

SUBJECT: REQUIREMENTS FOR GREASE INTERCEPTORS

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1. Denver's City Ordinances and Wastewater Management Division (WMD) Rules and Regulations make it illegal to discharge grease or other viscous substances into the city sanitary sewerage system. Unless specifically permitted, no wastes other than kitchen related wastes are allowed to discharge into any interceptor. (Toilets, urinals, etc. are not allowed to discharge to the grease interceptor).
2. Grease interceptors are required on all premises, other than residential, where food is prepared, processed, or when an industrial process involves organic waste. Interceptor designs must be included in the restaurant's Sewer Use and Drainage Permit application documents for review of the interceptor's compliance with City of Denver criteria.
3. In those cases where grease interceptors are not required, grease containers shall be specified and properly located, and maintained for adequate storage of all wastes, which may contain grease. These containers shall be of the type and capacity approved by the Department of Environmental Health, Environmental Protection Division. The Department of Environmental Health determines proper disposal of the grease containers. Business owners will provide schedules, for removal of grease, to the QC section of WMD. The schedule will show type of container, dates of pickup, name of service company, and point of disposal. If grease is not removed or disposed of in the proper manner a grease interceptor may be required to be installed. The size of the grease interceptor will be determined during review of the submitted to WMD for the sewer use and drainage permit.
4. The size of the grease interceptor to be required is determined by the following factors: turn-over rate (2.0), categorical use factor (CUF), and 2.5 gallons of water per place setting, and seating capacity.
 - a. Categorical use factor is based upon fixtures in a single service facility.

- b. Seating capacity is determined by using 10 square feet of dining area per person. The area per seat value is intentionally conservative to allow for future restaurants to be able to utilize the grease interceptor
- Patio and bar seating areas that are located within or adjacent to the restaurant or are part of the restaurant should be included in the dining area.
 - If a patio or bar seating area is not located within or adjacent to the restaurant, then their seating area should only be included in the dining area calculation if food from the restaurant is served at the patio or bar seating area.
 - For food courts with shared seating areas, the seating capacity shall be allocated evenly between the restaurants utilizing the shared seating.
- c. An 800-gallon two compartment gravity grease interceptor is the accepted minimum capacity allowed to be installed.

Grease Interceptor Sizing Guidelines

The following categories contain formulas to calculate the size of grease interceptors:

Category A-1: Restaurants/cafeterias are defined as full or limited service establishments with capacity to serve or prepare less than 100 meals per day.

Plumbing fixtures include: one pot sink, one 2or 3-compartment sink, one hand sink, one mop sink, one floor sink, and one garbage disposal. All waste lines in the kitchen and food prep areas, including the garbage disposal, are to be routed to the grease interceptor.

Kitchen equipment includes: one grille (or griddle, wok-stove, or stovetop), one two-basket deep fryer, and one oven.

Formula to calculate the interceptor capacity in gallons is:

$$2.0 (TO) \times 1.25 (CUF) \times 2.5(\text{gal.}) \times \text{Seating Capacity} = \text{Interceptor Capacity}$$

Category A-2: Restaurants/cafeterias are defined the same as Category A-1. The following adjustments are to be made to the A-1 formula.

The CUF is increased by 0.25 for each additional garbage disposal or dish washer included in the kitchen and food prep areas.

The CUF is increased by 0.50 for each additional grill, griddle, wok-stove, and/or two-basket deep fryer added to the kitchen and food prep areas.

The CUF will be increased by 1.5 for restaurants defined as “Take Out” and/or as “Carry Out” restaurants.

The CUF is not increased for additional plumbing fixtures or kitchen equipment other than garbage disposals, dish washers, grill, griddle, wok-stove, or two-basket deep fryer as noted above.

For food courts with shared seating areas, the interceptor capacity shall be sized for each restaurant independently with the seating capacity distributed evenly between the restaurants utilizing the shared seating area

Category B: Individual formulas have been assigned to hospitals, schools, institutions, and care facilities.

Formula for hospital/schools to calculate the interceptor capacity in gallons is:

$$2.0 \times 0.75 \times 2.5 \times \text{bed usage} / \text{seating capacity} = \text{Interceptor Capacity.}$$

Formula for sizing Institutions/Care Facilities in gallons is:

$$2.0 \times 0.75 \times 2.5 \times \text{bed usage} / \text{seating capacity} = \text{Interceptor Capacity}$$

Formula for butcher shops/ or meat cutting facilities, retail or wholesale bakeries, commercial kitchens or caterers in gallons is:

$$\text{Hours of operation} \times 4.0 \text{ CUF} \times 10 \text{ gallons of water} = \text{Interceptor Capacity}$$

A factor of 4.50 CUF shall be used for the cooking of meats.

A factor of 5.5 CUF shall be used for wholesale and industrial bakeries.

Category D. The formula for sizing food court, common trap, and strip mall

interceptors will be based upon seating capacity and usage. Each restaurant shall be sized individually. The individual capacities will be combined to determine the interceptor's total capacity in gallons.

Category E. All food manufacturing facilities shall be included in Category E. Each case will be evaluated separately. A control manhole or a sampling point will be required in addition to the installation of a grease interceptor. WMD's Quality Control Lab (QC) will make the determination if a control manhole or a sampling point will be required, but in most cases, a control manhole is required.

When the above methods are not feasible, Appendix H, from the 2006 Uniform Plumbing Code (UPC) will be used to determine the interceptor size (liquid capacity).

For fast food restaurants, the number of meals served in the peak hour shall be based on the restaurant's operation but shall not be less than the 1.33 times the seating capacity of the restaurant, as defined above.

For all other restaurants, the number of meals served in the peak hour shall be based on the restaurant's operation, but shall not be less than the seating capacity of the restaurant, as defined above

5. Owners or operators of food processing or food preparation industries, or businesses, should be aware of the following requirements for grease interceptors:
 - a. Plans and specifications, including complete architectural and plumbing floor plans, shall be submitted to WMD for approval prior to construction. Plumbing plans must include a riser diagram showing waste line and waste trap sizes being routed through the interceptor. A site plan is also required to show the location of the grease interceptor being installed outside the building. No submittals will be accepted without a copy of the letter from the Department of Environmental Health. All requirements by Department of Environmental Health must be reflected on the plans submitted to
 - b. Approval of the installation of pretreatment devices, control manholes/ sampling points and connection shall be by the Public Works Plumbing Inspectors prior to the water test of the plumbing system.
 - c. Interceptors shall be located outside the building on private property. If circumstances prevent the outside installation of interceptors, special permits must be obtained from the Building Inspection Division (BID) and the Department of Environmental Health for installation inside the building. A grease interceptor may not be

installed in any part of a building where food is handled.

- d. All drains, waste lines from the kitchen, food preparation, and dishwashing areas (including the garbage disposals) shall be connected to the grease interceptor.
- e. Garbage grinders/disposals located in all food processing or preparation areas must be routed to the grease interceptor. Garbage grinders/disposals that are located outside for food processing or preparation areas shall not be connected to a grease interceptor, shall not be used for disposal of grease, and shall connect directly to the sanitary sewer.
- f. The responsibility of cleaning and maintaining the grease interceptor in an efficient operating condition shall be the owner and or lessee's responsibility. Signed documents, by all persons responsible for the maintenance and cleaning of grease interceptor, must be submitted upon request. The grease interceptor shall be accessible and shall be inspected on a periodic basis by the QC section of WMD. The use of ladders, or the removal of bulky equipment in order to service interceptors, shall constitute a violation of accessibility.

(Reference: UPC 2004 (including Appendix H), Denver Building Code Amendments to the 1994 UPC, UPC 2006, 2019 Denver Amendments to the 2018 IPC, and Denver Revised Municipal code Section 56-104.).