

Seattle Fire Prevention Division

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Seattle Fire Code: Researching Fire Flow and Hydrant Requirements

The fire code requires new buildings to have enough water or “fire flow” for the Seattle Fire Department (SFD) to protect you, your property and our firefighters in the event of an emergency. Appendix B of the [Seattle Fire Code](#) (SFC) outlines the requirements for fire flow, which is determined by a few key factors: the building's size, its construction type, and its intended use or occupancy. In order for us to access the water during an emergency, the SFC also requires a hydrant to be in near proximity to any new building being proposed. SFC Chapter 5 provides the hydrant requirements.

The right time to research fire flow and hydrants is early in your real estate acquisition or project design process. This research is technical and may be best done together with an architect or other design professional.

How to Research SPU Data for Fire Flow and Hydrants

Seattle Public Utilities (SPU) provides free online information about their hydrants and water mains here: <https://www.seattle.gov/utilities/construction-resources/water-and-sewer-map>. With it you can find the hydrant nearest to your project and get a sense of whether your project meets SFC requirements for hydrant proximity. You can find estimated fire flow by clicking on the hydrant and reviewing the information for “Modeled Water Main Capacity (Gallons per Minute)”. SPU estimates this flow will be available for firefighting purposes for at least a four-hour duration. SFD uses this data as our measure of “fire flow”.

How to Research Fire Code Requirements for Fire Flow and Hydrants

You can review **fire flow requirements** in the Seattle Fire Code here: [https://www.seattle.gov/sdci/codes/codes-we-enforce-\(a-z\)/fire-code](https://www.seattle.gov/sdci/codes/codes-we-enforce-(a-z)/fire-code). This step is technical and may be best done together with an architect or other design professional. The final determination will be based on the official SFD plan review. When reviewing the code, you will need to know:

- Whether your building will fit in the category of one- or two-family dwelling, or occupancy type of R-3 or R-4, or a townhouse, or will be not be in that category. Your design professional can tell you what they are designing, ex: “R-2” for apartment buildings, “B” for office buildings. Please note that sometimes the desired classification is modified during plan review by the Seattle Department of Construction and Inspections (SDCI) and this can affect fire flow requirements.
- Your building’s square footage.
- Your building’s construction type (ex: “Type VB” which means the building is wood-framed, without additional fire resistance protection for its frame). See Seattle Building Code Chapter 6. If unsure, you may want to use the least fire resistive construction type, VB, which will give you the “worst case” or most restrictive answer.
- Whether your building already has or will have an approved automatic sprinkler system appropriate for the project you are considering.

Use tables in Appendix B, Section B105.1, for one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses. Use tables in B105.2 for all other building types.

Example 1: New 3,500 square foot two-family dwelling constructed to the Seattle Residential Code, no automatic sprinkler system planned, Type VB. Since this is a two-family dwelling, use Table B105.1(1). **Fire flow required: this project appears to need 1,000 gallons per minute for 1 hour.**

Option to Install a Sprinkler System to Reduce Your Fire Flow Requirements

A sprinkler system is a highly effective tool that can control a fire in its early stages, significantly lowering the amount of water needed by the fire department to finish the job. The fire code allows for a reduction in the required fire flow—sometimes by 75% or more—for buildings equipped with an approved sprinkler system. Installing sprinklers can make a project feasible in areas with limited water supply.

Example 2: New 3,500 square foot two-family dwelling constructed to the Seattle Residential Code, with automatic sprinkler system voluntarily installed, Type VB. Since this is a two-family dwelling, use Table B105.1(1). **Fire flow required: this project appears to need 300 gallons per minute for 30 minutes.**

The Seattle Fire Code requires a **hydrant** within 400 feet, with two exceptions that increase that distance to 600 feet: (1) buildings with an approved automatic sprinkler system, and (2) one- and two-family dwellings and townhouses as well as Group R-3 and Group U occupancies (2021 SFC 507.5). You would work with SPU if your project needs a new hydrant installed.

Permitting Process Information – Documentation Required for Water

Water Availability Certificate. Most projects require a Water Availability Certificate (WAC). You or your design professional should request your WAC from SPU in the early stages of your process. WACs are available using the Public Utilities-Development Services option on the Seattle Services portal located at <https://services.seattle.gov/Portal/Customization/SEATTLE/welcome.aspx>.

Fire flow documentation for the construction/phased permit When submitting a construction or phased permit, there are generally no documents required by SFD for water with the -CN permit, instead we use City databases to perform the fire flow review. We will contact you if for any reason we need additional documentation.

Sprinkler system documentation for the fire sprinkler trade permit: When submitting a sprinkler permit application, your design professional must include an official Fire Flow Availability Report from Seattle Public Utilities' Development Services Office (DSO) in close proximity to the project site. If there is an actual hydrant test within the last five years within 500 feet of the parcel, there is no cost for this report. If there has not been an actual hydrant test in the last five years in the near vicinity of your project, you will need to pay for SPU to do a current test, before they can generate your Report. This may add two or more months to the turn-around time. Please initiate the process of obtaining your Fire Flow Availability Report early. Please [request a flow test](#) from the DSO and they will either provide the free report of a recent test in close proximity to your project, or let you know that a new test will be required, including the fees for the service. Exception: For NFPA 13D systems using the simplified calculation method, plan submittals do not require the Fire Flow Availability Report, instead include a Water Availability Certificate from SPU. WACs are available using the Public Utilities-Development Services option on the Seattle Services portal located at <https://services.seattle.gov/Portal/Customization/SEATTLE/welcome.aspx>.