GREASE INTERCEPTOR REQUIREMENTS
Lakeway Municipal Utility District

Last Updated on October 27, 2011

Grease interceptors are required to separate out Fats, Oils and Greases (FOGs) and solids normally found in food preparation waste from the rest of the wastewater being discharged. By intercepting the FOG and solids normally found in food preparation operations, the grease interceptor protects the wastewater system from potential blockages, overflows and ensuing fallout.

All establishments which have commercial kitchen facilities, except residential customers, are required to have a properly sized and functioning grease interceptor (also referred to as a grease trap). The following types of facilities will be required to have grease interceptors: restaurants, schools, hospitals, nursing homes, and any other facility that handles grease. Under-counter or other grease capture devices internal to the facility are not acceptable.

Location Requirements

All interceptors shall be located outside of the building in such a manner that personnel from the District can inspect the interceptors at any time, except as provided by agreement by the General Manager.

Interceptor Sizing

All interceptors shall be sized to ensure that the District's sanitary sewer system is protected from excessive grease which may cause clogging or damage and that the facility is capable of meeting all discharge requirements. In no case will interceptors of less than 100 gallons be acceptable.

All fixtures with a potential to carry grease-bearing waste shall be plumbed to the grease interceptor. Associated fixture units to be used for sizing purposes shall be as noted below in Table 1.

Table 1. Fixture Units.

Type of Fixture	Contributing Pipe Size	Fixture Units
3 compartment sink	1-1/2", 2"	3, 4
2 compartment sink	1-1/2"	2
Dishwasher	2"	4
Wok stove	2"	4
Hand Sink	--	0
Mop Sink	2", 3", 4"	2, 3, 4
Floor Drains (2", 3", 4")	2", 3", 4"	2, 3, 4
Floor sinks (3", 4")	3", 4"	3, 4
Garbage grinder	*Prohibited**	
Notes: Hand sinks are not required to be plumbed to the grease interceptor. For indirect waste systems where hub drains and floor sinks are used as receptors for dishwashers, 2- and 3-compartment sinks, etc., the fixture unit count shall be twice (2x) the floor sink or hub drain fixture unit count. In such cases the fixture count for the indirect waste source is not counted. Garbage grinders and disposals are prohibited in commercial kitchens and other industrial users of the sanitary sewer system.		

The District has adapted a grease interceptor sizing procedure similar to neighboring City of Austin, based on the following three steps.

Step 1. Calculate the total number of fixture units connected to the interceptor. The fixture unit counts that shall be assigned to each different kind of fixture are listed in Table 1 of these interceptor requirements.

Step 2. Determine the minimum flow rating of the grease interceptor by multiplying the total fixture unit count times three gallons/minute:

Flow rating = Total fixture unit count x 3 gallons/minute

Step 3. The interceptor must accommodate the required liquid holding capacity, defined by the available volume within the interceptor below the static water level. The minimum liquid holding capacity of the interceptor is calculated by multiplying the grease interceptor flow rating from Step 2 (in gallons per minutes) by a minimum 12-minute retention time:

Minimum liquid holding capacity (gallons) = Flow rating x 12 minutes

Note that the actual capacity of the interceptor will be greater than the calculated minimum liquid holding capacity value in order to accommodate venting and freeboard requirements.

Upon approval from the District, fixtures receiving non-grease-bearing wastes may be drained through a grease interceptor, but shall not be included for grease interceptor sizing (i.e., condensate from coolers).

Interceptor Design Criteria

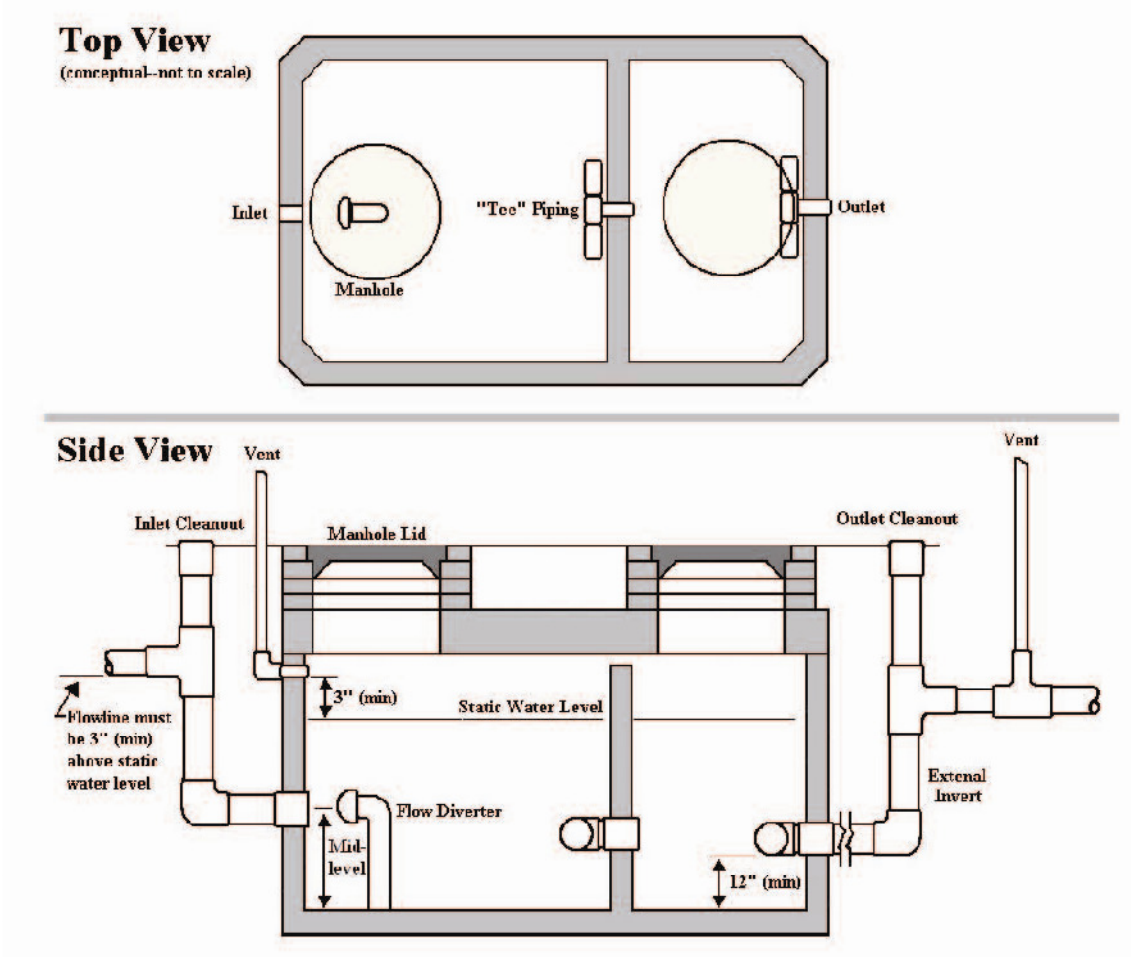
The approved design for grease interceptors shall be as follows:

1. The grease interceptor must be constructed in accordance with the current plumbing codes and installed in a manner acceptable to the District to ensure watershed protection.
2. The grease interceptor shall have two compartments.
3. While operating at the interceptor's rated flow capacity, the first compartment must provide a retention time of no less than seven minutes, and the second compartment must provide a retention time of no less than five minutes.
4. Interceptor inverts and vents shall be external to the compartments.
5. The flowline to the interceptor (upstream of inlet invert) must be at least 3 inches above the static water level of the tank.
6. Similarly, the interceptor vent must be at least 3 inches above the static water level of the tank.
7. The interceptor inlet must be near an elevation that is one half of the height of the tank's static water level, and the interceptor outlet must be at least 12 inches above the floor of the tank.

8. Adequate flow diffusion features must be provided to evenly distribute flow throughout the grease interceptor. Examples of such features would include a flow diverter plate in the primary compartment, "tee" piping between the two interceptor compartments and "tee" piping on the tank outlet.
9. Each interceptor compartment shall be accessible for cleaning and inspection purposes (no exceptions).

Exceptions to certain of these criteria may be considered for approval in conjunction with the review process. In such cases, engineering drawings and supporting performance data must be submitted to and approved by the District prior to grease interceptor installation.

Below is conceptual drawing of a typical grease interceptor design. (*Source: City of Austin Pretreatment Special Services Division,* http://www.ci.austin.tx.us/water/downloads/wwwssd_iw_gt_concept_drwg.pdf.)



General Specifications

The following specifications may provide general guidance for acceptable grease interceptor design.

Materials:

1. Concrete – The interceptor shall be constructed of precast concrete having a minimum 20-day compressive strength of 4500 psi, utilizing ASTM A615 or A706 Grade 60 reinforcing steel designed for traffic loading.
2. Steel (more commonly for freestanding, not buried) – Hot rolled, all welded steel and enamel or epoxy-coated inside and out with removable sealed cover.
3. Fiberglass/HDPE (where lightweight construction is required)
4. Manhole Access – Grease interceptor shall have adequate manhole access to permit cleaning of all areas of the interceptor. Each manhole access shall be minimum 20-inch diameter clear opening and be water-tight. Cast-iron fame/covers shall conform to ASTM A48 and be traffic-duty.
5. Piping –Material compatible with sanitary sewer design, such as solvent welded PVC.

Installation:

1. Interceptor and associated inlet/outlet/vent piping shall be installed per the manufacturer's recommendations and project specifications.
2. All joints shall be made water-tight.

District Approval

The following must be submitted to the District for review and approval prior to issuance of a permit for installation of an interceptor.

- A site plan showing the location of the interceptor, lines and cleanout or manhole;
- Details of the interceptor, lines and cleanout or manhole;
- Interceptor manufacturer's shop drawings, certified by an engineer;
- Copies of manufacturer's specifications including interceptor, manhole frame/cover and joint sealant/coating details; and
- Formula and calculations used to determine the interceptor capacity.

Any subsequent changes to the approved plan shall be resubmitted for approval prior to the changes being implemented. Inspection and approval of the installation will be required. Do not purchase any grease interceptor without first receiving approval for installation of that the specific model.

Maintenance Requirements

The FOGs and solids captured in the interceptors have to be removed on a regular basis in order for grease interceptors to work properly. All waste, liquid, semi-solid, solid and residue must be removed from the interceptor when cleaned. A person cleaning a grease interceptor shall dispose of the waste removed in accordance with federal, state, and local regulations. All grease interceptors must be cleaned per the established schedule with the District and no less frequent than annually.

If an interceptor is not cleaned out regularly, destructive acids may form as the grease turns septic compromising the integrity of the interceptor. The use of enzymes, bacteria and/or other agents that would liquefy the contents normally captured by a grease interceptor is prohibited.

Copies of the waste hauler's manifest records documenting that the grease interceptor is being cleaned according to the required schedule must be available on the premises. A single grab wastewater sample may be used by the District to determine FOG concentration. Since wastewater charges are determined based on the quality discharged, appropriate design and maintenance of an interceptor can help alleviate unnecessary wastewater charges.

The failure to meet any one of these grease interceptor maintenance or documentation requirements would be considered a violation, subject to resultant penalties.

For those grease interceptors that must be taken out of service, the procedures for interceptor abandonment must be followed.

Interceptor Abandonment

Prior to abandonment, notification via application must be given to the District. Once the application is accepted, the interceptor may be prepared for inspection as follows:

1. Existing grease interceptor to be abandoned must be pumped to remove any and all waste. Pumping must be performed by a licensed waste hauler, and documentation shall be posted on site or made available for verification during the abandonment inspection.
2. The top cover or arch over the grease interceptor shall be crushed into the empty tank or removed.
3. The grease interceptor shall be back filled no higher than the top vertical edges of the tank with fill material less than 3 inches in diameter and free of organic and construction debris. Examples: sand, sandy loam, pea gravel, crushed limestone base, clean class III soils. Clay soils should be avoided due to their high shrink/swell characteristics.

Once the above conditions have been met, an inspection can be scheduled with McComis Inspections at (512) 301-7801. Once inspection is passed, you may continue to finish covering as desired. It is recommended that finish cover be mounded slightly higher than adjacent grade to allow for settling.