Residential DESIGN

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RESIDENTIAL FIRE SPRINKLER SYSTEM FLOW TEST INSTRUCTIONS

FLOW TEST INSTRUCTIONS

When installation of all pipe and fittings is complete, a flow test is recommended to insure the system supplies enough water for proper fire sprinkler operation.

Note: *The NFPA 13D Installation Standard does not require flow verification.*

Prior to flow test, verify that water pressure matches the pressure used in the system design, noted on installation drawings.

MATERIAL REQUIRED FOR FLOW TEST

The Flow test Kit attaches to the most hydraulically remote sprinkler adapter for proper flow verification. Please refer the installation drawings for the location of the hydraulically remote sprinkler head(s).

The kit contains the following items:

One, 1" full port ball valve, PEX X PEX connections, or add PEX x THRD adapters

One, 1" PEX x 1/2" FNPT threaded adapter

One, 1" PEX x 1/2" MNPT threaded adapter

Eight feet of 1" PEX pipe, can be cut shorter if desired.

One sprinkler head of same size, orifice and K Factor as installed on project being tested.

INSTRUCTIONS FOR THE FLOW

All flow-restricting devices, such as, water softener, water meters, and other equipment must be in place when you perform a flow test.

1. Turn water off.

2. identify the remote sprinkler head and carefully unscrew the sprinkler from the sprinkler adapter. Place the sprinkler in a safe place to avoid damage. It will be replaced after test is complete.

3. Assemble the PEX pieces using the threaded fittings, (see attached diagram 1).

4. Install a sprinkler head, which matches the design orifice and K Factor, in the bottom of the flow test kit. The sprinkler head should be cut in half to remove the linkage, side arms and deflector; this will leave the threaded connection and orifice plate intact. The sprinkler information is locate on the sprinkler installation shop drawings and may be different for each project.

5. Attach the flow test kit assembly to the ½" NPT connection of the sprinkler adapter. Ensure the valve is closed.

At this point remember to verify that a pressure gauge is installed at the water service entrance location, this will allow a pressure reading from this gauge during the flow test.

6. Install the proper sprinkler orifice adapter to the bottom of the flow verification kit.

7. Pressurize the system to its working pressure.

8. Open the valve and bleed air from the system.

9. Close the valve completely.

10. Record the static pressure from the gauge at the riser.

11. Open the valve and record the residual pressure reading on the manifold gauge *while the water is flowing. Water should be flowed into a graduated and measured container, such as a garbage can with permanent marks noting the volume of water in gallons. Close the valve after one minute of water flow, or sooner if the container fills...*

12. Compare the results with the gallons per minute required on the sprinkler data sheet. Test results must equal or exceed the required flow for proper operation and warranty coverage.

13. Pull all Teflon tape off detached sprinkler.

14. Apply new Teflon tape to the threads of the sprinkler (three wraps).

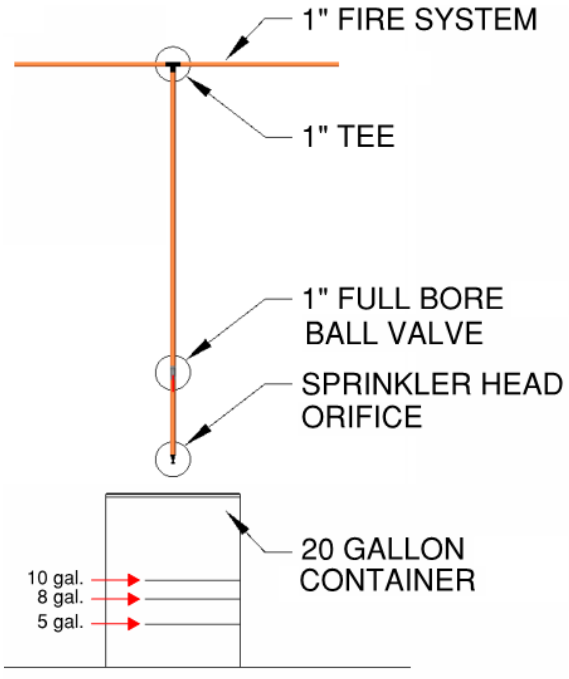
15. Using the appropriate sprinkler wrench, carefully tighten the sprinkler head into the sprinkler adapter. Be sure to follow the installation instruction for the sprinkler head manufacture.

16. Once you have verified the proper flow rate, fill out the Flow Test Verification form and retain this information for your records. You may be asked to provide this information to the home owner or your local AHJ.

Note: If the AHJ requires a two head test, an additional flow test kit is required.

MAKING A GRADUATED MEASURED CONTAINER

Using a one-gallon container, carefully mark the fill-lines in a large bucket (such as a 20- or 30-gallon garbage container) with a permanent marker. You should mark at the 5-, 8- and 10-gallon levels; then at each gallon up to or exceeding the minimum required flow from the sprinkler(s).



BUCKET TEST DETAIL

TROUBLESHOOTING FLOW PROBLEMS

If the number of gallons that flow out of the sprinkler during a flow test is less than the number required by the manufacturer, perform the following checks.

- *Verify the available water pressure.*
- *Verify all piping is per system design drawings.*
- *Verify that proper test orifice for the flow test is used.*
- *Check to see that all supply valves in the system are open.*
- *Ensure that no flow-restricting devices were added after the design was complete.*
- *Ensure that you have the properly sized water meter, according to the drawing.*
- *Ensure that the water service pipe (i.e., diameter and length) is in accordance with the design.*
- *Ensure that the elevations are in accordance with the design.*