



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0001	Sprinkler Plan Review Policies		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The purpose of this policy is to establish a Standardization of Plan Review for Automatic Fire Sprinkler Systems reviewed by the City of Bloomington Fire Prevention Division.

SPRINKLER PLAN REVIEW POLICIES

The following list contains the policies of the City of Bloomington Fire Prevention Division concerning fire sprinkler system plan review. The list is not all-inclusive. Unique situations can be reviewed on a case by case basis.

Sprinkler plans that are submitted to the City of Bloomington Fire Prevention Division will be reviewed for compliance with the requirements contained in the Minnesota State Fire Code, NFPA-13 (2002 edition), and the Plan Review Policies. Working plans shall include the elements contained in Section 14.1 of NFPA 13 (2002 edition.).

A properly completed application form and a check for the appropriate fees shall accompany all plans sent to the City of Bloomington Fire Prevention Division for review. A permit is required for all new installations and for all modifications, alterations or repairs.

The City of Bloomington Fire Prevention Division requires a minimum of **three sets** of plans, one set of hydraulic calculations, and one set of material specifications. All plans will be reviewed, stamped, and two sets of plans will be returned to the contractor. The sprinkler contractor shall keep one set of reviewed plans on the job site and accessible to inspectors at all times.

All equipment in a fire protection system shall be UL Listed, Factory Mutual Approved, listed by a nationally recognized testing organization, or approved by the City of Bloomington Fire Marshal [NFPA 13, 6.1.1.2].

The City of Bloomington Fire Prevention Division reviews hydraulic calculations to meet minimum NFPA standards. The installing contractor is responsible for proper pipe sizing, hydraulic calculations and proper system operation. [NFPA 13, 14.3]

Partial sprinkler systems, meaning those required by the MSFC for a part of a whole building (i.e. large basements) shall be installed in accordance with NFPA 13 (2002 edition). Voluntary systems (those not required by the MSFC shall be installed according to the BFP policy on partial and voluntary systems.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0002	Water Supplies for Fire Protection Systems		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The purpose of this policy is to establish a Standardization of water supply requirements for Automatic Sprinkler Systems reviewed by the City of Bloomington Fire Prevention Division.

WATER SUPPLY POLICIES

The following list contains the policies of the City of Bloomington Fire Prevention Division concerning fire sprinkler systems. The list is not all-inclusive. Unique situations can be reviewed on a case by case basis.

- A) Double backflow prevention is only required by the State Plumbing Code when there is a risk of cross-contamination with a non-potable source (i.e. lake, pond, etc.). However, the City of Bloomington Public Works Department has requirements that are more restrictive and they should be consulted prior to the request for permit.

- B) The City of Bloomington Fire Prevention Division may approve a combined domestic/fire service line if the size of the domestic connection does not exceed one-fourth the size of the combined service line, **or** the domestic water demand is added to the sprinkler water demand at the point of connection and hydraulically proven to the municipal street main.

Consult the City of Bloomington Fire Prevention Division **prior** to the request for permit should you have any questions.

- C) Water flow data used for hydraulically designed fire protection systems shall be no more than three (3) years old*.

*When an existing fire pump is the primary source of supply, a copy of the fire pump test no more than one year old shall be provided in the submittal package. The system design shall be based on the actual pump test plus the city supply pressure and flow, adjusted for the system demand, at the pump's discharge flange.



**CITY OF BLOOMINGTON
Fire Prevention Division**

STATEMENT OF POLICY

Policy #: BFP-0003	Valves, Fire Department Connections and Alarms		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The purpose of this policy is to establish a Standardization of valve arrangements for Automatic Sprinkler Systems reviewed by the City of Bloomington Fire Prevention Division.

VALVE ARRANGEMENTS

The following list contains the policies of the City of Bloomington Fire Prevention Division concerning fire sprinkler systems. The list is not all-inclusive. Unique situations can be reviewed on a case by case basis.

- A) The fire department connection (FDC) shall be provided at the street, address side of the building.

- B) An outside flow alarm is required for all fire protection systems having more than 20 sprinklers. The outside flow alarm shall consist of a combination horn and light unit, shall be located above the fire department connection, and shall activate upon water flow. [NFPA 13(2002 edition) Section 8.16.1.1]

- C) Sprinkler systems installed in buildings 3 stories or more in height are required to have shut-off valves and water-flow devices for each floor unless approved by the City of Bloomington Fire Marshal.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0004	Buildings of Undetermined Use: MSFC 903.3.1.4		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The purpose of this policy is to clarify MSFC (07), section 903.3.1.4, concerning “Buildings of undetermined use.”

There have been numerous questions concerning the above amendment, specifically as to the type of occupancy the amendment applies to.

MSFC 903.3.1.4:

When fire sprinkler systems are required in buildings of undetermined use, they shall be designed and installed to have a sprinkler density of not less than that required for an Ordinary Hazard Group 2 use with a minimum design area of 3,000 square feet (279 m2).

Use is considered undetermined if not specified at the time a permit is issued. Where a subsequent occupancy requires a system with greater capability, it shall be the responsibility of the owner to upgrade the system to the required density for the new hazard, use or occupancy.

MSFC (07) Section 903.3.1.4 was intended to apply to “speculative” factory, warehouse and high-pile storage type occupancies; the final use of which was unknown at the time of construction. These occupancies could potentially provide storage for everything from pallets to high piled / rack storage of a wide variety of materials of varying hazards.

It was **NOT** the intent of this amendment (MSFC 903.3.1.4) to be applied to obvious speculative office space (Light Hazard) or strip shopping malls that are clearly mercantile (Ordinary Hazard) in design and function.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0005	Sprinkler Protection of Residential/Commercial Mixed-Use Occupancies		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

This interpretation outlines the requirements for automatic sprinkler systems in residential buildings, especially small or nontraditional facilities. Guidance is also provided on the selection of sprinkler installation standards when mixed occupancies occur as a result of residential dwelling units constructed in conjunction with a commercial building.

Residential type buildings with mixed use occupancies must be protected entirely using either NFPA 13 or NFPA 13R, but not both. When incidental occupancies are used solely by the residential occupants of the building, the use of NFPA 13R throughout the entire building is allowed. When the incidental occupancies are used by the residential occupants of the building and the general public, the use of NFPA 13 throughout the entire building is required.

RATIONALE:

NFPA 13R (2002 edition) A.1.1 states that if it is appropriate to use NFPA 13R, that it be used throughout the entire building. Portions of residential buildings can contain an occupancy that is incidental to the operations of the residential occupancy. Such incidental occupancies are considered to be part of the predominant (residential) occupancy and therefore subject to the provisions of the predominant (residential) occupancy. Use of NFPA 13R throughout the entire building in these scenarios is allowed.

Example #1: A three-story wood frame building with wood floor and attic trusses. The first floor is a parking garage and the upper two floors are residential condo units. The parking garage is limited to use by the residential tenants only.

Since the first floor is limited to use by the residential tenants only, the occupancy of this level is considered incidental. The entire building may be protected with an NFPA 13R system, which permits all combustibles concealed spaces, including those over the parking garage, to be un-sprinkled. If the parking garage is not limited to use by the residential tenants only, the entire building shall be protected with an NFPA 13 system, which requires all combustibles concealed spaces to be sprinkled.

Example #2: A three-story wood frame building with wood floor and attic trusses. The first floor is a mercantile area and the upper two floors are residential condo units. The businesses in the mercantile area depend on and derive their income from the general public.

Since the first floor businesses depend on and derive their income from the general public, the occupancy of this level is not considered incidental. The entire building shall be protected with an NFPA 13 system, which requires all combustibles concealed spaces to be sprinkled. If the first floor businesses depend on and derive their income from the residential tenants only, the entire building may be protected with an NFPA 13R system, which permits all combustibles concealed spaces, including those over the mercantile area, to be un-sprinkled.

NFPA 13R (02) A.1.1 further states that where a structure of mixed use can be totally separated so that the residential portion is considered a separate building under the local code, NFPA 13R can be used in the residential portion, while NFPA 13 is used in the remainder of the building. The building codes allow a single structure to be divided into and treated as separate buildings. This requires vertical separation as found in IBC: 705.1. It states that each portion or part of a building separated by one or more fire walls shall be permitted to be considered a separate building. Where buildings of mixed use can be separated by a vertical fire wall so that the residential portion is considered a separate building under the local code, then a NFPA 13R system can be used in the residential portion (which really isn't a portion since it is a separate building) and a NFPA 13 system can be used in the other building. With one exception horizontal separations are not allowed to define the boundary of separate buildings. The only allowance of a building being permitted to be considered as horizontally separated is found in IBC: 508.2. These sections will allow a first-story parking garage to be considered as a separate and distinct building from the stories above if separated by a 3-hour horizontal fire barrier assembly. This type of separation is limited only to parking garages.

HOSE STREAMS: There is **no inside/outside hose stream** requirement for any part of a building protected primarily under the premise of NFPA 13R. For “areas outside the dwelling unit,” the only four design criteria from NFPA 13 that are applicable are: design discharge, number of sprinklers in the design area, sprinkler coverage, and position of sprinklers.
[NFPA 13R (2002 edition) 6.7.2.1]

Additionally, in a building that has been classified primarily as a light hazard occupancy but has incidental-use areas that may otherwise be classified as ordinary hazard (i.e., a wrestling room or kitchen in a high school) any and all hydraulic calculations within that building, regardless of the density required for the incidental-use space, need only include the hose demand for a light hazard occupancy. This rationale would likewise apply to an ordinary hazard repair garage with a high hazard, incidental-use paint booth inside.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0006	Sprinklers Supplied by Domestic Water		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

To allow limited area sprinkler protection from domestic water supplies and also provide guidance for the proper installation of such protection in both new and existing buildings.

POLICY: DOMESTIC WATER SPRINKLERS

The City of Bloomington Fire Marshal will allow the installation of sprinklers connected to the domestic water supply to protect limited areas in non-sprinklered buildings (typically six or fewer sprinklers) when these sprinklers are either required by the code or are used as an alternate means of protection.

A) Design guidelines

This policy only permits the installation of 1/2” standard spray pendent and upright sprinkler heads. Extended coverage and sidewall sprinklers are not permitted. Where a shut-off or control valve is installed, the valve shall be clearly labeled and secured in the open position to prevent tampering.

Sprinklers used for this type of protection shall be connected to domestic water lines at least 5/8” in diameter for copper or 3/4” in diameter for steel. Where four (4) or more sprinklers are used to protect a single room or area, the pipe sizes must be at least 1” in diameter. For all other requirements, sprinklers shall be installed according to appropriate standards (NFPA 13 (2002 edition)).

B) Number of sprinklers permitted in a single room

This policy permits protection of a small room or area with up to 6 sprinklers supplied from an adjacent available domestic water supply. In addition, a small system using dedicated piping can be used to protect multiple rooms or areas. Uses in accordance with this policy are not required to be hydraulically designed, but a maximum of 6 domestic water sprinklers are permitted in any one room.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0007	Partial and Voluntary Fire Protection Systems		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

To provide for uniform application of MSFC (07) provisions relating to partial and voluntary fire protection system and equipment installation.

INTERPRETATION:

The City of Bloomington Fire Prevention Division encourages complete, code-compliant fire protection system installation whenever possible, even when not required by code. It is understood, however, that complete, code-compliant protection is not always physically or economically feasible.

- 1) A “voluntary” fire protection system may be defined as an active fire protection system being provided where none is otherwise required by code when a property owner deems the extra degree of protection to be of value, or, where the voluntary system is an approved substitute for other provisions of the Code. Such installations must follow the applicable standards in-so-far-as possible with the approval of the City of Bloomington Fire Prevention Division. The limitations of voluntary systems must be clearly considered and understood before installation and approval.

*Buildings or areas provided with voluntary systems not installed in conformance with the code shall be considered unprotected. When installed, voluntary systems shall **not** be used as a trade- off (alternate) for code compliance unless the voluntary system is in complete compliance with the applicable code or standard.*

- 2) A “partial” fire protection system may be defined as an active fire protection system installed to nationally recognized standards in a part of a building in order to satisfy the code requirements for that particular occupancy classification within the building shell. All other code requirements must be complied with. Partial fire protection systems must adhere to their respective installation standards for the occupancy being protected.

3) Installation and Licensing

Partial and voluntary fire protection system work must conform to requirements for licensing and permitting [MSFC Section 901.4.2]. This would include Minn. Stat. § 299M for sprinklers and Minn. Stat. § 326.2421 for alarm systems. Homeowners, however, are permitted by Minn. Stat. § 299M to install residential sprinklers in their own home without the use of a licensed contractor. The homeowner first must obtain approval from the City of Bloomington Fire Prevention Division prior to the commencement of work.

4) Partial and Voluntary sprinkler systems in buildings other than one and two family dwellings:

When partial (required) fire sprinkler systems are installed, the requirements of NFPA 13 (2002 edition) shall be used. It is the policy of the City of Bloomington Fire Prevention Division that voluntary sprinkler systems should be installed according to NFPA 13 (2002 edition) to the maximum extent possible. NFPA 13(2002 edition) Section 4.2.

5) Voluntary sprinkler systems in one and two family dwellings

It is the policy of the City of Bloomington Fire Prevention Division to permit the installation of systems that may provide protection beyond that required by the code. These types of systems should be installed according to NFPA 13D (2002 edition).

6) Voluntary systems other than sprinklers Examples of other voluntary systems could include:

- Smoke detectors to provide limited protection for times when a building is not occupied.
- Manual pull stations provided at constantly attended locations to permit fire department notification.
- Detectors located in the HVAC system for shutdown and closing of smoke dampers.
- Special suppression systems for protection of bank vaults or similar enclosures.
- Equipment usually installed for life safety, but now provided with the goal of property protection.
- Smoke removal systems: manual or automatic

The City of Bloomington Fire Prevention Division may permit the installation of systems that provide protection beyond that required by the code. These types of systems should be installed according to sound engineering practices and applicable nationally recognized standards to the maximum extent possible. Any equipment installed should be fully functional and must be tested, inspected and maintained as a required system would be.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0008	Wet Kitchen Hood Systems in the Remote Area		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The purpose of this policy is to clarify the fire sprinkler design parameters when a wet kitchen hood system falls within a hydraulically remote design area.

POLICY:

When kitchen hoods are located in a hydraulically remote area of a sprinkled building, the remote area must be expanded to include the required size (typically 1,500 sq. ft.) plus the additional flow and pressure required by the hood's extinguishing system.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0009	Water-based Kitchen Hood Fire Protection		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

To provide for uniform application of MSFC provisions relating to the use of automatic sprinklers for the protection of commercial cooking equipment as required by MSFC (07) Section 904.2.1.1.

**PROTECTION OF COOKING HOODS
WITH WATER BASED SYSTEMS**

Water based extinguishing systems used to protect commercial cooking equipment and the hood/exhaust systems in which they are installed shall comply with the following:

1. For pre-engineered fire protection ventilation systems, it is the responsibility of the manufacturer to establish baseline requirements for fire protection for its hood systems. It is the responsibility of the project engineer to ensure that the system is installed in accordance with its listing and manufacturer’s instructions. The sprinkler contractor or project engineer is responsible for the proper design and installation of the sprinkler protection for the exhaust duct, unless that portion of the protection is also part of the previously mentioned pre-engineered systems.
2. As a minimum, the sprinkler system must be designed to an Ordinary Hazard Group I classification. When the listing or installation documents indicate a flow rate higher than Ordinary Hazard Group I, it shall be provided. All sprinkler heads must be listed or approved for the purpose for which they are used. They must be installed in accordance with the manufacturer’s instructions and designed to an adequate water supply.
3. Minimum design criteria must be based on the flow from 10 heads or 50% of the heads located under the hood, whichever is greater, plus the head in the duct collar must be calculated to be flowing. Sprinkler heads in the ductwork, past the collar head, do not have to be calculated. If the hood ends up being in the hydraulically most remote area of a sprinklered building, the kitchen hood demand must be added to the sprinkler demand of the entire remote area.
4. Kitchen cooking equipment located in a sprinklered building would not be considered to be obstructions to floor protection, but rather treated the same as furnishings or appliances (e.g. refrigerator, chest-type freezer, etc).
5. In a sprinklered building, if the approved hood and plenum fire protection system covers all appliances and floor surfaces under the hood, such protection shall be considered to meet the requirements of NFPA 13 (2002 edition), Section 7-9. No additional sprinklers are

required under the hood to meet floor protection requirements. If, however, the cooking equipment is not protected with a fixed extinguishing system (e.g. no grease laden vapors produced) or the hood system does not extend to all appliances and floor surfaces beneath the hood, and the hood creates an obstruction to adjacent ceiling sprinklers, sprinklers from the ceiling system shall be extended through the hood to protect the floor area below the hood.

6. The City of Bloomington Fire Prevention Division will accept a hose bib with a hose to an open floor drain as an alarm test connection to meet the requirements of NFPA 13 (2002 edition.).
7. Sprinklers must be installed throughout the exhaust duct as specified in NFPA 13 (2002 edition), Section 7-9.
8. The exhaust fan must continue to operate on activation of the extinguishing system protecting kitchen cooking equipment.
9. Water-based systems for the protection of commercial cooking equipment shall be inspected at a minimum of every six months and after activation.

Note: The GEM ® Protectospray, Type EA-1, automatic spray nozzles for deep fat fryers are currently “de-listed”. The City of Bloomington Fire Prevention Division will approve their use over deep fat fryers if they are designed and installed in accordance with technical data sheet TD725. See NFPA 13, 3.2.1, 2002 Edition, definition of “Approved”.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0010	Kitchen Hood Fire Protection Systems		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

To provide for uniform interpretation and enforcement of the requirements for commercial kitchen hood fire-extinguishing systems as required by MSFC (07) Section 609.2 and 904.11.

POLICY:

SECTION 1 — KITCHEN HOOD SYSTEMS

Approved fire-extinguishing systems shall be installed for the protection of commercial-type food heat-processing equipment located inside structures that produce grease laden vapors. Operations that produce grease laden vapors include frying (deep-fat, range-top, or griddle frying), grilling, broasting, large rotisserie or pizza ovens (capable of cooking large quantities), and broiling. The following operations are not considered to produce grease laden vapors: baking, heating, warming, steaming, and microwaving.

In cases where the cooking operations take place rarely (once a month or less), the inspector is authorized to not require the installation of the extinguishing system if no obvious or distinct hazard exists with the cooking operation. An example of this would be a church kitchen where cooking is done on an irregular and infrequent basis.

When an extinguishing system is installed, a means of shutting off the fuel supply (either electricity or gas) to the cooking appliances is required. If the fuel supply is gas (natural or LP), a manual reset valve is required so that the gas supply is not restored to the appliance without a suitable pilot light. In the case of newly installed extinguishing systems, all electrical receptacles located under the hood are also required to be shut down upon activation of the extinguishing system. The requirements for shutdown of electrical receptacles upon activation shall only apply for systems installed on or after June 29, 1998.

SECTION 2 – UL 300 EXTINGUISHING SYSTEMS

The Bloomington Fire Prevention Division has received many questions on whether an existing non-UL 300 hood suppression system may remain in service. It is the Bloomington Fire Prevention Division Policy to allow these older systems to remain in service as long as they were installed, inspected, and maintained in accordance with their original listing and the manufacturer’s instructions. We base this decision on an Underwriter’s Laboratories (U/L) interpretation given in 1996 to the National Restaurant Association. U/L’s response stated:

“While we believe the requirements contained in UL 300 offer an enhanced level of safety for fire suppression equipment intended for the protection of restaurant cooking areas, extinguishing system hardware authorized to have a UL Listing Mark and manufactured prior to the effective date of November 21, 1994, continues to be UL Listed provided that it is installed, inspected, and maintained in accordance with the manufacturer’s instructions referenced on the name plate”.

SECTION 3 – OTHER REQUIREMENTS

On the contrary, all newly installed cooking suppression systems shall be tested in accordance with UL 300, listed and labeled for the intended application, and shall have the capability to flow water through the same nozzles upon discharge of the wet chemical.

These systems shall be installed by personnel who have been trained and certified by the manufacturer of the suppression system. Proof of employee certification shall accompany the permit application and suppression system plans.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0011	Hydrostatic Testing – Modifications in Existing Structures		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The purpose of this policy is to establish a Standardization of Plan Review for Automatic Fire Sprinkler Systems reviewed by the City of Bloomington Fire Prevention Division.

POLICY:

1. All piping and attached appurtenances subjected to system working pressure shall be hydrostatically tested at 200 psi and shall maintain that pressure without loss for 2 hours. *NFPA 13 (2002) 16.2.1.1*
2. Modifications affecting 20 or fewer sprinklers shall not require testing in excess of normal static pressure. *NFPA 13 (2002) 16.2.1.4*
3. Where addition or modification is made to an existing system affecting more than 20 sprinklers, the new portion shall be isolated and tested at not less than 200 psi for 2 hours. *NFPA 13 (2002) 16.2.1.5*
4. Modifications that cannot be isolated, such as relocated drops, shall not require testing in excess of system working pressure when approved by the Fire Marshal. *NFPA 13 (2002) 16.2.1.6*
5. Full floor remodels shall be isolated and hydrostatically testing at not less than 200 psi for 2 hours. *NFPA 13 (2002) 16.2.1.5*
6. Plans shall indicate the source of the water supply piping to the modified area. *NFPA 13 (2002) 14.1*



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0012	Fire Alarm System Requirements		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The purpose of this policy is to establish standardization for Fire Alarm System Requirements by the City of Bloomington Fire Prevention Division.

POLICY:

All required fire alarm systems shall be installed in accordance with Section 907 of the Minnesota State Fire Code, its Amendments, and referenced standards.

The City of Bloomington Fire Prevention Division requires a minimum of **three sets** of plans including, but not limited to, the following items: a Fire Alarm Input/Output Matrix, device type and location, field device wiring detail, fire alarm panel location(s) and type, battery calculations, and one complete set of material specifications.

Special fire alarm systems such as one for a High Rise Building may have additional requirements. Contact the Fire Marshal PRIOR to submitting any plans in these cases.

All plans will be reviewed, stamped, and two sets of plans will be returned to the contractor. The fire alarm contractor shall keep one set of reviewed plans on the job site and accessible to inspectors at all times.

The City of Bloomington Building Inspection Department may require an Electrical Permit. An electrical rough-in inspection is required prior to any fire inspection. Please contact a City of Bloomington Electrical Inspector prior to submitting a permit.

The fire alarm system shall be monitored off-site and/or sound a general evacuation signal within the building upon activation of a water-flow device or a manual pull station, and in certain situations, upon activation of a smoke or heat detector.

In a high-rise building, the alarm system shall be zoned to operate on selected floors (typically the floor of origin, 1 story above AND below the floor of origin).

The sprinkler flow and tamper functions that are required to be monitored off-site, shall transmit a signal to a central station upon activation.

Detectors in ventilation systems and equipment (air handler shut-downs, etc.) shall be on a supervisory signal, not an alarm signal, as they create a large number of false alarms. The air handlers should shut-down upon activation of the smoke detector but no general fire alarm evacuation notification should occur.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0013	Fire Protection System Testing, Inspection, and Maintenance		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The purpose of this policy is to establish information on the requirements for System Testing, Inspection, and Maintenance of Fire Protection Systems.

SECTION 1 – INTRODUCTION

This fire safety information sheet is based upon the 2007 Minnesota State Fire Code (MSFC) and the 2007 Minnesota State Building Code (MSBC). The requirements outlined in this information sheet apply only to the system testing, inspection and maintenance of sprinkler systems, alarm systems, commercial cooking systems, portable fire extinguishers and other fire protection equipment.

The purpose of this information sheet is to provide uniform application of MSFC (07) provisions relating to suppression detection and smoke removal system testing, inspection and maintenance.

This information sheet provides an overview of the major code requirements that apply for the system testing, inspection and maintenance of fire protection systems and does not attempt to cover every situation. References to the applicable code sections are found in brackets, [].

SECTION 2 – SYSTEM TESTING, INSPECTION AND MAINTENANCE

Periodic inspection and testing is required for fire sprinkler systems, fire hydrant systems, standpipe systems, fire alarm systems, portable fire extinguishers, smoke and heat ventilators, smoke removal systems and other fire protection appliances [MSFC (07) Section 901.6.1, as amended].

TABLE 901.6.1	
FIRE PROTECTION SYSTEM TESTING AND INSPECTION MAINTENANCE	
SYSTEM	STANDARD
Portable Fire-Extinguishers	NFPA 10
Carbon Dioxide Fire-Extinguishing Systems	NFPA 12
Halon 1301 Fire-Extinguishing Systems	NFPA 12A
Dry-Chemical Extinguishing Systems	NFPA 17
Wet-Chemical Extinguishing Systems	NFPA 17A
Water-Based Fire Protection Systems	NFPA 25
Fire Alarm Systems	NFPA 72
Water-Mist Systems	NFPA 750
Clean-Agent Extinguishing Systems	NFPA 2001

Reports of inspection, testing and maintenance shall be maintained on premises for review [MSFC (07) Section 901.6.2].

Suppression, detection and smoke removal systems shall be properly serviced and returned to full operating condition after activation.

Detailed inspection and testing documentation shall be maintained on site and available for review. Records shall be retained until the next test and kept at the premises for at least three years thereafter [MSFC (07) Section 901.6.2].

SECTION 3 – Fire Sprinkler Systems and Equipment

3.1 Frequency of Inspection

Automatic fire protection systems shall be inspected and tested annually as required by MSFC (07) Section 901.6.1, as amended.

3.2 How the Inspection is to be conducted

The annual inspection and testing of sprinkler systems shall follow, at a minimum, Chapter 5 of NFPA 25 (02). Procedures with a frequency less than yearly shall also be completed during the annual inspection and testing. The owner is responsible for this annual inspection and test of the sprinkler system, which shall be completed by a licensed sprinkler contractor employing licensed journeymen sprinkler fitters [MSFC (07) Section 901.6.1 and Minn. Rules § 7512.2800].

SECTION 4 – DETECTION AND ALARM SYSTEMS

4.1 Frequency of Inspection

It is the policy of the Bloomington Fire Prevention Division that detection and alarm systems shall be tested at least annually [MSFC (07) Section 901.6.1]. Fully addressable/intelligent fire alarm systems still require testing and inspection on an annual basis since there are maintenance items that are required that cannot be monitored by the alarm system (visual inspection, obstructions near detectors, cleaning of detectors, etc.).

4.2 How the Inspection is to be conducted

The annual inspection and testing of alarm systems shall follow, at a minimum, Chapter 10 of NFPA 72 (02). Procedures with a frequency less than yearly shall also be completed during the annual inspection and testing. The owner shall provide for proper testing and maintenance of the system.

Individuals performing testing and maintenance shall be qualified and knowledgeable in the equipment operation and test procedures of installed systems. Examples of qualified personnel include the following [NFPA 72 (02), Chapter 10]:

- a. Factory trained and certified,
- b. National Institute for Certification in Engineering Technologies (NICET) certified in fire alarm systems,
- c. International Municipal Signaling Association Fire Alarm certified
- d. Trained and qualified personnel employed by an organization listed by a national testing laboratory for the servicing of fire alarm systems.

4.2.1 Power limited (low voltage) systems.

Testing and maintenance shall be performed by employees of a licensed alarm and communications contractor [Minn. Stat. § 326.2421, subd.3] or licensed electrical contractor [Minn. Stat. § 326.242, subd. 6]. The employees of a licensed alarm and communications contractor or licensed electrical contractor need not be individually licensed [Minn. Stat. § 326.242, subd. 12b].

4.2.2 Non-power limited (high voltage) systems.

Testing and maintenance shall be performed by employees of a licensed electrical contractor. Employees of a licensed electrical contractor working on non-power limited fire alarm systems must also be licensed electricians [Minn. Stat. § 326.242, subd. 6].

4.3 Use of canned smoke products

Aerosol smoke products can be used to test smoke detectors, but they must be listed and used only as directed. The use of non-listed products or improper use of listed products may affect the smoke alarm's sensitivity. This is a "go, no go" type of test that only ensures smoke entry into the chamber and alarm response. It does not test the detector's sensitivity since it is not a calibrated test method.

SECTION 5 — SUPPRESSION SYSTEMS FOR COMMERCIAL COOKING EQUIPMENT

5.1 Commercial Cooking Systems

Hoods, grease-removal devices, fans, ducts and other appurtenances shall be cleaned at intervals necessary to prevent the accumulation of grease. Chemical extinguishing systems are required to be inspected at least every six months by qualified individuals and after activation [MSFC (07) Section 904.11.6.4]. If these systems are connected to a potable water supply (one or two agent systems) the work does not need to be done by a licensed sprinkler contractor but by a factory-trained and certified technician. For seasonal installations, inspections shall be conducted at least yearly. Water-based kitchen hood systems need only be inspected annually by a licensed sprinkler contractor.

SECTION 6 — PORTABLE FIRE EXTINGUISHERS

6.1 Portable Fire Extinguisher Servicing

Portable fire extinguishers shall be in accordance with MSFC (07) Section 906 and National Fire Protection Association (NFPA) Standard 10 (02). A "quick check" for all fire extinguishers is necessary on a monthly basis. Minimal knowledge is necessary to perform this inspection [NFPA 10 (02), Chapter 6]. Extinguishers shall receive maintenance at least

yearly. Maintenance, servicing and recharging shall be performed by trained persons having available the appropriate servicing manuals, the proper type of tools, recharge materials, lubricants, and manufacturer's recommended replacement parts [NFPA 10 (02) Section 6.1.4].

SECTION 7 — OTHER FIRE PROTECTION EQUIPMENT

7.1 Standpipe systems

Standpipe systems shall be inspected and tested at least every five years. Inspection and testing is to be conducted by either a licensed sprinkler contractor or a plumber licensed under Minn. Stat. § 326.40. Standpipe systems that are combined with automatic sprinkler systems shall be tested and inspected by a licensed sprinkler contractor.

7.2 Smoke control/removal systems

Routine maintenance and inspection of smoke control systems shall be conducted in accordance with the manufacturer's instructions. All equipment such as initiating devices, fans, dampers, controls, doors and windows shall be tested. A written schedule of testing shall be maintained at the premise.

7.3 Special suppression systems

Special suppression systems (halon, dry chemical, clean agent, etc) shall be inspected and tested at least annually [MSFC (07) Section 901.6.1, as amended]. Inspection and testing is to be conducted by qualified individuals. Foam type suppression systems shall be inspected and tested by licensed sprinkler contractors at least annually.

7.4 Emergency voice alarm-signaling systems

Emergency voice alarm-signaling systems shall follow the inspection and testing requirements for fire alarm systems, Section 3.

7.5 Fire pumps

Fire pumps shall be inspected and tested at least annually [NFPA 20 (03) Chapter 14]. The annual inspection and testing of fire pumps shall follow, at a minimum, Chapter 14 of NFPA 20 (03). Procedures with a frequency less than yearly shall also be completed during the annual inspection and testing. To insure the highest reliability possible, at least monthly pump operation under no-flow conditions will be enforced [MSFC (07) Section 901.6.1]. The owner is responsible for this annual inspection and test, which shall be completed by a licensed sprinkler contractor employing licensed journeymen sprinkler fitters.

7.6 Emergency generators

Emergency generators shall be inspected in accordance with NFPA 110 (02) and shall be exercised under load at least monthly [NFPA 110 (02) Section 8.4.1]. More frequent inspection and testing may be required by the manufacturer or other regulatory agency (health care, for example).

7.7 Emergency Lighting

Emergency lighting and means of egress illumination, including battery pack systems, shall be tested on a regular basis to ensure proper operation and repaired or replaced when necessary [MSFC (07) Section 1027.5].



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0014	Spray Booth Fire Protection Systems		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The installation and maintenance of all spray finishing equipment and booths shall comply with the Minnesota State Fire Code (MSFC).

POLICY:

Prior to issuance of any permit, the applicant must provide three sets of plans that include the scale and size of spray booth(s) or spraying area, location within room area, or place of building. The submittal must include the manufacturer's specifications and the responsible party for the installation or construction of the spray booth or area.

Plans and manufacturer's specifications must be submitted for review and issuance of a mechanical permit and electrical permit. Extinguishing system plans and hydraulic calculations must be submitted for review and issuance of a fire extinguishing system permit.

Size and Location:

- The aggregate area of spray booths shall not exceed 10% of the floor area or basic allowable area allowed for group H-2 occupancy without area increases. Individual booths shall not exceed the lesser of the aggregate size or 1500 square feet

Exception: One individual booth not exceeding 500 square feet.

- Booths shall be constructed of noncombustible materials. Aluminum shall not be used. The interior surfaces of spray booths shall be smooth and shall be constructed so as to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning, and shall be designed to confine residues within the booth.
- A three-foot clear space is required around all spray booths unless booth can be adequately maintained and it is located against non-combustible exterior wall or 1 hour partition.

Ventilation/Mechanical

- Air velocity at open face of booth or booth cross section shall not be less than 100 lineal feet/minute and shall comply with MSFC 1504.7.3

- Termination point of exhaust ducts must comply with MSFC 1504.7.6.
- Exhaust ventilation systems shall be interconnected to the spraying equipment such that spraying cannot take place unless the ventilation system is operating.
- Make up air shall be provided and so located as to prevent re-circulating of exhaust air as required by the Fire Code and Mechanical Code.
- Exhaust system intake air ducts shall be provided within six inches of the floor in the spray booth to assist with the ventilation of flammable vapors.

Electrical

- Flammable and combustible liquid spraying areas are classified as Class I, Division 1 or Class II, Division 1 hazardous locations by the electrical code. All wiring and equipment must be of an explosion proof type and be approved for hazardous locations.
- Electrical wiring and equipment outside of but within 10 feet of the floor and 20 feet horizontally of the limited spraying space shall be designed for Class I, Division 2 or Class II, Division 2, whichever is applicable.
- Metal parts of spray booth, exhaust ducts and piping systems shall be electrically grounded in accordance with the National Electrical Code.
- Fixed lighting in compliance with MSFC Section 1504.6.2 must be used for illuminating the booth.

Automatic Fire Extinguishing System

- Automatic fire extinguishing system sprinklers or nozzles are required in the spray area, immediately behind the filters, and throughout the duct(s) so as to provide 100 percent coverage. The sprinkler contractor must submit plans and hydraulic calculations for review and issuance of a fire permit.
- A separate indicating type control valve shall be provided isolating the spray booth sprinkler system from the rest of building's sprinkler system. The valve shall be equipped with a tamper switch and wired to the supervisory alarm side of the fire alarm system.
- Sprinkler heads shall be protected from spray residue by a lightweight plastic (.003 inch) or paper bag.
- Activation of a sprinkler head within the spray booth shall activate an interior audible/visual fire alarm device. The Fire Inspector must approve device location.

Portable Fire Extinguisher

- One 4A-40BC rated fire extinguisher must be located within 30 feet of each spray booth.

Elimination of Ignition Devices and Accumulation of Combustibles

- Open flame or spark producing devices shall not be located within 20' of a booth opening.
- NO SMOKING and NO WELDING signs must be conspicuously posted in the area where spray booths are located.
- Excessive residue accumulations on booth, ducts, and exhaust fan blades must be promptly removed.
- Listed disposal cans with lids must be provided for disposal of soiled shop rags.

Flammable and Combustible Liquids

- Flammable and combustible liquid container storage exceeding ten gallons must be located within a U.L. listed flammable liquids cabinet.
- Material safety data sheets (MSDS) and a Hazardous materials inventory statement (HMIS) for all flammable and combustible liquids must be kept on site.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0016	Outdoor Fireworks Display		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: July 1, 2009	Revised Date:

PURPOSE:

The purpose of this policy is to establish information on the requirements for outdoor fireworks display.

POLICY:

Minnesota State Law requires that fireworks displays be conducted under the direct supervision of a Pyrotechnic Operator certified by the State of Minnesota Fire Marshal.

- Applicant shall provide the name(s) of Supervising Operator(s) and current Certificate number(s).

The applicant shall provide a scaled, detailed Site Plan at which the display will be held. This diagram (drawn to scale or with dimensions included) must include and not limited to:

- Discharge Site Location (location(s) where fireworks will be launched)
- Display Site Location (includes Drop-zone/Fallout zone)
- Location of buildings, roads, waterways
- North Arrow
- Fireworks storage location – if applicable
- Spectator Locations

The application must be completed and returned at least 15 days prior to the date of display. A Plan Review fee of \$109.00 must accompany the Temporary Fire Marshal Permit and Fee.

The applicant shall provide a proof of bond or certificate of insurance. Minnesota State Law requires a \$1.5 million minimum amount beginning July 1, 2009.

The applicant, at the time of application, shall provide names and ages of all assistants that will be participating in the display.

The applicant and their representatives, shall comply with all provisions of MN Statute 624.20 through 624.25, MN State Fire Code, National Fire Protection Association Standard 1123 (2006 edition), applicable federal law(s) and the requirements of the City of Bloomington City Code, and will ensure that the fireworks are discharged in a manner that will not endanger persons or property or constitute a nuisance.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0017	Standpipes in Parking Ramps		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: July 1, 2009	Revised Date:

PURPOSE:

The purpose of this policy is to establish information on the requirements for Standpipes in Parking Ramps.

POLICY:

The installation and acceptance testing, regular annual maintenance inspection and testing of Standpipes in Parking Ramps, shall comply with all provisions of the MN State Fire Code, National Fire Protection Association Standard 14, National Fire Protection Association Standard 25, and the requirements of the City of Bloomington Fire Marshal.

Standpipes shall be located in parking ramp stairwells and as approved by the City of Bloomington Fire Marshal. The maximum coverage area for any Standpipe is 130 feet (hose length of 100 feet and 30 feet hose stream).

The maximum distance between two Standpipes is 260 feet. However, this distance may have to be reduced when considering actual fire hose lays and fire stream patterns.

If additional Standpipes are required to be installed within the parking ramp structure, locations of additional Standpipes shall be determined by the City of Bloomington Fire Marshal.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0018	Tents and Canopies		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: July 1, 2009	Revised Date:

PURPOSE:

The purpose of this section is to establish standards for tents and canopies for special events. The use of tents and canopies for the purpose of housing motor or recreational vehicles or storage is prohibited.

POLICY:

Tents and canopies are permitted in most zoning districts. It is the responsibility of the Permit Applicant to consult with the Planning Division if a Tent or Canopy is permissible in the zoning district the tent/canopy will be erected in, prior to submitting a Tent/Canopy Permit.

Permits are required for tents over 200 square feet and for canopies over 400 square feet. When an interim use permit is issued for an event that includes a tent or canopy, Fire Marshal review of the proposed tent or canopy is required but a separate tent or canopy permit is not required.

Tents and canopies must conform within the provisions of the City of Bloomington Fire Prevention Code, Chapter 6, Bloomington City Code, Section 19.63.06, and the Minnesota State Fire Code.

Tents and canopies must be set back at least 10 feet from any property line. The Issuing Authority may require tents and canopies to be set back an additional distance from property lines when adjacent to an incompatible land use.

Unless entirely surrounded by buildings, tents and canopies shall not be erected for more than twenty five days per year per site. The City Council may extend the allowed time period after holding a public hearing and finding that the proposed tent or canopy will not be injurious to the neighborhood or otherwise detrimental to the public welfare.

Adequate parking and traffic circulation must be preserved and the health, safety, and welfare of the community must not be adversely impacted by the proposed tent or canopy.

Conditions of approval may be attached to a tent or canopy permit by the Issuing Authority or the City Council to ensure adequate parking and traffic circulation, to minimize impacts on adjacent property, to ensure adequate setbacks from property lines, and to otherwise protect the health, safety, and welfare of the community.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0019	Underground Storage Tank Removal		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: August 1, 2009	Revised Date:

PURPOSE:

The purpose of this policy is to establish information on the requirements for the removal of Underground Storage Tanks (UST).

POLICY:

Underground tanks containing flammable or combustible liquids that have been removed from service for one year are considered abandoned. For the purposes of this policy, commercial and residential heating oil tanks are included. All underground tanks that are abandoned must be removed from the ground (Minnesota State Fire Code, Section 3404.2.13).

A completed City of Bloomington Tank and Pipe Installation/Removal Permit is required. Additional requirements can be found within the Bloomington City Code, Section 14.224. These requirements include:

1. Signed City of Bloomington License application and fee.
2. Copy of State License
3. A \$10,000 bond in favor of the City of Bloomington. Bond must state for Flammable Tank Removal. Bonds should be continuous until cancelled.

Underground tanks that have been out of service for a period of 1 year or more are to be removed from the ground. Removal of underground tanks shall be in accordance with the Minnesota State Fire Code:

1. Flammable and combustible liquids shall be removed from the tank and connected piping.
2. Piping at tank openings which is not used shall be disconnected.
3. Piping shall be removed from the ground.
Exception: Piping is allowed to be abandoned in place where to fire code official determines that removal is not practical. Abandoned piping shall be capped and safeguarded as required by the code official.
4. Tank openings shall be capped or plugged, leaving a 1/8" to 1/4" diameter opening for pressure equalization.
5. Tanks shall be purged of vapor and made inert prior to removal.
6. All exterior above-grade fill and vent piping shall be permanently removed.
Exception: Piping associated with bulk plants, terminal facilities and refineries.

Tanks shall be disposed of in accordance with federal, state and local regulations.

If approved by the City of Bloomington Fire Marshal, an Underground Storage Tank may be abandoned in place; provided the removal of the tank will cause irreversible damage to an adjacent structure such as a foundation or concrete floor. A formal request for approval to abandon an underground storage tank must be submitted to the City of Bloomington Fire Marshal. A tank may not be abandoned in place without the approval of the City of Bloomington Fire Marshal.

When approved by the City of Bloomington Fire Marshal, tanks abandoned in place shall be safeguarded in accordance to the Minnesota State Fire Code, Section 3404.2.13.1.4:

1. Flammable or combustible liquids shall be removed from the tank and connected piping.
2. The suction, inlet, gauge, vapor return and vapor lines shall be disconnected.
3. The tank shall be filled completely with an approved inert material. Acceptable materials include cement slurry and polyurethane foam (sand or water are not satisfactory materials).
Exception: Residential heating oil tanks of 1,100 gallon capacity or less need not be filled with an inert material provided that the fill line is permanently capped or plugged below grade to prevent refilling of the tank.
4. Remaining underground piping shall be capped or plugged.
5. A record of tank size, location and date of abandonment shall be retained. In addition, the property owner is also responsible for notifying the Minnesota Pollution Control Agency (MPCA) and local officials (when required) as to the presence of the abandoned tank.



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0020	Aboveground Storage Tank Removal		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: August 1, 2009	Revised Date:

PURPOSE:

The purpose of this policy is to establish information on the requirements for the removal of Aboveground Storage Tanks (AST).

POLICY:

Aboveground tanks temporarily out of service (less than 90 days): are required to have all connecting lines isolated from the tank and be secured against tampering (MSFC (07) Section 3404.2.13.2.1).

Aboveground tanks out of service for 90 days but less than 1 year: shall be safeguarded in accordance with MSFC (07) Section 3404.2.13.1.2 or removed in accordance with MSFC (07) Section 3404.2.14. The requirements include:

1. Flammable or combustible liquids shall be removed from the tank.
2. All piping, including fill line, gauge opening, vapor return and pump connection, shall be capped or plugged and secured from tampering.
3. Vent lines shall remain open and maintained in accordance with MSFC (07) Sections 3404.2.7.3 and 3404.2.7.4.

Exceptions:

1. Tanks and containers connected to oil burners that are not in use during warm seasons of the year or are used as a backup heating system to gas.
2. In-place, active fire protection (foam) system lines.

Aboveground tanks out of service for 1 year or more: shall be removed in accordance with MSFC (07) Section 3404.2.14. The requirements include:

1. Flammable or combustible liquids shall be removed from the tank and connecting piping.
2. Piping at the tank openings that is not to be used further shall be disconnected.
3. Piping shall be removed from the ground unless the City of Bloomington Fire Marshal determines that the removal is not practical. Abandoned piping shall be capped and safeguarded as required by the City of Bloomington Fire Marshal.
4. Tank openings shall be capped or plugged, leaving a 0.125-inch to 1/4" diameter opening for pressure equalization.
5. Tanks shall be purged of vapor and made inert prior to removal.
6. All exterior above-grade fill and vent piping shall be permanently removed.
Exception: Piping associated with bulk plants, terminal facilities and refineries.

Abandonment is not an option for aboveground storage tanks that are out of service for 1 year or more.

Tanks shall be disposed of in accordance with federal, state and local regulations.

A completed City of Bloomington Tank and Pipe Installation/Removal Permit is required. Additional requirements can be found within the Bloomington City Code, Section 14.224.