

# Lucas Fire Department Development Requirements



Lucas Fire Dept  
151 Country Club Rd  
Lucas, TX 75002  
972-727-1242

# **Lucas Fire Department's Requirements**

**972-727-1242**

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- . Access Gates**
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Check the Lucas Fire Department web page for Fire Department Amendments to IFC 2003. ([www.lucasfire.com](http://www.lucasfire.com))

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# Fire Lanes

CHAPTER 5: Fire apparatus roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story building is located more than 150 feet from fire apparatus access as measured along a minimum of a 10-foot-wide unobstructed pathway around the external walls of the structure.

CHAPTER 5: Fire apparatus access roads shall have an unobstructed width of not less than 24 feet and an unobstructed vertical clearance of not less than 14 feet.

CHAPTER 5: Fire apparatus access roads shall be designed and maintained to support the imposed loads of the fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities per City of Lucas paving standards.

CHAPTER 5: The minimum turning radius of a fire apparatus access road shall be 30 feet (see fire lane design).

CHAPTER 5: Dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus (see detail on page 3 for approved turnarounds).

CHAPTER 5: **The maximum gradient for a fire lane shall not exceed 10% and the maximum cross fall shall not exceed ½ inch per foot.**

CHAPTER 5: When any part of the access roads (except public way) is designated as a fire lane by the Fire Marshal, it shall be the responsibility of the owner to install and maintain pavement markings and /or signs to properly notify the public of the location of fire lanes on his or her property.

**STRIPING:** Fire apparatus access roads shall be marked by painted lines of **red traffic paint** 6 inches wide to show the exact boundary lines of the fire lane. The lines shall be marked by painted 4 inch high lettering, using a 1 inch wide stroke of **white traffic paint** on the contrasting red background stating: "NO PARKING FIRE LANE" or "FIRE LANE NO PARKING". This marking is to be placed at 25-foot intervals along each boundary line (see fire lane marking). Where a curb is available, the striping shall be on the vertical face of the curb.

**SIGNS:** The signs shall read, "NO PARKING FIRE LANE" or "FIRE LANE NO PARKING" and shall be 12" wide and 18" high. Signs shall be painted on a white background with letters and borders in red, using not less than 2" lettering. Signs shall be permanently installed to a stationary post and the bottom of the sign shall be six feet, six inches (6'6") above finished grade. Signs shall be spaced not more than fifty feet (50') apart. Signs may be installed on permanent buildings or walls or as approved by the Fire Chief.

**Fire lanes shall be installed and serviceable prior to construction of walls.**

Reminder:

Concrete must have a minimum depth of 6 inches.

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## FIRE HYDRANTS

- **508.5.1 Where required.** Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.

### Exceptions:

1. For Group R-3 and Group U occupancies, the distance requirements shall be 500 feet.
  2. For buildings equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the distance requirement shall be 500 feet.
- Fire hydrants shall be of the National Standard type.
  - Fire hydrants shall be located at all intersecting streets and roadways and at intermediate locations spaced at distances of not more than four hundred feet (400') apart.
  - **508.5.4 Obstruction.** Posts, fences, vehicles, growth, trash, storage and other materials or objects shall not be placed or kept near fire hydrants, fire department inlet connections or fire protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible. The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants.
  - **508.5.5 Clear space around hydrants.** A 3-foot (914 mm) clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.

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## **FIRE DEPARTMENT CONNECTIONS**

The City of Lucas requires a remote fire department connection "yard pipe" in certain locations. This policy has been established due to the high potential of wall collapse. Wall collapse is a major cause of fatality and property damage during fires.

The criteria for yard pipes applies for:

- **All tilt/poured in place wall construction.**
- **All multi-story construction.**
- **All one story construction with walls 15 feet or greater in height.**

Yard pipes shall be:

- **Located 1 ½ times the height of the wall from base of the wall. The height of the wall is measured from ground level to the top plate.**
- **The FDC shall be between 18" and 42" in height.**
- **The FDCs shall be located within 50' of a fire hydrant.**
- **The FDCs shall be located within 8' of a fire lane or paved street.**
- **The barrel shall be marked with red reflective tape.**
- **A blue reflective pavement marker shall be placed in the street adjacent to all FDC locations.**
- **Due to the fact that missing caps on FDCs allow trash and debris to be introduced into the system, all caps shall be of a locking type that is approved by the AHJ. (2 1/2" locking FDC plugs)**

**IF AN EXISTING PROPERTY HAS AN ONGOING PROBLEM OF MISSING CAPS, THEY WILL BE REQUIRED TO REPLACE THEM WITH LOCKING CAPS.**

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## **KNOX/KEY BOX**

A Knox key box is required for all commercial structures in the city of Lucas.

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## FIRE ALARM SYSTEMS

1. A copy of the annual inspection report shall be forwarded to the Fire Marshal.
2. Systems shall be installed, tested and maintained in accordance with National Fire Protection Association Standards
3. The Fire Department shall witness all acceptance tests.
4. Alarm systems consisting of 50 or more alarm actuating devices, buildings with elevators or buildings with automatic sprinkler systems, shall have an addressable fire detection system consisting of a fire alarm panel with a minimum of 50 points.
5. Alarm systems containing 75 smoke detectors, or more than 200 total alarm devices shall be analog intelligent addressable fire detection systems.
6. Manual alarm actuating devices shall be an approved double action type.
7. In sprinklered buildings, notification shall be provided upon water flow, with one horn strobe at riser location and one horn strobe at the front of the building. All tenant spaces in buildings with an automatic sprinkler system shall have full notification on water flow alarm.
8. Sprinkler system monitoring and alarms. Sprinkler and standpipe system water flow detectors shall be provided for each floor tap to the sprinkler system and shall cause an alarm upon detection of water flow for a minimum of 45 seconds and not more than 90 seconds. All control valves in the sprinkler and standpipe systems except for fire department hose connection valves shall be electrically supervised to initiate a supervisory signal at the central station upon tampering.
9. In Division E occupancies, system smoke detectors shall be installed in all spaces that may be occupied.
10. If the system is not centrally supervised by an approved monitoring agency, a sign which states, "Local Alarm Only, Call Lucas Fire Department, 911", and contains the address of the property protected by the alarm shall be located above each pull station. The sign shall have a minimum dimension of four inches. Letter height shall be a minimum of one inch high, contrasting with the background.
11. For systems with less than 50 devices, zoning shall be arranged such that not less than one zone



per 10000 square feet, per floor level, per initiating device type is provided. (Manual pulls, smoke detectors, water flow, etc.)

12. All fire alarm systems shall be installed in such a manner that the failure of any single alarm-actuating or alarm indicating device will not interfere with the normal operation of any other such devices. All alarm-actuating devices shall be class "A" wired with a minimum of six feet separation between supply and return loops. Initiating Device Circuit-Style D-Signaling Line Circuit-Style 6-Notification Appliance Circuit-Style X.
13. Correspondence shall be directed to the Lucas Fire Department Fire Prevention Division.
14. The AHJ shall be consulted in every case to determine compliance with fire alarm requirements to the installation of any fire alarm system.
15. The fire alarm system contractor shall submit three sets of drawings and one submittal book required by the subsection for review.
16. The AHJ shall designate those corrections necessary for acceptance of the proposed installation design and return all but one copy that will remain on record with the Fire Department.
17. No fire alarm system shall be installed without City of Lucas Fire Prevention stamps and compliance with corrections required by the AHJ.
18. Permit and approved set of plans shall be on site during installation and acceptance test.
19. Any deviation from an approved plan must be reviewed and approved by the AHJ.

The information in section 11-16 and the following shall be included with all submittals:

1. Provide a separate sheet or drawing showing circuit wiring (not conduit) diagrams for both the initiation and annunciation circuits. Multiple circuit paths on the same wire run are not acceptable. Additional drawings may be required for systems such as some control, firefighter phones, or speakers for evacuation.
2. General information
  1. Company name and state fire alarm contractor number.
  2. Alarm superintendent name and state license number.
  3. Signature of alarm superintendent, certifying that plans are in compliance with the ordinances.
  4. Property name and address.
3. Site and floor plans diagramming the layout of buildings, existing systems and alarm equipment locations. Drawings shall be scaled or dimensioned. Any change in the existing systems shall be approved by the Fire Marshal.
4. Supervision
  1. Monitoring supervision
  2. Trouble signal initiating circumstances



5. Submittal Book/Drawings:

1. System design description with sequence of operations
2. Manufacturer's Product Information sheets of all system components and devices
3. Schematic riser diagram including alarm receiving circuits, alarm sending circuits, control circuits, etc.
4. Battery-size calculations with input value derivations
5. Voltage-drop calculations with input value valuations and wire resistances
6. Wire specifications: All wiring shall be UL listed power limited fire alarm wiring.
7. List of materials
8. Addressable device list/zone legend
9. Type of primary and secondary power

**Definitions:**

**Addressable Fire Detection System** is any system capable of providing identification of each individual alarm-initiating device. The system shall be capable of alarm verification

**Analog Intelligent Addressable Fire Detection System** is any system capable of calculating a change in value by directly measurable quantities (voltages, resistance, etc.) at the sensing point. The physical analogy may be conducted at the sensing point or at the main control panel. The system shall be capable of compensating for long-term changes in sensor response while maintaining constant sensitivity. The compensation shall have a pre-set point at which a detector maintenance signal shall be transmitted to the control panel. The sensor shall remain capable of detecting and transmitting an alarm while in the maintenance mode.

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## FIRE EXTINGUISHERS

Portable fire extinguishers shall be installed in occupancies and locations as set forth in this code and as required by the Chief. A 2-A:10-B:C class fire extinguisher is the minimum size recognized by the Lucas Fire Department for legally required extinguishers. The following are minimum requirements for fire extinguisher coverage per occupancy classification. A structure must have at least one (1) fire extinguisher for every six thousand (6000) square feet of floor area. The extinguisher classification shall coincide with the occupancy classification of the structure, as listed in the table below.

Occupancy Travel Classification	Extinguisher Classification	Maximum Distance to an Extinguisher
S-3	2-A:10-B:C	75 feet
S-3 w/ fuel dispensers	4-A:40-B:C	75feet
B	2-A:10-B:C	75 feet
B w/ cooking area	40-B:C	30 feet
A, E, & I	2-A:10-B:C	75 feet
With cooking area	40-B:C	30 feet
R-1, M, F, S-1, S-2, S-5	2-A:10-B:C	75 feet
H4-A	4-A:40-B:C	50 feet
W/ spray booth	4-A:40-B:C	30 feet
Asphalt kettles & Heating equipment	40-B:C	30 feet with an additional extinguisher on the roof

EXCEPTION: All new installations of UL 300 listed systems shall be accompanied by a 2-A:1-B:C:K fire extinguisher. All existing hood systems shall be retrofitted with a 2-A:1-B:C:K within one (1) calendar year from 01 January 2008.

# FIRE EXTINGUISHERS (continued)

## MOUNTING, INSPECTION AND MAINTENANCE REQUIREMENTS

Fire extinguishers shall be hung on brackets not more than five feet above the floor with a minimum clearance of four inches between the bottom of the fire extinguisher and the floor.

1. Extinguishers shall be subjected to a yearly inspection by a state licensed extinguisher company.
2. Extinguishers shall be subjected to maintenance not more than six years apart or when specifically indicated by an inspector.

### **Restaurant hood suppression systems and/or spray booths, etc:**

- (a) On a semi-annual basis, all automatic wet or dry chemical extinguishing systems shall be inspected and if any deficiencies are found, **appropriate corrective action shall be taken immediately.**
- (b) On an annual basis all automatic wet or dry chemical extinguishing systems shall be recharged and a thorough check of the system shall be conducted.

### **Inspection of Range Hoods to include:**

Current inspection tag dated within the last six months.  
System is fully pressurized.  
Discharge nozzles are provided with blow-off caps.  
All filters are in place.  
Hoods are clean and free of excess grease build-up.  
All detectors, releasing devices, piping, hose assemblies, nozzles, alarms and all auxiliary equipment are examined.

### **Definitions:**

**Inspection** – A “quick check” that an extinguisher is available and will operate. It is intended to give reasonable assurance that the extinguisher is fully charged and operable. This is done by seeing that it is in its designated place, that it has not been actuated or tampered with, and there is no obvious physical damage or condition to prevent operation.

**Maintenance** – A “thorough check” of the extinguisher is intended to give maximum assurance that an extinguisher will operate effectively and safely. It includes a thorough examination and any necessary repair or replacement, as well as the replacement of the extinguishing agent. It also includes the propellant of certain types of extinguishers and hydrostatic testing if indicated by the date stamped on the extinguisher body.

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## ACCESS GATES

### Emergency Access of Limited Access Gates at Apartments and Gated Communities

This policy outlines the provisions established by the Fire Marshal's Office for maintaining limited access control gates across dedicated or designated emergency access easements (fire lanes). This policy applies to all multifamily occupancies (apartments), private gated communities, or any other occupancy deemed as high risk by the Fire Marshal's Office.

#### General Requirements:

1. All limited access drives from public streets shall be designated to accommodate Fire Department emergency service vehicles (24' minimum width, 14' minimum clearance). All limited access drives will be designated as either a primary or secondary emergency access way. The Fire Marshal will make all determinations as to primary and secondary designations.
2. All primary emergency access gates designated by the Fire Marshal shall be equipped with the **Opticom Gate Opening System**. Individual property owners must maintain the system in good working condition at all times. **This system only addresses the concerns of the Fire Department. Sheriff's Office access must be addressed by the Collin County Sheriff's Office.**
3. The gate shall also incorporate a fail safe manual backup or automatic release in the event of a failure of the electrical or mechanical system.
4. All secondary emergency access points shall incorporate a manual disconnect to allow manual opening of the gate by emergency responders. This system must be a **Knox Padlock** or other device approved by the Fire Marshal.

#### Requirements for Private Residences:

1. Gated drives for private residences, if electrically controlled shall have the capability to be activated by **Knox** key.
2. The gate shall also incorporate a manual disconnect to allow manual opening of the gate by emergency responders. This system must be a **Knox Padlock** or other device approved by the Fire Marshal.

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## RESIDENTIAL FIRE SPRINKLERS

Residential fire sprinklers in Lucas are required to conform to NFPA 13D with the following additional requirements:

- Attached garages must be sprinklered.
- Lucas Fire Department does not recognize the small room rule. Any area that could reasonably be inhabited by a person must be sprinklered.
- Preferred location for sprinkler riser will be the utility room.
- Preferred location for inspector's test valve will be the most hydraulically remote area from the riser.
- Plans shall be submitted to Lucas Fire Department for review.
  - A minimum of two sets of plans shall be submitted with one plan being kept by the Lucas Fire Department for its records.
  - Plans shall be accompanied by cut sheets of sprinkler heads to be used and hydraulic calculations showing a minimum of 10 psi residual.
- Sprinkler system shall be subjected to a two hour hydrostatic test at 200 psi to be witnessed by AHJ or his representative.
- If foam insulation is used on underside of roof, requirement for bat insulation around sprinkler piping will be waived.
- Sprinkler system shall have a flow switch connected to a single horn to notify occupants of waterflow. Flow switch need not be monitored.
- If flow switch is connected to an alarm system, the system shall be programmed so that a waterflow alarm shall produce a distinct tone from any other alarm source.