

FIRST FIRE PROTECTION DISTRICT OF  
ANTIOCH TOWNSHIP  
FIRE PREVENTION CODE

2012 EDITION OF THE INTERNATIONAL FIRE CODE WITH CERTAIN AMENDMENTS

ADOPTION OF THE INTERNATIONAL FIRE CODE 2012 EDITION

The regulations of the 2012 edition of the International Fire Code, as published by the International Code Council is hereby adopted as the regulations governing the safeguard of life and property from the hazards of fire and explosion arising from the storage, handling and use of hazardous substances, materials and devices; and from conditions hazardous to life or property in the use or occupancy of existing or proposed new buildings or premises in the First Fire Protection District of Antioch Township with such amendments as are hereafter set forth.

**CHAPTER 1 - ADMINISTRATION**

**SECTION 101 – SCOPE AND ADMINISTRATION**

**101.1 Title**

These regulations shall be known as the Fire Code of the First Fire Protection District of Antioch Township, hereafter referred to as “this Code”.

**SECTION 102 – APPLICABILITY**

**102.7 Referenced codes and standards**

The codes and standards referenced in this Code, listed in Chapter 80 and Appendixes B, C and D are hereby incorporated into the Antioch Fire Prevention Code and shall be considered part of the requirements of this Code to the prescribed extent of each such reference. Where differences occur between the provisions of this Code and referenced standards, the more restrictive standard shall apply.

**SECTION 103 – DEPARTMENT OF FIRE PREVENTION**

**103.1 General**

A Fire Prevention Bureau is hereby established within the First Fire Protection District of Antioch Township under the direction of the Fire Marshal. The function of the Fire Prevention Bureau shall include, but not be limited to the implementation, administration and enforcement of the provisions of this Code along with other duties deemed necessary by the Chief in the interest of the First Fire Protection District of Antioch Township.

## **103.2 Appointment**

The Chief of the First Fire Protection District of Antioch Township shall, by reason of said position, shall appoint personnel of the First Fire Protection District of Antioch Township to assist in enforcing this Ordinance. Such appointments shall include, but be not limited to a Fire Marshal, and as many inspectors, investigators, and public safety educators as may be needed. For the purposes of this Code, the Fire Marshal is the same as the Code Official.

## **SECTION 104 – GENERAL AUTHORITY AND RESPONSIBILITIES**

### **104.3 Right of Entry**

**RIGHT OF ENTRY:** Whenever it is necessary to make an inspection to enforce the provisions of this Code, or whenever the Fire Code Official has reasonable cause to believe that there exists in a building or upon any premises any conditions or violations of this Code which make the building or premises unsafe, dangerous or hazardous, the Fire Code Official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the Fire Code Official by this Code. If such building or premises is occupied, the Fire Code Official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the Fire Code Official shall first make a reasonable effort to locate the owner or other person having charge or control of the building or premises and request entry. If entry is refused, the Fire Code Official has recourse to every remedy provided by law to secure entry. No owner or occupant or any other person having charge, care or control of any building or premises shall fail or neglect, after proper demand is made as herein provided, to properly permit entry therein by the Fire Chief or his authorized representative for the purpose of inspection or examination under such exigent circumstances affecting the safety of persons and/or property, or to take such prudent action to extinguish a fire or abate a fire hazard.

### **104.8 Modifications**

The Chief of the First Fire Protection District of Antioch Township may grant a variance regarding any of the provisions of this Code upon application in writing by the owner or lessee of the building or structure, or their duly authorized agent, where there are practical difficulties in the way of carrying out the strict letter of this Code, provided that the spirit of the Ordinance codified in this chapter shall be observed, public safety secured, and substantial justice done. If the Fire Chief decides to grant a variance, he may place conditions thereon. The decision of the Fire Chief in either granting or denying the variance shall be in writing and entered in the records of the First Fire Protection District of Antioch Township. A signed copy of the Fire Chief's decision shall be furnished to the applicant.

#### **104.10.2 Reporting hazardous locations**

Any person discovering the evidence of spontaneous heating or other abnormal heating of any kind in any building, marine vessel, appliance, apparatus, tank, or open stack or pile, or any person upon discovering or being apprised of an uncontrolled hazardous gas leak or hazardous material or flammable and/or combustible liquid spill, shall immediately notify the First Fire Protection District of Antioch Township.

## **SECTION 105 - PERMITS**

### **105.6 Required**

Permits shall be obtained from the First Fire Protection District of Antioch Township as required in other sections of this Code. Permits shall be valid only for the calendar year they were issued

for, or until the expiration date on the permit for temporary permits. A new permit along with the fee set forth in Section 105.8 shall be required each calendar year. Issued permits shall be kept on the premises designated therein at all times and shall be readily available for inspection by the Code Official.

### 105.8 Operational Permit Fees (Annual Permit Fee or Event)

The following fees are established for any operational permits required by this Code and shall be submitted along with the permit application: **The fee shall not exceed more than 150.00 for a business.**

Air-supported structures, temporary	\$50.00
Aerosol products, flammable and combustible	\$50.00
Amusement buildings or events (outdoors) per event	\$50.00
Automotive service station and repair garages	\$50.00
Aviation facilities	\$50.00
Battery Systems	\$50.00
Bowling establishment	\$50.00
Calcium carbide storage	\$50.00
Carnivals and fairs	\$50.00
Cellulose nitrate film	\$50.00
Combustible dust-producing operations	\$50.00
Combustible fibers, except agricultural storage	\$50.00
Compressed gases	\$50.00
Corrosives	\$50.00
Covered mall buildings	\$50.00
Cutting and welding, calcium carbide and acetylene generators	\$50.00
Cryogenic liquids	\$50.00
Day care centers	\$50.00
Dry Cleaning Plants	\$50.00
Dust producing materials, explosion hazards	\$50.00
Education use groups (not for profit)	N/C
Emergency responder radio coverage system	\$50.00
Education use groups (for profit)	\$50.00
Exhibits and trade shows	\$50.00
Explosives, ammunition and blasting agents	\$50.00
Fire hydrants and valves (private)	\$50.00
Fireworks (pyrotechnic display – per job)	\$50.00
Flammable and combustible liquids	\$50.00
Flammable solids	\$50.00
Floor finishing	\$50.00
Fruit and crop ripening	\$50.00
Fumigation and thermal insecticidal fogging (per event)	\$50.00
Licensed group homes	\$50.00
Lumber and woodworking plants with more than 100,000 board ft.	\$50.00
Hazardous materials, storage and handling	\$50.00
Hazardous production material facilities	\$50.00
Health hazard materials, storage and handling	\$50.00
High piled storage	\$50.00
Hot work operations	\$50.00
Industrial ovens	\$50.00
LP-gas, storage, use and handling	\$150.00
Liquefied/gas fueled vehicles or equipment in assembly buildings	\$50.00
Lumber yard and woodworking plants with more than 100,000 board ft.	\$50.00
Magnesium	\$50.00
Marine service and repair garages	\$50.00

Matches, manufacture or storage of	\$50.00
Material storage facilities	\$50.00
Miscellaneous combustible storage	\$50.00
Oil and gas production	\$50.00
Open flames and candles – torches for removing paint, candles, etc.	\$50.00
Open burning (Except recreational fires)	\$50.00
Organic coatings, process	\$50.00
Ovens and furnaces, industrial type processes	\$50.00
Oxidizers, liquid and solid	\$50.00
Pesticides, storage and handling	\$50.00
Places of assembly and education for profit	\$50.00
Places of assembly and education not for profit	N/C
Pyroxylin plastics	\$50.00
Radioactive materials	\$50.00
Recreational and sport vehicle service and repair	\$50.00
Refrigeration Equipment	\$50.00
Rooftop Heliport	\$50.00
Solar photovoltaic power systems	\$50.00
Storage of scrap tires and tire by-products	\$50.00
Temporary membrane structures, tents and canopies	\$50.00
Toxic solids and liquids	\$50.00
Unstable (reactive) chemicals, storage and handling	\$50.00
Waste handling	\$50.00
Water material handling facilities	\$50.00
Water-reactive materials, storage and handling	\$50.00
Welding and cutting operations, electric or gas	\$50.00
Wood Products	\$50.00

### **105.8.1 PERMITS FOR MANAGERS AND CONTRACTORS**

#### **A. Circumstances Requiring Hazardous Substance Management Permit:**

Each person who owns or operates a location within the First Fire Protection District of Antioch Township which one or more hazardous substances is managed at one or more stationary facilities, must obtain from the Fire Prevention Bureau, and there after maintaining, a hazardous substance management permit under the following circumstances:

1. To be required to obtain the permit, the location must have at a minimum:
  - a. A facility managing one hundred (100) pounds or more of an explosive, poisonous material, radioactive material, reactive material or infectious substance; or
  - b. The capacity to manage more than one thousand (1,000) pounds of any hazardous substance at any given time; or
  - c. The capacity to manage more than two thousand five hundred (2,500) pounds of hazardous substances in the aggregate at any given time.
  
2. A location is considered to have the capacity to manage hazardous substances according to the sum of the following capacities of all facilities at the location:
  - a. The combined capacities (whether in use or not) of any underground or aboveground storage tanks; and

b. Not including tank capacities:

- (1) The combined permitted maximum capacities (whether in use or not) for the storage of hazardous substances at any one time at the location stated in a permit or license issued by applicable local, State or Federal authority; or
- (2) If greater than subsection A.2.b.(1) of this Section, the weight of the greatest amount of hazardous substances present at the location at any one time during the twelve (12) month period next prior to the date of application.

3. The following facilities and their capacities shall not be included in determining whether a permit is required:

- a. Any natural gas pipe or pipeline;
- b. Any sanitary or storm sewer owned or operated by a unit of local government;
- c. Retail displays of hazardous substances, in closed containers each containing not more than five (5) gallons (wet volume) or fifty (50) pounds (dry weight) of a hazardous substance, if the owner or operator certifies to the Fire Prevention Bureau that hazardous substances are being displayed for retail sale to consumers, and that not more than five thousand (5,000) pounds of hazardous substances are being or will be on display at any one time, and that not more than five hundred (500) pounds of airy explosive, radioactive material, or reactive material will be on display at any one time;
- d. Satellite containers of waste infectious substances at a hospital or medical clinic, before those containers are aggregated at a single location for collection.

4. An application for a hazardous substance management permit shall be made to the Fire Prevention Bureau as follows:

- a. For a location which first meets the requirements for having a permit after the effective date hereof, within sixty (60) days of meeting the requirements;
- b. For locations which meet the requirement to have a permit on the day this Chapter becomes effective, the owner and operator of each location shall apply for a hazardous substance management permit within ninety (90) days of the effective date hereof; and
- c. The owner and operator of each other affected location shall apply for the permit within one hundred fifty (150) days of the effective date hereof;
- d. Each application or reapplication hereunder shall be signed by the owner and the operator of the location sought to be permitted.

B. Installation or Removal of Storage Tanks; Permit; Exception: Unless covered by a generic location authorization under subsection F. of this Section, any person who installs or removes a tank in the First Fire Protection District, shall be required to first obtain a permit from the Fire Prevention Bureau, if such tank has been used for, or is intended to be used for, the storage of hazardous substances. Provided, however, no permit shall be required for any tank whose proposed use is, or immediate past use was, the storage of home heating oil exclusively for the on-premises use in single-family or multiple-family residences.

C. Asbestos Removal; Permit: Unless covered by a generic location authorization under subsection F. of this Section, any person who, in the pursuit of a commercial activity, removes asbestos or asbestos-containing material from a facility within the First Fire Protection District, during the construction, alteration, repair or demolition of such facility, shall first obtain a permit from the Fire Prevention Bureau. "Asbestos", "asbestos-containing material", and "commercial activity" shall have the meanings specified in 35 Illinois Administrative Code 228.101 through 228.161.

D. Lead Abatement or Mitigation; Permit: Unless covered by a generic location authorization under subsection F. of this Section, any person who performs lead abatement or lead

mitigation at a facility within the First Fire Protection District shall first obtain a permit from the Fire Prevention Bureau. "Lead abatement" and "lead mitigation" shall have the meanings specified in the Lead Poisoning Prevention Act, 410 Illinois Compiled Statutes 45/1 et seq. E. Permit Processing Fee: A fee, as follows, shall be paid by the applicant at the time the permit application is submitted to the Fire Prevention Bureau:

1. Management Permit: For a hazardous substance management permit:
  - a. Three hundred dollars (\$300.00), if the facility is capable of managing less than one ton (2,000 pounds); or
  - b. Seven hundred fifty dollars (\$750.00), if the facility is capable of managing one ton or more, but less than five (5) tons; or
  - c. One thousand five hundred dollars (\$1,500.00) if the facility is capable of managing five (5) tons or more, but less than twenty-five (25) tons; or
  - d. Two thousand five hundred dollars (\$2,500.00) if the facility is capable of managing twenty-five (25) tons or more, but less than fifty (50) tons; or
  - e. Four thousand dollars (\$4,000.00) if the facility is capable of managing fifty (50) tons or more, but less than two hundred fifty (250) tons; or
  - f. Five thousand dollars (\$5,000.00), if the facility can is capable of managing two hundred fifty (250) tons or more.
  
2. Gasoline Station: For a hazardous substance management permit for a gasoline station:
  - a. Three hundred dollars (\$300.00), if the station is capable of managing less than fifty (50) tons; or
  - b. Five hundred dollars (\$500.00), if the station is capable of managing fifty (50) tons or more, but less than one hundred (100) tons; or
  - c. One thousand dollars (\$1,000.00), if the station is capable of managing one hundred (100) tons or more.
  
3. Amendment Fees: For an amendment to a hazardous substance management permit, the fees, if any, shall be as provided in subsection E.1. and E.2. of this Section but shall be based only on any net increase in facility capacity over the capacity in the permit being amended.
  
4. Tank Installation: For each tank to be installed pursuant to a tank installation permit:
  - a. One hundred dollars (\$100.00), for a tank with a capacity less than one thousand (1,000) gallons; or
  - b. Two hundred dollars (\$200.00), for a tank with a capacity of one thousand (1,000) gallons or more, but less than five thousand (5,000) gallons; or
  - c. Five hundred dollars (\$500.00), for a tank with a capacity of five thousand (5,000) gallons or more, but less than ten thousand (10,000) gallons; or
  - d. One thousand dollars (\$1,000.00), for a tank with a capacity of ten thousand (10,000) gallons or more, but less than fifty thousand (50,000) gallons; or
  - e. Two cents (\$0.02) per gallon of capacity for a tank with a capacity of fifty thousand (50,000) gallons or more, up to a maximum fee of two thousand five hundred dollars (\$2,500.00).
  
5. Tank Removal: For each tank to be removed pursuant to a tank removal permit:
  - a. One hundred dollars (\$100.00) for an aboveground tank; and
  - b. Two hundred dollars (\$200.00) for an underground tank.
  
6. Asbestos Removal: For a facility asbestos or asbestos-containing material removal permit: one hundred dollars (\$100.00) per day, or part thereof, during which such removal is sought to be permitted.
  
7. Lead Abatement or Mitigation: For a facility lead abatement or mitigation project

permit: fifty dollars (\$50.00) per day, or part thereof, during which such abatement or mitigation is sought to be permitted, but in no event less than one hundred dollars (\$100.00) per facility.

F. Generic Authorization: Any holder of, or applicant for, a hazardous substance management permit may, at the time of application, or during the term of a permit, seek generic location authority to remove/install tanks or to remove asbestos-containing material or to conduct lead abatement or mitigation at the location covered by the permit. Generic authorizations shall expire with the location permit.

1. It shall be a condition of each such generic authorization that the permittee provide the Fire Prevention Bureau with written notification of each specific project to be conducted under the permit at the earliest of the following times:

- a. The time notification of such project is provided to another governmental body, including the office of the State Fire Marshal or the Village Building Department; or
- b. Upon the on-site request of the Fire Prevention Bureau, as respects any project underway at the time of the request; or
- c. Within fourteen (14) business days following a written request from the Fire Prevention Bureau for a list of projects undertaken in the twelve (12) months prior to the request.

2. The fees for generic authorizations shall be in addition to the base hazardous substance management permit fee, as follows:

- a. Tank removal/installation, two thousand five hundred dollars (\$2,500.00);
- b. ACM removal, one thousand dollars (\$1,000.00);
- c. Lead abatement/mitigation, five hundred dollars (\$500.00); or
- d. All three (3) generic authorizations, three thousand dollars (\$3,000.00).

G. Expiration Date of Permit: A hazardous substance management permit required hereunder shall expire one year after its date of issuance. Any application for renewal or reissuance of such permit shall be submitted to the Fire Prevention Bureau not less than thirty (30) days in advance of the permit expiration date.

H. Manner and Form of Permit: The Fire Prevention Bureau shall prescribe the manner and form of permit applications required hereunder. Until a particular form of application is prescribed, an applicant may use any form which provides, at a minimum, and in a legible form, the information called for hereafter:

1. Identification of the name and address of the owner and operator of the location which is the subject of the permit, including any beneficial owner(s) and an identification of any parent corporation of the owner or operator;
2. Identification of the location which is the subject of the permit, including a legible map showing the location within the First Fire Protection District;
3. Identification of the operations conducted at the location generally, and the hazardous substance management operations and locations more specifically;
4. Identification of and, if required by the Director of the Fire Prevention Bureau, complete copies of, each permit, license or authorization issued by any local, State or Federal authority granting permission to release hazardous substances from any facility at the location;
5. A description of any hazardous substance releases, or fires or explosions at any location facility within the preceding two (2) years, for which the facility owner or operator was required to make an oral or written report to any governmental body;
6. Identification of and, if required by the Director of the Fire Prevention Bureau, a copy of the most recent prevention, control and countermeasure plan, or emergency response

plan, or contingency plan which the applicant has prepared pursuant to some other law, but which covers all or a part of the location;

7. Identification of and, if required by the Director of the Fire Prevention Bureau, a copy of the most recent RPCC Plan for each facility at the location;
8. A description of HAZWOPER training for, and an identification of certified employees;
9. Unless the maximum permit fee is tendered with the application, quantification of the location's capacity to manage hazardous substances, and an explanation how that quantity was calculated; and
10. If a generic authorization is requested pursuant to subsection F. of this Section, a description of the anticipated type, location and duration of the activity to be covered.

### 105.9 Site development and construction plan review

Each applicant for a building permit involving new construction, additions and/or alterations, subdivision improvements, Planned Unit Developments (PUD's), fire detection/suppression systems or any other item that will affect the First Fire Protection District of Antioch Township operation, shall submit to the Code Official for review and approval, three (3) sets of all required plans, documents and a complete description of work to be performed. Only site development and sprinkler system plan and documents will be required for all single-family residences. The Code Official shall, within ten (10) days, examine said plans and documents to determine compliance with the applicable codes, standards, ordinances and good fire safety practices. If said plans are approved, the Code Official shall endorse said plans accordingly, and deliver said plans to the applicant and/or Building Official. If said plans are found to be unsatisfactory, then said plans shall be returned to the applicant and/or Building Official with a memorandum listing the specified deficiencies found. A copy of the list of deficiencies shall be delivered to the applicant and/or Building Official with a recommendation to reject said plans until corrected.

#### 105.9.1 Plan review and site inspection fee schedule

Each applicant shall pay the following plan review and site inspection fees for review and site inspection by the First Fire Protection District of Antioch Township. No part of said fees shall be refundable. Plan review fees shall include re-reviews, along with preliminary site visits up to a total of three (3) inspections for each category. Contact the First Fire Protection District of Antioch Township for the plan review and site inspection fee schedule. Submit three (3) sets of fire sprinkler shop drawings and construction documents for plan review

<b>Site Plan – New development</b>	\$150.00
<b>New construction and/or large-scale remodel &gt; 15,000 sq ft</b>	
Life Safety Review: \$.10 cents per sq. ft, minimum	\$200.00
<b>Small scale tenant finish or remodel &lt; 15,000 sq ft</b>	
Life Safety Review: \$.07 cents per sq. ft, minimum	\$200.00
<b>Custom Mall Kiosks</b>	\$ 100.00
<b>Automatic fire-extinguishing systems</b>	
NFPA 13 or 13R:	\$200.00 plus \$3.00 per sprinkler
NFPA 13D (Single family residences):	\$200.00
Small scale tenant remodel of sprinkler system:	\$150.00
Combination pre-action/clean agent:	\$450.00



Other fire suppression systems (Wet Chemical, Clean Agent, Etc.)	\$250.00
<b>Standpipes</b>	\$200.00
<b>Fire pumps and related equipment</b>	\$200.00
<b>Fire alarm systems &amp; related equipment</b>	\$200.00 plus \$3.00 per device
<b>Fire alarm panel replacement</b>	\$250.00
<b>Computer Board and all components of board</b>	
<b>Restaurant Mechanical Hood &amp; Duct Systems</b>	\$250.00
<b>Compressed gases/Flammable &amp; Combustible Liquids</b>	\$100.00
<b>Flammable and combustible liquids</b>	\$100.00
<b>Hazardous Materials</b>	\$100.00
<b>Industrial ovens</b>	\$100.00
<b>LP – gas</b>	\$150.00
<b>Private fire hydrants</b>	\$100.00
<b>Spraying or dipping</b>	\$100.00
<b>Temporary membrane structures, tents and canopies</b>	\$100.00

**NOTE:** In addition to the review fees listed, the applicant shall pay, prior to the issuance of any permit, the actual costs and expenses incurred by First Fire Protection District of Antioch Township for extraordinary reviews of plans or specifications beyond the review customarily involved in the usual course of such plan reviews. Such costs and expenses shall include actual review fees by consultants or outside contractors or time spent by First Fire Protection District of Antioch Township staff. First Fire Protection District of Antioch Township staff time shall be billed at an hourly rate to be determined by the Fire Chief or designee.

**105.9.2 Third Party Consultants**

The District reserves the right to send out any plan review to a third-party consultant. The third-party consultant shall invoice all review fees directly to the contractor or building owner.

**105.9.3 New development contribution fee**

The First Fire Protection District of Antioch Township has adopted a formula for new residential developments in assessing contribution fees in developing areas. The developer contribution fee per dwelling unit is as follows:

1. Two (2) bedroom	\$403.40
2. Three (3) bedroom	\$579.80
3. Four (4) bedroom	\$752.80
4. Five (5) bedroom (or more)	\$754.00

Any future expansion or increase in density, following approval of the preliminary plat, will be subject to the contribution payment schedule. Payment will be due at a time agreed upon by both parties prior to the issuance of any building permits.

Developer contribution fees for commercial buildings will be assessed at a rate of \$.10 per square foot.

The First Fire Protection District of Antioch Township may require a capital contribution for buildings or developments that have a profound impact on emergency operations as deemed necessary by the Fire Chief. Such contributions shall include, but not be limited to senior citizen developments, multi-story buildings, large commercial retail projects, large commercial buildings, use or storage of hazardous materials, etc. The Fire District only extends property tax and is not a benefactor of sales tax. Full realization from tax revenue is typically not fully collected for three years; therefore, this contribution will assist in offsetting full service costs incurred.

**SECTION 108 - BOARD OF APPEALS**

**108.1 Board of appeals established**

Whenever the Code Official shall disapprove an application, or refuse to grant permission or when it is claimed that the true intent and meaning of the Ordinance have been misconstrued or wrongly interpreted, the applicant or person affected may appeal the decision of the Code Official to the Chief of the First Fire Protection District of Antioch Township by written notice filed in the First Fire Protection District of Antioch Township Chief's office within ten (10) days

from the date of the decision being appealed. The said Chief shall call a hearing on said appeal within sixty (60) days of said notice of appeal filing and shall render a decision within (10) days after completing such hearings. Nothing herein shall restrict the Code Official from seeking immediate enforcement of the regulation of this Ordinance in Court where the hazard involved requires such action.

#### **108.1.1 Court of jurisdiction**

Any person aggrieved by a decision of the Board, may apply to the appropriate Court of Jurisdiction. Application for review shall be made to the proper court within fifteen (15) days after the filing of the Board's decision in the office of the Secretary of the Board.

### **SECTION 109 - VIOLATIONS**

#### **109.4 Violation Penalties**

Any person, firm, or corporation who shall violate any provision of this Code or shall fail to comply with any of the requirements thereof or shall erect, construct, alter or repair a building or structure in violation of an approved plan or directive from the Code Official, or of a permit or Certificate of Occupancy issued under the provisions of this Code, shall be guilty of a misdemeanor, punishable by a fine of not less than \$150.00 and not more than \$750.00. Each day the violation continues after due notice has been served shall be deemed a separate offense.

### **SECTION 110- UNSAFE BUILDINGS**

**110.5 FIRE WATCH:** Where conditions exist that are deemed hazardous to life and property by the Fire Code Official, a fire watch shall be implemented. The Fire Code Official shall determine the number of personnel required and the duration necessary for the fire watch. A fee of seventy-five dollars (\$75.00) per hour for each First Fire Protection District of Antioch Township personnel assigned to the fire watch shall be charged. Conditions that may require a fire watch shall include, but are not limited to, the following:

- A. Buildings occupied or in use prior to completion of the fire safety equipment and supervision;
- B. Buildings in which the fire safety equipment and supervision is placed out-of-service and will not be restored within eight (8) hours with Authority Having Jurisdiction approval;
- C. Building with an occupancy load greater than the posted numbers;
- D. Special events or programs where there will be an occupant load greater than the established maximum capacity;
- E. Situations where the fire-load is greater than the normal day-to-day operation; and
- F. Where other unsafe or hazardous conditions exist.

## **SECTION 111 – STOP WORK ORDER**

### **111.4 Failure to comply**

Any *person* who shall continue any work after having been served with a stop work order, except such work as that *person* is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than \$150.00 dollars or more than \$750.00 dollars for each offense payable to the First Fire Protection District of Antioch Township.

### **111.5 Injunctive Relief**

As an alternative or in conjunction with the position of other penalties as provided in other provisions of this Code, the District may elect to seek injunctive relief from a Court of equity requiring compliance with the Code, demolition of the offending structure or removal of the offending condition. The District shall be entitled to an award of reasonable attorney's fees and all costs of litigation, including court costs, deposition fees and expert witness fees incurred in enforcing this Ordinance through this provision.

## **CHAPTER 2- ABBREVIATIONS AND DEFINITIONS**

### **SECTION 201 - GENERAL**

#### **201.1 ABBREVIATIONS:**

1. The abbreviation NFPA shall mean “National Fire Protection Association”.
2. The abbreviation IBC shall mean “International Building Code”.
3. The abbreviation IFC shall mean the “International Fire Code, 2012 Edition”.
4. The abbreviation LSC shall mean the “NFPA #101, Life Safety Code, 2012 Edition”.

### **SECTION 202 - GENERAL DEFINITIONS**

1. **CHANGE OF OWNERSHIP:** A change of ownership occurs when a title is transferred from one person or entity to another. Ownership of land is transferred by having the owner sign a deed in exchange for money and/or other considerations. It results in a change in the legal right to the ownership and possession of land. Change of ownership of land requires many formalities. Some states require the deed to be notarized. The land ownership deed should be also by officially “recorded” in the county where the land is situated.
2. **CHANGE OF USE:** For the purpose of determining a “change in use,” this shall mean the change from one general property use to another or change from one specific property use to another within the same general property use. Buildings or parts of a building vacant for more than one (1) year shall be considered a change of use. Listings of both general and specific property uses are found in NFPA #901, Standard Classification for Incident Reporting and Fire Protection Data, 2011 Edition.

3. **FIRE AREA:** Fire area means the total floor area including mezzanines and basements contained within the surrounding exterior walls of a building on all floors and levels added together. The area included within the surrounding exterior walls of a building shall include roof overhangs and extensions and all enclosed extensions. Areas of a building not provided with surrounding walls shall be included within the building area if such areas are included within the horizontal projection of the roof or floor above. Interior walls, including fire walls, party walls, fire barriers, fire partitions, and other such fire separation walls, shall not be considered as walls which divide a structure into two or more separate buildings, but structures containing such interior walls shall be considered as one building for the purposes of this section.

## **CHAPTER 3 - GENERAL PRECAUTIONS AGAINST FIRE**

### **SECTION 301 – GENERAL**

#### **301.3 Items not specifically covered**

Whenever or wherever a condition is found in any building, lot, or premises, that in the opinion of the Code Official is not specifically covered by the provisions of this Chapter, but that requires correction or removal for the protection of the occupants or the public, the Code Official shall order such conditions be corrected or removed and the owner or occupant of such buildings, lots, or premises shall comply with such orders.

### **SECTION 305 – IGNITION SOURCES**

#### **305.1.1 Fuel burning appliances located in garages**

Any fuel burning appliance located in a garage area of any occupancy mounted less than six feet above the floor shall be enclosed with a one-hour fire rated enclosure with makeup air taken from the exterior, not the garage area.

Exception: Any fuel burning appliance that is American Gas Association certified, with a safe, sealed combustion chamber (no open flame) designed with an intermittent ignition device and make-up air taken from the exterior not the garage.

#### **305.5 Portable Heaters**

Portable heaters shall be designed and located so that they cannot be easily overturned, and heaters shall be designed to shut off if overturned. The Code Official may prohibit the use of portable heaters in occupancies or situations in which such use or operation would present an undue danger to the life or property of others.

#### **305.6 Heating and lighting apparatus**

Proper clearance (a minimum of 36 inches) shall be maintained between lighting and heat producing equipment and combustibles so that continuous operation at full capacity will not increase the temperature of the surrounding combustibles to their flash point or ignition temperature.

### **SECTION 307 – OPEN BURNING, RECREATIONAL FIRES AND PORTABLE OUTDOOR FIREPLACES**

### **307.1.2 Prohibited open burning**

Pursuant to Public Act 97-0488, (70 ILCS 705/8.20), and as authorized by the Board of Trustees, the Fire Chief or a designated officer, may prohibit open burning on an emergency basis if it is deemed a fire hazard due to weather or other conditions that create an unreasonable risk.

### **307.6 Spread of fire**

No person shall knowingly permit any fire to spread so as to endanger the life or property of another or use or operate any device which a source of ignition may be, unless proper removal of flammable material surrounding the operation is accomplished, or such other reasonable precautions are taken to ensure against the starting or spreading of unfriendly fires.

## **SECTION 308 – OPEN FLAMES**

### **307.4.3.1 – Portable outdoor fireplaces**

Portable outdoor fireplaces shall be used only on noncombustible surfaces. Fuel for an outdoor fireplace shall consist of only seasoned, dry firewood and shall be ignited with a small quantity of paper.

## **SECTION 315 MISCELLANEOOUS COMBUSTIBLE MATERIAL STORAGE**

### **315.4 Outside storage**

Outside storage of combustible material shall not be located within 10ft of a lot line

## **CHAPTER 4- PREMISES IDENTIFICATION**

**401.1 ADDRESS IDENTIFICATION:** New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. The Arabic numbers are to be a minimum of six (6) inches in height with a minimum stroke width of one-half (½) inch (12.7 mm). Where required by the Fire Code Official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

**401.2 INTERIOR ROOM NUMBERS:** New and existing buildings shall have an approved room and suite numbers identification placed in positions that are plainly legible and visible. Numbers shall contrast with their background; interior suite and room numbers shall be Arabic numeral or alphabet letters. Interior room and suite numbers shall be a minimum of 1.25 (1 1/4) inches (31.75 mm) high with a brush stroke width of 0.25 (1/4) inches (6.35 mm).

## **CHAPTER 5 - FIRE SERVICE FEATURES**

### **SECTION 503 - FIRE APPARATUS ACCESS ROADS**

#### **503.1.1 Buildings and facilities**

#### **503.1.4 Approval**

The location of the fire apparatus roads or fire lanes shall be reviewed and approved by the First Fire Protection District of Antioch Township.

#### **503.2.1 Dimensions**

Fire apparatus access roads shall have an unobstructed width of not less than twenty (20) feet, exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than fifteen (15) feet.

#### **503.2.3 Surfaces**

Fire apparatus access roads or fire lanes shall have a solid surface capable of supporting the appropriate fire apparatus. Fire apparatus roads shall be pitched in such a manner as to allow the runoff of water and eliminate the potential of standing water. It shall be the responsibility of the property owner to maintain the surface in a usable condition at all times, including the removal of snow.

### **507.7 Adopt IFC Appendix D – Fire Apparatus Access Roads**

### **SECTION 506 - KEY BOXES**

#### **506.1 When required**

A key box shall be required in any building that is required by this code to have fire suppression, fire protective signaling or a fire detection system. The Code Official shall require a minimum of one key lock box to be installed at a height not to exceed six (6) feet, in an accessible location. The key lock box shall be of an approved type listed in accordance with UL 1037 and shall contain keys to gain access as required by the Code Official.

#### **506.1.1 Locks**

The Code Official shall first approve any lock installed on gates or similar barriers.

#### **506.1.2 Supervision**

All required key boxes shall be electronically supervised.

#### **506.1.3 Contents of Key Box**

All required key boxes shall contain a key to all areas required by the code official

## **506.2 Key lock box maintenance**

The operator of the building shall immediately notify the Code Official and provide the new key when a lock is changed or re-keyed. The key to such lock shall be secured in the key lock box. The users shall be responsible for the proper installation and maintenance of such key lock boxes, at their expense, and shall agree to indemnify and hold harmless the First Fire Protection District of Antioch Township, and their officers, employees and agents from any liability with respect to such key lock boxes.

## **506.3 Key lock box availability**

The Chief of the First Fire Protection District of Antioch Township is authorized to make available key lock boxes to all owners or lessees of buildings or structures or their duly authorized agents.

## **506.4 Stock of key boxes**

The First Fire Protection District of Antioch Township shall purchase such key lock boxes (of a type to be approved by the First Fire Protection District of Antioch Township Chief) in reasonable quantities and provide them to users for cost plus a reasonable handling charge.

## **SECTION 507 - FIRE PROTECTION WATER SUPPLIES**

### **507.1 Required water supply**

#### **507.1.1 General**

All water distribution facilities including piping, fittings, hydrants, valves, devices, well pumps, and other needful appurtenances shall be subject to approval of the Code Official and shall be installed according to the standards herein adopted. A water supply system shall be capable of supplying the hydrants prior to the construction of structures. It shall be unlawful to erect, alter, use or occupy any structure that has been deemed to have inadequate water supply.

#### **507.1.2 Water supply demand changes**

Area water supplies shall be studied whenever additional demands will be placed on the water supply by new construction, change in use, or changes in hazard or contents. Standard fire flow calculation methods will be used to make determinations. Upon determination by the Code Official that inadequate water supplies exist, the Code Official shall reject any applicable plans and provide the property owner, the water utility, and the Building Official with a memorandum listing said deficiencies.

#### **507.1.3 Rural water supply requirements (Dry Hydrants)**

In any subdivision/development, where an adequate water distribution system is not provided, the Code Official shall require the sub-divider, developer, builder and/or the owner to modify storm water control devices, so as to provide a pond within a maximum distance of 2,000 feet of all buildings within the development. It shall conform to the standard of NFPA 1142. The pond must be a minimum depth of five (5) feet and provide a minimum of 500,000 gallons of available water. (See Appendix B for additional rural water supply requirements).



### **507.3 Fire flow**

#### **507.3.1 Minimum flow requirements**

Each fire hydrant shall be provided with an adequate water supply so as to develop a minimum individual supply of not less than one thousand (1,000) gallons per minute (gpm) flow with not less than 20 pounds per square inch residual pressure for a municipal public water supply system. Nonpublic municipal water supply system the minimum fire flow shall be 500 hundred (500) gallons per minute (gpm) with not less than 20 pounds per square inch (psi).

#### **507.3.2 Adopt Appendix B – Fire Flow for Buildings**

### **507.5 Fire hydrant systems**

#### **507.5.1 Where required**

The maximum hydrant spacing shall not exceed three hundred (300) feet from the furthest point of any building or structure as measured by an approved access route around the exterior of the facility or building unless otherwise approved by the Code Official. Where the configuration of lots, distances between buildings and lot lines or public utility easements, accessibility to buildings for fire suppression requirements dictate, the Code Official shall increase or decrease hydrant spacing and appropriate supply mains as deemed necessary.

#### **507.5.1.1 Adopt IFC Appendix C – Fire Hydrant Locations and Distribution**

#### **507.5.1.2 General**

Additional fire hydrants shall be located within one hundred (100) feet of any Fire Department Connection (FDC). Hydrants shall not be installed on a water main less than six (6) inches in diameter. Dead end water mains shall not to exceed one hundred (100) feet of six (6) inch pipe and six hundred (600) feet of eight (8) inch pipe. It is recommended that a looped water main system with a minimum pipe diameter of eight (8) inches be required for each structure or group of structures.

#### **507.5.7 Identification**

All fire hydrants public or private shall be marked with a number, hydrant flag and painted a color approved by the fire Code Official. At dry fire hydrants, provide signs with the wording "No Parking" with arrows and fire hydrant symbol.

#### **507.5.8 Apartment and cluster type housing**

In areas where apartment buildings, town/row houses, condominium buildings, or other types of cluster-type housing are located, the area along the roadway within seven and one-half feet on either side of the fire hydrant shall be designated as "NO PARKING" and either the curb shall be painted yellow or "NO PARKING" signs shall be installed (or both).

#### **507.5.9 Unauthorized use**

It shall be unlawful for any person to utilize any device such as a fire hydrant, drafting

hydrant, dry hydrant, or other water supply appurtenances designed for fire suppression operations without the express permission of the Code Official.

## **SECTION 511 - ELEVATORS**

### **511.1 When Required**

Provide elevator service for new multi-level buildings that exceed 1,000 square feet of floor area in accordance with State of Illinois Accessibility Code requirements for elevators.

Exception: One and two-family residences, unless covered elsewhere in this Code.

### **511.2 – Elevator car requirements**

Elevator cars are to accommodate the ambulance stretcher. In the buildings two stories in height or more, at least one elevator shall be of such a size and arrangement to accommodate a 24-inch by 84-inch ambulance stretcher in the horizontal, open position and shall be identified by the international symbol for emergency medical services (Star of Life). The symbol shall not be less than 3 inches high and shall be placed inside on both sides of the hoist way doorframe. The inside hand rail shall be set at the maximum thirty-six (36) inch height allowed under ADA standards to better accommodate the stretcher. The cab size is to be minimum a 5' x 7' platform and minimum 2500 lb capacity with a 42" side slide door.

**511.3 ELEVATOR PHONE:** All required emergency elevator phones shall directly dial the First Fire Protection District's Communications Center (CenCom E9-1-1 Dispatch) via the phone number designated by the Fire Code Official. (847-270-9111). Pre-recorded messages should contain the following information:

1. Building name and address
2. Elevator number or location within the building
3. All messages shall be clear, concise and in the English language.
4. Messages shall be repeated and allow for voice override/two-way communication.

**511.4 AREA OF RESCUE ASSISTANCE COMMUNICATION:** All required areas of rescue assistance shall have two-way communication which is directly connected to CenCom E9-1-1 Dispatch (847-270-9111) or other approved 24-hour watch company. The message sent to the dispatcher will provide the following information:

1. Building name and address
2. Stairwell number, floor area or location within the building
3. All messages shall be clear, concise and in the English language.
4. Messages shall be repeated and allow for voice override/two-way communication.

## **CHAPTER 6 - BUILDING SERVICES AND SYSTEMS**

### **SECTION 609 - COMMERCIAL KITCHEN HOODS**

#### **609.4 Required kitchen hood fire suppression systems**

All required commercial or other occupancy kitchen exhaust hood and duct system shall be protected with an approved wet chemical fire suppression system installed and maintained per NFPA 17, and UL 300 Standard. Every required automatic fire suppression system, when activated shall transmit a fire alarm signal to the First Fire Protection District of Antioch Township main dispatch center via an approved fire alarm system.

### **609.5 Maintenance**

Commercial kitchen exhaust systems shall be cleaned to remove deposits of residue and grease in the system at intervals specified in the cleaning schedule required to be submitted in accordance with the mechanical code listed in Chapter 80. Thorough cleaning of ducts, hoods and fans shall require scraping, brushing or other positive cleaning methods.

### **609.6 Cleaning Schedule**

Where a cleaning schedule is not on file, the Code Official shall require a schedule to be submitted, indicating the method of cleaning and the time intervals between cleanings.

## **CHAPTER 7- MISCELLANEOUS PROVISIONS**

**705.1 TENANT SEPARATION:** Each tenant space shall be separated from other tenant spaces and corridors by walls, partitions, and floor-ceiling assemblies having at least a one (1) hour rating approved fire resistance rating. The floor-ceiling assembly is not required to have a one (1) hour rating when not required by the IBC and the building has a complete automatic sprinkler system.

**705.2 HAZARDOUS AREAS:** Rooms used for elevator equipment, electrical equipment, (1200 Amps or Greater) boiler rooms, fuel storage, janitor's closets, laundry rooms, maintenance shops and similar hazardous areas shall be separated from other building areas by wall/floor/ceiling/window/opening assemblies having a fire resistance rating of not less than one (1) hour with appropriate protection of openings into the rooms. Opening protection shall be per the IBC. The floor-ceiling assembly is not required to have a one-hour rating when not required by the IBC.

**705.3 FIRE RESISTANCE RATING, MAINTENANCE, AND REPAIR:** The fire resistance rating of walls, floors, ceilings, and partitions, including openings therein and other static fire protection requirements shall be maintained in proper condition and repair at all times.

**705.4 SMOKE RESISTANCE:** Walls, floors, ceilings, and partitions, including openings therein that can assist in the prevention of smoke and gas movement, shall be maintained in proper condition at all times.

**705.5 NUMBER AND LOCATION OF EXITS:** All rooms, spaces or buildings over two thousand (2,000) square feet in area shall have two (2) separate remote means of egress.

## **CHAPTER 9 FIRE PROTECTION SYSTEMS**

### **SECTION 903 – Automatic sprinkler systems**

#### **903.2 Where required**

An automatic sprinkler system shall be provided, where not otherwise specified in this

section, for all new buildings and structures over 10,000 square feet in fire area. Automatic sprinkler systems shall be installed in accordance with applicable NFPA standards, manufacturer's recommendations, UL listings, and good fire safety practices. Automatic sprinkler systems shall be maintained in full operating condition at all times.

**Exception No. 1:** Detached structures which comply with all of the following do not require automatic fire sprinkler protection.

1. Less than one thousand (1000) square feet in fire area
2. Single story
3. Not used as a dwelling
4. Not a High Hazard Use Group
5. Not used for high hazard products or hazardous materials storage
6. No basement levels
7. Minimum 20 feet separation between buildings

**Exception No. 2:** Real estate sales and construction trailers utilized during the development of property when approved by the code official, agriculture storage buildings less than 8,000 square feet.

#### **903.3.1.4 Warehouse and Storage Buildings**

Unknown specification uses and occupancy for new warehouse buildings (Use groups S or F) with a ceiling roof height of 25 feet or greater to be protected with ESFR (Early Suppression Fast Response) fire sprinkler system or a hydraulically calculated system for class IV commodities with rack storage calculated to the greatest storage height. All sprinkler systems shall be electronically supervised by a fire alarm system.

### **903.3 Installation Requirements**

**903.3.1 INSTALLATION:** The Fire Code Official shall be notified at least forty-eight (48) hours prior to schedule any required acceptance testing.

**903.3.2 PERIODIC TESTING AND INSPECTION:** All automatic sprinkler systems shall be maintained, periodically inspected, and tested in accordance with NFPA 13, NFPA 25, and Chapter 80. All inspection and repair reports shall be submitted per the requirements set forth by the Fire Marshal of the First Fire Protection District of Antioch Township within ten (10) working days of completion.

**903.3.3 OUT OF SERVICE:** Automatic fire sprinkler protection shall be maintained in service at all times. Systems shall not be out of service for more than eight (8) hours for maintenance or repair without First Fire Protection District of Antioch Township Fire Prevention Bureau approval.

**903.3.4 BACKFLOW PREVENTION:** Whenever a backflow prevention device of a different type from the original is to be installed on an existing hydraulically calculated sprinkler system, the system shall be recalculated to assure that the design density is satisfied.

Should the design density be inadequate, the automatic sprinkler system shall be redesigned as needed to be in compliance with the required design density.

### **903.3.8 Sprinkler valve/fire pump room**

All fire sprinkler valve rooms and fire pump rooms shall be provided with minimum one-hour separations from adjacent uses.

### **903.4.1 Monitoring**

#### **903.4.1.1 Reporting directly to the Fire District Communication Center**

Where required by the fire code official to protect from hazards to life and property, the fire alarm system shall connect directly to the First Fire Protection District of Antioch Township Communication Center. The method of connection shall be of a type approved by the Chief.

### **903.4.2 Alarms**

#### **903.4.2.1 Strobe Lights**

A strobe light shall be installed on the exterior of all occupancies protected by a fire sprinkler system. The strobe light shall be located directly over the Fire Department Connection and next to the 10-inch exterior bell or in a location approved by the fire code official. In a new multi-occupancy structure, an additional amber strobe light shall be installed at an approved exterior location for each unit. These devices shall activate on a water flow only. The strobe light shall be clearly visible from the Fire Department's normal access route and shall be labeled as "water flow". The type, number of appliances and location of the strobe lights and bells shall be approved by the fire code official.

#### **903.4.2.2 Building Notification**

Alarm indicating appliances audio visual devices shall be provided, seen and heard in all areas of every building per NFPA 72. All sprinklered buildings shall be provided with occupant notification devices. This will provide full building notification per NFPA 72.

#### **903.4.2.3 Inspector's Test Valve accessibility and Identification**

Fire sprinkler system inspectors test valves shall be accessible at all times and located no more than 6 feet above the finished floor unless approved otherwise by the fire code official. On multiple riser systems, test valves shall be marked as to which riser and area it tests.

### **903.4.3 Floor control valves**

In multi-story buildings, approved supervised indicating floor control valves with water flow switches shall be provided for each floor at the point of connection to the riser. In large multi-tenant buildings, approved control valves with water flow switches shall be provided for each tenant. This will make it easier for the fire department personnel to locate the fire and will eliminate birdcage sprinkler systems where the alarm is for the whole building.

#### **903.4.3.1 Sprinkler control valves**

All new and existing sprinkler control valves shall be equipped with electronic supervision (tamper switches) in accordance with NFPA 72. All new tamper switches installed shall have the capability to self-restore. All required fire protective signaling systems shall transmit alarm, supervisory, and trouble signals directly to an approved supervising station dispatch Communication Center in accordance with NFPA 72..

#### **903.4.3.2 INSTALLATION REQUIREMENTS:**

- A. Valve Control Area Diagram: A diagram showing areas served by control valves shall be placed adjacent to each valve and in the riser room.
- B. All fire sprinkler systems water control valves shall be located no less than two (2) feet nor more than five (5) feet above the finished floor and subject to the approval of the First Fire Protection District of Antioch Township.
- C. The fire department sprinkler connections shall be required and subject to the approval of the First Fire Protection District of Antioch Township. A 24 VDC sprinkler water flow bell shall be installed over the top of the fire department connection. The exterior mounted fire department connection to the automatic sprinkler system shall be equipped with a five (5) inch "storz" fitting with a hose locking mechanism. The center cap shall be attached to the connection with a 0.125" vinyl coated aircraft cable or an approved equivalent and the type of connection shall be determined by the Fire Code Official.
- D. Fire Alarm monitoring of fire sprinkler systems within R-2 Use Groups shall be in compliance with NFPA 72. Audio/visual alarm devices shall be required throughout the building. Each dwelling unit shall have a minimum of one (1) audio/visual alarm device installed within the living quarters.

### **903.6 Where required in existing buildings and structures**

#### **903.6.1 Interior alterations or remodeling**

Existing buildings or structures that are remodeled, and that meet any of the criteria listed below, shall provide fire protection as detailed in 903.2:

- 1. If alteration costs 50% or more of the reproduction cost of the building or structure, the entire building or structure shall comply with the requirements of the construction as defined in this code. The reproduction cost shall be determined by using the recognized standards of an authoritative technical organization. For the purposes of calculating percentages of reproduction cost, the cost of alteration shall be construed as the total actual combined cost of all alterations within any period of 30 months.
- 2. A project that results in an increase or decrease in the total number of tenant spaces within the building or structure.
- 3. A project that entails a change in Use Group for any part of the building.

#### **903.6.2 Increasing existing gross floor area by 25% or more up to 50%**

Fire protection for additions that increase the existing gross floor area of a building or structure by 25% or more and up to 50%:

1. Provide fire protection for the entire building or structure as detailed in 903.2 or
2. Provide a UL listed three-hour fire separation assembly between the existing building and the new addition. Provide fire protection for the new addition as detailed in 903.2.

### **903.6.3 Increasing existing gross floor area by more than 50%**

Fire protection as detailed in 903.2 shall be required for the entire building or structure for additions that increase the existing gross floor area of a building or structure by more than 50%.

### **903.7 Automatic Sprinklers**

Where automatic sprinkler provide protection to an area with an approved flow switch interconnected to the fire alarm system, and is easily identifiable as to the location, additional automatic detectors are not required. When a building has numerous rooms protected by the zone sprinkler system, the fire code official may require additional smoke detectors for a more rapid means to identify the location of smoke or fire.

### **903.8 Hydraulic Nameplate**

By each hydraulically calculated area, on each drawing, provide a copy of the hydraulic nameplate. This will make it easier to check the hydraulics of the sprinkler system for future building or storage changes.

### **903.9 References to NFPA Standards**

All listed references to NFPA standards are to be considered part of this code. This will require sprinkler system installations to be installed per NFPA requirements and NFPA recommendations for good engineering practices and installations. The appendixes of all NFPA standards are to be considered as part of each standard and are considered a "shall" requirement and not "should" information. This will require sprinkler system installations to be installed per NFPA requirements and NFPA recommendations for good engineering practices and installations.

### **903.10 Fire pump test header**

Provide an outside test header on all fire pump installations. An OS&Y control valve shall be provided on all fire pump test headers.

**903.10.1 Pump Flow Tests:** Each fire pump shall be tested annually by discharging to the atmosphere the required flow one hundred percent (100%) rated capacity at one hundred percent (100%) of the rated pressure and at one hundred fifty percent (150%) rated capacity at sixty-five percent (65%) of the rated pressure. The test results shall be recorded, and a copy of all pump test information shall be submitted per the requirements set forth by the Fire Marshal of the First Fire Protection District of Antioch Township within ten (10) working days of completion.

### **903.11 Sprinkler riser and/or fire pump room access door**

Provide an outside access door to the sprinkler riser room and/or fire pump room. The

door shall be labeled with minimum 4-inch letters.

### **903.12 Separation of sprinkler riser and/or fire pump room**

Provide a minimum one (1) hour fire separation for the sprinkler riser room and/or the fire pump room.

### **903.13 Hydraulic calculations**

Provide a minimum 10% or 5 psi minimum safety factor in the fire protection system hydraulic calculation. The system demand shall be 5 psi minimum below the seasonal low water flow test supply. The safety factor will allow for low pressures in the water supply. By each hydraulic calculated area, on each drawing, provide a copy of the hydraulic nameplate. This will make it easier to check the hydraulics of the sprinkler system for future building or storage changes.

### **903.14 Fire hose valves – Warehouse and/or storage Fire Areas**

In all warehouse storage areas exceeding 50,000 square feet, and where storage exceeds twelve (12) feet high, provide inside 2 ½" fire hose valves with 1 ½" reducer to a 1 ½" connection. Locate the valves at each door entrance to the warehouse and/or storage area. Provide additional 2 ½" fire hose valves so that no portion of the warehouse and/or storage area is more than 120' maximum travel distance to a fire hose valve. Show the location of all obstructions and/or racks on the drawings.

Fire hose valves system piping shall be:

1. A separate riser piping system.
2. The 2 ½" valves shall be supplied by a minimum of 4" with 2 ½" drops to each valve.
3. Where system pressures exceed 100 psi, provide Potter reduced pressure field adjustable type valves.

### **903.15 Large warehouse system check valves**

Provide a check valve in each sprinkler riser on large warehouse systems. This will prevent multiple sprinkler system riser flow switches from activating (backwards) when large volumes of water are flowing through another riser.

## **SECTION 905 – STANDPIPE SYSTEMS**

### **905.3 Required installations**

All required standpipe systems shall be supplied by a separate riser. The supply riser shall be hydraulically designed to supply 2 ½" hose drops. The riser system shall be equipped with a separate control valve and flow switch. The standpipe shall be a 2 ½" gated connection with a 1 ½" reducer and all locations shall be approved by the Code Official. All standpipe and sprinkler risers shall have separate control valves and flow switches per floor.

#### **905.3.1 Building height**

Class III standpipe systems shall be installed throughout buildings or structures (1) in all



newly constructed buildings so that all areas in excess of 120 feet from the nearest point of entry to the building shall be covered by a standpipe; (2) in all areas of existing structures which have been remodeled or added to in such a manner that those areas are located in excess of 120 feet from the nearest point of entry to the building; (3) in all newly constructed buildings or structures more than two (2) stories in height or more than two (2) stories below the highest level of fire department vehicle access so that all areas on those floors are within 120 feet of a standpipe; and (4) in all buildings or structures more than two (2) stories in height or more than two (2) stories below the highest level of fire department vehicle access which have been remodeled or added to in such a manner so that those areas are located in excess of 120 feet from the nearest standpipe. The standpipes shall be provided with a 2½" to 1½" reducer and cap with no fire hose. There shall be an approved fire department connection at grade and hose connections located at each floor level.

### **905.12 Piping design**

The riser piping, supply piping and the water service piping shall be sized to maintain a residual pressure of at least 65 psi (448kPa) at the topmost outlet of each riser. The piping size shall be based on the capacity of the automatic water supply system or, whereas automatic water supply is neither required nor provided to maintain the residual pressure of 65 psi, the pipe size shall be on a pressure of 150 psi available at the fire department connection.

Exception: The residual pressure of 65 psi is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3 and where the highest floor level is not more than 150 feet above the lowest level of fire department vehicle access.

### **905.13 Riser sizing**

The riser size shall be based on the hydraulic calculations for a minimum flow of 500 gallons per (gpm) (378 L/min.).

Exceptions:

1. Where only 1 ½" valves are provided, the riser(s) shall be sized to provide a minimum flow of 100 gpm (378 L/min).
2. In buildings where, limited area sprinkler systems are supplied with water from a common standpipe riser, the riser shall be sized to satisfy total demand.
3. For occupancies Use Group B, I, R1, or R2 in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3, each riser shall be sized for a minimum flow of 250 gpm (945 L/min.).
4. Risers that are sized in accordance with the pipe schedule requirements of NFPA 14 listed in Chapter 35 are not subject to this requirement.

### **905.14 System pipe sizing**

The system piping, including the horizontal or common feeder lines, shall be sized for a minimum flow of 500 gpm (1892 L/min.). Where more than one standpipe riser is required or provided, all common system piping shall be sized for a minimum flow of 500 gpm (1892 L/min.) for the first riser plus 250 gpm (945 L/min.) for each additional riser, and the total

shall not be required to exceed 1,250 gpm (4731 L/min.).

Exception:

1. Where only 1 ½" valves are provided, the supply piping shall be sized for a minimum flow of 100 gpm (378 L/min.) for each riser, and the total shall not be required to exceed 500 gpm (1892 L/min.).
2. In buildings where, limited area sprinkler systems are supplied with water from a common standpipe riser, the supply piping shall be sized for a minimum flow of 500 gpm (1892 L/min.) plus the sprinkler demand for first riser, plus 250 gpm (945 L/min.) for each additional riser, and the total shall be required to exceed 1,250 gpm (4731 L/min.).
3. For occupancies in Use Group B, I, R-1, or R2 in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3, all common supply piping shall be sized for a minimum flow of 250 gpm (945 L/min.) for the first riser plus 250 gpm (945 L/min.) for each additional riser, and the total shall not be required to exceed 750 gpm (2838 L/min.).

## **SECTION 906 – PORTABLE FIRE EXTINGUISHERS**

### **906.1 Where required**

1. Where deemed necessary by the fire code official based on plan reviewing, inspections of occupancies, or protection of processes and/or activities.
2. Fire extinguishers shall be a minimum 10-pound (4A:40-B: C) ABC Dry Chemical type unless approved otherwise by the fire code official. All fire extinguishers shall have location signs and current services tags

## **SECTION 907 - FIRE ALARM AND DETECTION SYSTEMS**

### **907.1.3 Equipment**

New fire alarm control panels shall be addressable unless otherwise approved by the Code Official. The equipment shall be capable of having the audio signal silence without resetting the fire alarm control panel. All fire alarm control panels shall have an approved method of placing the system in trouble mode at the location of the alarm panel.

**907.1.4 Power Supply:** All fire alarm control equipment shall have a minimum of sixty (60) hours of standby and five (5) minutes of alarm current for secondary power battery standby.

**907.1.5 Initiating Device Identification:** The fire alarm system shall identify the specific initiating device address, location, device type, and floor level where applicable and status including indication of normal, alarm, trouble and supervisory status, as appropriate

**907.1.6 Acceptance Tests and Completions:** Upon completion of the installation, the fire alarm system and all fire alarm components shall be tested in accordance with NFPA Standard #72. This test shall be witnessed by the First Fire Protection District of Antioch Township, Bureau of Fire Prevention and possibly by the jurisdiction issuing the permit. The Fire Code Officials shall be notified at least forty-eight (48) hours prior to scheduling any required acceptable test. Upon completion of said testing, a report of signals received at the supervising station shall be submitted to the First Fire Protection Antioch Fire Prevention

Bureau within ten (10) working days of completion.

**907.1.7 Testing:** Testing shall be performed in accordance with the schedules in NFPA #72, but not less than annually or more frequently where required by the Fire Code Official. Records of all testing and repair shall be maintained and shall be submitted per the requirements set forth by the Fire Marshal of the First Fire Protection District of Antioch Township within ten (10) working days of completion.

## **907.2 Where required – new buildings and structures**

An approved manual, automatic, or manual and automatic fire alarm system shall be provided in all Use Groups of new buildings and structures in accordance with sections 907.2.1 through 907.2.23. Fire alarm systems shall be maintained in full operating condition at all times. All fire alarm control panels or full function annunciator panels shall be installed within 10 feet of the main entrance, or in a location approved by the fire code official. Occupant notification shall be in accordance with section 907.5, unless other requirements are provided by another section of this code. Where automatic sprinkler protection is installed in accordance with section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required. An approved automatic fire detection system shall be installed in all Use Groups, not provided with an automatic sprinkler system, in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances and equipment shall comply with Section 907.1.2. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to actuate a smoke detector. If the alteration costs 50 percent or more of the reproduction cost of the building or structure, the entire building or structure shall comply with the requirements of new construction as defined in this code. For the purpose of calculating percentages of reproduction cost, the cost of alteration shall be construed as the total actual combined cost of all alterations made within any period of 30 months.

### **907.2.1 Group A**

A manual fire alarm shall be installed in accordance with NFPA 72 in Group A occupancies.

#### **907.2.1.3 Group A-2**

An automatic fire alarm detection system shall be installed in accordance with NFPA 72 in Group A-2 occupancies that have an occupant load of 50 or more persons.

### **907.2.2 Group B**

A manual fire alarm system shall be installed in accordance with NFPA 72 in group B occupancies.

### **907.2.3 Group E**

A manual fire alarm system shall be installed in group E occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

### **907.2.4 Group F**

A manual fire alarm system shall be installed in accordance with NFPA 72 in group F occupancies.

#### **907.2.5 Group H**

A manual fire alarm system shall be installed in Group H occupancies. An automatic detection system shall be installed for highly toxic gasses, organic peroxides and oxidizers in accordance with Chapters 37, 39 and 40 respectively.

#### **907.2.6 Group I**

A manual fire alarm system and automatic fire detection system shall be installed in group I occupancies. An electrically supervised, automatic smoke detection system shall be provided in waiting areas that are open to corridors.

##### **907.2.6.1**

##### **907.2.6.3 Group I-3 occupancies**

Group I-3 occupancies shall be equipped with a manual fire alarm system and automatic smoke detection system installed for alerting staff. All required fire protective signaling systems shall transmit alarm, supervisory, and trouble signals directly to an approved supervising station dispatch Communication Center in accordance with NFPA 72.

Exceptions:

1. Smoke detectors in buildings of groups R-3 and R-4.
2. Single-station smoke detectors as required by 907.2.9.
3. Smoke detectors in building group I-3.
4. Smoke detectors in patient sleeping areas of group I-2.

#### **907.2.7 Group M and S**

A manual fire alarm system shall be installed in accordance with NFPA 72 in group M and S occupancies.

#### **907.2.8 Group R-1**

A manual fire alarm system and an automatic fire detection system shall be installed in group R-1 occupancies.

Exceptions:

1. A manual fire alarm system is not required in buildings over two stories in height where all individual guestrooms and contiguous attic and crawl spaces are separated by at least one-hour fire partitions and each individual guestroom has an exit directly to a public way, exit court or yard.

2. An automatic fire detection system is not required in buildings that do not have interior corridors serving guestrooms and where guestrooms have a means of egress door opening directly to an exterior exit access that leads directly to the exits.

3. A separate fire alarm detection system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system and a manual fire alarm system.

### **907.2.9 Group R-2**

A manual and automatic fire detection system shall be installed and maintained in common areas in all occupancies in use group R-2 such as corridors, hallways, stairwell, boiler or furnace rooms, laundry rooms, community rooms, meeting rooms, offices, attics and all other similar common areas within buildings. The automatic fire detection system must include occupant notification.

### **907.2.11 Single and multiple station smoke alarms**

“The current State of Illinois Smoke Detector Act (425 ILCS 60/1, et. seq.)” and all the rules and regulations of the Illinois State Fire Marshal”.

#### **907.2.11.1.1 Group R-1**

1. Within 15 feet outside of any sleeping area
2. At the top of every stair
3. Within 15 feet of any furnace

#### **907.2.11.1.2 Group R-2, R-3, R-4 and I-I**

1. Within 15 feet outside of any sleeping area
2. At the top of every stair
3. Within 15 feet of any furnace

#### **907.2.11.4 Power source**

In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over-current protection.

Exceptions:

1. Smoke alarms are not required to be equipped with battery backup in group R-1 where they are connected to an emergency electrical system.
2. Group R-3 smoke alarms are to be 120-volt with a battery backup.

#### **907.2.4.1**

In existing buildings or structures, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over-current protection. If the alteration costs 50 percent or more of the reproduction cost of the building or structure, the entire building or structure shall comply with the requirements of new construction as defined in this code. For the purpose of calculating percentages of reproduction cost, the cost of alteration shall be construed as the total actual combined cost of all alterations made within any period of 30 months.

Exceptions:

1. Smoke alarms are not required to be equipped with battery backup in group R-1 where they are connected to an emergency electrical system.
2. Group R-3 smoke alarms are to be 120-volt with a battery backup.

#### **907.3.5 Single and multiple station smoke alarms**

Listed single-and multiple-station smoke alarms shall be installed in accordance with the provisions of this Code and the household fire warning equipment provisions of NFPA 72. When a system is installed within a dwelling unit it shall comply with UL 217.

#### **907.3.6 Where required in existing one and two-family dwellings**

All existing one and two-family residences shall have installed therein smoke detectors in accordance with Illinois Smoke Detector Act. Every single-family residence shall have at least one smoke detector installed on every story, including basements, but not including unoccupied attics. Smoke detectors shall be installed in each room used for sleeping purposes and within fifteen (15) feet of the entrances of all rooms used for sleeping purposes. The signal shall be clearly audible within each room used for sleeping purposes over background noise levels with all intervening doors closed. In single-family residences with split-levels, a smoke detector installed on the upper level shall suffice for the adjacent lower level if the lower level is less than one full story below the upper level. However, if there is an intervening door between the adjacent levels, a smoke detector shall be installed on each level.

#### **907.3.7 Alterations, repairs, and additions**

When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be provided with smoke alarms located as required for new dwellings; the smoke alarms shall be interconnected and hard-wired.

**Exceptions:**

1. Smoke alarms in existing areas shall not be required to be interconnected and hard-wired where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space, or basement available which could provide access for hard wiring and

interconnection without the removal of interior finishes.

2. Repairs to the exterior surfaces of dwellings are exempt from the requirements of this section.

### **907.3.8 Mounting of detectors**

All smoke detectors shall be mounted on the ceiling at least six (6)" from the wall, or on the wall six (6) to twelve (12)" from the ceiling, except that all smoke detectors in interior common stairwells shall be on the uppermost ceiling.

### **907.3.9 Responsibility for installation**

In single family and two-family residences, it shall be the responsibility of the owner of the building or structure to supply and install all required smoke detectors. The owner shall be responsible for making reasonable efforts to test and maintain smoke detectors in interior common stairwells.

### **907.3.10 Maintenance of detectors**

It shall be the responsibility of the tenant to test and provide general maintenance for the smoke detectors within the tenant's dwelling unit and to notify the owner or an authorized agent of the owner, in writing, of any deficiencies, which the tenant cannot correct. The owner shall be responsible for providing the tenant with written information regarding smoke detector testing and maintenance.

### **907.3.11 Battery replacement**

The tenant shall be responsible for replacement of any required batteries in the smoke detectors in the tenant's dwelling unit, except that the owner shall ensure that such batteries are in operating condition at the time the tenant takes possession of the dwelling unit. The tenant shall provide the owner or the authorized agent of the owner with access to the dwelling unit to correct any deficiencies in the smoke detector(s), which have been reported in writing to the owner or authorized agent of the owner.

### **907.3.12 Low-voltage system**

At the option of the owner of the building or structure, a low-voltage, standard central smoke detection system may be installed in a single-family residence or two-family residence in lieu of battery-powered smoke detectors or hard-wired smoke detectors, provided that such low-voltage standard central smoke detection system meets the requirements for such a system set forth in the Ordinance codified in this Chapter or is otherwise approved by the Code Official.

### **907.3.13 Existing Multi-family (three or more dwelling units) buildings**

All multi-family buildings whether existing or constructed hereafter, shall have installed therein hard-wired smoke detectors as provided in this subsection.

#### **907.3.13.1 Smoke detector locations**

1. Each room used for sleeping purposes.  
Exception: Existing multi-family buildings and structures have the option to install

battery powered smoke detectors in lieu of hard-wired in sleeping areas. Hard-wire smoke detectors with battery backup are preferred.

2. In the immediate vicinity (minimum of 15 feet) of all entrances to rooms used for sleeping purposes.
3. Within 15 feet of any furnace.
4. A smoke detector shall be installed in each interior common stairwell (at the top of the stairs).
5. A smoke detector shall be installed in each interior common corridor or hallway at intervals of not more than thirty (30) feet.
6. A smoke detector shall be installed within each laundry room, boiler, electrical and other service room, and each tenant and building maintenance storage room. The Code Official is authorized to require an approved alternative type of detector be installed where, during normal operation, products or combustion or other conditions are present in sufficient quantity to actuate a smoke detector.

#### **907.3.13.2 Access for maintenance**

The tenant shall provide the owner or authorized agent of the owner with access to the dwelling unit to check, clean, test, maintain, repair and replace all smoke detectors therein.

#### **907.3.13.3 Low voltage standard smoke detection system locations**

The low-voltage, standard central smoke detection system shall be installed in all interior common stairwells, interior common corridors or hallways, laundry rooms, boiler, electrical and other service rooms, and tenant and building maintenance and storage rooms. The smoke detection devices connected to the low-voltage, standard central smoke detection system shall be located as provided in 907.3.9.1.

#### **907.3.13.4 Hard wired smoke detector locations**

A hard-wired smoke detector with battery back-up shall be installed in each room used for sleeping purposes. When more than one smoke detector is installed, all smoke detectors shall be so wired so that the actuation of one detector shall activate all the detectors in the dwelling unit.

#### **907.3.13.5 Annunciator and panel control box**

Each smoke detection device connected to the low-voltage, standard central smoke detection system shall be connected to an annunciator and a panel control box.

1. The annunciator shall have a visual indicator of alarm location and be installed in the entrance or on the exterior of each building or structure at the entrance, in a waterproof enclosure, as directed by the Code Official.
2. There shall be American with Disability Act (ADA) compliant horn/strobes installed in the interior common corridors, hallways, and stairwells leading to the dwelling units, which are clearly audible within such dwelling units over background noise levels with all intervening doors closed.

#### **907.3.13.6 Fire alarm supervision**



All new low-voltage, standard central smoke detection system installations shall be connected directly to an approved supervising station in accordance with NFPA 72 at the time the system is placed into operation.

#### **907.3.13.7 Responsibility Maintenance**

In multi-family buildings or structures, it shall be the responsibility of the owner of the building or structure or authorized agent of the owner thereof to install, maintain, repair, and replace, if necessary, the low-voltage, standard central smoke detection system required hereby.

#### **907.3.13.8 Maintenance and testing**

The owner or authorized agent of the owner shall also be responsible for the continuous maintenance of such system through no less than an annual inspection and testing thereof performed under a written maintenance agreement with a reliable firm actively engaged in the servicing of such systems. A copy of each maintenance agreement shall be accompanied by a written report and a copy of such report shall be promptly delivered to the First Fire Protection District of Antioch Township. Further, the current maintenance agreement and latest report shall be made available at all reasonable times for inspection by duly authorized personnel of the First Fire Protection District of Antioch Township Bureau of Fire Prevention.

##### **907.3.13.8.1 Maintenance Fines**

If maintenance and testing is not compliance annually, a fine of 250.00 will be issued, payable within 30 days. It is the responsibility of the owner to have such system tested by a certified agency and witnessed by the First Fire Protection District of Antioch Township Bureau of Fire Prevention.

#### **907.3.13.9 Power source for existing multifamily buildings**

Smoke alarms are not required to be equipped with battery backup where they are connected to an emergency electrical system.

#### **907.3.13.10 Heat detection device**

Where a heat detection device or combination heat and smoke detection device will be more effective than a smoke detector as a result of conditions within the area in which the device is located, the heat detection device or combination heat and smoke detection device shall be installed in place of a smoke detector at the direction of the Code Official. The combination heat and smoke detection device shall bear the testing label of a nationally recognized, independent testing laboratory and shall meet the requirements of NFPA 72.

### **907.3 Fire Safety functions**

#### **907.3.1**

Duct Smoke detectors installed in ducts shall be listed for the air velocity, temperature and humidity present in the duct. Duct smoke detectors shall be connected to the building's fire

alarm control unit when a fire alarm system is required by Section 907.2. Activation of a duct smoke detector shall initiate an approved signal and shall perform the intended fire safety function in accordance with this code and the International Mechanical Code. Duct smoke detectors shall not be used as a substitute for required open area detection. Duct detectors shall be installed inside the building in a temperature-controlled environment

#### **907.4.2 Manual fire alarm boxes**

Manual fire alarm boxes shall be installed in each Use Group described in this Code; they shall be installed in accordance with Sections 907.2.1 through 907.4.2.5.

Exception: Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an approved automatic sprinkler system, the notification appliances will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

#### **907.5.2.1 Audible alarms**

Audible alarm notification appliances shall be provided and sound a distinctive sound that is not used to be used for any purpose other than that of a fire alarm. The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or five dBA above the maximum sound level having duration of at least 60 seconds, whichever is greater, in every space within the building. The minimum sound pressure levels shall be: 70 dBA in occupancies in group R and I-1; 90 dBA in mechanical equipment rooms; and 60 dBA in other occupancies. The maximum sound pressure level for audible alarm notification appliances shall be 120 dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise is greater than 105 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audio alarm appliances shall not be required.

Exception: Visible alarm notification appliances shall be allowed in lieu of audible alarm notification appliances in critical care areas of group I-2.

#### **907.5.2.3 Visible alarms**

Visible alarm notification appliances shall be provided in accordance with sections 907.5.2.3.1 through 907.5.2.3.4.

**907.5.2.4 Visual Alarms/Panel Identification:** An exterior weather resistant strobe shall be installed at the entrance providing access to the fire alarm control or annunciator panel and/or key box.

#### **907.5.2.5 Visible Alarms - Multi-Tenant Use Group M, F and S buildings**

Multi-tenant Use Group M, F and S buildings will be “ring by tenant” activated by a fire sprinkler system flow switch for that space or automatic fire detection and shall include a weatherproof clear outside strobe over the entrance to each tenant space as directed by the fire code official. All outside strobes shall be 75 candela minimum.

**907.5.2.6 Zones:** Each floor shall be zoned separately. Each zone shall not exceed 20,000 square feet in area, and the length of any zone shall not exceed 200 feet in any

direction. A zoning indicator panel and the associated controls shall be provided in an approved location. The visual zone indication shall lock in until the system is reset and shall not be cancelled by the operation of a public alarm – silencing switch. A separate zone by floor shall be provided for the following types of alarm initiating devices where provided:

- A. Detection devices.
- B. Sprinkler water-flow alarms.
- C. Manual fire alarm boxes.
- D. Each tenant space in multi-tenant occupancies, and
- E. Other approved type of automatic fire detection devices or suppression systems.

Each zone of each panel shall be clearly and permanently identified in a manner approved by the Fire Code Official.

### **907.6.5 Monitoring**

All required fire protective signaling systems located within the First Fire Protection District of Antioch Township shall transmit alarm, supervisory, and trouble signals directly an approved supervising station in accordance with NFPA 72.

Exceptions:

1. Single- and multi-station smoke detectors are required by Section 907.2.11.
2. Smoke detectors in buildings of Use Group I-3 occupancies.
3. Automatic sprinkler systems in one- and two-family dwellings.

### **907.10 False fire alarm activation**

False fire alarm: Any alarm signal which indicates the existence of an emergency situation, when in fact no such emergency exists, and shall include any alarm signal generated by any fire protection system by whatever means, but shall not include alarms from the following causes:

1. Fire which causes structural damage to the protected premises.
2. Earthquake causing structural damage to the protected premises.
3. Tornado winds causing structural damage to the protected premises.
4. Flooding to the protected premises due to overflow of natural drainage.
5. Lightning causing physical damage to the protected premises.
6. Telephone line malfunction verified in writing by an authorized telephone company

supervisor within seven calendar days of the occurrence.

7. Electrical service interruption verified in writing by an authorized local power company supervisor within seven calendar days of the occurrence.

#### **907.10.1 False fire alarm service charge**

For false fire alarms, an alarm user shall be charged a service charge of \$150.00 for each false alarm more than three (3) in any calendar year. The calendar year will be from January 1<sup>st</sup> to December 31<sup>st</sup>. All false fire alarm service charges shall be remitted to the First Fire Protection District of Antioch Township by the alarm user upon receipt of the statement for such service charge.

**907.6.6.7 False Alarm Payment Time Frame:** A false alarm charge shall be for the third false alarm transmitted and responded to in any capacity by the First Fire Protection District of Antioch Township during any calendar year, whether caused by malfunctioning, or intentionally or negligently misused or abused facilities or equipment, or inadequately maintained, and which results in a fire suppression and/or rescue apparatus and equipment being unnecessarily called to the property in response thereto, All false alarm charges shall be paid to the First Fire Protection District of Antioch Township within thirty (30) calendar days of the date of an invoice for such charges.

- A. **Joint and Several Liability:** More than one user may be charged under this Ordinance for a single false alarm, and the user(s) so charged are jointly and severally liable for any citations and fines due under this Ordinance
- B. **Additional Fine:** That, in addition to the fines set forth above, if any user refuses to pay or fails to pay within sixty (60) days of notice of the fine, the user will be deemed to have further violated this Ordinance and will incur an additional fine of not less than twenty-five dollars (\$25), nor more than five hundred dollars (\$500) for each offense plus all legal fees and all costs caused by enforcement. Such fees and costs shall include, but not be limited to, staff costs of inspection or re-inspection, legal fees, and staff cost of enforcement. A separate offense shall be deemed committed for each day on which a violation occurs or continues.
- C. **No Liability:** The First Fire Protection District of Antioch Township assumes no liability for:
  1. Any defects in the operation of a system.
  2. Failure or neglect to respond appropriately upon receipt of an alarm.
  3. Failure or neglect of any person in connection with the installation, operation or maintenance of any system.
  4. The transmission of alarm signals, pre-recorded alarm messages, or the relaying of such signals and messages.
- D. **Waiver of Fines:** The Fire Chief and his designees are hereby permitted to waive the fees due under this Ordinance in case of demonstrated financial hardship, intergovernmental cooperation, or in cases where systems have been repaired or replace and are operating properly. Requests for the waiver of fees must be made in writing to the Fire Marshal, who shall make the initial determination as to the validity of the waiver request.

- E. **Right of Appeal**: Appeal Procedure: All users who are assessed fines in accordance with Section with this Ordinance or denied a waiver of fine pursuant to (D-Waiver of Fines) of this Ordinance shall have the right to appeal their fine before the Fire Chief of the District in accordance with the appeal procedure established in Section 108.
- F. **False Alarm Revenue**: All revenue from the charges assessed pursuant to this Ordinance shall be deposited in the general fund of the First Fire Protection District of Antioch Township.

#### **907.10.2 Newly installed fire alarm allowance**

Special consideration will be given to fire alarm users should false fire alarms occur during the first three months after the user's alarm service was commenced.

#### **907.10.3 Local government allowance**

Units of local government such as schools and park districts may receive special consideration for alarms caused by circumstances listed in Section 907.10.

#### **907.10.4 Intentional false alarms**

No person shall intentionally turn in a fire alarm when, in fact, such person knows that no fire exists. No person shall activate any fire alarm system or any fire suppression system for purposes other than emergency, maintenance, or prescribed testing.

#### **907.10.5 Penalties**

Any person who violates any of the provisions of section 907.10 shall be subject to a fine of not more than \$500.00 for each violation. Such fines shall be in addition to any other fee or charge authorized pursuant to the terms of the ordinance codified in this chapter.

### **SECTION 912 FIRE DEPARTMENT CONNECTIONS**

#### **912.7**

All fire department connections shall be a 5" Storz Connection.

### **CHAPTER 10**

#### **MEANS OF EGRESS**

**1006.6.1 GENERAL:** The power supply for means of egress illumination shall normally be provided by the premise's electrical supply.

In the event of power supply failure, an emergency system shall automatically illuminate all the following areas:

1. Exit access corridors, passageways, aisles and in rooms or spaces with an occupant load of ten (10) or more.
2. Exit access corridors and exit stairways located in buildings with an occupant load of ten (10) or more.
3. Interior exit discharge elements, as permitted in Section 1006.1, in buildings with an occupant load of ten (10) or more.
4. The portion of the exterior exit discharge immediately adjacent to exit discharge doorways in buildings with an occupant load of ten (10) or more.
5. Conference rooms, training rooms, break or lunch rooms, and restrooms that accommodate more than one occupant.

### **1006.6.2 Illumination emergency power**

All rooms containing the building fire sprinkler riser(s), fire pump(s) and fire alarm control panel(s) shall be provided with approved emergency lighting.

### **1006.6.3 Egress/Exit way Obstructions**

#### **Code 1030.3 Obstructions**

A mean of egress shall be free from obstructions that would prevent its use, including the accumulation of snow and ice. Within 48 hours after inclement weather concluding all exits, i.e. doorways, balconies, fire escapes, sprinkler room etc., must be cleared of snow and ice. If exits are still blocked after the 48-hour period, a \$50.00 fine will be issued.

## **CHAPTER 56 EXPLOSIVES AND FIREWORKS**

### **SECTION 3302 - DEFINITIONS**

The following words and terms shall, for the purpose of this Chapter and as stated elsewhere in this Code, have the meanings shown herein.

**Fireworks:** The term "fireworks" shall mean and include any explosive composition, or any substance or combination of substances, or article prepared for the purpose of producing a visible or audible effect of a temporary exhibitional nature by explosion, combustion, deflagration or detonation, and shall include blank cartridges, toy cannons, in which explosives are used, the type of balloons which require fire underneath to propel the same, firecrackers, torpedoes, sky-rockets, Roman candles, bombs, or other fireworks of like construction and any fireworks containing any explosive compound, or any tablets or other device containing any explosive substance, or containing combustible substances producing visual effects, provided, however, that the term "fireworks" shall not include trick noise makers known as "party poppers", "booby traps", and "snappers"; toy pistols, toy canes, toy guns, or other devices in which paper or plastic caps containing twenty-five hundredths of grains or less of explosive compound are used, providing they are so constructed that the hand cannot come in contact with the cap when in place for the explosion; and toy pistol paper or plastic caps which contain less than twenty hundredths grains of explosive mixture.

Note: Devices such as sparklers, snake or glow worm pellets, trick matches, etc. that require an open flame, such as a match or lighter, to ignite are not permitted.

## **SECTION 3304 - EXPLOSIVE MATERIALS STORAGE AND HANDLING**

### **3304.1 – Explosive materials storage and handling**

The storage of explosive materials is prohibited within the First Fire Protection District of Antioch Township.

## **SECTION 3305 – MANUFACTURE, ASSEMBLY AND TESTING OF EXPLOSIVES, EXPLOSIVE MATERIALS AND FIREWORKS**

### **3305.1 General**

The manufacturing, assembly and testing of explosives, ammunition, blasting agents and fireworks is prohibited in the First Fire Protection District of Antioch Township.

## **SECTION 3308 - FIREWORKS**

### **DISPLAY**

### **3308.2 Permit application**

A permit shall be required for the possession, display or discharge of fireworks or pyrotechnical displays. The permit application shall include the applicant's name, address, and age; the date and place of the proposed discharge of fireworks or pyrotechnical display; the nature and quantities of fireworks to be discharged or displayed; and the applicant's experience, if any, in discharge of fireworks or pyrotechnical displays. Also included shall be plans for the display, inspections of the display site, and demonstrations of the display operation. Such permit shall be applied for a minimum of fifteen (15) days prior to the proposed date of display.

Upon receipt of the application, the Code Official, or designee, shall inspect the location of the proposed discharge of fireworks or pyrotechnical display. If, in the judgment of the Code Official, or designee it would not be hazardous to any property or persons to allow such discharge of fireworks or pyrotechnical displays, given the resources of the Fire Department available for the requested date, the Code Official shall approve the application and issue a permit for the discharge of fireworks or pyrotechnical display. Fees in accordance with Section 105.8 shall apply.

A representative of the First Fire Protection District of Antioch Township shall standby on site from the time fireworks product arrives on site through the post display final safety check. In addition, a fire engine with a crew of two (2) firefighters will be required for standby at the display. Standby personnel shall be reimbursed at a rate of \$100.00 per hour. The fire engine standby personnel will be reimbursed a minimum of two (2) hours. Payment is due at the time the permit is issued.

A permit granted hereunder shall not be transferable, nor shall any such permit be extended beyond the dates set out therein.

## **SECTION 3310 – FIREWORKS VIOLATIONS**

**3310.1 General**

A person shall not possess, manufacture, store, offer or expose for sale, sell at retail or discharge any fireworks within the First Fire Protection District of Antioch Township.

Exception: Where approved for the supervised display of fireworks in accordance with Section 3308 of this Code.

**3310.2 Bond for display**

The permit holder shall furnish a bond in an amount approved by the code official for the payment of all potential damage caused either to the person or property due to the permitted display and arising from any acts of the permit holder or agent of the permit holder. In lieu of a bond, the permit holder may provide a certificate of insurance, in an amount acceptable to the Code Official as an additional insured and execute an agreement holding the First Fire Protection District of Antioch Township harmless from any damage to persons or property caused by the permitted display.

**3310.3 Fines for violations**

Any person, firm, partnership, association or corporation found violating any of the provisions of this chapter shall be fined not less than one hundred and fifty dollars (\$150.00), but not more than seven hundred and fifty dollars (\$750.00). All fines shall be paid to the First Fire Protection District of Antioch Township.

**CHAPTER 80 REFERENCED STANDARDS**

**Delete International Plumbing Code and insert the Illinois State Plumbing Code**

This change affects all references to the International Plumbing Code in the entire code.

**NFPA**

NFPA 10 - 2010	NFPA 11 – 2010	NFPA 12 – 2011	NFPA 12A – 2009
NFPA 13 – 2010	NFPA 13D – 2010	NFPA 13R – 2010	NFPA 14 – 2010
NFPA 15 – 2012	NFPA 16 – 2011	NFPA 17 – 2009	NFPA 17A – 2009
NFPA 18 – 2011	NFPA 20 – 2010	NFPA 22 – 2008	NFPA 24 – 2010
NFPA 25 – 2011	NFPA 30 – 2012	NFPA 30A – 2012	NFPA 30B – 2011
NFPA 32 – 2011	NFPA 33 – 2011	NFPA 34 – 2011	NFPA 35 – 2011
NFPA 36 – 2009	NFPA 40 – 2011	NFPA 45 – 2011	NFPA 51 – 2007
NFPA 51A – 2011	NFPA 51B – 2009	NFPA 58 – 2011	NFPA 61 – 2008
NFPA 70 – 2011	NFPA 72 – 2010	NFPA 80 – 2010	NFPA 85 – 2011
NFPA 96 – 2011	NFPA 99 – 2010	NFPA 101 – 2012	NFPA 110 – 2010
NFPA 111 – 2010	NFPA 120 – 2010	NFPA 204 – 2007	NFPA 252 – 2012



NFPA 253 – 2011	NFPA 257 – 2012	NFPA 265 – 2011	NFPA 268 – 2011
NFPA 409 – 2010	NFPA 418 – 2011	NFPA 654 – 2011	NFPA 655 – 2012
NFPA 664 – 2012	NFPA 701 – 2010	NFPA 704 – 2012	NFPA 720 – 2012
NFPA 1123 – 2010	NFPA 1124 – 2012	NFPA 1142 – 2012	NFPA 1144 – 2008
NFPA 2001 – 2011			

## **APPENDIX B**

### **SECTION B103 MODIFICATIONS**

#### **B 103.4 Dry hydrants**

In any subdivision / development, where a water distribution system is not provided, the First Fire Protection District of Antioch Township may require the owner to modify storm water control devices, so as to provide a pond with a minimum depth of five (5) feet and to install a dry hydrant that conforms to the standard of NFPA 1142 and with the approval of the Code Official with a suction pipe from the middle of the pond. The dry hydrant shall be installed on the right of way of a street proposed to be installed within the subdivision/development and shall meet the standards established by the First Fire Protection District of Antioch Township. Where a pond is not practical, a tank system with adequate water storage capacity may be required. It shall be unlawful to erect any structure in any subdivision / development prior to completion of any required water supply equipment as required by this Ordinance.

B-103.4.1 Where the configuration of lots, distance between buildings and lot lines or public utility easements, accessibility to building or fire suppression requirements dictate, the Code Official shall require additional hydrants as deemed necessary.

B-103.4.2: The total gallons per minute, which dry hydrants shall be required to produce, shall be determined by the structure being served by the hydrant. In no case shall the hydrant produce less than 1,000 gallons per minute.

B-103.4.3: The precise location of and specifications for dry hydrant(s) shall be subject to the review and approval by the Code Official prior to the installation of the system.

B-103.4.4: The dry hydrant plan submitted for review may be subject to review by an outside engineer or code consultant. The submitted party will incur all associated costs.

B-103.4.5: It shall be unlawful for any person to utilize any device such as drafting pits, dry hydrants or other water supply appurtenances designed for firefighting operations without the express permission of the First Fire Protection District of Antioch Township.

B-103.4.6: All dry hydrants shall be maintained free from obstructions. The access to any area surrounding the dry hydrant shall be properly cleared of obstacles, which may hide or impede the use of the dry hydrant. Furthermore, the hydrant shall be maintained in working order at all times, capable of delivering the minimum required flow. Responsibility of maintaining, repairing, replacing and / or dredging all hydrants within a subdivision shall be the responsibility of the appropriate homeowner's association. In the absence of a homeowner's association, each dry hydrant will be addressed on an individual basis.

B-103.4.7: The First Fire Protection District of Antioch Township may require the property owner or his agent to install "No Parking – Fire Hydrant", or other signs as needed.

## APPENDIX B

# FIRE-FLOW REQUIREMENTS FOR BUILDINGS

*The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.*

### SECTION B101 GENERAL

**B101.1 Scope.** The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

### SECTION B102 DEFINITIONS

**B102.1 Definitions.** For the purpose of this appendix, certain terms are defined as follows:

**FIRE-FLOW.** The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

**FIRE-FLOW CALCULATION AREA.** The floor area, in square feet (m<sup>2</sup>), used to determine the required fire flow.

### SECTION B103 MODIFICATIONS

**B103.1 Decreases.** The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

**B103.2 Increases.** The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

**B103.3 Areas without water supply systems.** For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the *fire code official* is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code*.

### SECTION B104 FIRE-FLOW CALCULATION AREA

**B104.1 General.** The fire-flow calculation area shall be the total floor area of all floor levels within the *exterior walls*, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

**B104.2 Area separation.** Portions of buildings which are separated by *fire walls* without openings, constructed in

accordance with the *International Building Code*, are allowed to be considered as separate fire-flow calculation areas.

**B104.3 Type IA and Type IB construction.** The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

**Exception:** Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

### SECTION B105 FIRE-FLOW REQUIREMENTS FOR BUILDINGS

**B105.1 One- and two-family dwellings.** The minimum fire-flow and flow duration requirements for one- and two-family *dwellings* having a fire-flow calculation area that does not exceed 3,600 square feet (344.5 m<sup>2</sup>) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. Fire-flow and flow duration for *dwellings* having a fire-flow calculation area in excess of 3,600 square feet (344.5 m<sup>2</sup>) shall not be less than that specified in Table B105.1.

**Exception:** A reduction in required fire-flow of 50 percent, as *approved*, is allowed when the building is equipped with an *approved automatic sprinkler system*.

**B105.2 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 as specified in Table B105.1.

**Exception:** A reduction in required fire-flow of up to 75 percent, as *approved*, is allowed when the building is provided with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

### SECTION B106 REFERENCED STANDARDS

ICC	IBC—12	International Building Code	B104.2, Table B105.1
ICC	IWUIC—12	International Wildland-Urban Interface Code	B103.3
NFPA	1142—12	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

APPENDIX B

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

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute) <sup>b</sup>	FLOW DURATION (hours)
Type IA and IB <sup>a</sup>	Type HA and HIA <sup>a</sup>	Type IV and V-A <sup>a</sup>	Type IIB and IIIB <sup>a</sup>	Type V-B <sup>a</sup>		
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	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	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	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	4
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	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	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 gallon per minute = 3.785 L/m, 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.

## APPENDIX C

# FIRE HYDRANT LOCATIONS AND DISTRIBUTION

*The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.*

### SECTION C101 GENERAL

**C101.1 Scope.** Fire hydrants shall be provided in accordance with this appendix for the protection of buildings, or portions of buildings, hereafter constructed.

### SECTION C102 LOCATION

**C102.1 Fire hydrant locations.** Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.

### SECTION C103 NUMBER OF FIRE HYDRANTS

**C103.1 Fire hydrants available.** The minimum number of fire hydrants available to a building shall not be less than that listed in Table C105.1. The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table C105.1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted.

### SECTION C104 CONSIDERATION OF EXISTING FIRE HYDRANTS

**C104.1 Existing fire hydrants.** Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.

### SECTION C105 DISTRIBUTION OF FIRE HYDRANTS

**C105.1 Hydrant spacing.** The average spacing between fire hydrants shall not exceed that listed in Table C105.1.

**Exception:** The fire chief is authorized to accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service.

Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1.

**TABLE C105.1  
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS**

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS <sup>a, b, c</sup> (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT <sup>d</sup>
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more <sup>e</sup>	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

- a. Reduce by 100 feet for dead-end streets or roads.
- b. Where streets are provided with median dividers which cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.
- c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
- d. Reduce by 50 feet for dead-end streets or roads.
- e. One hydrant for each 1,000 gallons per minute or fraction thereof.

# APPENDIX D

## FIRE APPARATUS ACCESS ROADS

*The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.*

### SECTION D101 GENERAL

**D101.1 Scope.** Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*.

### SECTION D102 REQUIRED ACCESS

**D102.1 Access and loading.** Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an *approved* fire apparatus access road with an asphalt, concrete or other *approved* driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds (34 050 kg).

### SECTION D103 MINIMUM SPECIFICATIONS

**D103.1 Access road width with a hydrant.** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see Figure D103.1).

**D103.2 Grade.** Fire apparatus access roads shall not exceed 10 percent in grade.

**Exception:** Grades steeper than 10 percent as *approved* by the fire chief.

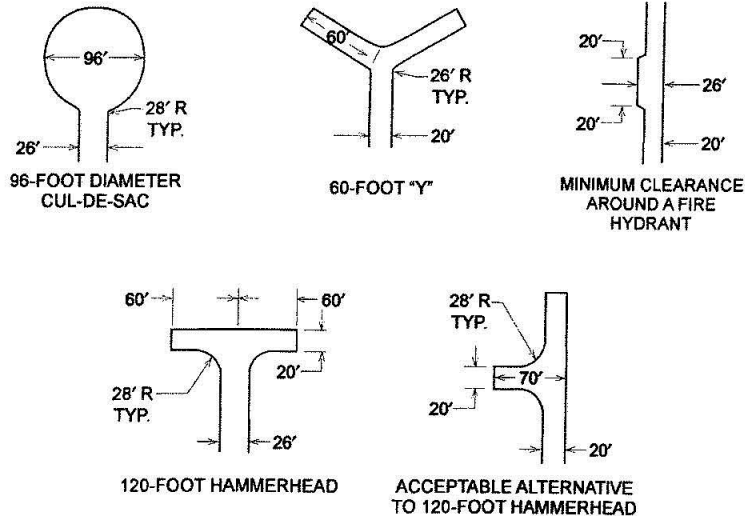
**D103.3 Turning radius.** The minimum turning radius shall be determined by the *fire code official*.

**D103.4 Dead ends.** Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

**TABLE D103.4  
REQUIREMENTS FOR DEAD-END  
FIRE APPARATUS ACCESS ROADS**

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	20	None required
151-500	20	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
501-750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
Over 750	—	Special approval required

For SI: 1 foot = 304.8 mm.



For SI: 1 foot = 304.8 mm.

**FIGURE D103.1  
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND**

APPENDIX D

**D103.5 Fire apparatus access road gates.** Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. The minimum gate width shall be 20 feet (6096 mm).
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the gate location.
7. Locking device specifications shall be submitted for approval by the fire code official.
8. Electric gate operators, where provided, shall be listed in accordance with UL 325.
9. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

**D103.6 Signs.** Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with Figure D103.6. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.

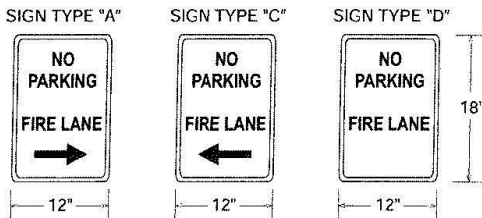


FIGURE D103.6  
FIRE LANE SIGNS

**D103.6.1 Roads 20 to 26 feet in width.** Fire lane signs as specified in Section D103.6 shall be posted on both sides of fire apparatus access roads that are 20 to 26 feet wide (6096 to 7925 mm).

**D103.6.2 Roads more than 26 feet in width.** Fire lane signs as specified in Section D103.6 shall be posted on one side of fire apparatus access roads more than 26 feet wide (7925 mm) and less than 32 feet wide (9754 mm).

SECTION D104

COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

**D104.1 Buildings exceeding three stories or 30 feet in height.** Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have at least two means of fire apparatus access for each structure.

**D104.2 Buildings exceeding 62,000 square feet in area.** Buildings or facilities having a gross building area of more than 62,000 square feet (5760 m<sup>2</sup>) shall be provided with two separate and approved fire apparatus access roads.

**Exception:** Projects having a gross building area of up to 124,000 square feet (11 520 m<sup>2</sup>) that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems.

**D104.3 Remoteness.** Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

SECTION D105

AERIAL FIRE APPARATUS ACCESS ROADS

**D105.1 Where required.** Where the vertical distance between the grade plane and the highest roof surface exceeds 30 feet (9144 mm), approved aerial fire apparatus access roads shall be provided. For purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater.

**D105.2 Width.** Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7925 mm), exclusive of shoulders, in the immediate vicinity of the building or portion thereof.

**D105.3 Proximity to building.** At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet (4572 mm) and a maximum of 30 feet (9144 mm) from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the fire code official.

**D105.4 Obstructions.** Overhead utility and power lines shall not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building. Other obstructions shall be permitted to be placed with the approval of the fire code official.

**SECTION D106  
MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS**

**D106.1 Projects having more than 100 dwelling units.** Multiple-family residential projects having more than 100 *dwelling units* shall be equipped throughout with two separate and *approved* fire apparatus access roads.

**Exception:** Projects having up to 200 *dwelling units* may have a single *approved* fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with *approved automatic sprinkler systems* installed in accordance with Section 903.3.1.1 or 903.3.1.2.

**D106.2 Projects having more than 200 dwelling units.** Multiple-family residential projects having more than 200 *dwelling units* shall be provided with two separate and *approved* fire apparatus access roads regardless of whether they are equipped with an *approved automatic sprinkler system*.

**SECTION D107  
ONE- OR TWO-FAMILY RESIDENTIAL  
DEVELOPMENTS**

**D107.1 One- or two-family dwelling residential developments.** Developments of one- or two-family *dwelling units* where the number of *dwelling units* exceeds 30 shall be provided with two separate and *approved* fire apparatus access roads, and shall meet the requirements of Section D104.3.

**Exceptions:**

1. Where there are more than 30 *dwelling units* on a single public or private fire apparatus access road and all *dwelling units* are equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 of the *International Fire Code*, access from two directions shall not be required.
2. The number of *dwelling units* on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the *fire code official*.

**D108  
REFERENCED STANDARDS**

ASTM	F 2200—05	Standard Specification for Automated Vehicular Gate Construction	D103.5
ICC	IFC—12	International Fire Code	D101.5, D107.1
UL	325—02	Door, Drapery, Gate, Louver, and Window Operators and Systems, with Revisions through February 2006	D103.5