



OPERATING POLICY 4 FIRE HYDRANTS AND FIRE FLOW



Kirkland Fire/Building Department • 123 Fifth Avenue, Kirkland, WA 98033 • (425) 587-3650

A. SCOPE

In accordance with the International Fire Code, Section 507 *Fire Protection Water Supplies*, and [Appendix B Fire Flow Requirements for Buildings](#) as adopted by the City of Kirkland (Chapter 21.20.060, Kirkland Municipal Code), an approved water system capable of supplying the required fire flow shall be provided to premises on which buildings are constructed. The water system shall consist of water mains or other fixed systems capable of providing the required fire flow, as well as fire hydrants installed in locations as required in this policy.

B. GENERAL

1. Hydrants shall be installed to meet sound engineering practices and shall meet current A.W.A.A. Standards. An auxiliary gate valve shall be installed between the service main and the hydrant to permit the repair or replacement of the hydrant without disruption of water service. The location of all valves, piping, and hydrants shall be properly and accurately indicated on identifiable plans or drawings.
2. Hydrants shall have two male, 2-1/2" hose outlets with National Standard threads and one male pumper port outlet. The pumper port outlet shall be 4-7/8" outside diameter, measured from crest to crest on threads, and shall have six threads per inch. In addition, a five-inch Storz quarter turn adapter shall be installed on the pumper port outlet. In some cases, existing hydrants in areas of re-development will need to be replaced with hydrants meeting current standards.
3. There shall be at least 36 inches of horizontal clearance on all sides of the hydrant, and at least fifteen inches of clearance between the ground and the bottom of the lowest port, measured at finished grade level. The breakaway flange must be above the finished grade level.
4. Where necessary, hydrants shall be protected from damage by vehicles. Guard posts or bollards shall comply with IFC Section 312 and shall be approved by the Fire Department.
5. Hydrants shall be painted a color which has been approved by the Fire Department and the appropriate Water District and shall be visible under adverse light and weather conditions. Colors that have been applied by the Water Purveyor or Fire Department shall not be changed except by permission of these departments.
6. Hydrant locations shall be identified by the installation of blue reflective markers.
7. Hydrant locations and removals shall be approved by the Fire Marshal and be coordinated with the Water Purveyor.

8. Hydrants and their supply systems shall be operational and available for use prior to combustible construction.
9. Hydrants located on private property shall be considered a part of that property's fire protection system. The property owner shall maintain these hydrants in an operative condition and shall replace or repair where defective.
10. Fire hydrants must be kept free of obstacles so that they may be seen by approaching fire trucks for at least 200 feet. Posts, fences, mailbox stands, vehicles, bushes and trees, waste containers, trash, storage and other materials or items shall not obstruct hydrants in a manner that would prevent them from being immediately visible or used effectively.
12. Buildings or areas where fire department vehicle access is difficult or unfeasible may require a fire sprinkler system in addition to hydrant installation. Examples: grades in excess of 10 percent; portions of buildings not accessible to fire apparatus).

C. RESIDENTIAL AREAS (Single family)

1. The fire flow requirement for one- and two-family dwelling units is based on the size of the house. Fire flow requirements are based on IFC Table B105.1(1) and B105.1(2) and may be found in Operating Policy 4A (*Fire Flow Requirements for Single Family Homes*).
2. The fire flow required is over and above the computed domestic usage. (This is known as the de-rated fire flow). Fire flow is measured at 20 PSI residual pressure for a duration of two hours. For those areas where the fire flow is not sufficient, fire sprinklers may be substituted. (See Operating Policy 2 *Automatic Sprinkler and Standpipe Systems*.)
3. Hydrants in residential areas shall be spaced 600 feet or less apart, and there shall be a hydrant within 300 feet from the nearest setback on a building lot. All measurements shall be made by vehicular travel distance.
Exception: For one- and two-family dwelling units equipped with automatic sprinkler systems, the distance from a hydrant to the nearest setback may be increased to 600 feet.
3. Hydrants in new single-family residential areas shall be on water mains sized in accordance with current Public Works standards. These systems shall be appropriately engineered, and pipe sizes shall be increased where necessary to provide the required flow.

D. COMMERCIAL AREAS (Including schools located in single family areas)

1. All buildings other than one- and two-family dwelling units shall be considered commercial buildings with fire flow requirements and hydrant spacing determined on criteria set forth within this policy. Fire flow requirements for townhomes or zero lot line homes shall be based on the total square footage.
2. Fire hydrants in commercial areas shall be spaced 300 feet or less apart, and there shall be a hydrant within 150 feet of any portion of a building accessible by Fire Department vehicles.

This may require on-site hydrants as specified by the Fire Marshal. Hydrants should be located at least 50 feet from a building to avoid the potential collapse zone.

3. For sprinklered buildings, the preferred distance between the fire department connection and a hydrant is approximately 50 feet. This distance is subject to adjustment based on site specific conditions.

4. Fire hydrants are to be accessible to Fire Department vehicles on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building. (See Operating Policy 6 *Fire Department Access*.)

5. It shall be the responsibility of a developer or property owner to provide a system which can supply the amount of fire flow required for a project based with the size of the building(s), type of construction, and proposed fire protection features, such as fire sprinklers. (These requirements may be found in [Appendix B of the International Fire Code, Fire Flow Requirements for Buildings](#).)

6. The Fire Marshal shall determine the location of the hydrants and the direction they shall face, depending on utility, topography, access, and building location. The Fire Marshal may grant a variance from these requirements providing an equal amount of fire protection can be maintained.

*THIS POLICY APPROVED
BY KIRKLAND FIRE MARSHAL
EFFECTIVE 12/1/2019*