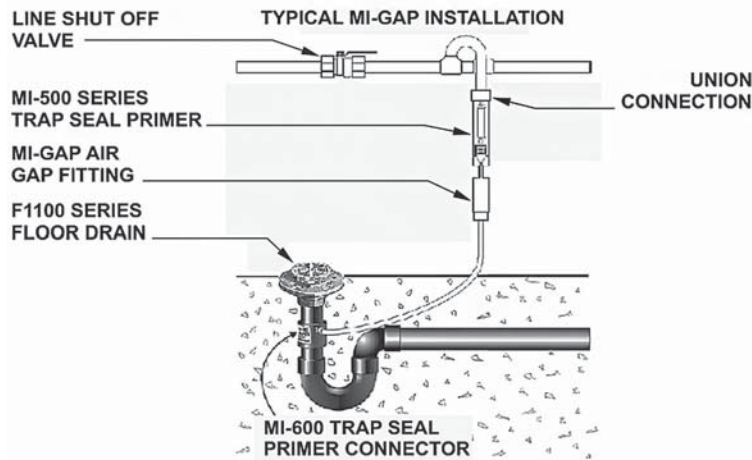


MIFAB TRAP SEAL PRIMER SELECTION GUIDE

Trap seal primers are a necessity where floor drains are infrequently used and in areas such as mechanical and service rooms. In surprisingly little time, evaporation of water in floor drain traps will allow sewer gas to enter the interior of the building. Today's typical method of cleaning floors produces very little water that runs into floor drains. In mechanical rooms, warm dry conditions and air pressure changes caused by HVAC equipment may also serve to compromise the water seal. Trap seal primers provide a 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 drains. They are installed on the potable cold water supply line, and react to water flowing in the line to trigger, either by turbulence or pressure drop. Once a triggering event occurs, the primer will release water that is piped to a trap primer connector on or near the "P" trap being maintained. The selection and specification of trap seal primers merits careful consideration. Outlined below are some of the factors to be aware of when planning to use trap seal primers effectively. Installation 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-NPB and MI-TSP-NPB trap seal primers are tested and certified to the A.S.S.E. 1018 Standard.

MIFAB's trap seal primers have been tested and certified to comply with the low lead plumbing law. These products have been verified with weighted average lead content of less than .25% of the wetted surface.



MI-TSP-1-NPB ILLUSTRATED
(Continuous flow)

TYPES OF TRAP SEAL PRIMERS

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

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.

ELECTRONIC TRAP SEAL PRIMERS

MIFAB's MI-100 Series of electronic trap seal primers are a pre-assembled electronic trap seal primer system programmed to maintain the water seal of floor drain traps. The device is made with an A.S.S.E. approved vacuum breaker, solenoid valve operated by a timer, shut off valve for maintenance and a manifold system to distribute water evenly to the desired floor drain traps. The design is programmed at MIFAB's factory with standard flush times. These flush times can be adjusted by the operator in order to discharge more or less water to the floor drain traps, depending on the installation and climate conditions. Applications include commercial buildings such as schools, hospitals, manufacturing facilities, and any other buildings that require floor drain trap seal protection. The distribution of water from the MI-100 to the traps avoids possible odors coming from the drains.

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 made 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 stainless steel 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-NPB trap seal primer will discharge a one half ounce of water, the M1-500-NPB will discharge a full ounce of water and the M2-500-NPB 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 trap 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 floor drain trap 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.



MIFAB TRAP SEAL PRIMER SELECTION GUIDE (Cont'd)

INSTALLATION CONSIDERATIONS

Continuous flow and pressure drop activated trap seal primers should be installed at least 12" above the floor drain traps for every 20 feet of distance to the drain to ensure that there is enough of a slope for the discharged water to flow to the traps. MIFAB recommends pre-priming the traps, as trap seal primers are meant to replace trap water loss through evaporation, etc. Pressure drop activated primers should be connected to the water supply line with a vertical elbow to limit line debris from entering and contaminating the valve. The primer itself should be installed vertically. 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 and union connections are 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 at least five 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. Install the trap seal primer as close to the source of the pressure drop as possible. Fixtures with a water restriction device may not cause a large enough pressure drop to activate the trap seal primer.

AIR GAP FITTING

Many local codes require the use of an air gap fitting underneath the trap seal primer (see MIFAB's MI-GAP-NPB 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.

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.

LINE SHUT OFF VALVE

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.

