

# Fire Prevention Code Policy

Office of the Fire Marshal • Roanoke Fire-EMS Department



**Subject:** Fire Hydrant Standards and Fire Flow Requirements

**Date:** September 1, 2019

**Revision:** A

**Fire Marshal:** David Guynn

**Fire Chief:** David Hoback

## Purpose

Fire Prevention Code Policy documents are promulgated by the Office of the Fire Marshal of the Roanoke Fire-EMS Department, acting as the Fire Code Official for the City of Roanoke. This document is intended to provide guidance to stakeholders for compliance with the currently adopted edition of the City of Roanoke Fire Prevention Code (“the Code”) and compatibility with the standards and practices of the Roanoke Fire-EMS Department. In the event of a conflict with any provision of the currently adopted Code, the Code shall prevail.

## Scope

This policy applies to construction of new buildings or structures within the City of Roanoke or buildings or structures for which a comprehensive plan review is otherwise required.

## Authority/References

- 2015 Statewide Fire Prevention Code, §507

## Policy

### Fire Hydrant Locations

Fire hydrants shall be located:

- 1) Within one hundred feet (100’) of any fire department connection serving a sprinkler or standpipe system.
- 2) In residential areas at street intersections and at intermediate locations where necessary as determined by the Fire Marshal or his/her designee.
- 3) As required by the following table according to use group, where the distance specified is to the remote portion of the building or structure:

Use Group(s)	Distance
A-1, A-2	300 feet
A-3, A-4, A-5, B, E, M	350 feet
F, H, I-1, I-2, I-4, S, R-1 and R-2	250 feet
R-3, R-4, R-5, U	500 feet

- 4) A minimum of fifty feet (50') away from buildings other than single-family detached dwellings.
- 5) Within twenty five feet (25') of any street or required fire apparatus access roads. The elevation of the street or fire apparatus access roads and the elevation of the fire hydrant must not have more than a 5% grade. No physical barriers are allowed between the fire hydrant and the street or fire apparatus access road.
- 6) Fire hydrants separated from the building or structure by a road greater than four (4) lanes in width are not considered compliant with this policy.

Fire Hydrant Standards

- 1) All fire hydrants (public and private) shall be installed in accordance with the Western Virginia Regional Design and Construction Standards and the Western Virginia Regional Construction Details, except as noted below.
- 2) Private fire hydrants shall be equipped with a 5" Storz connection as the large-diameter nozzle in lieu of the 4 1/2" large-diameter nozzle.

Fire Flow Requirements

Fire flow requirements shall be based on the use of the building or structure. All fire flow requirements are for a minimum of two (2) hours with a residual pressure of not less than 20 psi.

- 1) Residential single-family or duplex:

<b>Condition</b>	<b>Fire Flow Requirement</b>
Single family residential; >100' between buildings	500 gpm
Single family residential; 30' – 100' between buildings	750 gpm
Single family, single story residential; 11' – 30' between buildings	1,000 gpm
Single family, one and one-half story residential; 11' – 30' between buildings	1,000 gpm
Single family, two story residential; 11' – 30' between buildings	1,500 gpm
Single family residential; < 11' between buildings	1,500 gpm

- 2) All other uses:

<b>Use Group</b>	<b>Fire Flow Requirement</b>
Groups A, B, E up to two stories	2,000 gpm
Groups A, B, E greater than two stories	2,500 gpm
Groups F, H, M, S up to 20,000 square feet	2,500 gpm
Groups F, H, M, S greater than 20,000 square feet	2,750 gpm
Group I up to two stories	1,750 gpm
Group I greater than two stories	2,250 gpm
Groups R-1, R-2, R-3, and R-4 up to 2 1/2 stories	1,500 gpm
Groups R-1, R-2, R-3, and R-4 with 3 or greater stories	2,000 gpm
Group U	1,500 gpm

- 3) Where a building consists of mixed uses (separated or unseparated), the fire flow requirement shall be the greater fire flow value indicated in the appropriate table.

- 4) Site plans must indicate the measured static and residual pressures in psi and the calculated flow in gpm at 20psi residual pressure for each hydrant shown. Fire flow modeling may be required at the discretion of the Fire Marshal or his/her designee.