CLARK COUNTY FIRE DEPARTMENT - FIRE PREVENTION BUREAU
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Email: Fireintake@clarkcountynv.gov
Permit By Inspector Guideline

HYDRANT FLOW TEST

This guide is used to assist in the permitting process for hydrant flow test. A permit is required per IFC 105.6.19. NFPA 13 requires fire sprinkler designers to calculate suppression systems back to a valid water source. Part of the review for hydraulically calculated systems is validating the water supply is adequate to provide sufficient pressure and flow to support the system.

Through a partnership with Las Vegas Valley Water District (LVVWD) Effective August 1, 2021 fire hydrant flow test for fire sprinkler design will no longer be accepted for ALL areas within the LVVWD. For areas outside LVVWD, if water network analysis is not available a flow test permit by inspector may be used.

APPLICABLE CODES:

The following codes and standard apply to this permit:

- *Standard for the Installation of Sprinkler Systems*, NFPA 13, 2022 edition
- *International Fire Code*, 2024 edition (IFC)
- *Clark County Fire Code Amendments*, 2024 edition (CCFC)

PLEASE NOTE: Where a waterflow test is used for the purpose of the system design, the test shall be conducted no more than 12 months prior to working plan submittal date unless otherwise approved by the authority having jurisdiction (AHJ).

PERMIT BY INSPECTOR ELIGIBILITY:

No items are required to be submitted for Permit by Inspector permit types. But plans must be available for inspector review at the time of inspection. A printed copy or an electronic display (i.e., a tablet or I-Pad) shall be available to the inspector.

1. **PLAN INFORMATION: Provide sketch for inspector showing the following information;**
   - Location of hydrants
   - Identify the Hydrant intended to be gauged for pressure readings and which hydrant to be flowed
   - Identify the adjacent streets to the project site
   - Indicate the approximate location of the building site and approximate location to the hydrant
   - See sample sheet on page 3

2. **EQUIPMENT:**
   - The contractor shall provide equipment needed for the test.
     - Gauges shall be calibrated as required by the manufacturer
   - The gauged hydrant shall have the gauge installed onto one of the fire hydrant outlets and will be used to record pressure before(static) and during the flow(residual).
     - The Static pressure is measured prior to flowing the hydrant

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    - The Residual pressure is measured when the flowed hydrant is fully opened
- The residual pressure is measured when the flowed hydrant is fully opened
    - Residual pressure must be a minimum of 10 psi lower than the static pressure.
    - Exception: Where all three outlets have been opened on the flow hydrant and the pressure drop is still not 10 psi, then the minimum of 10 psi pressure drop is not required.
- The flow hydrant, as identified on the plan, shall have one or more outlets opened, starting with the 2.5 inch outlets. The flow shall be measured from all open outlets, utilizing the corrective factors in NFPA 291. Flows from multiple outlets must be added together.

3. RESULTS:

- The fire inspector will witness the test and record the results on an inspection record. A copy of the inspection record will be given to the contractor to be utilized for fire sprinkler system design. A copy of the inspection record shall be added to the fire sprinkler submittal.
    - The static, residual, and pitot pressure, the orifice diameters and the flow achieved must be recorded.

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FIRE HYDRANT FLOW TEST INSPECTION SHEET

CONTRACTOR: _____

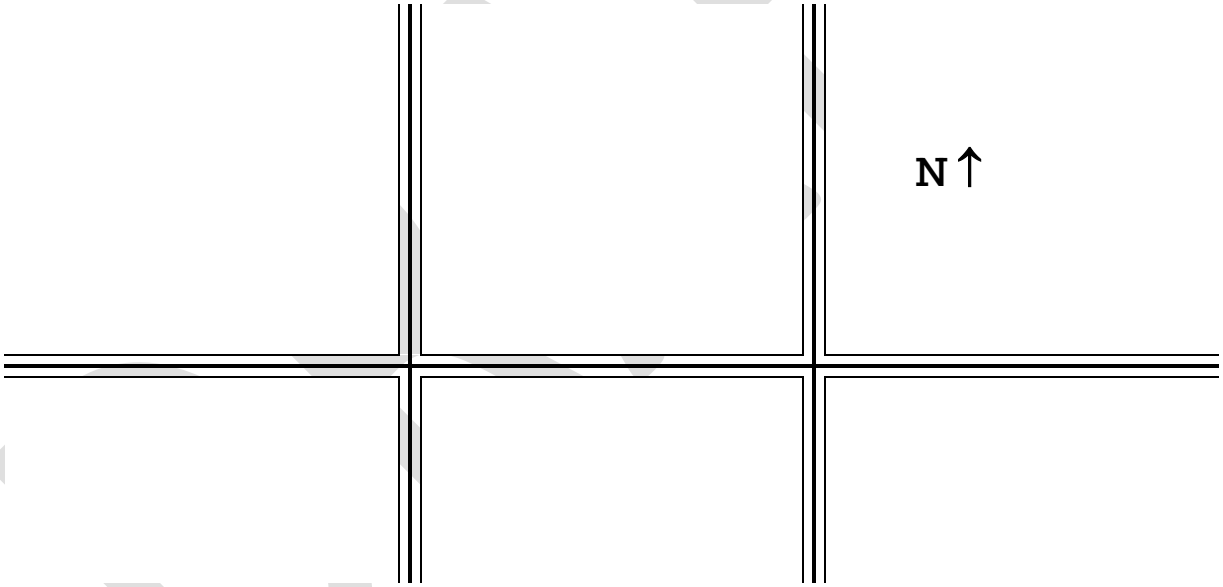
PH. NO.: _____E-MAIL:_____

NAME OF PROJECT:_____

LOCATION: _____

**IDENTIFY THE FOLLOWING; PROJECT LOCATION, CROSS STREET NAMES, READ

HYDRANT AND FLOW HYDRANT LOCATIONS



Static:_____ Residual:_____ Pitot:_____

Orifice Diameter: _____Flow Achieved: _____Distance to Structure:_____

APPENDIX A DEFINITIONS

PROJECT LOCATION: Building location, closest cross streets

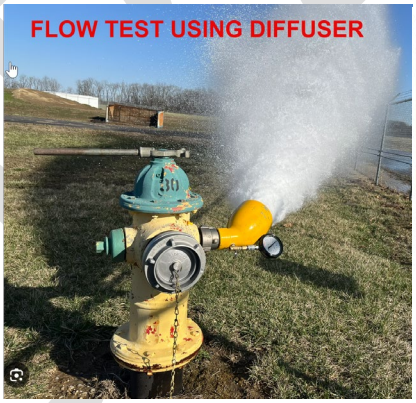
FLOW TEST: A test performed by the flow and measurement of water from one hydrant and that static and residual pressures from an adjacent hydrant for the purpose of determining the available water supply at that location.

READ HYDRANT: The hydrant that is used for measuring static and residual pressure during a flow test.



FLOWED HYDRANT: The hydrant that is used for the flow and flow measurement of water during a flow test.







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