

FDC & PIV Installation

2025 California Fire Code §912 and NFPA 24 - Fire department connection and system isolation

Purpose. This handout summarizes installation considerations for fire department connections (FDCs) and post indicator valves (PIVs) serving private fire-service mains and water-based fire-protection systems.

1. Approved Plans and Applicable Standards

FDCs, private fire-service mains, valves and appurtenances must be installed in accordance with approved plans and the applicable NFPA standard. Private fire-service mains are governed by NFPA 24 as referenced and amended by the California Fire Code. Sprinkler and standpipe system connections also follow the applicable NFPA 13, NFPA 13R or NFPA 14 requirements.

Exact valve type, pipe size, backflow arrangement, FDC inlet configuration, hydrant relationship and PIV location depend on the approved hydraulic and site design. Do not install these components based solely on a typical detail.

Code reference: 2025 CFC §§507.2.1 and 912; CFC Chapter 80; NFPA 24

2. FDC Location

- Locate the FDC on the street side of the building or facing an approved fire apparatus access road unless another location is approved.
- The FDC must be fully visible and recognizable from the street, apparatus access road or nearest approved fire department vehicle-access point.
- Its location must allow apparatus and connected hose to supply the system without blocking access needed by other fire apparatus.
- The fire code official approves the final FDC location. A universal FDC-to-hydrant distance should not be assumed unless the applicable code section, adopted amendment or approved plan establishes it.

Code reference: 2025 CFC §§912.2 and 912.2.1

3. Required Clear Working Space

Maintain a clear working envelope around the connection. For wall-mounted FDCs, the clear working area applies in front of and to the sides. For free-standing FDCs, the clear area applies around the circumference.

Code reference: 2025 CFC §912.4.2

Clearance dimension	Minimum
Width	36 inches
Depth	36 inches
Height	78 inches

4. Access and Physical Protection

- Immediate access to the FDC must be maintained at all times.
- Fences, bushes, trees, walls, parked vehicles, storage and other objects may not obstruct access.
- If a fence is permitted around the FDC, the approved gate must include required identification and an approved emergency-operation method.
- Provide vehicle-impact protection where the FDC is exposed to damage from vehicles.
- Locking FDC caps can be required where the responding fire department carries the appropriate removal equipment.

Code reference: 2025 CFC §§912.4-912.4.3

5. PIV / System Isolation Valve

A PIV provides a visible means of identifying and controlling the open/closed position of a fire-protection water-supply valve. Its location and installation must comply with NFPA 24 and the approved fire-service-main design. The valve must be accessible for fire department and inspection use and protected from damage.

NFPA 24 contains specific rules for isolation valves and PIV placement, including conditions where the preferred remote location cannot be achieved. Because the correct location is design-specific, the approved plan and current adopted edition of NFPA 24 control.

- Keep the PIV visible and accessible.
- Maintain the valve in its normal required position and supervise it where required by the sprinkler standard/CFC.
- Do not bury, landscape over or obstruct access to the valve.
- Protect the valve from vehicle impact where necessary.
- Label or identify the valve where required so responders can determine what building/system it controls.

Code reference: 2025 CFC §§507.2.1, 903 and 912; NFPA 24 (adopted edition)

6. FDC Inlets, Threads and System Identification

- FDC inlet type, quantity and size are based on the system design and applicable NFPA standard.
- Fire hose threads and connections must be compatible with responding fire department equipment as required by the code.
- The FDC must be permanently identified for the system served. Multiple buildings, zones or systems require clear identification.
- Standpipe connections can require additional information such as the system type and required inlet pressure.

Code reference: 2025 CFC §§912.3 and 912.5-912.5.4

7. Installation / Final Inspection Checklist

- Installation matches approved fire-protection and site plans.
- FDC is visible from the approved apparatus approach.
- FDC working space is at least 36 x 36 x 78 inches.
- FDC is unobstructed and protected from vehicle impact when required.
- Correct approved caps, inlets and threads installed.
- Required system sign installed.
- PIV/isolation valve accessible, identifiable and in correct normal position.
- Underground/private main acceptance testing and flushing completed as required.
- Required inspections and acceptance tests completed before system approval.

Primary References

- 2025 California Fire Code §§507.2.1 and 912
- NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances, adopted edition
- NFPA 13 / NFPA 13R / NFPA 14 as applicable to the connected system
- 2025 California Fire Code Chapter 80 - Referenced Standards

This handout is an informational summary. It does not replace the adopted code, approved plans, permit conditions, State licensing requirements, or determinations of the fire code official. Project-specific requirements may vary.