



DIVISION OF
FIRE AND LIFE SAFETY

CITY OF SCOTTSDALE
SCOTTSDALE FIRE DEPARTMENT

**Interpretations
and
Applications
of
NFPA 13R (2022 edition)**

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TABLE OF CONTENTS

Chapter 5	SYSTEM COMPONENTS
5.2.14.5.1	Backflow Preventers
5.3	Underground Pipe
Chapter 6	INSTALLATION
6.6	Location of Sprinklers
6.6.1	Location of Sprinklers
6.6.2	Location of Sprinklers
6.6.5	Location of Sprinklers
6.6.6	Location of Sprinklers
6.7.2.6	Protection of Piping
6.16.4	Alarms
6.16.5	Alarms
Chapter 8	PLANS AND CALCULATIONS
8.1.1.1	Submittal Requirements
8.1.7	Working Plans
Chapter 9	WATER SUPPLIES
9.3.1	Water Supply
9.6.2	Water Supply Information
9.6.2.2	Safety Factor
Chapter 10	SYSTEM ACCEPTANCE
10.2.2.3	Rough Inspection
10.2.2.4	Final Inspection
10.2.2.5	Reinspection Fees and Calculations

INTERPRETATIONS & APPLICATIONS
OF THE 2022 MODIFIED NFPA 13R

The following are additions and amendments to NFPA 13R



CHAPTER 5 – SYSTEM COMPONENTS

5.2.14.5.1 BACKFLOW PREVENTERS *amended*

Fire service lines require an approved backflow prevention device on the vertical riser. Where fire service lines supply multiple buildings, a single backflow preventer located at the property line may be installed. Prior approval from the Fire Code Official and the Planning Department is required. Backflow prevention devices shall be installed in accordance with City of Scottsdale Standard Details 2351 through 2369. See [2020-Details-Combined.pdf \(scottsdaleaz.gov\)](https://www.scottsdaleaz.gov/2020-Details-Combined.pdf)

5.3 UNDERGROUND PIPE *amended*

All fire service lines shall be and installed in accordance with NFPA 13 and the City of Scottsdale Design Standards and Policy Manual. See [DSPM+2018.pdf \(scottsdaleaz.gov\)](https://www.scottsdaleaz.gov/DSPM+2018.pdf)

CHAPTER 6 – INSTALLATION

6.6 LOCATION OF SPRINKLERS *amended*

6.6.1 Sprinklers shall be installed in all areas except where omission is permitted by 6.6.2 through 6.6.7 as amended.

6.6.2 Sprinklers shall be required in all bathrooms.

6.6.5 Sprinklers shall be required in all the following features that are open and attached:

- (1) Porches, balconies, lanais, verandas, awnings, or similar areas
- (2) Trellis overhangs
- (3) Carports
- (4) Porte cocheres
- (5) Stairs
- (6) Corridors that are not part of a means of egress
- (7) Other similar features

6.6.6 Sprinklers shall be required in attics. Attics shall be hydraulically calculated utilizing a light hazard design area in accordance with NFPA 13.

Sprinklers shall not be required in penthouse equipment rooms, elevator machine rooms, concealed spaces dedicated exclusively to and containing only dwelling unit ventilation equipment, crawl spaces, floor/ceiling spaces, vertical chases, elevator shafts where the elevator installation complies with ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, and other concealed spaces that are not intended for living purposes or storage and do not contain fuel-fired equipment.

6.7.2.6 PROTECTION OF PIPING *added*

Copper or steel sprig-ups are permitted with CPVC piping in 13R installations. CPVC sprig-ups are not permitted unless installed with sprinklers specifically listed to protect CPVC piping in concealed space applications.

6.16.4 ALARMS *amended*

Where a building fire alarm or sprinkler monitoring system is provided, the building fire sprinkler system shall be required to be zoned per floor.

6.16.5 ALARMS *added*

The alarm unit shall be a red, listed, 10-inch DIA electric alarm bell. The bell shall be fully visible and recognizable from street or nearest point of fire department vehicle access.

CHAPTER 8 – PLANS AND CALCULATIONS

8.1.1.1 SUBMITTAL REQUIREMENTS *added*

Fire sprinkler plans submitted to the City shall comply with the following:

- (1) All plans, calculations, and data sheets shall be digital format only (PDF).
- (2) Hydraulic calculations shall include all information required by NFPA 13 - 28.4.
- (3) Include product data for all system components.
- (4) All submittals shall be signed and sealed with review and expiration date by a minimum level III NICET Certified Engineering Technician (CET) automatic sprinkler systems or an Arizona Registered Professional Engineer (PE).

Exception: Addition or alteration of five (5) or less fire sprinklers to existing approved fire sprinkler systems shall not require plan submittal. Fire inspection is required.

For digital plan submittals, see the City of Scottsdale website at:

<https://eservices.scottsdaleaz.gov/bldgresources/Plans>

8.1.7 WORKING PLANS *amended*

- (37) Hydraulic calculation data placard
- (38) Ceiling heights; ceiling height changes
- (39) Sloped ceilings exceeding 2:12. Indicate “no slope” if applicable
- (40) Beam sizes and soffit depths
- (41) Dimensioning of sprinklers as necessary for determining proper sprinkler spacing
- (42) Clearly identified calculated areas on plans and calculations
- (43) Inspector’s test location
- (44) Riser location
- (45) Riser detail
- (46) General notes as required
- (47) City of Scottsdale Flow Test Summary Form

CHAPTER 9 – Water Supplies

9.3.1 WATER SUPPLY *amended*

A dedicated water supply main for the fire sprinkler system shall be provided. The supply shall not be a common domestic/fire sprinkler main.

9.6.2 WATER SUPPLY INFORMATION *amended*

A fire hydrant flow test shall be used for the purposes of system design. The flow test shall be permitted and witnessed by the City of Scottsdale no more than 12 months prior to working plan submittal, unless otherwise approved by the Fire Code Official. Results shall be recorded on the Fire Hydrant Flow Test Summary Form.

See [City of Scottsdale - Fire Hydrant Flow Test Permit Application \(scottsdaleaz.gov\)](http://scottsdaleaz.gov/CityofScottsdale-FireHydrantFlowTestPermitApplication)

See [FlowTestFinal.pdf \(scottsdaleaz.gov\)](http://scottsdaleaz.gov/FlowTestFinal.pdf)

9.6.2.2 SAFETY FACTOR *added*

The available water supply used in hydraulic calculations shall maintain a 10% safety margin from the observed fire hydrant flow test results. The adjusted flow test curve shall maintain the same slope. *The hydraulically calculated system demand shall not exceed the adjusted flow test results, and in no case shall the required demand exceed 72 psi at the source.*

CHAPTER 10 – SYSTEM ACCEPTANCE

10.2.2.3 ROUGH INSPECTION *added*

- (1) All tests shall be witnessed by Scottsdale Fire Department.
- (2) All components of system shall be in place and secured.
- (3) The system shall be connected to the permanent water supply source.
- (4) Approved fire sprinkler system plans shall be on-site.
- (5) Concealed fire sprinkler cover plates shall not be installed.

- (6) When CPVC piping systems are hydrostatically tested, plugs shall be installed in fittings. Ceilings greater than 16 feet in height may have sprinklers installed at time of hydrostatic test.
- (7) Installation of CPVC pipe requires factory issued certification card to be carried by pipe fitter during installation and is to be made available to an inspector upon request. Installer shall follow all manufacturer guidelines for installation.

10.2.2.4 FINAL INSPECTION *added*

- (1) All sprinkler system components shall be in place and the system shall be flowed to verify activation of the flow switch and bell.
- (2) All risers shall have a Hydraulic Design Information Sign.
- (3) Spare fire sprinklers shall be in the riser compartment.
- (4) Fire Department Inspection form from rough inspections must be on job site at time of test if there were any stipulations for rough approval.
- (5) Verify manufacturers sprinkler tolerance with escutcheon in place and check for paint, obstructions, plaster, etc.
- (6) Concealed fire sprinkler cover plates shall not be installed.
- (7) Labels for inspector's test, auxiliary control valves, etc., shall be in place.
- (8) Dwelling unit identification and/or building diagram shall be in place at each riser.

10.2.2.5 REINSPECTION FEES AND CANCELLATIONS *added*

A fee may be assessed for each reinspection, including but not limited to the following:

- (1) Approved plans with SFD approval stamp not on-site during inspection.
- (2) Installation is not complete.
- (3) Corrections from previous inspections not complete
- (4) Two or more inspection cancellations.
- (5) Late notice of cancellation (less than 2 hrs. prior).

Cancellations shall be called into scheduler, not inspector. Call 480-312-1855