

MIFAB Trap Seal Primer Selection Guide

Trap seal primers are a necessity where floor drains are infrequently used and in areas such as mechanical and service rooms prone to warm and dry temperatures that result in rapid evaporation of water in floor drain traps. Today's typical method of cleaning floors involves the use of a mop that produces very little water that drains into floor drains. Trap seal primers provide a constant supply of water to replenish the deep seal or "P" trap of a drain to prevent sewer or potentially explosive methane gas from entering the area through the floor drain. They are installed within the water supply line. The selection and specification of trap seal primers merits careful consideration.

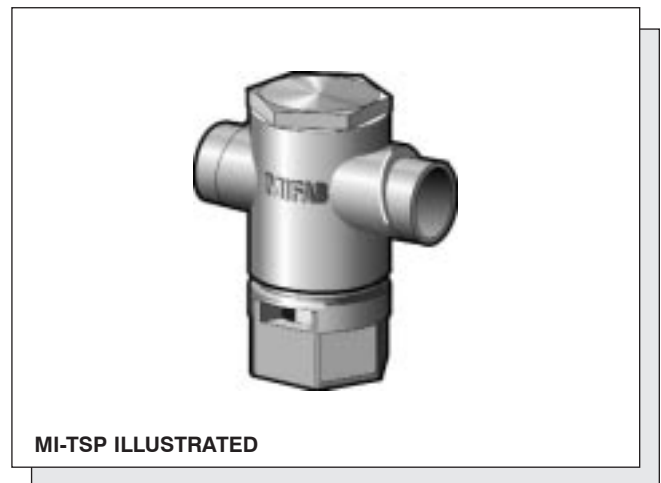
Factors such as type of trap seal primer, installation considerations, and local code requirements must be taken into account when specifying trap seal primers. The A.S.S.E. (American Society of Sanitary Engineers) trap seal primer standard # 1018 is the key Standard that relates to trap seal primers. MIFAB's M-500 and MI-TSP trap seal primers are tested and certified to the A.S.S.E. 1018 Standard.

TYPES OF TRAP SEAL PRIMERS

There are three main types of trap seal primers. They include: continuous flow, pressure drop activated and flush valve operated.

CONTINUOUS FLOW TRAP SEAL PRIMERS

Continuous flow trap seal primers are the original style of trap seal primers. They are typically constructed of cast brass or bronze with a neoprene rubber poppet float on the inside that rises upward as water flows through the primer. When the poppet rises off of its seat, water flows from the primer, through the plumbing line connection, and into the floor drain trap. They are manufactured in either sweat, threaded or union connections and should be installed in a vertical position within the horizontal water supply line, at least ten inches above the floor drain trap that it serves. Continuous flow trap seal primers do not have any method of screening out line debris. This often results in their clogging and either flowing water continuously, or not at all. The volume of water that they discharge is directly related to the amount of water that continuously flows through them. For these reasons, pressure drop activated trap seal primers have become the selection of choice for specifiers.



MIFAB Trap Seal Primer Selection Guide (Cont'd)

PRESSURE DROP ACTIVATED TRAP SEAL PRIMERS

Pressure drop activated trap seal primers are typically manufactured out of brass. They are engineered with a 1/2" M.I.P. inlet connection and a 1/2" F.I.P. outlet connection. They have an interior cartridge that seals when the line pressure is in a static state. When the line pressure drops as little as three p.s.i. (pounds per square inch) (caused by the flushing of a toilet, opening of a faucet, or any draw of water from the water supply line within a close distance to the primer) the interior cartridge will rise due to the pressure differential within the primer and a metered amount of water is discharged under pressure into the plumbing line connected to the floor drain trap. Pressure drop activated trap seal primers are supplied with a fine mesh brass filter that will screen out debris to ensure that the cartridge is not clogged and that the water deliveries are uniform. The filter is easily accessible for quick cleaning or replacement. Three different cartridges offer three different water deliveries into the floor drain, depending on the number of floor drain traps served and the evaporation rate of the water in the floor drain traps. Assuming line pressure of 60 p.s.i., and a line pressure drop of 3 p.s.i., MIFAB's MR-500 trap seal primer will discharge a one half ounce of water, the M1-500 will discharge a full ounce of water and the M2-500 will discharge a one quarter ounce of water into the floor drain trap every time the line pressure changes by 3 p.s.i.

FLUSH VALVE TRAP SEAL PRIMERS

Flush valve trap seal primers are installed below the flush valve and direct an amount of waste water discharged from the flush valve into a tube that connects to the floor drain to maintain the water seal. Their advantages are that the water used is already consumed by the flush valve operation, and this type of primer has no moving parts. Their disadvantage is that their location is determined by the location of the fixtures which may be too far away from the floor drains to be practical, unlike supply line mounted trap seal primers which can be more easily installed close to the drain to be primed. Many installations cannot use flush valve trap seal primers because the floor drain traps are too far away to be reached by the flush valve trap seal primer.



M-500 ILLUSTRATED



MI-700 ILLUSTRATED

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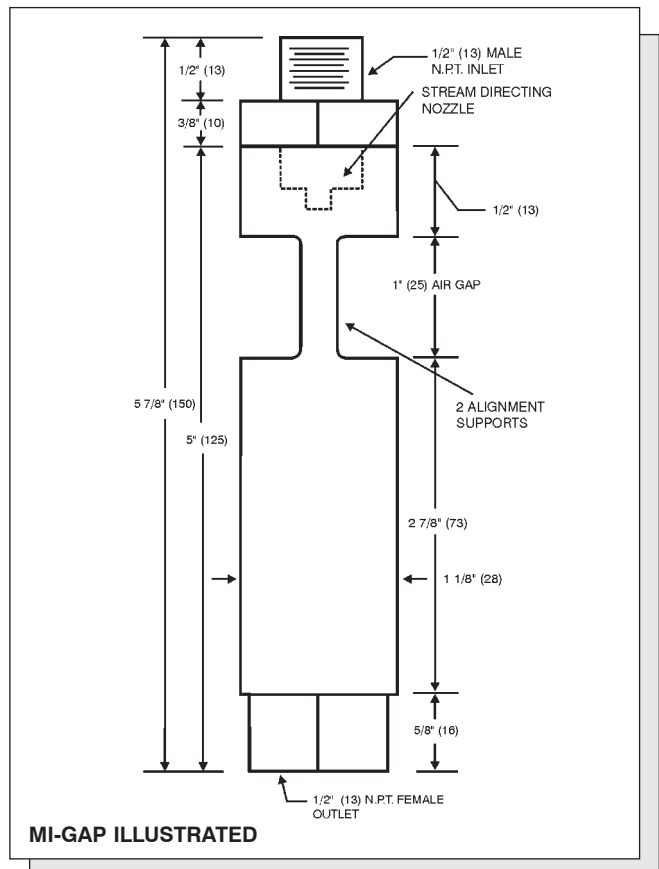
INSTALLATION CONSIDERATIONS

Continuous flow and pressure drop activated trap seal primers should be installed at least ten inches above the floor drain traps to ensure that there is enough of a drop for the discharged water to flow to the traps. Pressure drop activated primers should be connected to the water supply line with a raised elbow and in a vertical position to ensure that line debris does not enter and contaminate the valve. Access doors should always be specified to provide easy access to all trap seal primers. Trap seal primers have moving parts that will eventually wear or be compromised by line debris even in the best of circumstances. The access doors specified should be large enough to provide "hand access" to the trap seal primer, related accessories and line shut off valve. For quick and easy repair, a line shut off valve is recommended directly before the trap seal primer on the water supply line.

The closing of this valve will facilitate the cleaning and maintenance of the primer without having to separately shut off the building's water supply. Water supply lines should be flushed several times before the trap seal primers are initially installed to ensure that debris will not enter the primers and negatively affect their performance. Pipe dope and paste should never be used when installing trap seal primers in water supply lines because the fine residue from these adhesives will enter the trap seal primers and clog the cartridges. Once installed, pressure drop activated trap seal primers should be cycled at least five times to ensure reliable operation. Quickly opening and closing the line shut off valve can accomplish this. Four view holes located directly across from each other at the bottom of the pressure drop activated trap seal primers allow easy observation of water discharging into the make up line that leads to the floor drain trap.

AIR GAP FITTING

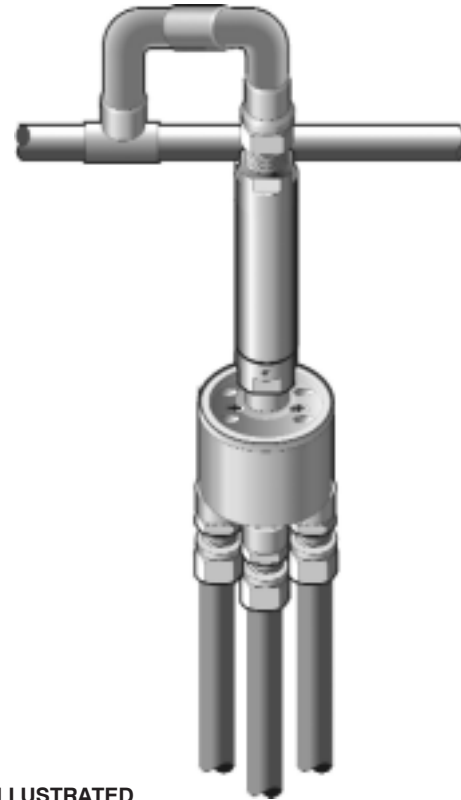
Many local codes require the use of an air gap fitting underneath the trap seal primer (see MIFAB's MI-GAP product). The purpose of an air gap fitting is to provide a vertical space that is twice the diameter of the water supply connection in order to ensure positive protection against backflow. ANSI / ASME Standard A112.1.2 air gap in plumbing systems is written for the application of air gap fittings. It is recommended that air gaps be specified for use in areas where splashing water from the air gap will not be objectionable or cause damage.



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DISTRIBUTION UNITS

Distribution units can be installed underneath pressure drop activated trap seal primers to distribute water to up to ten floor drain traps that are in close proximity to each other. (See MIFAB's MI-DU product) Typically, distribution units are used when a men and women's restroom are located side by side with a common pipe chase between them. In this instance, one trap seal primer with a distribution unit dialed to the 2 setting can be used to service both floor drain traps. This eliminates a second costly installation procedure, shut off valve, access door and air gap fitting. MIFAB's distribution units are engineered so that they do not need to be installed level to distribute water evenly and can be adjusted to serve either two, three or four floor drain traps with a single unit. Up to ten floor drain traps can be served by having one main distribution unit feed others below it. Contact MIFAB for layout information on distribution units serving multiple drains.



MI-DU ILLUSTRATED

TRAP SEAL PRIMER CONNECTORS

Most trap seal primers are connected to the 1/2" trap seal primer tapping on a floor drain body via a soft copper or plastic plumbing tube. Often, this tube is pinched or squashed during the concrete pour and water cannot travel to the floor drain water trap. In these instances, the trap seal primer is rendered useless. This can be avoided by using a trap seal primer connector which is installed underneath the floor drain and slab ensuring that the plumbing tube is not impacted. In addition, some floor drain bodies are installed without trap seal primer tappings. In these instances, one can specify a trap seal primer connector that is mounted into the no hub connection of the floor drain. It has a brass compression fitting attached to it that will receive the plumbing line coming from the trap seal primer. Trap seal primer connectors are also advantageous in that they can be rotated 360 degrees in order to receive the plumbing line from any position.



MI-600 ILLUSTRATED