1900 Hotel Plaza Blvd., Lake Buena Vista, FL 32830 ⌖ (407) 828-2034 ⌖ (407) 828-4466/IVR ⌖ (407) 828-2416/Fax ⌖ Permitting@oversightdistrict.org

GREASE TRAP & INTERCEPTOR DESIGN CRITERIA

The following design criteria shall apply to all commercial grease traps and grease interceptors installed within the Central Florida Tourism Oversight District (the District).

GREASE INTERCEPTOR DESIGN CRITERIA

General:

- Minimum size 750 gallons*
- Maximum size of single trap 5,000 gallons
- For trap volumes exceeding 5,000 gallons, use multiple units operating in parallel.
  *Smaller interceptors may be approved on a case-by-case basis why specific limitations exists.
- Hydromechanical type interceptors are not permitted.

Procedure for determining grease interceptor size:

1. Determine the peak flow to the interceptor.
   a. Determine the number of seats (maximum) and assume 100-percent use/occupancy.
   b. Determine the maximum number of take-out meals served (if any).
   c. Apply the flow factors to the above.
      i. 25 gallons per day (gpd) per seat
      ii. 5 gallons per take out meal (non-fast food)
      iii. 2.5 gallons per take out meal (fast food)
   d. Apply the peak factor.
      i. Use 3.0 times unless documented otherwise
   e. Peak Flow (gpd) = (# Seats x 25 + # take-out meals x (5 or 2.5) x peak factor of 3.

2. Determine the type and character of the Facility and interceptor cleaning frequency.
   a. Apply the appropriate service factors for:
      i. Operating hours
      ii. Food service type
      iii. Proposed cleaning frequency*
      iv. Seat turnover

   *Cleaning frequency should utilize standard frequency factor unless specifically submitted, justified and approved otherwise.

3. Complete the calculation for the interceptor size:
   Trap Volume = Peak Flow (in gpm) ÷ 1440 (minutes per day) x 120 minutes Detention Time x Cleaning Factor x Open Hours Factor x Service Type Factor x Seat Factor.

4. Select the appropriate interceptor size by rounding up to the nearest 100 gallon increment.

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DEFINITIONS OF FOOD SERVICE TYPES:

DELI STYLE – Food that does not use cooking oil in preparation or service, and that has an option for carry-out orders. Deli style facilities will have no fryers and be principally cold service foods.

FAST FOOD – Food that uses cooking oils of any type in preparation or service, and that has an option for carry-out orders. Fast food facilities will use a fryer of some type and size for food preparation.

FULL SERVICE – A sit-down facility includes all facilities that serve food in a dining area, utilize washable cutlery, plates and glassware and serve any type of alcoholic beverage.

STANDARD SERVICE – A sit-down facility that includes all facilities that serve food in a dining area and utilize washable cutlery and washable plates and glassware, but do not serve alcoholic beverages.

OPERATIONAL AND FACILITY FACTORS FOR SIZING INTERCEPTORS

TRAP SIZE BASED ON	MULTIPLIER
1) Cleaning frequency of interceptor:	
a) Standard frequency = 1/quarter	1
b) Minimum frequency = 1/year	4
c) Maximum frequency = 1/month	0.33
d) Minimal frequency = 2 x 1 yr	2
2) Hours of operation of food/kitchen service [a]:	
a) Standard operation = 12 hours/day	1
b) Minimum operation = 8 hours/day	0.6667
c) Maximum operation = 20 hours/day	1.667
d) Extended operation = 16 hours/day	1.333
3) Number of meals served per day (max. day) and	None
4) Number of seats in restaurant	
a) Standard turnover ratio: 1/hour	1
b) Maximum turnover ratio: 2/hour	2
c) Minimum turnover ratio: ½/hour	0.5
5) Type of food service	
a) Fast food with or without take-out	1.2
b) Deli style with or without sit-down facilities	0.8
c) Sit-down, standard service	1
d) Sit-down, full service	1.5

a. For operating hours other than those listed, use a ratio of: actual hours/12.

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EXAMPLES OF FORMULA APPLICATIONS:

Example 1: Assume a sit-down restaurant that is open 12 hours per day, has 120 seats, has 1-hour per seat turnover and intends to clean their trap quarterly. Also assume they use 25 gallons per seat and a peaking factor of 3. All operational and facility factors would therefore be 1.0.

Trap size would be:

Flow = 120 x 25 x3 = 9,000 gallons per day

Trap Size = 9,000/1,440 x 120 = 750 gallons, or the minimum size.

Example 2: Assume that we have a fast-food restaurant that serves 5,000 meals a day, is open 16 hours a day, has seating capacity for 40 people, turns the seats over 1/hour, and intends to clean the trap on a quarterly basis.

Trap size would be:

Flow = 40 x 25 x 3 = 3000 gallons per day

Number of meals served at sit-down = 40 x 16 x 1/hr = 640

plus (5,000 – 640) x 2.5 = 10,900 gallons

Total flow = 13,900 gallons

Trap size = 13,900/1440 x 120 x 1.333 = 1,540 gallons

or about twice the size of the smallest trap.

Example 3: Let's examine an extreme case, a fast-food restaurant serving 15,000 meals a day, having 200 seats, open 20 hours per day, turning over their seats every 30 minutes and intending to clean their trap quarterly.

Trap size would be:

Flow = 200 x 25 x 3 = 15,000 gpd

Number of meals served at sit down = 200 x 16 x 2 = 6,400

plus 15,000 – 6,400 x 2.5 = 21,500 gallons

Trap size = (15,000 + 21,500)/1,440 x 120 x 1.667 = 5,079 gallons

If this facility only intended to clean their trap 2 times per year, the size would double to 10,000 gallons.

Example 4: Here is another extreme case. A walk-up deli style open 8 hours per day with no seats and expecting to service its trap only annually, serving 500 meals per day on a peak day, or about one per minute.

Trap size would be:

Flow = 500 x 2.5 x 3 = 3,750 gpd, based on meals served only, no sit down.

Trap size: 3,750/1,440 x 120 x 0.667 x 0.5 x 4 = 417 gallons;

or a minimum tank of 750 gallons would suffice.

Example 5: Assume a large full service restaurant with 500 seats, open 16 hours per day, with turnover of seats at once per hour with no take-out, and cleaned quarterly.

Trap size would be:

Flow = 500 x 25 x 3 = 37,500 gallons

Trap size = 37,500/1,440 x 120 x 1.33 x 1.2 x 1.0 = 4,987.5 gallons or say 5,000 gallons