



## ARE YOUR FIRE HYDRANTS TO NFPA CODE?

Frederick R. Holley | Circuit Rider III

As I sit at the Salt Lake City Airport awaiting the end of my 3 hour layover for my connecting flight to get me one step closer to home, I have time to reflect on our recent National Rural Water Association conference in Reno, Nevada. Time was well spent in classes, meeting with vendors, checking out new technologies and most of all networking with like minded people from every state Rural Water Association across this great country.

I have wanted for some time to write about NFPA code for Fire Hydrants. Just who is the NFPA and what do they stand for? The National Fire Protection Association (NFPA) is a global nonprofit organization, established in 1896, devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. I am going to concentrate on Fire Hydrants, NFPA 291.

Per NFPA 291 Chapter 5.1 through 5.2.1.2, hydrants should be classified by their rated capacity with their tops and nozzle caps painted the appropriate color. The barrels are to be Chrome Yellow except in cases where another color has been adopted. Class AA, rated at 1500 GPM or greater, Light Blue, Class A, 1000-1499 GPM, Green, Class B, rated at 500-999 GPM, Orange, and Class C, rated at less than 500 GPM, Red.

Private hydrants are to be color coded Red and non-potable Violet or Light Purple. 5.2.1.6 states that classification and color coding is to be based on individual fire flow testing. The picture shows a hydrant rated at 500+ GPM. To obtain these ratings requires performing fire flow testing. NFPA 4.1.5 states



“A primary concern should be the ability to maintain sufficient residual pressure to prevent developing a negative pressure at any point in the street mains, which could result in the collapse of the mains or other water system components or back siphonage of polluted water from some other interconnected source”.

The most common means of fire flow calculation is with a “Pitot” meter along with a pressure gauge to monitor static and residual pressures.

Fire flow testing is usually an engineering requirement for any type of new construction. There are complex math equations for this but, me being terrible at math, I chose the easy route,



the Internet. Plug in the numbers and print the results. NFPA recommends flow testing of underground and exposed piping at least once every 5 years (NFPA 25, Table 7.1.1.2, 2014).

On a recent call to a system, at the request of their insurance underwriter, updated fire flow information was needed. In performing these tests, it was found that there was a big discrepancy in results in 2 areas. In one area a closed valve was found causing skewed results, and in the other area a largely blocked 4 inch main was found. With these findings the system is able to determine where system upgrades need to be prioritized. This finding also involved notification to the underwriter and to the fire department. It was also recommended that the hydrants be tagged “not for fire fighting”.

Most hydrants in our area are painted red, which per NFPA would be a private hydrant. I traveled through a community where all of the hydrants are purple, per NFPA these would be non-potable water. Very few systems use the color coding. The system I operated marked the 2.5 inch caps per NFPA standards. When the local “Authority” took over the system the coding was removed, all of the caps were painted yellow erasing the helpful information our Fire Fighters were accustomed to. In my travels across the western part of our great state I keep looking at fire hydrants. Maybe some day all will be uniformly marked.

I hope to see you in my travels. If I can in any way assist you, don't hesitate to contact me. 💧💧