UPPER DARBY TOWNSHIP FIRE DEPARTMENT

FIRE MARSHAL'S OFFICE

***Only this document will be accepted by the Upper Darby Township Fire Prevention Division for annual testing purposes as required by the Pennsylvania Uniform Fire Safety Code and applicable N.F.P.A. Standards*

ANNUAL SPRINKLER INSPECTION

Contractor's Material and Test Certificate for Aboveground Piping

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

Property name	Date
Property address	

Plans

Accepted by approving authorities (names)

Address

Installation conforms to accepted plans ☐ Yes ☐ No

Equipment used is approved ☐ Yes ☐ No

If no, explain deviations

Instructions

Has person in charge of fire equipment been instructed as to location of control valves and care and maintenance of this new equipment? ☐ Yes ☐ No

If no, explain?

Have copies of the following been left on the premises? ☐ Yes ☐ No

1. System components instructions ☐ Yes ☐ No
2. Care and maintenance instructions ☐ Yes ☐ No
3. NFPA 25 ☐ Yes ☐ No

Location of system

Supplies buildings

Sprinklers

Make	Model	Year of manufacture	Orifice size	Quantity	Temperature rating

Pipe and fittings

Type of pipe _____

Type of fittings _____

Alarm valve or flow indicator

Alarm device			Maximum time to operate through test connection	
Type	Make	Model	Minutes	Seconds

Dry pipe operating test

Dry valve			Q. O. D.		
Make	Model	Serial no.	Make	Model	Serial no.

	Time to trip through test connection[1]		Water pressure	Air pressure	Trip point air pressure	Time water reached test outlet[1]		Alarm operated properly	
	Minutes	Seconds	psi	psi	psi	Minutes	Seconds	Yes	No
Without Q.O.D.									
With Q.O.D.									

If no, explain

[1] Measured from time inspector's test connection is opened

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Hydraulic data nameplate	Nameplate provided ☐ Yes ☐ No	If no, explain	
Remarks	Date left in service with all control valves open		
Signatures	Name of sprinkler contractor		
	Tests witnessed by		
	For property owner (signed)	Title	Date
	For sprinkler contractor (signed)	Title	Date
Additional explanations and notes			

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Hydrostatic test	All new underground piping hydrostatically tested at _____ psi for _____ hours		Joints covered ☐ Yes ☐ No
Leakage test	Total amount of leakage measured _____ gallons _____ hours		
	Allowable leakage _____ gallons _____ hours		
Hydrants	Number installed	Type and make	All operate satisfactorily ☐ Yes ☐ No
Control valves	Water control valves left wide open If no, state reason		☐ Yes ☐ No
	Hose threads of fire department connections and hydrants interchangeable with those of fire department answering alarm		☐ Yes ☐ No
	Date left in service		
Remarks			
	Name of installing contractor		
Signatures	**Tests witnessed by**		
	For property owner (signed)	Title	Date
	For installing contractor (signed)	Title	Date
Additional explanation and notes			

10-2 Acceptance Requirements.

10-2.1* Flushing of Piping. Fire service mains (from the water supply to the system riser) and lead-in connections to system risers shall be completely flushed before connection is made to sprinkler piping. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning. The minimum rate of flow shall be not less than one of the following:

(1) The hydraulically calculated water demand rate of the system including any hose requirements
(2) That flow necessary to provide a velocity of 10 ft/sec (3.1 m/sec) *[see Table 10-2.1(2)]*
(3) The maximum flow rate available to the system under fire conditions

10-2.2 Hydrostatic Tests.

10-2.2.1* All piping and attached appurtenances subjected to system working pressure shall be hydrostatically tested at 200 psi (13.8 bar) and shall maintain that pressure without loss for 2 hours. Loss shall be determined by a drop in gauge pressure or visual leakage. The test pressure shall be read from a gauge located at the low elevation point of the system or portion being tested.

Exception No. 1: Portions of systems normally subjected to system working pressures in excess of 150 psi (10.4 bar) shall be tested as described in 10-2.2.1 at a pressure of 50 psi (3.5 bar) in excess of system working pressure.

Exception No. 2: Where cold weather will not permit testing with water, an interim air test shall be permitted to be conducted as described in 10-2.3.

Exception No. 3: Modifications affecting 20 or fewer sprinklers shall not require testing in excess of system working pressure.

Exception No. 4: 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 (13.8 bar) for 2 hours.

Exception No. 5: Modifications that cannot be isolated, such as relocated drops, shall not require testing in excess of system working pressure.

Exception No. 6: In buried pipe, leakage shall be permitted as follows:

(a) The amount of leakage at the joints shall not exceed 2 qt/hr (1.89 L/hr) per 100 gaskets or joints, irrespective of pipe diameter.*

(b) The amount of allowable leakage specified in item (a) of this exception shall be permitted to be increased by 1 fluid ounce (30 ml) per inch valve diameter per hour for each metal seated valve isolating the test section.*

(c) If dry barrel hydrants are tested with the main valve open so the hydrants are under pressure, an additional 5 oz/min (150 ml/min) of leakage shall be permitted for each hydrant.

(d) The amount of leakage in buried piping shall be measured at the specified test pressure by pumping from a calibrated container.

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ANNUAL SPRINKLER INSPECTION

Contractor's Material and Test Certificate for Underground Piping

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners, and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

Property name		Date
Property address		
Plans	Accepted by approving authorities (names)	
	Address	
	Installation conforms to accepted plans	☐ Yes ☐ No
	Equipment used is approved If no, state deviations	☐ Yes ☐ No
Instructions	Has person in charge of fire equipment been instructed as to location of control valves and care and maintenance of this new equipment? If no, explain	☐ Yes ☐ No
	Have copies of appropriate instructions and care and maintenance charts been left on premises? If no, explain	☐ Yes ☐ No
Location	Supplies buildings	
Underground pipes and joints	Pipe types and class	Type joint
	Pipe conforms to _____ standard Fittings conforms to _____ standard If no, explain	☐ Yes ☐ No ☐ Yes ☐ No
	Joints needed anchorage clamped, strapped, or blocked in accordance with _____ standard If no, explain	☐ Yes ☐ No
Test description	Flushing: Flow the required rate until water is clear as indicated by no collection of foreign material in burlap bags at outlets such as hydrants and blow-offs. Flush at flows not less than 390 gpm (1476 L/min) for 4-in. pipe, 880 gpm (3331 L/min) for 6-in. pipe, 1560 gpm (5905 L/min) for 8-in. pipe, 2440 gpm (9235 L/min) for 10-in. pipe, and 3520 gpm (13,323 L/min) for 12-in. pipe. When supply cannot produce stipulated flow rates, obtain maximum available. Hydrostatic: Hydrostatic tests shall be made at not less than 200 psi (13.8 bar) for 2 hours or 50 psi (3.4 bar) above static pressure in excess of 150 psi (10.3 bar) for 2 hours. Leakage: New pipe laid with rubber gasketed joints shall, if the workmanship is satisfactory, have little or no leakage at the joints. The amount of leakage at the joints shall not exceed 2 quarts per hour (1.89 L/hr) per 100 joints irrespective of pipe diameter. The leakage shall be distributed over all joints. If such leakage occurs at a few joints, the installation shall be considered unsatisfactory and necessary repairs made. The amount of allowable leakage specified above can be increased by 1 fluid ounce per inch valve diameter per hr. (30 mL/25 mm/hr) for each metal seated valve isolating the test section. If dry barrel hydrants are tested with the main valve open so the hydrants are under pressure, an additional 5 ounces per minute (150 mL/min) leakage is permitted for each hydrant.	
Flushing tests	New underground piping flushed according to _____ standard by (company) If no, explain	☐ Yes ☐ No
	How flushing flow was obtained ☐ Public water ☐ Tank or reservoir ☐ Fire pump	Through what type opening ☐ Hydrant butt ☐ Open pipe
	Lead-ins flushed according to _____ standard by (company) If no, explain	☐ Yes ☐ No
	How flushing flow was obtained ☐ Public water ☐ Tank or reservoir ☐ Fire pump	Through what type opening ☐ Y connection to flange and spigot ☐ Open pipe

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ANNUAL SPRINKLER INSPECTION

Deluge and preaction valves

Operation ☐ Pneumatic ☐ Electric ☐ Hydraulics

Piping supervised ☐ Yes ☐ No | Detecting media supervised ☐ Yes ☐ No

Does valve operate from the manual trip, remote, or both control stations? ☐ Yes ☐ No

Is there an accessible facility in each circuit for testing? ☐ Yes ☐ No | If no, explain

Make	Model	Does each circuit operate supervision loss alarm?		Does each circuit operate valve release?		Maximum time to operate release	
		Yes	No	Yes	No	Minutes	Seconds

Pressure reducing valve test

Location and floor	Make and model	Setting	Static pressure		Residual pressure (flowing)		Flow rate
			Inlet (psi)	Outlet (psi)	Inlet (psi)	Outlet (psi)	Flow (gpm)

Test description

Hydrostatic: Hydrostatic tests shall be made at not less than 200 psi (13.6 bar) for 2 hours or 50 psi (3.4 bar) above static pressure in excess of 150 psi (10.2 bar) for 2 hours. Differential dry-pipe valve clappers shall be left open during the test to prevent damage. All aboveground piping leakage shall be stopped.

Pneumatic: Establish 40 psi (2.7 bar) air pressure and measure drop, which shall not exceed 1½ psi (0.1 bar) in 24 hours. Test pressure tanks at normal water level and air pressure and measure air pressure drop, which shall not exceed 1½ psi (0.1 bar) in 24 hours.

Tests

All piping hydrostatically tested at _____ psi (___ bar) for ____ hours ☐ Yes ☐ No
Dry piping pneumatically tested ☐ Yes ☐ No
Equipment operates properly ☐ Yes ☐ No | If no, state reason

Do you certify as the sprinkler contractor that additives and corrosive chemicals, sodium silicate or derivatives of sodium silicate, brine, or other corrosive chemicals were not used for testing systems or stopping leaks? ☐ Yes ☐ No

Drain test	Reading of gauge located near water supply test connection: _____ psi (____ bar)	Residual pressure with valve in test connection open wide: _____ psi (____ bar)

Underground mains and lead in connections to system risers flushed before connection made to sprinkler piping
Verified by copy of the U Form No. 85B ☐ Yes ☐ No
flushed by installer of underground sprinkler piping ☐ Yes ☐ No | Other Explain

If powder-driven fasteners are used in concrete, has representative sample testing be satisfactorily completed? ☐ Yes ☐ No | If no, explain

Blank testing gaskets

Number used	Locations	Number removed

Welding

Welding piping ☐ Yes ☐ No

If yes. . .

Do you certify as the sprinkler contractor that welding procedures comply with the requirements of at least AWS B2.1? ☐ Yes ☐ No

Do you certify that the welding was performed by welders qualified in compliance with the requirements of at least AWS B2.1? ☐ Yes ☐ No

Do you certify that the welding was carried out in compliance with a documented quality control procedure to ensure that all discs are retrieved, that openings in piping are smooth, that slag and other welding residue are removed, and that the internal diameters of piping are not penetrated? ☐ Yes ☐ No

Cutouts (discs)

Do you certify that you have a control feature to ensure that all cutouts (discs) are retrieved? ☐ Yes ☐ No