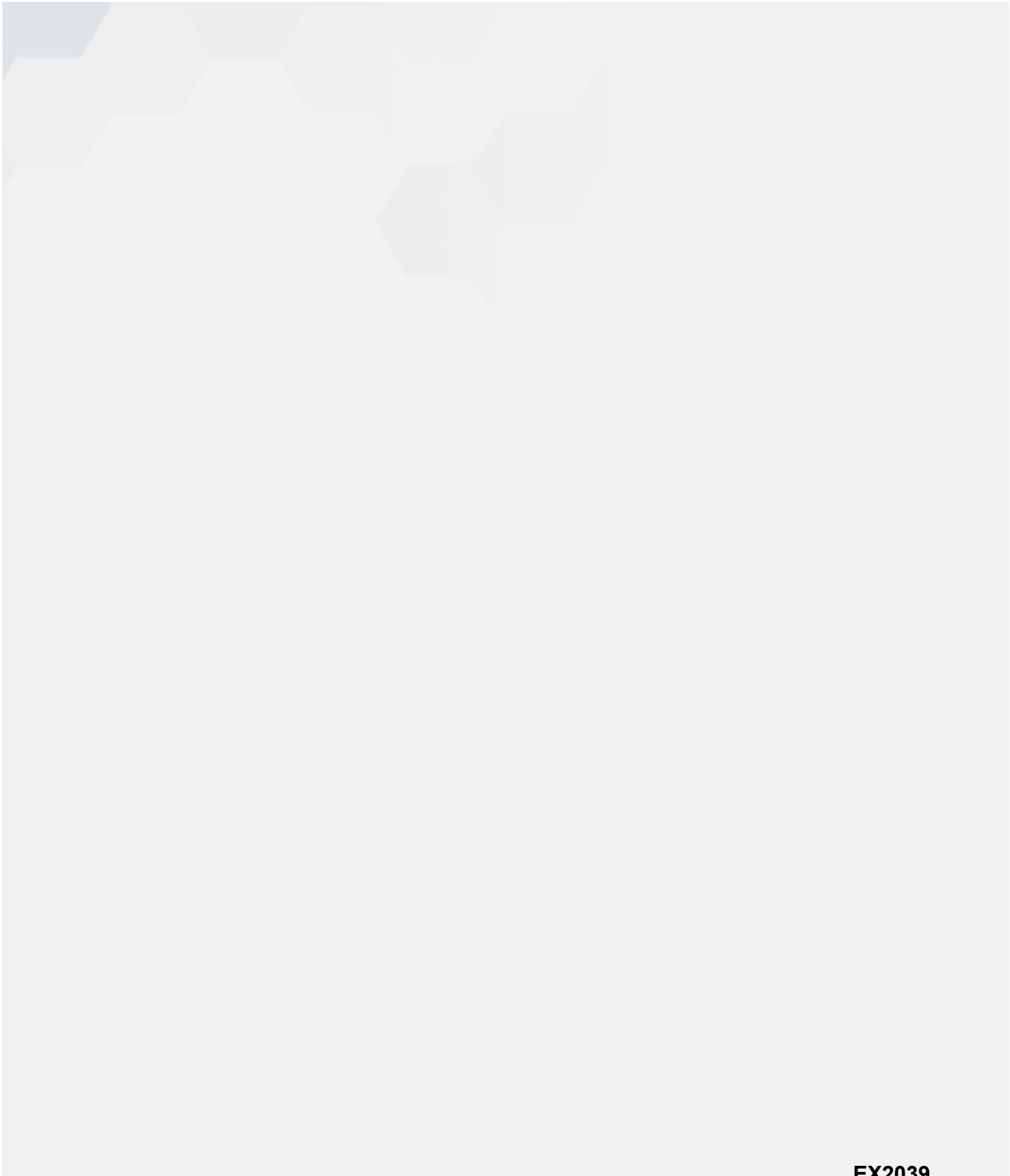






About A Standpipe Connection For Fire Protection

October 12, 2021 by David Balkan



A standpipe connection can be a lifesaver in case of a fire. Firefighters rely on standpipe connections to save lives and minimize property damage. The end result is that standpipes are an excellent innovation. They enable firefighters to suppress fires even when they break out on high-rise buildings.



In 1915, the National Fire Protection Association (NFPA) adopted the standpipe code. It remains the basis of the current NFPA 14. NFPA 14 contains the Standards for the Installation of Standpipes and Hose Systems. But you probably do not know what a standpipe system is. Let's define it for you.

What Is A Standpipe System?

Inside the structure of a building a standpipe is a collection of piping, hose connections, valves, as well as accompanying equipment. Their sole purpose is to help extinguish a fire to protect lives and property. The positioning of the hose connection allows water to be discharged in spray patterns or streams once the hoses as well as nozzles are connected.

The standpipe system also has numerous outlets located on each floor of a building. This enables firefighters to reach all the areas in a building. However, they are designed differently



Fire House, Warehouse complex, Active fire protection (AFP) standpipes

Classes Of Standpipes Systems

Class I Standpipe Systems

These systems are restricted for use by professional firefighters as they release water under high pressure that may be hard for an inexperienced person to control. Their outlets are usually installed within building stairwells.

Firefighters usually carry a unique hose to attach to class I standpipe connections. In most places, you can fit a 2.5" hose. However, in New York and San Francisco, you can fit a 3" hose to your class 1 standpipe.



trying to use them to put out fires and getting hurt in the process. As a result, they mostly exist on old buildings, with new building owners preferring domestic fire sprinklers.

Class III Standpipe Systems

This is a hybrid of class I and Class II standpipe systems. They have permanently fixed 1.5" hoses for use by inexperienced firefighters. And 2.5" hose connections where professional firefighters attach their hoses. Some Class III systems have 2.5" connections and reducers with 1.5" hoses permanently attached. But some do not include the permanent 1.5" hose.



How Are Standpipes Fed Water?



Wet System

It has constant water and consistent water pressure. This system is permanently fixed to a reliable water supply with a manual regulating valve.

Manual Dry Systems

The pipes in this system contain no water or air. Firefighters use a fire apparatus to feed them with water.

Automatic Dry Standpipes

They are filled with water to maintain constant pressure. You release the air in the system when you connect the hose in an emergency and replace it with water.

Semi-Automatic Dry Standpipe

This system stores pressurized or unpressurized air in the pipes. When you activate the manual pull station or electrical switch, water flows in as the air escapes from the far end.

Maintaining And Testing Standpipe Systems

After installing your standpipe, you want to test it to ensure it can deliver water effectively in an emergency. Testing is also done after a major modification of a structure. Testing is also essential during the demolition of a building. This initial testing done on the new or modified building is referred to as acceptance testing. Let's explore the two testing requirements here:

Acceptance Testing

Standpipe acceptance testing is done sequentially, beginning with the underground components and proceeding to the subsequent levels. Testing underground standpipe components helps the contractor identify faults like blockage or leakages. It also helps them



hydrostatic test then follows to ensure there are no breakages, leakages, as well as pressure loss. The hydrostatic test should run for about 2 hours as you pump water from the lowest point and monitor the pressure.

NPFA 25 regulations allow a pressure loss of up to 5psi as you may not tighten joints to avoid small leaks. If the pressure drops beyond that, there could be another problem.

Above-Ground Testing

You can do your above-ground testing immediately after the underground test. Here, you also begin by flushing debris from the components. Follow this with a hydrostatic test for leaks and pressure loss.

This involves capping all the outlets and running pressurized water through the standpipe system for about 2 hours. For best results, pump water from the lowest point in every zone and monitor the gauge consistently for any pressure drop.

Above-ground hydrostatic testing doesn't allow pressure loss. Unlike in underground testing where a small margin of pressure loss is acceptable. Test the connections to ensure they are compatible with your local authority hose type specifications.

You should also test if the system delivers water to the furthest point of the structure. Class I and III require a 100psi pressure at the most remote point, while class II systems require a 65psi to the same point.

Test if the pressure reducing parts work as intended and that the valves are open. Use the initial test as your benchmark for pressure reading you will use in maintenance testing. The process for maintenance testing will be similar, identifying and replacing faulty components.

How We Can Help

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David Balkan

David Balkan is the CEO of Balkan Sewer And Water Main, the largest and most trusted service in New York City. David is extremely active in various NYC plumber organizations being the Chairman of the Subsurface Committee in the Master Plumbers Council, and Vice President of the Subsurface Plumbers Association. In addition David's expertise is respected by officials of New York City agencies such as the NYC DEP, NYC DOB, and the NYC DOT. He frequently provides valuable input on a variety of industry related matters.





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Contact Info

130-01 Jamaica Avenue
Richmond Hill, NY 11418



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