



# FIRE DEPARTMENT CONNECTION PLACARD REQUIREMENTS

Vancouver Fire Department, Washington

Effective April 2, 2024

**TABLE OF CONTENTS**

1. INTRODUCTION ..... 1

2. SCOPE AND PURPOSE ..... 1

3. DEFINITIONS ..... 1

4. QUALIFICATIONS AND RESPONSIBILITIES ..... 3

5. DESIGN CONSIDERATIONS ..... 3

    5.1 SIGNAGE AND SYSTEM DESIGN INFORMATION ..... 3

    5.2 SIGNAGE REQUIREMENTS ..... 5

6. SUBMITTAL REQUIREMENTS ..... 5

**APPENDIX A - EXAMPLE PLACARD**

    DIAGRAM A1 (Fire Pump) ..... 1

    DIAGRAM B1 (Automatic Wet Standpipe) ..... 1

    DIAGRAM B2 (Manual Wet Standpipe) ..... 1

    DIAGRAM C1 (Manual Dry Standpipe) ..... 1

    DIAGRAM D1 (Automatic Combination Standpipe) ..... 1

    DIAGRAM D2 (Manual Wet Combination Standpipe) ..... 1

    DIAGRAM E1 (Address and Building Signage) ..... 1

## 1. INTRODUCTION

- A. This document outlines and clarifies *Fire Department Connection* placard requirements when a building has Class I Standpipe/s and/or *Fire Pump/s*.
- B. This document is intended to provide guidance on *FDC* signage for Class I Standpipes and Fire Protection Systems connected to Fire Pumps. If a *Standpipe System* not covered by this document is installed, consult with the City of Vancouver Fire Marshal's Office for guidance and clarification of the requirements.

## 2. SCOPE AND PURPOSE

Where required, the City of Vancouver VMC 16.04.160 requires *Fire Department Connections* serving *Standpipe System/s* and/or *Fire Pump/s* to indicate the pressure required at the inlets to deliver the system demand. This document is intended to provide standards for the required signage.

## 3. DEFINITIONS

Refer to adopted editions of NFPA 13, NFPA 14, NFPA 20, and IFC for expanded definitions of the following terms:

- A. General
  - a. Sprinkler System. A system that consists of an integrated network of piping designed in accordance with fire protection engineering standards that includes a water supply source, a water control valve, a waterflow alarm, and a drain. The system is commonly activated by heat from a fire and discharges water over the fire area.
  - b. Standpipe System. An arrangement of piping, valves, hose connections, and associated equipment installed in a building or structure, with the hose connections located in such a manner that water can be discharged in streams or spray patterns through attached hose and nozzles, for the purpose of extinguishing a fire, thereby protecting a building or structure and its contents in addition to protecting the occupants.
  - c. Fire Department Connection / FDC. A connection through which the fire department can pump supplemental water into the sprinkler system, standpipe, or other water-based fire protection systems, furnishing water for fire extinguishment to supplement existing water supplies.
  - d. System Demand. The flow rate and residual pressure required from a water supply, measured at the point of connection of a water supply to a standpipe system, to deliver the total waterflow rate and the minimum residual pressures required for a standpipe system at the hydraulically most remote hose connection, and the minimum waterflow rate and residual pressure for sprinkler connections on combined systems.
  - e. System Working Pressure. The maximum anticipated static (nonflowing) or flowing pressure applied to standpipe system components exclusive of surge pressures and exclusive of pressure from the fire department connection.
  - f. Maximum Allowable Working Pressure. The maximum water pressure that can be applied to the *Standpipe System* based on the water pressure rating of its most restrictive component.

Note: This definition does not exist in NFPA 14; it has been created for this document. Typically, for a single-zone *Standpipe System*, the *Maximum Allowable Working Pressure* will be 175 PSI. For a *Standpipe System* with multiple zones or where high-pressure zones exist, consult with the AHJ for clarification, where necessary.

- g. Approved. Acceptable to the City of Vancouver Fire Marshal's Office.
  - h. Record Drawing. A design, working drawing, or as-built drawing that is submitted as the final record of documentation for the project.
- B. Fire Pump System
- a. Fire Pump. A pump that is a provider of liquid flow and pressure dedicated to fire protection.
  - b. Suction Pressure. The total pressure available at the fire pump suction flange.
  - c. Net Pressure. For vertical turbine fire pumps, the total pressure at the fire pump discharge flange plus the total suction lift. For other fire pumps, the total pressure at the fire pump discharge flange minus the total pressure at the fire pump suction flange.
  - d. Discharge Pressure. The total pressure available at the fire pump discharge flange.
  - e. Churn / No Flow / Shutoff. The condition of zero flow when the fire pump is running but not flowing water into the system. In the zero flow condition, the pump is producing the maximum pressure it is capable of producing.
- C. Standpipe System
- a. Standpipe. The system piping that delivers the water supply for hose connections, and for sprinklers on combined systems, vertically from floor to floor.
  - b. Class I System. A system that provides 2 1/2 in. hose connections to supply water for use by fire departments.
  - c. Standpipe System
    - i. Manual Dry Standpipe System. A standpipe system with no permanently attached water supply that relies exclusively on the fire department connection to supply the system demand.
    - ii. Manual Wet Standpipe System. A standpipe system containing water at all times that relies exclusively on the fire department connection to supply the system demand.
    - iii. Automatic Wet Standpipe System. A standpipe system containing water at all times that is attached to a water supply capable of supplying the system demand at all times and that requires no action other than opening a hose valve to provide water at hose connections.
    - iv. Combined System. A standpipe system that supplies both hose connections and automatic sprinklers.
  - d. Fire Department Connection for Automatic Standpipe Systems. A connection through which the fire department can pump the secondary water supply to an automatic standpipe system at the required system demand. Supplemental water can also be provided into the sprinkler system or other system furnishing water for fire extinguishment to supplement existing water supplies.

- e. Fire Department Connection for Manual Standpipe Systems. A connection through which the fire department can pump the primary water supply to a manual standpipe system at the required system demand.

#### 4. QUALIFICATIONS AND RESPONSIBILITIES

- A. Fire sprinkler contractors involved in design and installation of these systems must be City of Vancouver endorsed contractors in accordance with City of Vancouver VMC 16.04.095.
- B. The Fire Sprinkler Contractor, at time of design, is responsible for providing a graphic of any signage required by Vancouver Municipal Code, Title 16.
- C. The Building Owner shall be responsible for providing signage at a location *approved* by the Fire Code Official. Where furnishing signage is delegated to a contractor, the building owner assumes responsibility for providing *approved* signage if signage that is provided is deemed non-compliant.
- D. The Fire Protection Contractor and Building Owner shall coordinate to ensure all applicable requirements are met.

#### 5. DESIGN CONSIDERATIONS

##### 5.1 SIGNAGE AND SYSTEM DESIGN INFORMATION

- E. Fire Pump Signage
  - a. Signage shall indicate “FIRE PUMP”.
  - b. Where an *FDC* serves a *Fire Pump*, signage shall be posted that indicates the “SYSTEM DEMAND” pressure, which shall be the *System Demand* pressure required at the *Fire Department Connection* for the most demanding *Sprinkler System* hydraulic calculation.
  - c. Where an *FDC* serves a *Fire Pump*, signage shall be posted that indicates the “MAX PRESSURE” pressure, which shall be the *Discharge Pressure at No Flow*; otherwise stated as the sum of *Suction Pressure* and *Fire Pump Net Pressure at No Flow*.
  - d. See Appendix A (Diagram A1) for example.
- F. Wet Standpipe System Signage
  - a. Automatic Wet Standpipe
    - i. Signage shall indicate “AUTOMATIC WET STANDPIPE”.
    - ii. Where an *FDC* is connected to a *Standpipe System* supplied by a *Fire Pump*, signage shall indicate “FIRE PUMP”.
    - iii. Where an *FDC* serves a Class I Automatic Standpipe, signage shall be posted that indicates the *System Demand* pressure required at the *Fire Department Connection for Automatic Standpipe Systems*.
    - iv. Signage shall indicate the “MAX PRESSURE”, which shall be the *Maximum Allowable Working Pressure* for the *Standpipe System*.
    - v. See Appendix A (Diagram B1) for example.

- b. Manual Wet Standpipe
  - i. Signage shall indicate “MANUAL WET STANDPIPE”.
  - ii. Where an *FDC* is connected to a *Standpipe System* supplied by a *Fire Pump*, signage shall indicate “FIRE PUMP – SPRINKLER ONLY”.
  - iii. Where an *FDC* serves a Class I Manual Wet Standpipe, signage shall be posted that indicates the *System Demand* pressure required at the *Fire Department Connection for Manual Standpipe Systems*.
  - iv. Signage shall indicate the “MAX PRESSURE”, which shall be the *Maximum Allowable Working Pressure* for the *Standpipe System*.
  - v. See Appendix A (Diagram B2) for example.
- G. Dry Standpipe System Signage
  - a. Manual Dry Standpipe
    - i. Signage shall indicate “MANUAL DRY STANDPIPE”.
    - ii. Where an *FDC* serves a Class I Manual Dry Standpipe, signage shall be posted that indicates the *System Demand* pressure required at the *Fire Department Connection for Manual Standpipe Systems*.
    - iii. Signage shall indicate the “MAX PRESSURE”, which shall be the *Maximum Allowable Working Pressure* for the *Standpipe System*.
    - iv. See Appendix A (Diagram C1) for example.
- H. Standpipe - Combined System
  - a. Automatic Wet Combination Standpipes
    - i. Signage shall indicate “AUTOMATIC COMBO STANDPIPE”.
    - ii. Where an *FDC* is connected to a *Standpipe System* supplied by a *Fire Pump*, signage shall indicate “FIRE PUMP”.
    - iii. Where an *FDC* serves a *Sprinkler System* connected to a Class I Manual Wet Standpipe(s), signage shall be posted that indicates the *System Demand* pressure required at the *Fire Department Connection for Automatic Standpipe Systems*.
    - iv. Signage shall indicate the “MAX PRESSURE”, which shall be the *Maximum Allowable Working Pressure* for the *Standpipe System*.
    - v. See Appendix A (Diagram D1) for example.
  - b. Manual Wet Combination Standpipe
    - i. Signage shall indicate “MANUAL WET COMBO STANDPIPE”.
    - ii. Where an *FDC* is connected to a *Standpipe System* supplied by a *Fire Pump*, signage shall indicate “FIRE PUMP – SPRINKLER ONLY”.

- iii. Where an FDC serves a *Sprinkler System* connected to a Class I Manual Wet Standpipe(s), signage shall be posted that indicates the “SYSTEM DEMAND” pressure, which shall be the *System Demand* pressure required at the *Fire Department Connection for Manual Standpipe Systems*.
- iv. Signage shall indicate the “MAX PRESSURE”, which shall be the *Maximum Allowable Working Pressure* for the *Standpipe System*.
- v. See Appendix A (Diagram D2) for example.

## 5.2 SIGNAGE REQUIREMENTS

- a. Sign shall be at the *Fire Department Connection* (FDC) and in a location approved by the Fire Code Official.
- b. An *FDC* serving multiple buildings or where the purpose of the *Fire Department Connection* could be confused may require additional signage in a manner and location *Approved* by the Fire Code Official. See Appendix A (Diagram E1) for examples.
- c. Sign shall be made of durable all-weather, fade resistant material.
- d. Letters shall be reflective white on red background and sized, at minimum, in accordance with Appendix A example.
- e. The signage shall be located at the *FDC*, unless otherwise required/approved by the Fire Code Official.
- f. Upon acceptance of *FDC* signage, the *Fire Code Official* will issue a VFD approval logo on the sign in the space reserved for the approval logo. See Appendix A for examples.

## 6. SUBMITTAL REQUIREMENTS

### A. Fire Sprinkler Design Documents

- a. When determining the pressure required at the *Fire Department Connection* to provide *System Demand*, calculations shall be performed in accordance with applicable requirements from NFPA 13, NFPA 14, and NFPA 20.
- b. The Fire Sprinkler Contractor, at time of design, is responsible for providing a graphic of all signage required by City of Vancouver VMC 16.04.095 on the design documents, subject to fire official approval.
- c. The Fire Sprinkler Contractor, prior to Final Inspection, shall submit revised documents noting changes that affect signage requirements noted in this standard when changes have occurred from the *Approved* design documents.

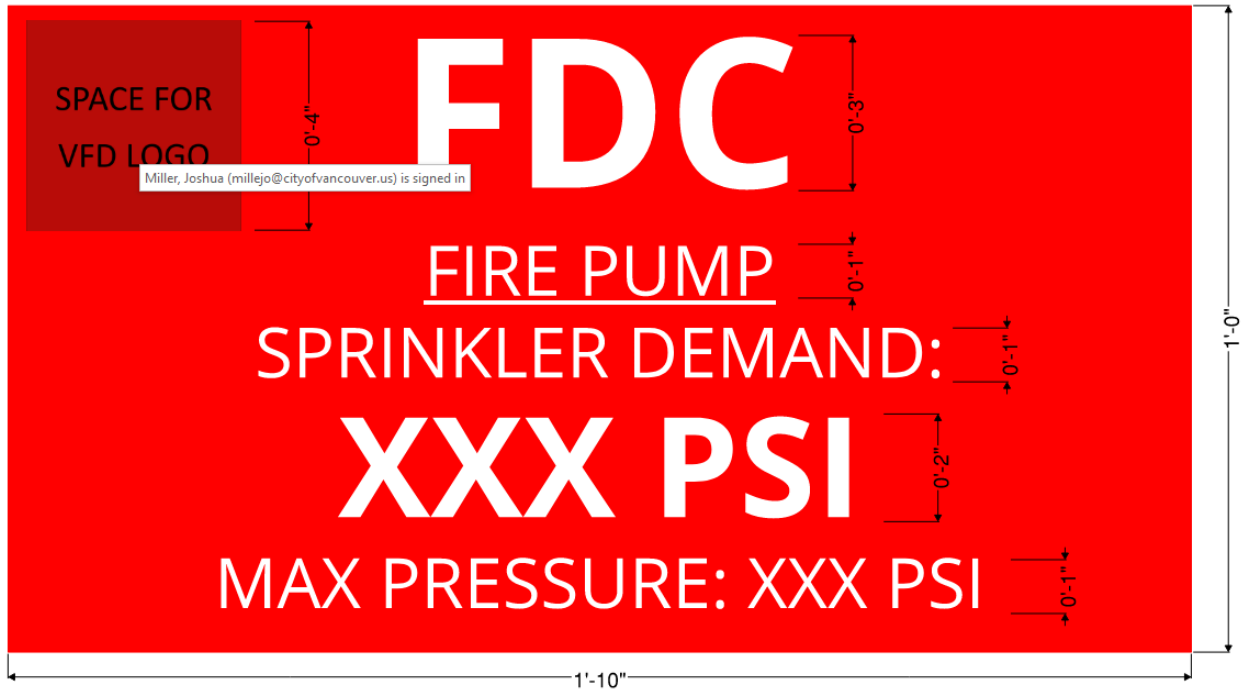
[ *Remaining page intentionally left blank* ]

## APPENDIX A – EXAMPLE PLACARDS

*[ Remaining page intentionally left blank ]*

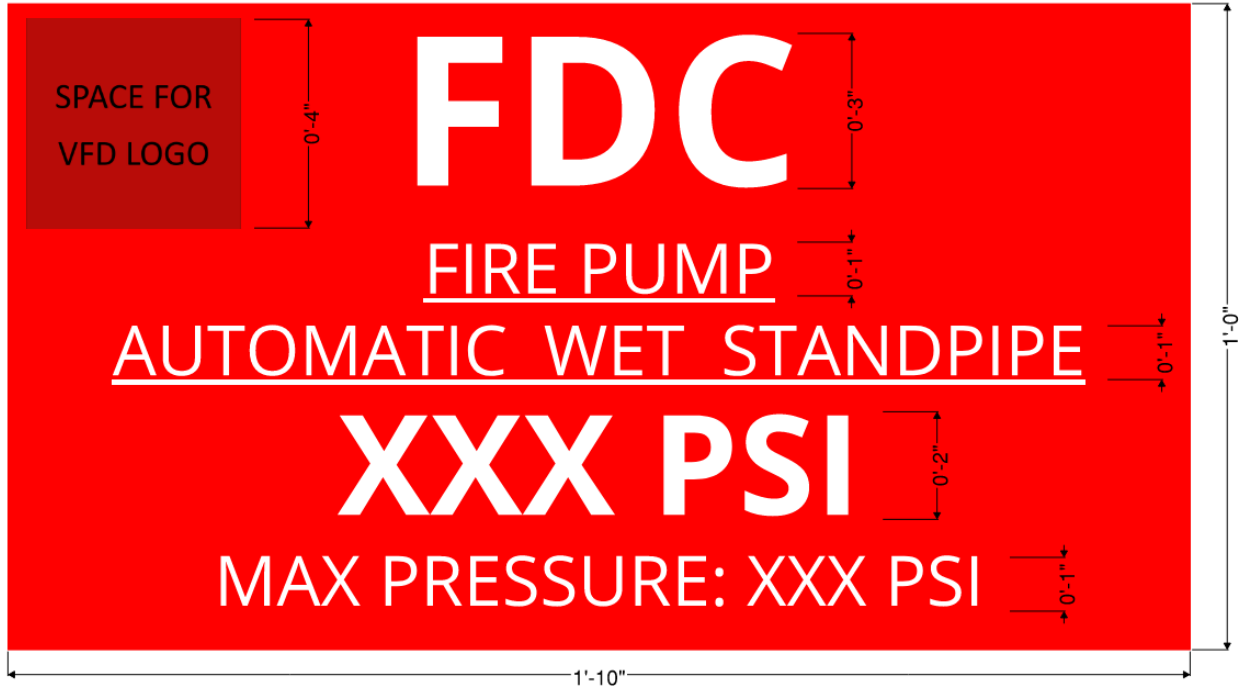


**DIAGRAM A1 (Fire Pump)**



**DIAGRAM B1 (Automatic Wet Standpipe)**

For Systems Connected to a Fire Pump



For Systems Not Connected to a Fire Pump



**DIAGRAM B2 (Manual Wet Standpipe)**

For Systems Connected to a Fire Pump



For Systems Not Connected to a Fire Pump

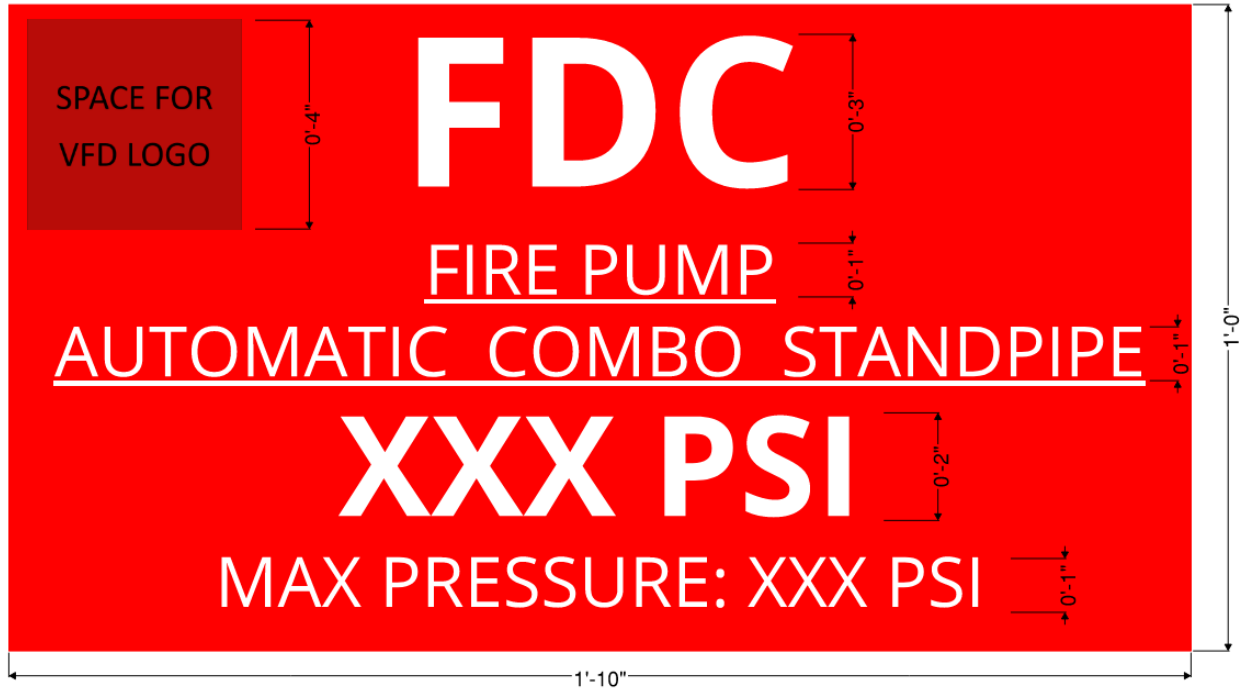


DIAGRAM C1 (Manual Dry Standpipe)



**DIAGRAM D1 (Automatic Combination Standpipe)**

For Systems Connected to a Fire Pump



For Systems Not Connected to a Fire Pump



**DIAGRAM D2 (Manual Wet Combination Standpipe)**

For Systems Connected to a Fire Pump



For Systems Not Connected to a Fire Pump



DIAGRAM E1 (Address and Building Signage)

