



**CHARLOTTE FIRE DEPARTMENT
FIRE MARSHAL'S OFFICE
500 DALTON AVE
CHARLOTTE, NC 28206**



FIRE HYDRANT TEST

- A non-sprinklered building hydrant flow test will require a "Single Hydrant Test" of the closest hydrant by the apparatus travel distance. This test will show how much water is available to the apparatus from the hydrant for suppression of the structure.
- A non-sprinklered building that will use multiple hydrants within the fire code apparatus travel distance to meet fire flow demand will require "Multiple Single Hydrant Test" and all hydrants must be flow tested at the same time. This test will show how much water is available to the apparatus from the hydrant for suppression of the structure.
- Sprinklered buildings where two hydrants are not available will require a "48 Hour Single Hydrant Test". This test will provide the engineer water flow GPM's of the water line to the best of our ability. The engineer will use this data to calculate sprinkler design, fire flow for hydrants and maybe domestic use for the entire project.
- Non – sprinklered buildings that are part of a new development where new a city or private water main are going to be installed as part of the design will require a "Capacity Test". This test will provide the engineer water flow GPM's of the water line between two hydrants on each side of the connection. The engineer will use this data to calculate domestic use and fire flow for hydrants for the entire project.
- Sprinklered buildings will require a "Sprinkler Design / 48 Hour Test". This test will provide the engineer water flow GPM's of the water line between two hydrants on each side of the connection. The engineer will use this data to calculate sprinkler design, fire flow for hydrants and maybe domestic use for the entire project.

"Single Hydrant Test" or "Multiple Single Hydrant Test": are test conducted taking the Static, Residual and Flow from the same test hydrant. This test does not require the hydrant to be on the same water line as the structure it is protecting. A 48-hour study is not normally conducted however there are instances where the engineer may request it.



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“48 Hour Single Hydrant Test”: are test conducted for “Sprinkler Design Test” where there is only one hydrant on the same water main where the tap for the sprinkler system will be made. Or the engineer for a “Single Hydrant Test” has requested a “48 Hour Study”. This test is conducted the same as a “Single Hydrant Test” with an added “48 Hour Study” on the same hydrant prior to flow testing.

“Capacity Test” or “Sprinkler Design / 48 Hour Test”: are test conducted using two hydrants on both sides of the connection on the same water main. There are instances due to CLT Water’s hydrant spacing the two hydrants may be right before or after the connection point. The hydrant upstream collects data for the 48-hour test, Static and Residual flows. The hydrant downstream collects data for the flow of the water. Also collected but not sent to the requestor during this test is a “Single Hydrant Test”. The requestor can receive this data as well by filling out another Hydrant Flow Request Form and paying an additional fee.

NOTE: Each test requested requires a separate form.

EXAMPLE: When requesting a “Multiple Single Hydrant Test” there should be one hydrant requested with the same project name and address on each request form with the “Multiple Single Hydrant Test” box checked.

Should you have any questions please contact

Water Supply Officer Adam Cloninger

704-995-7446

Seasonal Variations to Consider

Please note that hydrant test represent conditions observed during the stated pressure monitoring period. Distribution system conditions can vary seasonally, depending on system operating conditions and demands. Minimum static pressures are typically expected to occur during peak demand times. If there are private system design concerns, then the recommendation is to perform multiple pressure monitoring tests at different times of the year. The peak system demands for Charlotte Water are typically between June and September (Maximum Month is typically July)