

# Self-Certification Program 2018 Fire Code

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# Fire Code Self Certification Guide

## Overview of Fire Code Requirements for Self Certification Professionals

- Fire Site Plan Requirements
- Fire Systems Plans Review Requirements



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<https://www.phoenix.gov/fire/prevention/fire-code>

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# Fire Code Self Certification Guide

## General Information

### Fire Site Plan Review Process

- Pre-Application Site Plan (PAPP)
- Preliminary Site Plan (PRLM)
- Final Site Plan (SCMJ)

**NOTE: All new Self Certification building plans will not be accepted without Final Site Plan Approval.**



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# Fire Code Self Certification Guide

GUIDE TO:  
**SUCCESSFUL PLAN REVIEW**



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## Fire Systems Plans Review Process

- 1<sup>st</sup> Plan Review Submittal
- 2<sup>nd</sup> Plan Review Submittal  
(Denial)

# Fire Code Self Certification Guide



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## 2018 Phoenix Fire Code Chapter 1 Administration

# Administration

## 2018 Phoenix Fire Code

### Section 105 Applicant responsibility.

It shall be the responsibility of the applicant to ensure that the *construction documents* include all fire protection requirements, and the shop drawings are complete and in compliance with the applicable codes and standards.



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# Administration

## 2018 Phoenix Fire Code

### Section 105 Approved Documents.

*Construction documents approved by the fire code official are approved with the intent that such construction documents comply in all respects with this code. Review and approval by the fire code official shall not relieve the applicant of the responsibility of compliance with this code.*



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# Administration

## Section 105 Permits

- Access gates, *Automatic and Manual* (F157)
- Access, Emergency (F481)
- Address directories (F482)
- Automatic fire-extinguishing system (F100, F105, F159)
- CO2 Beverage Dispensing System (F238)
- Fire alarm and detection systems and related equipment (F122, F129, F175)
- Fire Pumps and related equipment (F117)
- Private fire hydrants (F112, F115)
- Special extinguishing system (F132, F134, F238)
- Standpipe systems (See Automatic sprinklers)
- Underground fire lines (F112, F115)

**NOTE:** Over-the-counter permits may also be obtained.



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# Administration

## Self-Certification Projects

- All Fire protection for schools shall be submitted to the Arizona State Fire Marshal.
- Marijuana Extraction Facilities shall separate the extraction portion and submit separately.

Exception: School Emergency Access and Gates shall be submitted to City of Phoenix PDD for permits.



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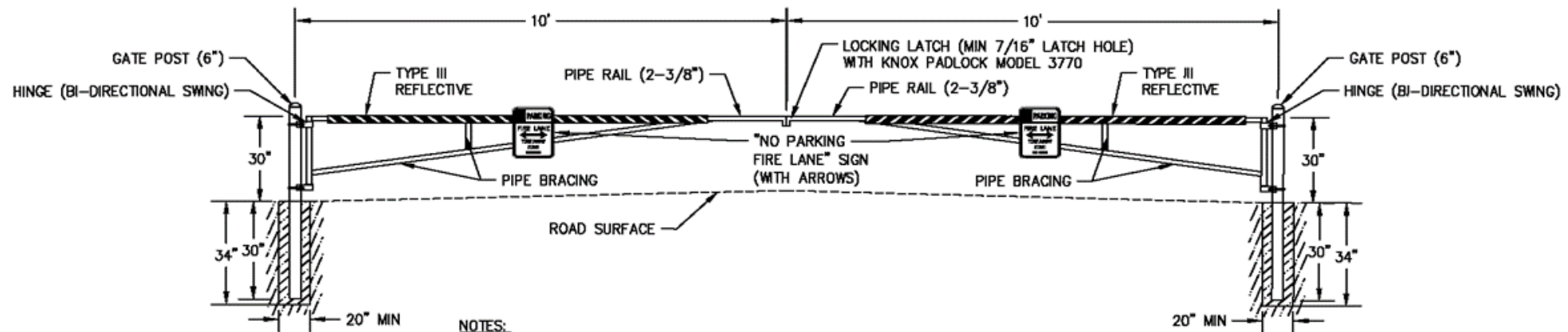
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# Fire Service Features

## 2018 Phoenix Fire Code Chapter 5 Fire Service Features



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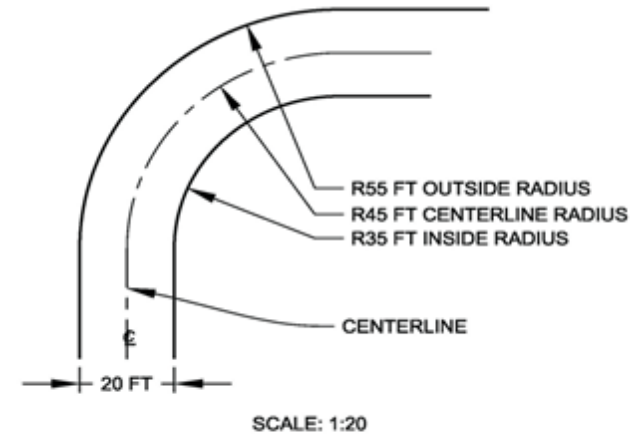
### NOTES:

1. ALL MATERIALS SHALL BE SCHEDULE 40, GALVANIZED STEEL PIPE.
2. PROTECTIVE FINISH SHALL BE HOT-DIPPED, GALVANIZED GRAY.
3. CONTRACTOR TO INSTALL NO PARKING, FIRE LANE SIGN ON EACH SIDE OF GATE MEETING THE REQUIREMENTS OF OFC D103.6 AS AMENDED BY CITY OF HILLSBORO HMC 11.28.010.
4. CONTRACTOR TO INSTALL TYPE III REFLECTIVE STRIPING ON BOTH SIDES OF GATE. STRIPING SHALL BE ALTERNATING RED/WHITE STRIPES, 6" WIDE & AT 45° ANGLE.
5. CONCRETE SHALL BE 3,000 PSI.
6. COORDINATE INSTALLATION OF KNOX PADLOCK WITH CITY OF HILLSBORO FIRE DEPARTMENT.

# Fire Service Features

## Fire Site Plan Requirements

- 503 Fire Apparatus Access Roads (Fire Lanes)
- 507 Fire Protection Water Supplies (Fire Hydrants)



## Determination of Setbacks



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# Fire Service Features

- **Section 507** Water supplies for manual fire suppression and fire hydrants shall be in accordance with Appendix B.
- **Appendix B** Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be specified in Appendix B105.1.
- Exception: A reduction in required fire-flow of up to 50%, as approved, is allowed when the building is provided with an approved NFPA 13 automatic sprinkler system. The resulting fire-flow shall not be less than 1,500 gallons per minute for the prescribed duration as specified in Table 105.1. No reductions are allowed for NFPA 13D or 13R systems other than Group R-3 single family homes.

APPENDIX B

TABLE B105.1  
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

Type IA and IB <sup>a</sup>	Type IIA and IIA <sup>a</sup>	Type IV and V-4 <sup>a</sup>	Type IB and IB <sup>a</sup>	Type V-8 <sup>a</sup>	FIRE-FLOW (gallons per minute) <sup>b</sup>	FLOW DURATION (hours)
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,900	15,401-18,400	9,401-11,300	2,750	3
70,901-83,700	39,701-47,000	25,901-30,000	18,401-21,800	11,301-13,400	3,000	
83,701-97,700	47,001-54,900	30,001-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,000	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,001-92,400	52,501-59,000	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,800	59,001-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,801-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,300	53,001-58,600	32,601-36,000	5,000	
225,201-247,800	126,701-139,400	81,301-89,200	58,601-65,400	36,001-39,600	5,250	
247,801-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,700	6,000	
---	---	115,801-125,500	83,701-90,600	51,701-55,700	6,250	
---	---	125,501-135,500	90,601-97,000	55,701-60,200	6,500	
---	---	135,501-145,800	97,001-106,800	60,201-64,000	6,750	
---	---	145,801-156,700	106,801-113,200	64,001-69,000	7,000	
---	---	156,701-167,900	113,201-121,300	69,001-74,600	7,250	
---	---	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
---	---	179,401-191,400	129,601-138,500	79,801-85,000	7,750	
---	---	191,401-Greater	138,501-Greater	85,001-Greater	8,000	

FIG. 10: 1 square foot = 0.0929 m<sup>2</sup>; 1 gallon per minute = 3.785 L/min; 1 pound per square inch = 6.895 kPa.

a. Types of construction are based on the International Building Code.

b. Measured at 20 psi residual pressure.



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# Fire Service Features

## Permits Required:

- Premises Identification (Address numbers)
  - Emergency Access Permit
  - Address Directory
- Fire Protection Water Supplies
  - Underground Fire lines
  - Offsite/Onsite Combination Plans
  - Onsite Only
  - AFP Plans (Customer will be sent to 438 N. Adams)
- Fire Protection, Equipment Identification (Signage)
  - Automatic Gates
  - Manual Gates



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# Automatic Sprinklers

## 2018 Phoenix Fire Code

### Chapter 9 Fire Protection Systems





# Automatic Sprinklers

## 903: Automatic Sprinkler System

**903.1 Bret Tarver Sprinkler Ordinance.** An approved automatic sprinkler system shall be installed throughout all levels of all new Group A, B, E, F, H, I, M, R-1, R-2, R-4, and S occupancies of more than zero square feet and throughout all Group R-3 occupancies built under the International Residential Code and Group U occupancies of more than 5,000 square feet.

Provide the type of sprinkler systems (NFPA 13D/NFPA 13R/NFPA13)

NFPA 13D: Standard for the installation of sprinkler systems for one and two family dwellings and manufactured homes

NFPA 13R: Standard for the installation of sprinkler systems in low-rise residential occupancies

NFPA 13: Standard for the installation of sprinkler systems



# Automatic Sprinklers

## 903: Sprinkler systems—Partially Sprinklered Buildings

When existing non-sprinklered buildings of mixed occupancy are required to install sprinklers based on a change of occupancy classification, sprinklers shall be installed throughout the fire area that includes the new occupancy. *Fire barriers or horizontal assemblies* separating sprinklered and non-sprinklered *fire areas* shall have a fire-resistance rating of not less than 2 hours. Fire department connection signage shall be in accordance with Section 912.4

# Automatic Sprinklers

## 903.4.1 Monitoring

Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an *approved* supervising station or, when *approved* by the *fire code official*, shall sound an audible signal at a constantly attended location.

### Exceptions:

1. Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.
2. Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position.
3. Building occupancies in Group A-2 that do not exceed 5,000 square feet.
4. Group E and H shall be monitored at 0 square feet.
5. All other buildings occupancies, that do not exceed 12,000 square feet.



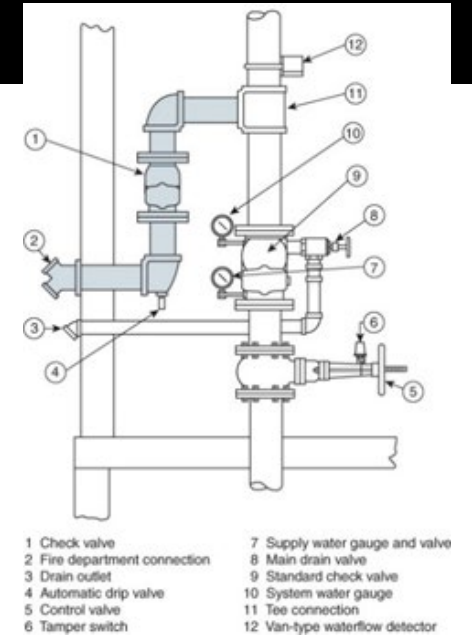
# Fire Department Connections

## PFC 912: Fire Department Connections

**912.2 Location.** The location of fire department connection shall be approved by the fire code official.

A site plan detail shall be submitted to the fire code official for approval as part of the construction documents.

**912.2.1 Visible location.** Fire department connections shall be located on the street side of buildings, fully visible and recognizable from the street or nearest point of fire department vehicle access.



**907.1.2 Fire alarm shop drawings.** Shop drawings for fire alarm systems shall be prepared in accordance with NFPA 72 and submitted for review and approval prior to system installation. (See fire code for required items.)



# Fire Alarm and Detection Systems

**907.2 Where Fire Alarms required – new buildings and structures. An approved fire alarm system shall be installed in accordance with fire code and NFPA 72.**

**(NOTE: Ensure Occupancy Group and Occupant load are shown on plans.)**

## **907.5.2.1 Audible Alarms:**

Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm. Group A, B, E, F, H, I, M, R, S and U occupancies shall meet Public Mode Audible Requirements of NFPA 72.



# Fire Alarm and Detection Systems

**Where required – new buildings and structures. An approved fire alarm system shall be installed in accordance with the provisions of the fire code and NFPA 72.**

**(NOTE: Also see AHJ Policy for NFPA 72 [City of Phoenix Fire Department - Fire Code](#) )**

## **907.5.2.3 Visual Alarm:**

Visual alarm notification appliances shall be provided in accordance with Section 907.  
(Coverage shall be provided in all public and common areas.)

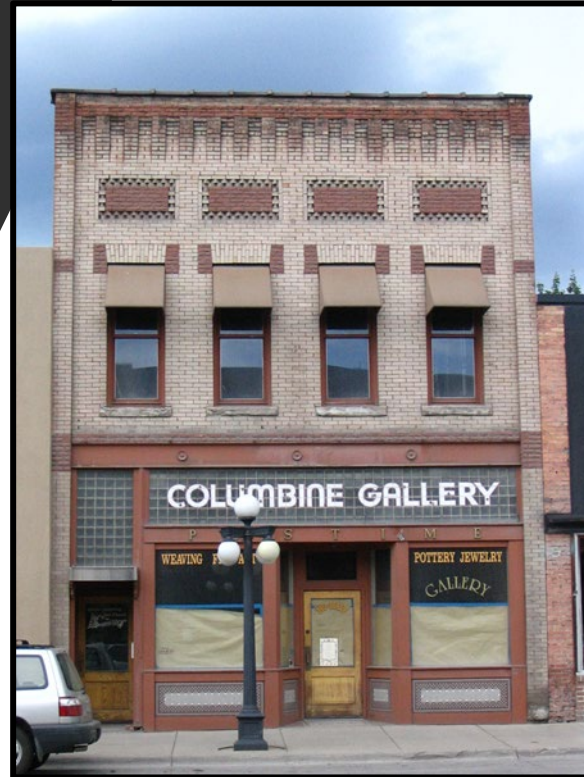




# Existing Buildings

## 2018 Phoenix Fire Code

### Chapter 11 Construction for Existing Buildings



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# Existing Buildings

## 2018 Phoenix Fire Code

**Scope.** The provisions of this chapter shall apply to existing buildings constructed prior to the adoption of this code.

**Intent.** The intent of this chapter is to provide a minimum degree of fire and life safety to persons occupying existing buildings by providing minimum construction requirements where such existing buildings do not comply with the minimum requirements of the *International Building Code*.

**See Table 1103.1 in 2018 Phoenix Fire Code.**



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# Existing Buildings

## 2018 Phoenix Fire Code

### **1103.5.5 Sprinkler systems.**

All retro-active Brett Tarver Ordinance requirements may be found in Chapter 11 as well as Chapter 9.



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# Existing Buildings

## 2018 Phoenix Fire Code

### Fire Alarm & Detection Systems

**1103.7 Fire Alarm Systems.** An approved fire alarm system shall be installed in existing buildings and structures; unless other requirements are provided in other sections of the code.

Where a fire alarm system is required to be installed in an existing building, an approved fire detection system shall be installed.



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# Fire Plan Review Staff

## FIRE PLAN REVIEW PERSONNEL

Greg Preston	602-534-2639
Karen Roberts	602-495-5586
Lyles Viseur	602-262-6032
Luis Badilla	602-495-3664
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Christopher Wehrung	602-262-4784
Breelle Lugo	602-534-7234
Karen Mikus (contractor)	602-326-9191



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# Fire Code Self-Certification Guide

## Construction Documents

- **Scope of Work/ Project Narrative**
- **Building Information/data (Occupancy classification, building area, type of construction, occupant load, etc.) Provide code summary chart / project data**
- **Applicable codes and standards (2018 Fire Code)**
  - **PFC Chapter 9 in lieu of IBC Chapter 9**
- **Automatic sprinkler system (NFPA 13,13R, ESFR)**
- **List of deferred submittals (Life safety permits)**
- **Hazardous Material Inventory Statement (HMIS)**
- **Fire Department Appeals or Building CMODs**

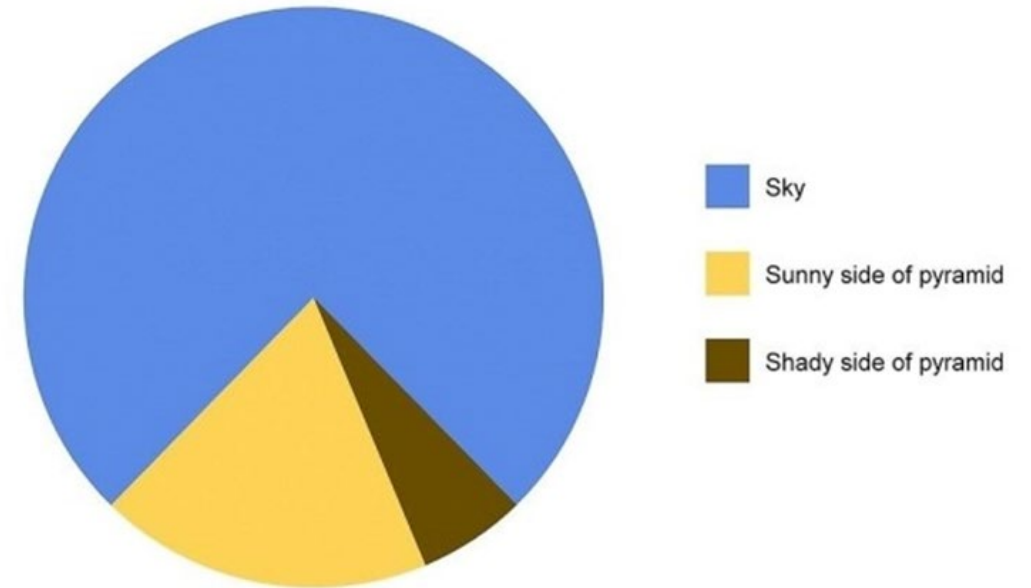


# Fire Code Self-Certification Guide

## **PFC 903: Automatic Sprinkler System**

### **NFPA 13 system is required:**

- **Building area increase**
- **Reduction in fire resistance rating**
- **Travel distance increase**
- **Reduction in fire partitions rating**
- **Reduction in required fire flow**





# Fire Code Self-Certification Guide

## **Access to Building Opening and Roof**

- **Stairway access to roof is required four or more stories above grade plane. Exception, 33.3 % slope.**
- **Stairway access to the roof is to comply with Phoenix Fire Code 504.3. Stairway is to be in accordance with 1011.12. Please show and note on the construction documents which stairways are to be provided to conform. Please provide stair a detail.**



# Fire Code Self-Certification Guide

## Emergency Responder Radio Coverage

- **Four stories or greater**
- **Total building area greater than 50,000 square feet**
- **Any building with a basement or underground level(s)**
- **Where required by the fire code official**
- **PFC Section 1103- Emergency responder radio coverage in existing buildings**



# Fire Code Self-Certification Guide

**905: Class I standpipe systems shall be installed throughout buildings 30 feet above/below the fire department vehicle access.**

**Non-sprinklered Group A buildings having an *occupant load* exceeding 1,000 persons.**

- **Covered and open mall buildings**
- **Stages greater than 1,000 square feet**
- **Underground buildings**
- **Helistops and heliports**
- **Marinas and boatyards**
- **Rooftop gardens and landscaped roofs**

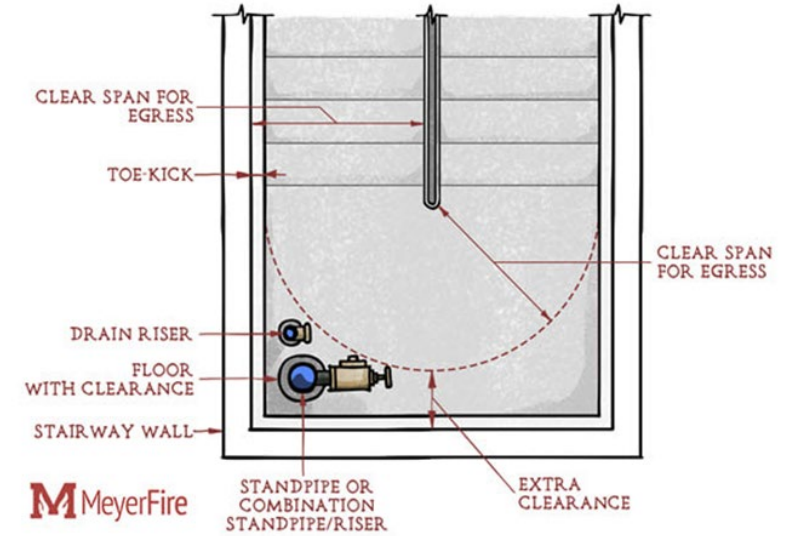
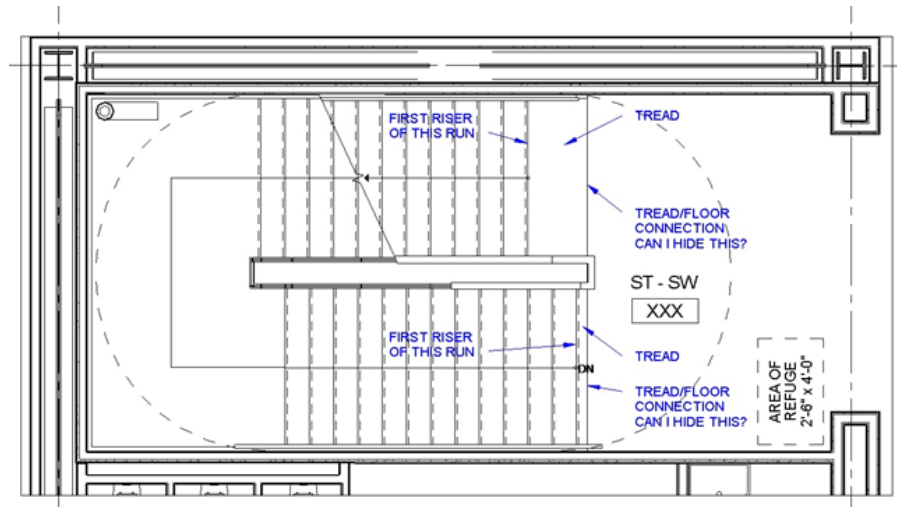


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# Fire Code Self-Certification Guide

## 905: Standpipe Systems

- Show proposed location on drawings
- Main Floor landing



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# Fire Code Self-Certification Guide

## High-piled Storage

### •PFC 910: Smoke and Heat Removal

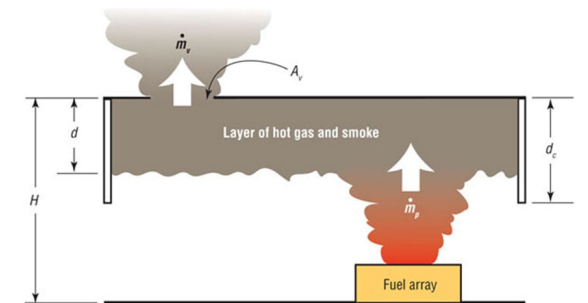
- Group F-1 or S-1 more than 50,000 square feet (4645 m<sup>2</sup>) of undivided area
- PFC 3206.4.1.3- Speculative warehouses
- Table 3206.2- Smoke and heat removal required at 2,501 for High-pile storage

•If ESMR exception is to be utilized, show on drawings in code analysis, listed in deferred submittal, etc.

- Evaluate the need for Fire Pump
  - 1 hour Fire Separation

•A separate FPPD submittal is required to PDD for High-Pile Storage – F102 (Construction Permit)

•A separate FPPR submittal is required to the Fire Department for High-Pile Storage – F303 (Operational Permit)



# Fire Code Self-Certification Guide

## **PFC 32: High-Piled Combustible Storage**

- **3206 Number of doors required.**
  - Fire department access doors shall be distributed a lineal distance to not exceed 125 feet (center to center)
  - **PBC 1017.2.2 Groups F-1 and S-1 amendment has 4 conditions which must be met to increase travel distance to 400 feet. Condition #4 defers to PFC 3206.6**
    - **Applicable to shell buildings**
      - Speculative Warehouses PFC 3206.4.1.3.
- **3206.8 Smoke and heat removal.**



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# Fire Code Self-Certification Guide

## **PFC 913: Fire Pumps**

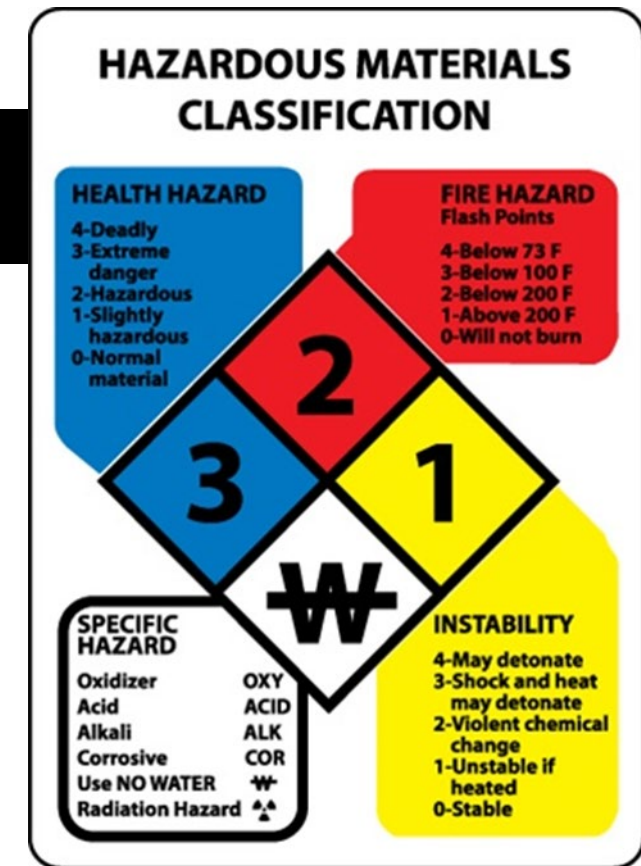
- **Indicate type of pump (Electric vs Diesel)**
  - **Diesel, evaluate MAQ, show fuel tank capacity calculations on construction documents NFPA 20 (11.4.1.2)**
  - **Electric: Generator fuel capacity (if applicable) NFPA 20 (9.6.2.3)**
- **Protection of fire pump rooms. Fire pumps shall be located in rooms that are separated from all other areas of the building by 2-hour *fire barriers* (1-hour fire barrier in other than high-rise building with automatic sprinkler system).**



# Fire Code Self-Certification Guide

## PFC 50: Hazardous Materials

- **Hazardous Materials Inventory Statement (HMIS).** Where required by the *fire code official*, an application for a permit shall include an HMIS or a Globally Harmonized System (GHS).
- **To be coordinated with Phoenix Fire Department Special Hazards Unit (SHU)**
  - <https://www.phoenix.gov/fire/prevention/specialhazards>



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# Fire Code Self-Certification Guide

## PFC 50: Hazardous Materials Inventory Statement

- Indoor/ Outdoor
- Chemical Trade name
- Concentration
- CAS number
- Hazard Classification
- Physical State (Solid, Liquid, Gas)
- Total Amount ( Pounds, Cubic Feet, Gallons)
- NFPA 704 Rating
- Number of Tanks Above Ground



# Fire Code Self-Certification Guide

## **Fire Life Safety Reports (FLSRs) Requirements PFC Section 105**

### **Applicable TRT documents:**

- ✓ **Document Number 00836 (FLSR Policy)**
  - ✓ **Document Number 00837 (FLSR Report Checklist)**
- 
- **High-Rise Buildings**
  - **Covered Mall Buildings**
  - **Buildings containing atriums**
  - **Hospitals**
  - **Building storage height over 40 feet**
  - **Group F and S occupancies over 500,000 square feet**
  - **Any structure determined by the Fire or Building Code Official**



# Fire Code Self-Certification Guide

## Common Audit Comments

- **Hose Valve Connection Locations(stairs/horizontal exits, etc.)**
- **Fire Alarm System Requirements**
- **Automatic Sprinkler System Requirements (NFPA 13/NFPA 13R)**
- **Fire Department Access Doors in High-Piled Combustible Storage**
- **Hazardous Materials Requirements**
- **Atrium or Smoke Control System modifications**
- **Extraction Rooms and Facilities**
- **Battery Storage Rooms/ Facilities**
- **Hazardous Occupancies/  
*Processes***



# Fire Code Self-Certification Guide

## **Not Eligible for Self-Certification**

- **Paint Booth**
- **Energy Storage System/ PV Solar System**
- **Dust Collector**
- **Paint Dipping Operation**
- **Grow Facility WITH Carbon Dioxide**
- **Plant Extraction**
- **Industrial Oven (400,000 Btu)**
- **Processes with descriptions which include the terms “combustible, flammable, hazardous and/or hazardous material”**
- **General: If an item has its own Chapter in the Fire Code**
  - **Sections 1205 & 1206 and Chapters 20, 22, 24, 25, 26, 27, 28, 29, 30, 32, 34, 38, 50 & 56**



# Questions?



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