Municipal Technical Advisory Service
INSTITUTE for PUBLIC SERVICE

Published on *MTAS* (http://www.mtas.tennessee.edu) February 27, 2020

Flow Test a Fire Hydrant

Dear Reader:

The following document was created from the MTAS website (mtas.tennessee.edu). This website is maintained daily by MTAS staff and seeks to represent the most current information regarding issues relative to Tennessee municipal government.

We hope this information will be useful to you; reference to it will assist you with many of the questions that will arise in your tenure with municipal government. However, the *Tennessee Code Annotated* and other relevant laws or regulations should always be consulted before any action is taken based upon the contents of this document.

Please feel free to contact us if you have questions or comments regarding this information or any other MTAS website material.

Sincerely,

The University of Tennessee
Municipal Technical Advisory Service
1610 University Avenue
Knoxville, TN 37921-6741
865-974-0411 phone
865-974-0423 fax
www.mtas.tennessee.edu

Table of Contents

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Reference Number: MTAS-1901

Many fire departments and water utilities do not know how to flow a fire hydrant properly. According to TDEC, there is no state regulation on how to flow a fire hydrant, but TDEC recognizes the American Water Works Association (AWWA) pamphlet # M-17 as the recognized standard for testing fire hydrants. Pamphlet M-17 is what both ISO and NFPA recognize as the approved method for flowing fire hydrants.

According to this standard, the proper way to test a hydrant and water main is to put a cap gauge on the test hydrant and take a static reading. Then proceed down stream to the next flow hydrant and back up stream to the closest flow hydrant and flow both at the same time. Use as many ports and sizes of discharges to make the largest drop in residual pressure. Record the pitot pressure at each flowing port and then record the residual pressure back at the test hydrant.

When the test is complete, five pieces of data will be used in determining the flow of the hydrant: the static pressure, the residual pressure, the flow (pitot) pressure, the size of the outlet flowing water, and the number of outlets open during the test. This information will be converted to gallons per minute by using a calculator or flow chart. The residual pressure will need to be charted to record the flow in gpm at 20 psi.

According to water experts, the multi-hydrant flow test method is the best and most accurate way to conduct a test. Doing single hydrant flow tests (i.e. where one hydrant is used to get the static, residual, and pitot pressures) is one reason so many communities seem to have so many red top hydrants. ISO will not recognize a single hydrant flow test.

MTAS has an Excel spreadsheet that one can use to calculate and document the results of fire hydrant flow tests. This resource is available on the MTAS website at this link: http://www.mtas.tennessee.edu/knowledgebase/fire-hydrant-flow-test-results-calculator [1].

MTAS has a model press release that a community can use to notify residents when fire hydrant flow testing is going to occur. This resource is available on the MTAS website at this link: http://www.mtas.tennessee.edu/knowledgebase/model-press-release-fire-hydrant-inspections-and-flow-testing [2].

MTAS has a model ordinance adopting by reference the NFPA fire hydrant color coding standards and establishing certain standards for fire flows and hydrants and use of some existing fire hydrants. This resource is available on the MTAS website at this link: http://www.mtas.tennessee.edu/knowledgebase/fire-hydrant-ordinance [3].

Links:
[1] http://www.mtas.tennessee.edu/knowledgebase/fire-hydrant-flow-test-results-calculator
[2] http://www.mtas.tennessee.edu/knowledgebase/model-press-release-fire-hydrant-inspections-and-flow-testing
[3] http://www.mtas.tennessee.edu/knowledgebase/fire-hydrant-ordinance


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