

Innovative Solutions for Clean Water

TYPICAL SPECIFICATIONS AND DATA

Safe Drain[®] is the most advanced and robust spill containment and storm drain inlet protection available today.

1. PRODUCT NAME

• Safe Drain ®

2. MANUFACTURER

Safe Drain Stormwater Holdings, Inc. 628 Hi Tech Parkway Oakdale CA 95361 Phone: 800-764-5220 Fax: 408-273-6000 Email: info@safedrainusa.com Web: www.safedrainusa.com

3. PRODUCT DESCRIPTION

Basic Use

The Safe Drain is a storm drain insert that controls fluids (spills) with a unique valve system. The Safe Drain also captures and filters storm water in the open position. The Safe Drain is a proactive measure used to contain unwanted or accidental spills from entering the environment and to comply with environmental regulations. The Safe Drain is built to fit the existing storm drain inlet, however, it can be modified to fit special location, circumstances and operations.

Available in manual or automatic versions; the manual units are operated with a valve key that fits through the storm drain grate to actuate the valve. The automatic units are controlled by a remote switch, computer, or smart phone.

Composition and Materials

The Safe Drain is an AISI 304 stainless steel containment basin with durable valve system, each has a double seal installation. Larger units are 12 gauge, smaller units are 14 gauge, all have a standard 2B finish.



The 65-45-12 ductile cast iron valve has a SS4-1600 steel and CF8M stainless steel stem; 316 stainless steel disc; a 416 stainless steel stem; a 316 stainless steel resilient; a EPDM, Buna-N, Viton seat; a Teflon®-graphite-impregnated stem bushing and Buna-N stem packing.

The filters are typically made of nylon mesh or stainless steel filter cartridges, The cartridges are charged with various media to accommodate the capture of the target pollution. If the target is petroleum products, then a hydrocarbon absorbing polymer material is used.

Benefits

- Stops unwanted discharges/spills from entering the storm water system
- Filters pollutants from entering the storm water system
- Prevents fines, clean-up costs and negative publicity
- Allows the user to have control over the storm drain
- Uses the existing storm drain grate so there are no weight load changes to the storm drain cover
- Manufactured to any size, shape or special design
- Installed with no construction, preventing costly down time
- Built to fit the existing storm drain inlet: round, square, or any other shape or size — can be fitted with 4-18 inch valves depending on the needed flow rate
- Produced by certified welders and installed with no construction, so there is little or no down time

Options

Various sizes and configurations of valves are available, see Table below for flow rates.

Rated Flow Coefficient (Cv)*

	Angle of Disc Opening				
Valve Size (inches)	10°	30°	50°	70 °	90°
4	5	63	177	472	827
6	13.3	136	385	1075	1883
8	20	247	687	1821	3239
10	31.67	394	1092	2983	5210
12	47	578	1665	4398	8026

*Cv is defined as the volume of water in U.S.G.P.M. that will flow through a given restriction or valve opening with a pressure drop of one (1) p.s.i. at room temperature. Recommended control angles are between 25-70 degrees open.

4. TECHNICAL DATA

Applicable Standards

American Iron and Steel Institute (AISI)

 AISI/SAE3Q4/304L Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method

American Society of Testing and Materials (ASTM)

- ASTM A351 Standard Specification for Castings, Austenlitic, for Pressure-Containing Parts
- ASTM A536 Standard Specification for Ductile Iron Castings



- ASTM A582 Standard Specification for Free-Machining Stainless Steel Bars
- s?ASTM C 1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method

Environmental Considerations

Safe Drain may qualify for LEED consideration.

Other Approvals

Safe Drain is a California Certified Small Business

5. INSTALLATION

The installation of the Safe Drain device is a straight forward process. Despite its ease of installation, there are several key items that require close attention. The following guideline is designed to ensure a trouble free and long lasting installation.

Unit Inspection: each unit should be inspected prior to installation for any damage or loosening of the valve attachment bolts. In the unlikely event that damage has occurred, please contact Safe Drain, Inc. immediately. If bolts have become loose, tighten Va turn past snug. Ensure valve opens and closes properly by turning hand-wheel. Do not over tighten. Valve only requires moderate pressure to close.

Additionally, is the unit correct shape and size? If yes, proceed to next step. If not, notify Safe Drain, Inc. immediately for resolution.



Site Preparation: the initial site preparation is a critical step in ensuring proper installation. The following steps must be adhered to closely:

Inspect area around drain inlet. Is the surface cracked, buckled or missing sections that will allow water to bypass the unit? If so, repair area immediately around ring and adjacent paved surfaces. This is readily accomplished by using a commercial asphalt or concrete patch mixture. It is, however, not suitable for heavily cracked, heaved or separated surfaces. These defects require professional paving repairs and are beyond the scope of this document and are not within the responsibility of Safe Drain personnel.

Basin Preparation: This operation involves potentially heavy lifting, dust production, flying debris and noise. Use appropriate safety measures to protect Safe Drain personnel, customer personnel and property and other people that may be in the area. This may include establishing an exclusion zone using barricades, cones and tape.

Exclusion Zone: The work exclusion zone allows for protection of the field service personnel, customers and customer's clients. When possible, forward an advanced work plan for the installation activities to the customer representative for posting at the appropriate site locations. This will allow work to proceed without impacting customer operations and hopefully prevent drains from being obstructed by vehicles.

Cordon off area that allows for sufficient working room for all activities. This should include the following when practical:

SAFE DRAIN Installation Procedure

- Safety cones: orange cones at perimeter of work zone
- **Barricade tape:** tape will be yellow Caution tape strung from cone to cone or to other objects that facilitate the establishment of the exclusion zone
- **Tarps:** use tarps to protect customer property from debris liberated during the cleaning process
- Hot work signage: in the event that grinding is required, a high contrast yellow and black lettered sign with the words Caution Hot Work in Progress shall be posted at all potential entrances to the work exclusion zone

The work exclusion zone is to protect both the customer and field service personnel. Any work activity that may present the potential for injury to other than field service personnel must be terminated if the work zone is breached by unauthorized personnel.

Grate: Using proper lifting techniques (and/or a hooktype tool) remove the grating from the support structure and set aside. Note any grate damage or defects. Recommend replacement if the grate is structurally compromised (cracked cast iron, failed or corroded weldments, heavily bowed or other obvious defect. Remove any loose debris or rust from the bottom of the grate to ensure a good seal against the basin. Although this is not a sealing surface, deflection of the grate during loading and unloading can transfer to the Safe Drain unit and result in long term damage.

Ring: Inspect the storm drain basin ring for damage. This may include, but is not limited to, cracks, chips, excess corrosion, gaps, offsetting or other defect(s) that would prevent the Safe Drain unit from sealing.

Using the appropriate PPE, remove all debris from the ring surface. This can be accomplished using a steel wire wheel brush, hand held brush or other abrasive media. After brushing, grinding or sanding, remove all debris. Wipe surfaces down using a clean rag. If the surfaces appear to be oily, us a mild detergent solution applied to a clean rag and wipe down the ring. Do not apply soap directly to ring in order to minimize the risk of contaminating the storm drain. A properly prepared surface will be one with exposed bare metal and be clean in appearance. This allows for the proper adhesion of the silicone sealant. **Test Fit of Unit:** Prior to permanently installing the Safe Drain unit, it must be test fit into place. This involves placing the unit into position, post-cleaning, and prior to application of the sealant. If the unit does not fit, inspect to determine if it is a size issue or orientation issue. If the unit is of the wrong dimensions, contact Safe Drain immediately for order and sizing verification. If the unit fits, remove the unit from the catch basin and proceed to the next step after ensuring that the bottom flange surface is clean.

Sealing Bead Application: To ensure a weatherproof, chemically-resistant, and flexible seal, only Sikafiex®-1a polyurethane sealant be used. It is also important to apply only in weather that is above 40 degreesF (5 degrees C) and not raining.

Apply a continuous bead at Va-% Inch wide allowing no gaps. Prior to skin forming on sealant (less than 30 minutes) place unit onto ring surfaces. Apply a uniform pressure against the flange surfaces. The unit must be installed so that the valve handle orientation is aligned with the openings on the grate or valve tool insertion. Install the grate onto the unit to apply weight to the flange surfaces for sealing.

Testing of Unit: The final step in the installation procedure is the integrity testing of the unit. Follow the steps listed below:

- 1. Ensure that the Safe Drain valve is closed.
- 2. Fill basin with clean water to brim and monitor for leakby.
- If unit is leak-tight, testing is completed and water may be removed for proper disposal. This may be into the landscape or sanitary drain.
- 4. If unit leaks, recover water from basin and inspect valve seat and butterfly for damage or fouling. Wipe clean all surfaces with a clean rag and inspect again. If it appears debris was causing unit not to seal (very unusual situation) close valve and repeat leak test. If unit is leak-tight, refer to step 3. If not, and immediate cause cannot be isolated, remove valve and install valve blank off plate.
- 5. Retest with plate in place. If unit is leak-tight, reinstall valve, retest. if unit is leak tight refer to step 3. If not, notify Safe Drain headquarters for further instructions.

Documentation: All drain installations are to be documented on the Product Installation Record SOP-PiR-104. This document allows for the tracking of field conditions, special notes and allows for the establishment of the effective warranty date. This form is to be completed and returned to the Safe Drain headquarters office.

6. AVAILABILITY AND COST

Availabllity

Contact manufacturer for availability.

Cost

The cost is dependent on the size of the storm drain and the valve requirements.

7. WARRANTY

Three-year warranty on the valves and moving parts, a tenyear warranty on the stainless steel basin. Void if modified or other than Safe Drain parts are used.

8. MAINTENANCE

The Safe Drain should be inspected monthly and the valve cycled. The unit should be cleaned as needed or on a regular maintenance schedule. The seals should be checked during service, a minimum of once per year.

9. TECHNICAL SERVICES

Safe Drain offers 24-hour technical support.



Safe Drain Stormwater Holdings, Inc. P.O. Box 723, Oakdale CA 95361 800-764-5220 • info@safedrainusa.com



The Safe Drain and components are patented/patent pending product(s) of Safe Drain Stormwater Holdings, Inc., ©2023 All Rights Reserved. Safe Drain is a registered trademark.

WWW.SAFEDRAIN.COM