Residential Fire Sprinkler System Guide to Fire Sprinkler Systems and Maintenance

Homeowners Guide to Fire Sprinkler Systems

The following is intended to educate the new homeowner who has purchased a home with an existing fire sprinkler system and those who have built, or are building, a home that will have a new fire sprinkler system installed.

What is a 13D system?

If your new house has a fire sprinkler system installed, it is a NFPA 13D type system. NFPA 13D is the National Fire Protection Association's (NFPA) standard for the installation of fire sprinkler systems in one and two family dwellings and mobile homes. The standard was adopted by the NFPA in 1975 with periodic reviews and updates to allow for new technological breakthroughs.

To make fire sprinkler systems economically practical for single family type dwellings, NFPA 13D permits omission of sprinklers from certain building areas where NFPA 13 (the standard for commercial occupancies) would require sprinklers. NFPA 13D also permits two sprinkler design areas so as to accommodate limited domestic water supplies. This means that the water supply only needs to be able to handle two sprinklers flowing water simultaneously among the total number of sprinklers in the building.

How do sprinklers operate?

Fire sprinklers are *individually* heat-activated and connected to a network of piping with water under pressure. When the heat of a fire raises the sprinkler to its operating temperature, usually between 165º - 175º F, a fusible link or glass bulb will activate only that sprinkler over the fire, thereby releasing water *only directly over the source of heat.*

Why are sprinklers so effective?

The key to keeping a fire from reaching potentially dangerous and life-threatening proportions is early detection. Fire sprinklers operate automatically over the fires area of origin, even if you're not home, releasing water directly over the source of heat while simultaneously sounding an alarm. Fire sprinklers keep fires small. In most cases, fires are controlled with one or two sprinklers.

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Do sprinklers go off accidentally?

It is possible for a sprinkler to discharge accidentally but it rarely happens. In fact, if a sprinkler is not subjected to freezing, overheating, or mechanical damage, loss records show that only 1 in 16,000,000 sprinklers per year will open accidentally.

What about sprinkler aesthetics?

Sprinklers are no longer the "ugly things hanging from the ceiling." Due to advances in sprinkler technology, sprinklers look better than ever, if you can see them at all. Sprinklers can be concealed in ceilings out of sight until needed to extinguish a fire. They are available in a wide range of sizes and colors to blend into the background of almost any room. Many realtors are boosting sprinkler systems as a desirable feature (which it is!) when selling homes.

What about water damage?

Water damage due to sprinkler activation is often grossly exaggerated due to comparisons made to small fire losses thanks to the sprinklers. Actually, the water discharged by the fire department is typically ten to hundreds of times greater than that discharged from the sprinklers. During a fire only the sprinkler(s) closest to the fire are activated limiting the total amount of water needed to suppress a fire.

What are the benefits?

Aside from the obvious property and life saving benefits, many insurance companies offer discounts to homeowners that have homes with fire sprinkler systems installed. The discount recommended by the Insurance Services Offices in most states is 13% for a 13D system, and an additional 2% if smoke detectors are also provided. This discount is from the total homeowner's premium, not just the fire portion. Although no specific data is available, a fire sprinkler system should also increase the resale value of your home. At the very least it will be an added benefit to the prospective buyer.

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Residential Fire Sprinkler Inspection Guide

Home fire sprinkler systems are on-duty all the time and have proven to be one of the most effective devices for saving life and property. The statistics of fire sprinkler system effectiveness is extraordinary. Whereas fire sprinklers are the silent knight and literally maintenance free, they do require some periodic inspections and maintenance. The following is a guide to assist you with inspecting your sprinkler system. The good news is, you can do all of this yourself.

Every month:

Visually check the sprinkler system monthly. This check is to make certain that nothing obstructs the sprinklers, which would interfere with their water spray pattern. Walk around your home and:

- Be sure nothing is hanging from sprinkler heads.
- Be sure no sprinkler heads have not been painted including overspray.
- Be sure there are no obstructions within 18 inches in any direction of the sprinkler head.

Two times a year:

When you change your clocks and when you change your smoke detector battery, give your fire sprinkler system a quick check also.

- Be sure the fire sprinkler system pressure gauge is working (the pressure gauge is located in the same location as your domestic water system pipe where it enters the house). Generally the pressure should read between 40 and 75 PSI. If pressure is lower, contact a licensed fire sprinkler installer. If the system is higher, conduct a flush test (see below) and see if the pressure drops to normal range. Note, before you do any test on the fire sprinkler system, be sure the system is not wired to your in-home fire/security alarm system. If it is, put the fire alarm in test mode.

- Open the inspectors test valve located right where the water supply for the fire sprinkler system is. This will usually be where the water service enters the house (i.e. – utility closet, basement, laundry room, etc.). This test valve will usually discharge into a floor drain located near the inspectors test valve. Some systems may have a remote inspector's test valve at the remote end of the sprinkler system. In either case, let the water flow for about a minute. Be prepared, two things will happen: Water will come out in force (you might get wet and it may damage landscaping slightly if discharged outside) and secondly within zero to 90 seconds, a bell will ring or your smoke detectors will operate in the alarm mode. The bell and/or smoke alarms will automatically turn off when you are done flushing the system and close the inspectors test valve.

- In the area where the water service enters your residence is usually where you will find the sprinkler system "riser" and sprinkler system controls. There will be a red box with spare sprinkler heads. Check to be sure there are at least six sprinkler heads and a sprinkler wrench. There should be at least one of each type of sprinkler head that is installed in your home included in this box.

A couple of other notes:

- If the testing and inspection of your sprinkler system is something you are not interested in performing, a licensed sprinkler contractor may be contacted to perform the test (for a fee) for you.

  If you want to modify your sprinkler system, make certain the work is done by a licensed sprinkler contractor. This is a life safety item engineered specifically for your house size and type. Modifications could render it useless. Before performing any modifications on your sprinkler system a permit is required from the Village of Wheeling Fire Prevention Bureau.

  Any deficiencies found during the sprinkler system test should be serviced by an Illinois licensed fire sprinkler contractor.

- In 2001, Omega Sprinklers issued a recall of its sprinkler heads. Although the deadline has passed to have the sprinklers replaced for free under the recall, owners of Omega sprinklers are encouraged to have their sprinklers heads checked and/or replaced.

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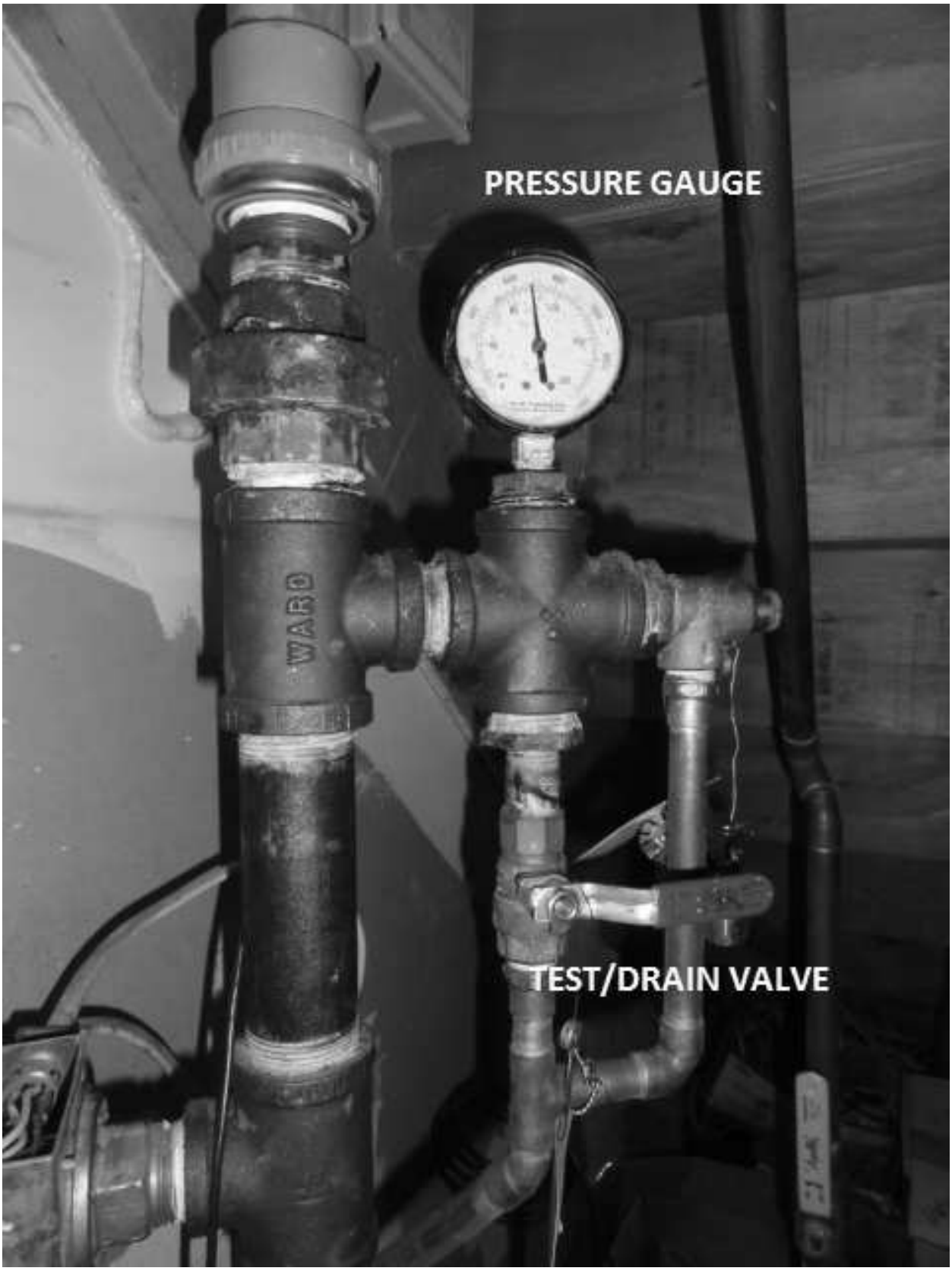
Don't forget to regularly check your smoke alarms and carbon monoxide alarms too!

Additional information may be obtained from the National Fire Sprinkler Association at http://www.nfsa.org/index2.htm

Lastly, if you have any questions at all, please do not hesitate to contact:

Evergreen Management, Inc., 800-973-4300

The Tideview Estates Condominium Association thanks the Village of Wheeling, IL, Fire Department, Fire Prevention Bureau, for the use of this document.



Typical Tideview Estates sprinkler installation.