall be earth or sand solidly tamped, and 6 inches shall be concrete. The earth or sand shall be filled in between the tank and concrete enclosure. The fuel tanks shall be located at least 15 feet away from the heating plant, 2 feet away from foundation footings and filled from the outside of the building.

(2) *Capacity of engine reservoir.* No reserve supply of fuel shall be stored in the compartment or building except that a reservoir tank not exceeding 1 quart liquid capacity may be located on the engine or in the engine compartment to insure minimum delay in starting the engine. The compartment shall not be used for storage of flammable oils or other combustible material.

(c) *Diesel fuel generators.* Fuel supplies for diesel engines shall comply with NFPA-37, 1979 Edition.

(d) *Temperature.* The rooms or compartments where engines are located shall be maintained at a temperature of not less than 65°F, even if it necessitates insulated enclosures with motor operated air intake louvers and air discharge louvers, either gravity or motor operated. Heating shall be by means of indirect radiation of the room or compartment. Adequate ventilation shall be provided to prevent temperature rises in generators, engines and controls in excess of the recommendations of the manufacturer. The ambient room temperature shall not exceed 110°F even if this requires air cooling. For water cooled engines located in exterior areas, in lieu of providing an insulated enclosure, it is permissible to provide jacket water heaters to maintain the engine at a temperature of not less than 70°F nor more than 100°F, in an ambient of 10°F only when an enclosed battery box with strip heater is also provided to maintain the starting battery at a temperature of not less than 65°F. A V-type engine shall have a heater for each bank of cyl-

inders. Only when providing such jacket water heaters and heated battery box may an enclosure be uninsulated or contain fixed immovable louvers.

(e) *Foundations.* Engines and generators shall be installed on solid foundations not likely to permit sagging of fuel, exhaust or lubricating oil piping and damage to parts resulting in leakage at joints. Such foundations shall be raised at least 6 inches above the floor level.

(f) *Accessibility of equipment.* Engine generators and controls shall be installed in a location that permits ready accessibility of parts for repair, maintenance, cleaning or replacement.

(g) *Fuel strainers.* A strainer shall be provided in the fuel supply line through which the fuel shall pass before reaching the valves or parts which are likely to become clogged. The strainer shall be readily accessible for cleaning.

(h) *Gravity feed prohibited.* Gravity feed of fuel to carburation or compression ignition engines shall be prohibited except that a reservoir tank described in subsection (b)(2) may be used.

(i) *Special devices for gas systems.* Systems using natural, manufactured or liquefied petroleum gas as fuel shall have suitable pressure reducing and regulating devices in the fuel line and shall have a solenoid valve that is normally closed connected in the line on the high pressure side of the engine gas regulator. The solenoid valve shall open automatically in the event of power failure and remain open until normal power is restored.

(j) *Liquefied petroleum gas.* Liquefied petroleum gas may be used as engine fuel under the following conditions:

(1) Cylinders shall be installed above grade with an outlet at least 5 feet away from any building opening which is below the level of such outlet.

(2) A relief valve shall be installed on the low pressure side of the primary regulator adjusted to discharge into the atmosphere at a pressure less than the maximum allowable pressure for the engine regulator. The discharge outlet shall be located not less than 5 feet horizontally from an opening into the building which is below such discharge.

(3) A solenoid operated valve shall be connected in the fuel line to the engine between the primary regulator and the engine regulator with the operating coil connected so that the valve will open automatically in the event of power failure and be closed at all other times.

(4) The fuel line shall be of sufficient size to provide adequate fuel at satisfactory pressure to run the engine generator at rated connected load.

(5) An adequate fuel supply to operate the engine generator at rated load for 1 hour shall always be maintained. A gauge to indicate fuel level shall be provided.

(6) Cylinders or tanks shall be set on a firm foundation and, in the case of school or other installations as deemed necessary by the Department, shall be enclosed by a fence with a locked gate to prevent unauthorized persons from tampering with the cylinders, tanks, regulators, and other similar equipment.

(7) Fuel and fuel cylinder or tank for emergency lighting application shall be used for no other purpose.

(k) *Exhaust pipes.* Exhaust pipes shall be of sufficient strength so as to withstand the service and shall be connected to the engine so that emission of sparks, flame or gas within the building is prevented. The pipes shall be adequately supported throughout their run and shall terminate outside the building at a point where the unobstructed discharge is subject to only normal atmospheric pressure and the hot gases or sparks will be discharged harmlessly and not directed against combustible material or in close proximity to fuel supply lines. Exhaust pipes shall not be connected into chimneys or flues except that a separate exhaust stack may be introduced into an existing flue if the exhaust stack extends to the top of the flue and the flue does not contain highly corrosive gases, such as products of combustion from gas, coal or oil burning appliances. An effective device shall be provided to permit prompt removal of exhaust condensation.

(l) *Ignition.* Electric or compression ignition shall be employed. No method of ignition shall be used that introduces open flames or exposes highly heated parts while the engine is in operation.

(m) *Starting apparatus.* Engine starting apparatus shall conform to one of the following arrangements:

(1) It is connected directly to the engine crankshaft and does not disengage after starting.

(2) It is connected to the engine crankshaft by gears, silent chain drives or by other approved means and does not disengage after starting or does disengage by means of an overrunning clutch.

(3) It is connected so as to engage for starting and to disengage after the engine is started if the means of engaging and disengaging the starting apparatus are by a solenoid actuated pinion used in conjunction with the over-running clutch. The starting motors, windings, drives and other devices shall be capable of continuously cranking the engine for a period of not less than 1 minute.

(n) *Cranking batteries.* When batteries are used to furnish energy for cranking, they shall be of sufficient capacity to start the engine within 5 seconds and to crank the engine continuously for a period of at least 5 minutes at a speed sufficient to start the engine at the end of a 5 minute cranking period.

(o) *Battery charging equipment.* Systems using charging batteries shall be equipped with a charging device to automatically maintain the batteries in a full charged condition. The charging device shall be capable of replacing, within a 24-hour period, the charge taken out of the batteries by a 5 minute continuous cranking period. The charger shall have an ammeter to read the rate of charge. The charger shall be permanently connected to the batteries, and no charger disconnect switch shall be permitted.

(p) *Size of engine.* The engine shall be of sufficient size to enable the generator set to pick up a full rated kilowatt load in one step. The generator set rating shall be determined by the criteria in this subsection. The minimum generator efficiency shall be 80%.

(q) *Low oil pressure and high water temperature alarms.* Engine protective and annunciator devices shall be provided as follows:

(1) Engines shall have an automatic engine speed governor.

(2) Air cooled engines shall be permitted, but not required, to have low lubricating oil pressure and high air temperature audible alarms, and automatic over-speed shutdown with audible alarm. Automatic engine shutdown for low lubricating oil pressure or high air temperature shall be permitted only when an audible preshutdown alarm is sounded.

(3) Water cooled engines shall have individual visual indicators and a common audible alarm device to announce any of the following:

(i) That the engine water jacket temperature is below 70 F.

(ii) That the engine is about to shut down due to low lubricating oil pressure or high water temperature.

(iii) That the engine has shut down due to low lubricating oil pressure, high water temperature, overspeed or failure to start after 60 or more seconds of continuous cranking.

(4) Gas or oil-fired turbine engines shall have individual indicators and a common audible alarm device to announce any of the following:

(i) That the engine is about to shut down due to low lubricating oil pressure or high engine temperature.

(ii) That the engine has shut down due to low lubricating oil pressure, high engine temperature, overspeed, flameout or failure to start after 60 or more seconds of continuous cranking.

(r) *Hydrometer.* A test of the specific gravity of the electrolyte shall be made at least once every 2 weeks. The manufacturer shall supply a hydrometer with each installation for this purpose.

(s) *Voltmeter.* A voltmeter shall be provided to indicate the voltage being generated. When polyphase systems are used, the voltmeter shall indicate all line voltage, either line to line or lines to neutral.

(t) *Nameplate.* In addition to the nameplate required in § 50.61(g) (relating to general requirements) with a nameplate setting forth the name of the manufacturer, model number and the engine brake horsepower for the fuel used. The generators shall be provided with a nameplate setting forth the name of the manufacturer, model number, power (W or KW) rating, current rating and voltage rating.

EXTINGUISHERS AND SPRINKLER SYSTEMS

§ 50.71. Fire extinguishers.

(a) Fire extinguishers shall be provided according to the type of flammable materials present. The basic types of fires are Classed A, B, C and D as follows:

- (1) Class A fires are fires in ordinary combustible materials, such as wood, cloth, paper, rubber and many plastics.
- (2) Class B fires are fires in flammable liquids, gases and greases.
- (3) Class C fires are fires which involve energized electrical equipment where the electrical nonconductivity of the extinguishing media is of importance.
- (4) Class D fires are fires in combustible metals, such as magnesium, titanium, zirconium, sodium and potassium.

(b) Fire extinguishers shall be inspected and maintained according to NFPA 10, 1981 Edition.

(c) Where fire extinguishers are installed in a closet or recessed in a wall or otherwise obscured from view, there shall be provided adjacent thereto a constant blue light of not less than 25 watt capacity.

(d) Fire extinguishers shall be mounted in a fashion to provide quick and easy access at all times.

*Maximum Height to
Top of Extinguisher*

40 pounds and under—	5 feet
over 40 pounds—	3 1/2 feet

§ 50.72. Automatic sprinkler systems.

(a) Automatic sprinkler systems shall be installed and operated in accordance with NFPA-13, 1983 Edition.

(b) Automatic sprinkler systems shall be maintained in accordance with NFPA-13A, 1981 Edition.

(c) Extinguisher systems which operate with an extinguishing agent other than water may be approved by the Department.

(d) An automatic hood extinguishing system shall be installed for commercial cooking equipment such as deep fat fryers, range top cookers, broilers and the like. The extinguishing system shall comply with NFPA-96, 1980 Edition.

Cross References

This section cited in 34 Pa. Code § 54.72 (relating to automatic sprinkler systems); 34 Pa. Code § 55.72 (relating to automatic sprinkler systems); 34 Pa. Code § 58.72 (relating to automatic sprinkler systems); and 34 Pa. Code § 59.72 (relating to automatic sprinkler protection).

RESTROOM EQUITY**§ 50.81. Purpose.**

The purpose of this section and §§ 50.82—50.86 is to implement the act of December 17, 1990 (P. L. 742, No. 185) (35 P. S. §§ 5820.1—5820.6), known as the Restroom Equity Act of 1990, the purpose of which is to mitigate the inequitable delays which women face when they need to use restroom facilities in public places.

Authority

The provisions of this § 50.81 issued under section 4 of the Restroom Equity Act (35 P. S. § 5820.4).

Source

The provisions of this § 50.81 adopted April 5, 1996, effective April 6, 1996, 26 Pa.B. 1552.

Cross References

This section cited in 34 Pa. Code § 50.82 (relating to jurisdiction and effective dates); 34 Pa. Code § 50.84 (relating to enforcement and inspections); 34 Pa. Code § 50.85 (relating to approval of plans); and 34 Pa. Code § 50.86 (relating to variances).

§ 50.82. Jurisdiction and effective dates.

(a) *Application.* Section 50.81, this section and §§ 50.83—50.86 apply to facilities where the public congregates: sports and entertainment arenas, stadiums, community and convention halls, specialty event centers, amusement facilities, ski resorts, public middle schools and high schools and community and municipal parks with a seating capacity of 500 or more persons. If a specialty event center is located in a community or municipal park, it is subject to § 50.81, this section and §§ 50.83—50.86 if it has seating capacity for 500 or more persons.

(b) *Exemptions.* Section 50.81, this section and §§ 50.83—50.86 do not apply to the following:

(1) Hotels. For purposes of § 50.81, this section and §§ 50.83—50.86, “hotel” means an establishment in which there exists the relationship of guests and innkeeper between the occupants and the owner or operator of the establishment. The existence of some other legal relationship between the occupants and the owner or operator shall be immaterial.

(2) Public eating or drinking places defined in the act of May 23, 1945 (P. L. 926, No. 369), known as the Public Eating and Drinking Place Law.

(3) Community and municipal parks with seating capacity for less than 500 persons.

(c) *Effective dates.* The effective dates for § 50.81, this section and §§ 50.83—50.86 are as follows:

- (1) *New facilities where the public congregates.* Implementation of § 50.81, this section and §§ 50.83—50.86 will be based upon contracts for design or construction executed on or after April 6, 1996.
- (2) *Existing facilities where the public congregates.* Implementation of § 50.81, this section and §§ 50.83—50.86 will be based upon contracts for the design or construction of the renovation executed on or after April 6, 1996.
- (d) *Renovating existing facility.* An existing facility where the public congregates will be considered to be renovated if one of the following applies:
- (1) Its rehabilitation requires more than 50% of the gross floor area or volume of the entire building to be rebuilt, not including cosmetic work such as painting, wall covering, wall paneling, floor covering and suspended ceiling work.
- (2) An addition is made to an existing facility where the public congregates.
- (e) The requirements of § 50.81, this section and §§ 50.83—50.86 apply only to the portion of the building which is being renovated.

Authority

The provisions of this § 50.82 issued under section 4 of the Restroom Equity Act (35 P. S. § 5820.4).

Source

The provisions of this § 50.82 adopted April 5, 1996, effective April 6, 1996, 26 Pa.B. 1552.

Cross References

This section cited in 34 Pa. Code § 50.81 (relating to purpose); 34 Pa. Code § 50.84 (relating to enforcement and inspections); 34 Pa. Code § 50.85 (relating to approval of plans); and 34 Pa. Code § 50.86 (relating to variances).

§ 50.83. Restroom requirements.

More water closets shall be provided for women than for men by a minimum ratio of two water closets for women for each water closet for men or for each single use urinal or 20 inches of trough urinal. The ratio shall be applied separately to permanent water closets and temporary water closets. Temporary water closets may not be provided in order to make up the difference between permanent water closets provided for women and permanent water closets provided for men.

Authority

The provisions of this § 50.83 issued under section 4 of the Restroom Equity Act (35 P. S. § 5820.4).

Source

The provisions of this § 50.83 adopted April 5, 1996, effective April 6, 1996, 26 Pa.B. 1552.

Cross References

This section cited in 34 Pa. Code § 50.81 (relating to purpose); 34 Pa. Code § 50.82 (relating to jurisdiction and effective dates); 34 Pa. Code § 50.84 (relating to enforcement and inspections); 34 Pa. Code § 50.85 (relating to approval of plans); and 34 Pa. Code § 50.86 (relating to variances).

§ 50.84. Enforcement and inspections.

(a) The Department of Labor and Industry will be responsible for the enforcement of §§ 50.81—50.83, this section and §§ 50.85 and 50.86, except in cities of the first class, second class and second class A, where the cities shall be responsible for enforcement of §§ 50.81—50.83, this section and §§ 50.85 and 50.86. The Department or other enforcement agency will not issue a permit authorizing the use or occupancy of a building until the provisions of §§ 50.81—50.83, this section and §§ 50.85 and 50.86 are met.

(b) For the purpose of enforcing the provisions of §§ 50.81—50.83, this section and §§ 50.85 and 50.86, the Department and the other enforcement agencies will:

(1) During ordinary business hours, have access to, and require the production of books, papers and documents pertinent to an inspection necessary to ascertain the compliance or noncompliance with the act and this chapter.

(2) During ordinary business hours, enter a building or structure governed under §§ 50.81—50.83, this section and §§ 50.85 and 50.86 for the purpose of making an inspection.

Authority

The provisions of this § 50.84 issued under section 4 of the Restroom Equity Act (35 P. S. § 5820.4).

Source

The provisions of this § 50.84 adopted April 5, 1996, effective April 6, 1996, 26 Pa.B. 1552.

Cross References

This section cited in 34 Pa. Code § 50.81 (relating to purpose); 34 Pa. Code § 50.82 (relating to jurisdiction and effective dates); 34 Pa. Code § 50.85 (relating to approval of plans); and 34 Pa. Code § 50.86 (relating to variances).

§ 50.85. Approval of plans.

It is the duty of the owner, or the owner's representative, of every building or structure covered by §§ 50.81—50.84, this section and § 50.86, to submit to the Department or other enforcement agency, for approval, architectural drawings, specifications or other data required by § 49.3 (relating to submission of plans) to show compliance with §§ 50.81—50.84, this section and § 50.86, prior to the beginning of construction, remodeling or alteration of a building or structure.

Authority

The provisions of this § 50.85 issued under section 4 of the Restroom Equity Act (35 P. S. § 5820.4).

Source

The provisions of this § 50.85 adopted April 5, 1996, effective April 6, 1996, 26 Pa.B. 1552.

Cross References

This section cited in 34 Pa. Code § 50.81 (relating to purpose); 34 Pa. Code § 50.82 (relating to jurisdiction and effective dates); 34 Pa. Code § 50.84 (relating to enforcement and inspections); and 34 Pa. Code § 50.86 (relating to variances).

§ 50.86. Variances.

Requests for variances from the requirements of §§ 50.81—50.85 and this section shall be submitted to the Industrial Board of the Department of Labor and Industry in accordance with § 49.15 (relating to appeals to the Board) or the appropriate variance board of enforcement agencies in first class, second class and second class A cities.

Authority

The provisions of this § 50.86 issued under section 4 of the Restroom Equity Act (35 P. S. § 5820.4).

Source

The provisions of this § 50.86 adopted April 5, 1996, effective April 6, 1996, 26 Pa.B. 1552.

Cross References

This section cited in 34 Pa. Code § 50.81 (relating to purpose); 34 Pa. Code § 50.82 (relating to jurisdiction and effective dates); 34 Pa. Code § 50.84 (relating to enforcement and inspections); and 34 Pa. Code § 50.85 (relating to approval of plans).

MISCELLANEOUS PROVISIONS**§ 50.91. High rise building.**

(a) A high rise building is a building that has an exterior face which exceeds 75 feet when measured from ground level to five feet above the highest occupiable floor level.

(b) High rise buildings shall be totally protected with an automatic sprinkler system.

(c) Travel distance may be increased to the following in buildings totally protected by an automatic sprinkler system installed in accordance with NFPA-13, 1983 Edition:

- (1) Two hundred feet from any point to an exit.
- (2) Three hundred feet between exits.

- (3) One hundred feet from dead ends and areas with a single path of egress.
- (d) Interior finish requirements may be reduced by one class in buildings totally protected by an automatic sprinkler system.
- (e) A dry standpipe system shall be required for high rise buildings. The dry standpipe system shall comply with the regulations for Class I service as listed in NFPA-14, 1980 Edition.

Notes of Decisions

Automatic Sprinklers

The regulations exempt cities of the first class from complying with Chapters 49—59, which require high rise buildings to have an automatic sprinkler system. A city of the first class has a population of 1 million or more under 53 P. S. § 101. Because Philadelphia was a city of the first class the city was not bound by the Pennsylvania Code provisions. *In re One Meridian Plaza Fire Litig.*, No. 91-2171 Consolidated with Nos. 91-2172, 91-2226, 91-2227, 91-2374, 91-2545, 91-2546, 91-2547, 1994 U. S. Dist. LEXIS 4343 (E. D. Pa. April 6, 1994), summary judgment denied, No. 91-2171, 1994 U. S. Dist. LEXIS 5532, Prod. Liab. Rep. (CCH) para. 13918 (E. D. Pa. April 29, 1994).

§ 50.92. Historic building.

Chapters 49—59 is not mandatory for existing buildings or structures identified and classified by the Historical and Museum Commission as historic buildings, subject to the approval of the Board, when those buildings are judged to be safe and in the interest of public health and safety.

§ 50.93. Special stage regulations.

Stages used for theatrical, musical and like performances which are equipped with a rigging loft or fly gallery shall comply with the following:

- (1) *Stage enclosure walls.* Every stage shall be enclosed on all sides with solid walls of not less than 2-hour fire resistance rating extending continuously from foundation to at least 4 feet above the roof.
- (2) *Stage floor construction.* The entire stage, except the portion used for the working of scenery, traps and other mechanical apparatus for the presentation of a scene, and the roof over the stage may not be less than 3-hour fire resistance rated construction. Openings through the stage floor shall be equipped with tight fitting, solid wood trap doors not less than 3 inches in thickness or other materials of equal physical and fire resistance rated properties.
- (3) *Stage rigging loft.* The rigging loft, fly galleries and pin rails shall be constructed of noncombustible materials.
- (4) *Footlights and stage electrical equipment.* Footlights and border lights shall be installed in troughs constructed of noncombustible materials. The switchboard shall be so located as to be readily accessible at all times, and the storage or placing of stage equipment against it is prohibited.

(5) *Exterior stage doors.* Required exit discharge door openings to the outer air shall be protected with approved self-closing fire doors.

(6) *Proscenium wall.* There may be no openings in the wall separating the stage from the auditorium except the main proscenium opening; two doorways at the stage level, one on each side thereof; and, where necessary, not more than two doorways to the musician's pit from the space below the stage floor. Each doorway may not exceed 21 square feet in area and shall be protected with 1 1/2-hour B label fire door assemblies. The distance between the top of the proscenium opening and the ceiling of the stage shall be not less than 5 feet.

(7) *Proscenium curtain.* The proscenium opening shall be provided with an approved curtain of noncombustible or fire-retardant material so designed and installed that it will protect against passage of flame and smoke for 5 minutes. The curtain shall be operated by an automatic heat activated device to descend instantly and safely and to completely close the proscenium opening at a rate of temperature rise of 15 to 20 F per minute (0.14 C to 0.19 C per second); and by an auxiliary operating device to permit immediate manual closing of the proscenium opening.

(8) *Scenery.* Combustible materials used in sets and scenery shall be rendered flame resistant.

(9) *Stage ventilation.* Metal or other approved noncombustible ventilators, equipped with movable shutters or sash shall be provided over the stage, constructed to open automatically and instantly by approved heat activated devices, with an aggregate clear opening of not less than 1/8 the area of the stage.

(10) *Dressing and appurtenant rooms.*

(i) *Construction.* Dressing rooms, scene docks, property rooms, work shops and store rooms and compartments appurtenant to the stage shall be fire-resistive construction and shall be separated from the stage and other parts of the building by walls of not less than 2-hour fire-resistance rating. The rooms shall not be placed immediately over or under the operating stage area.

(ii) *Opening protectives.* Openings other than to trunk rooms and the necessary doorways at stage level shall not connect the rooms with the stage, and the openings shall be protected with 1-hour self-closing B label fire doors.

(iii) *Dressing room and stage exits.* Each tier of dressing rooms shall be provided with at least two means of egress, one of which shall lead directly to an exit corridor, outer court or street. Exit stairways from dressing and storage rooms may be unenclosed in the stage area behind the proscenium wall. At least one approved exit shall be provided from each side of the stage and from each side of the space under the stage, and from each fly gallery and from the gridiron to a street, outer court or passageway to a street. A steel ladder shall be provided from the gridiron to a scuttle in the stage roof.

§ 50.94. Fixed seating.

(a) The spacing of rows of seats shall provide a space of not less than 12 inches from the back of one seat to the front of the most forward projection of the seat immediately behind it, when the seat is in the down position, as measured horizontally between vertical planes.

(b) Aisles shall be provided so that no more than six seats intervene between any seat and the aisle or aisles, except that the number of seats in a row may not be limited when self-raising seats are provided which leave an unobstructed passage between rows of seats of not less than 18 inches in width leading to side aisles in which exit doors are located at not more than 25 foot intervals.

(c) Seats without dividing arms shall have their capacity determined by allowing 18 inches per person.

(d) Every aisle shall lead to an exit door or to a cross aisle that is running parallel with the seat rows and leading directly to an exit door. In places of assembly where seating is provided, side aisles running at right angles to the seat rows and adjacent to exterior walls may not be less than 36 inches in width. Aisles having seats on both sides may not be less in width than 36 inches, plus 1/4 inch for every foot of length from their point of beginning to an exit door, or for their length between cross aisles. Cross aisles shall be not less in width than the widest connecting aisle.

(e) Aisles shall be used only for passage to and from seats and shall be kept unobstructed.

(f) Steps shall not be placed in aisles unless the gradient would exceed 1 foot rise in 10 feet run. Steps, when necessary, shall be grouped, and so far as practicable isolated steps shall be avoided. The steps shall extend across the full width of the aisles and shall be illuminated; treads and risers shall conform with the requirements for exit stairs under § 50.26(b) (relating to intercommunicating stairway).

(g) In balconies and galleries having more than 20 rows of seats, there shall be provided a cross aisle not less than 4 feet wide leading directly to an exit, if there is in no case a difference of level exceeding 11 feet between the lowest or highest seat platform and cross aisle or between intermediate cross aisles.

(h) The fascia of boxes, balconies and galleries shall have substantial railings not less than 26 inches above the floor. Aisles which intersect the fascia shall have railings along the fascia not less than 30 inches above the floor for the width of the aisle. Stairs which intersect the fascia shall have railings along the fascia not less than 36 inches above the floor for the width of the stair. Cross aisles shall have railings not less than 26 inches above the floor except where the backs of the seats on the front of the aisle project 24 inches or more above the floor of the aisle.

(i) In balconies, galleries or other locations where seats are arranged on platforms or successive tiers and the height of rise from one platform to another

below and in front of it exceeds 21 inches, a substantial railing not less than 30 inches high shall be placed at the edge of platform along the entire row of seats.

(j) Stairways from balconies, galleries, boxes or loges, discharging through a public lobby shall discharge in a direction parallel to and travel with the exit from the main assembly floor or shall have a rail separating the lines of travel. No more than 50% of the total exit capacity from a place of public assembly, or from a balcony or tier thereof, shall be through a single public lobby.

(k) Enclosed exit stairways from balconies shall be provided to accommodate 1/3 of the balcony capacity; except for balconies with capacities less than 200, no stairways need be enclosed.

(l) One means of egress is permissible for balconies of 600 square feet in area if the exitway is 1 1/2 units in width.

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