15430-4

GREASE TRAPS

Large Exterior
sizing estimate

$$\frac{Capacity}{30} = GPM\ into$$

Small Interior Grease Traps

All based on gravity. Oil is lighter than water. The goal of an intercepter is to provide turbulence-free area for grease to accumulate.

Driving Force is Gravity:
Cotton seed oil is closer to the density of water, so larger separators with lower flows are required.

Air introduced into the waste stream can assist with grease removal.

Air Inductor (flow control fitting)
Flow control is achieved by installing an orifice plate in the flow control valve.

This orifice must be selected to account for the static pressure developed between the outlet of the fixture.

The air intake is not a vent but can be interpreted as one (minimum size 1¼"). The intake should extend above the flood rim of the plumbing fixture.

Hot effluent will separate better. Cold grease will tend to cling to solids and can pass through the separator.

Particles can accumulate in the separator and cause odors.

Illinois and Wisconsin prohibit connections of dishwashers or food grinders to grease traps. Chicago allows food grinders and dishwashers but particle interceptors should be used.

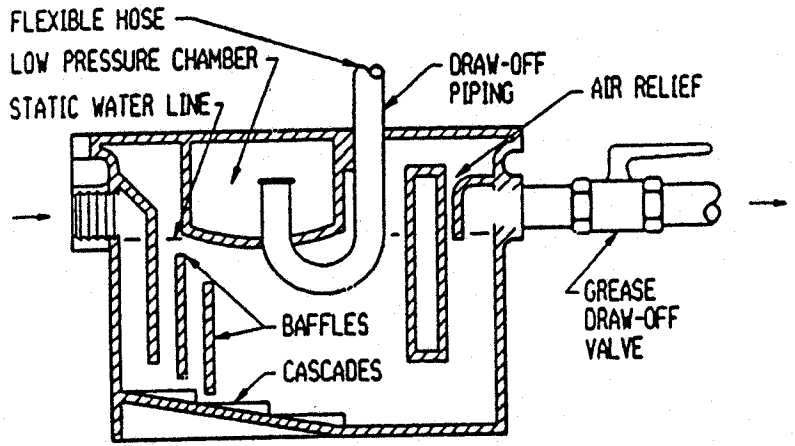
Grease interceptors should be located as close to the source as possible.

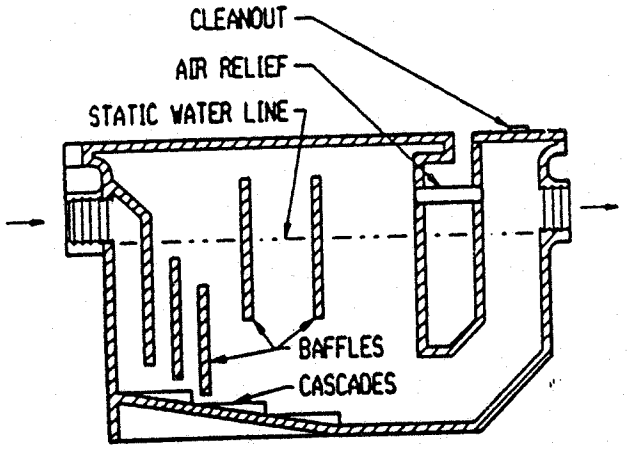
Some jurisdictions require grease recovery devices Maryland and Oregon or sell the grease to a renderer.

Section 890.Appendix E Illustrations for Subpart E

ILLUSTRATION A Grease Interceptor

(Referenced in Section 890.510)





SUBPART E: INTERCEPTORS-SEPARATORS AND BACKWATER VALVES

Section 890.510 Grease Interceptor Requirements

Plumbing systems for institutions or commercial establishments in which grease, fats, culinary oils, or similar waste products from kitchens or food processing areas are wasted, or in which grease, fats, or culinary oils are wasted in connection with utensil, vat, dish, or floor cleaning processes, shall include grease interceptors. All waste lines and drains carrying grease, fats, or culinary oil, in the above type establishments snall be directed to one or more interceptors. (See Appendix E: Illustrations A and B.)

a) All required grease interceptors shall comply with the following:

1) Material and Covers. Grease interceptors shall be constructed of durable, corrosion-resistant materials and shall have water-tight covers securely fastened in place.

2) Minimum Size. A grease interceptor installed on the same floor as the fixture shall have one-half the liquid holding capacity of the fixture. A grease interceptor located on a floor below the fixture shall have sixty percent of the liquid holding capacity of the fixture. To determine the liquid holding capacity in gallons of a plumbing fixture, multiply the length by the width by the height in inches, and divide by 231. Where two (2) or more sinks or receptacles are connected to an interceptor the liquid holding capacity shall be based on the combined volume of the fixtures served.

3) No grease interceptor shall receive the discharge from a food waste disposal or a commercial dishwashing machine.

4) The flow rate of the interceptor shall be sufficient to handle the maximum demand of the connected system.

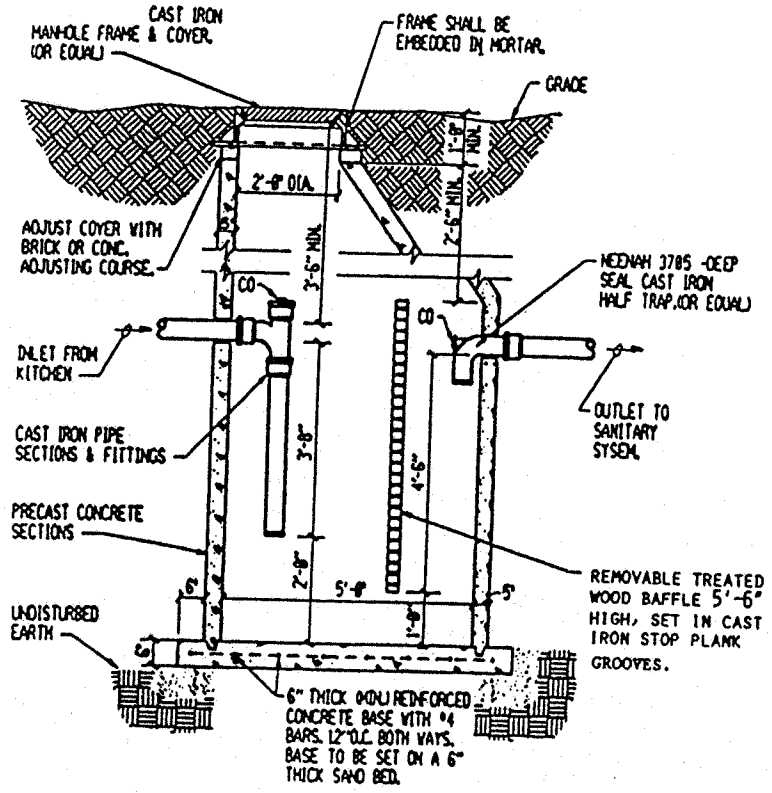
5) All interceptors shall be installed in an accessible location to permit the convenient removal of the lid and internal contents.

6) All interceptors shall be designed and installed with proper venting so that they do not become air bound. (See Appendix E: Illustration C.)

Section 890.Appendix E Illustrations for Subpart E

ILLUSTRATION B Typical Grease Interceptor/Catch Basin

(Referenced in Section 890.510)



b) Prohibited Type. Water cooled grease interceptors are prohibited.

Section 890.520 Gasoline, Oil and Flammable Liquids

Gas and Oil Interceptors. Commercial vehicle repair garages and gasoline stations with grease racks or pits, storage garages, enclosed parking garages, fire stations, emergency vehicle garages, and all facilities which generate oil and/or flammable waste shall be provided with floor drains or trench drains connected to an approved gas and oil interceptor. Residential garages with floor drains shall have a gas and oil interceptor if they have four (4) or more vehicle bays or exceed 900 square feet in size.

a) General Requirements

1) Gas and oil interceptors shall be of cast iron, steel, or equally durable fiberglass materials suitable for gas and oil. Fiberglass interceptors shall not be used for receiving any substance other than gas and oil.

2) Each interceptor or basin shall be provided with a heavy metal cover which shall be bolted into place and made gas and water-tight.

3) Each interceptor and, if provided with separate compartments, each compartment and basin shall be provided with a vent of at least two (2) inches, which shall extend independently to the outer air. Two (2) or more vents may be connected to a header which shall be six (6) inches or higher than the lowest floor drain served.

4) The inlet of the interceptor or the first basin shall be trapped except when floor drains are individually trapped.

5) Floor drains above the level of the interceptor or basins shall connect to a separate stack vent.

6) Interceptors must be constructed in accordance with the Illinois State Fire Marshal's rules and regulations for underground storage tanks (41 Ill. Adm. Code 170), where applicable, and shall be maintained to prevent loss of gas,

oil, etc. Interceptors utilizing an automatic draw off feature must install a separate U.L. approved underground storage tank or storage tank integral with the interceptor.

7) Minimum Dimension. Oil interceptors shall have a depth of at least two (2) feet below the invert of the discharge drain.

8) Performance. The oil interceptor shall have at least a 12 inch water seal with a minimum 90 percent efficiency rating or have a minimum of an 18 inch water seal. Gas and oil in the effluent from the interceptor or triple basin shall not exceed the levels specified by the sewage treatment authority having jurisdiction, as promulgated by local ordinances and regulations.

b) Commercial Requirements. For all commercial facilities specified in this Section, a minimum of one (1) floor drain per working stall or one (1) floor drain for each 500 square feet shall be installed. Where trench trains are used to carry wastes to the gas/oil interceptor, the trench drain shall either extend the entire length of the work (stall) area or shall be installed in each working stall. Continuous trench drains shall have a trapped and vented opening no less than every 40 lineal feet. Intermittent trench drains shall be treated as individual floor drains and shall meet the trap and venting requirements for floor drains. Floor drains for such areas shall be provided with an interceptor or a series of three (3) basins before discharging into the building drainage system.

c) Sizing

1) Motor Vehicle Servicing. Interceptors are required for motor vehicle servicing areas. The minimum size interceptor shall be six (6) cubic feet (45 gallons) for the first 100 square feet of garage floor area plus one (1) cubic foot for each additional 100 square feet to be drained into the interceptor. (One (1) cubic foot equals seven and one-half (7 1/2) gallons.)

2) The minimum size interceptor for all facilities, except those facilities required to conform to subsection (c)(1) of this Section, shall be six (6) cubic feet (45 gallons) for the first

500 square feet of floor area plus one (1) cubic foot per each additional 500 square feet to be drained into the interceptor.

d) Catch Basins. In all motor vehicle wash racks, drainage shall discharge into a water-tight catch basin at least 36 inches in diameter, or three (3) feet by two and one-half (2 1/2) feet (rectangular shape). The bottom shall not be less than 27 inches below the invert of the outlet pipe. The outlet pipe shall be trapped with a catch basin trap and shall be of cast iron or schedule 40 plastic with a seal of at least six (6) inches and a cleanout of at least four (4) inches.

e) Interceptor for Special Waste. Before installing any interceptor for any other flammable or special wastes, a drawing including all pertinent information shall be submitted to the Department for its approval.

Section 890.530 Sand, Bottle and Slaughter Houses

Sand, bottle and slaughter houses that produce wastes that will either settle or float (Example: oil or grease from meat packing operation, bottling establishments, heavy solids, etc.) shall have an interceptor installed which complies with Section 890.510(a). (See Appendix E: Illustration D.)

Section 890.540 Laundries

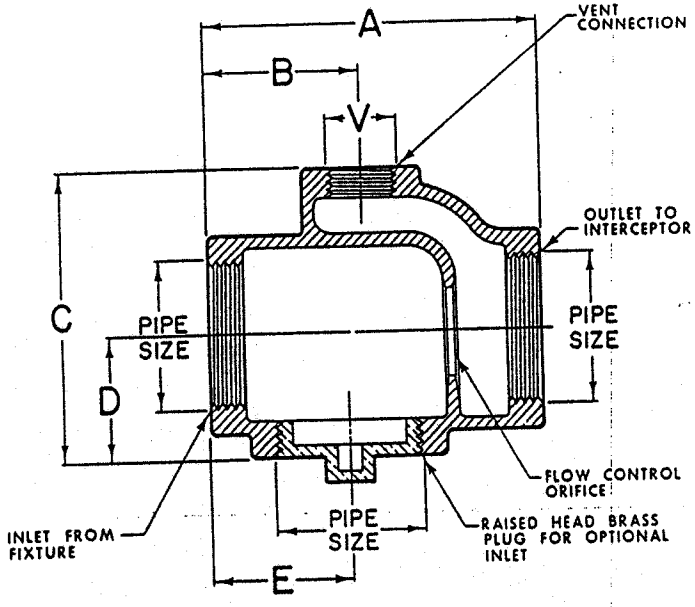
Interceptors. Commercial laundries shall be equipped with an interceptor having a removable wire basket or similar device that will prevent materials detrimental to the sewage system from passing into the system. (See Appendix E: Illustration E.)

Section 890.550 Backwater Valves - Sanitary System and Storm System

Backwater valves shall be installed in the building storm drain or the building drain to prevent backflow into the building, where backflow of storm water or sewage could occur.

a) Fixture Branches. Backwater valves may be installed in the branches of the building drain which are below grade.

FLOW CONTROL FITTING WITH OPTIONAL INLET CONNECTION AND RAISED HEAD BRASS PLUG

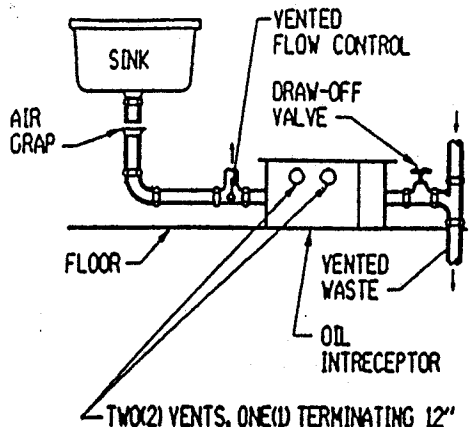


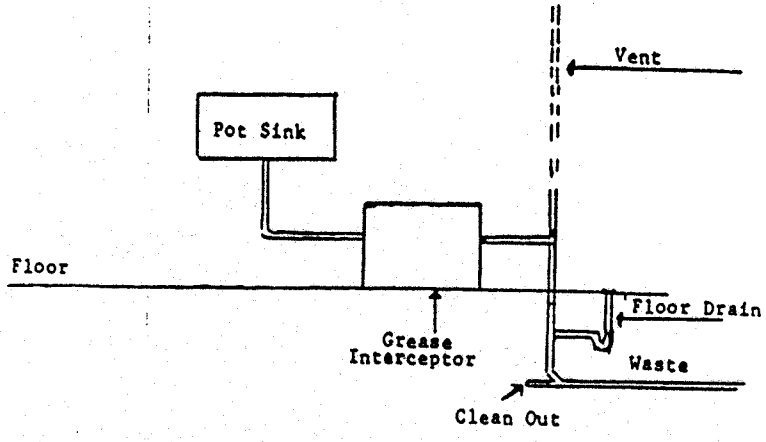
✓	CAT. NO.	PIPE SIZE	A	B	C	D	E	V
	W-5012-FC	2	5¾	3¾	4¼	2¼	2¼	1
	W-5013-FC	3	7	3¼	6	2½	3	1½
	W-5014-FC	4	10	4¼	10	4	3¾	2½

Section 890.Appendix E Illustrations for Subpart E

ILLUSTRATION C Interceptor/Separator Vents

(Referenced in Section 890.510(a)(6))

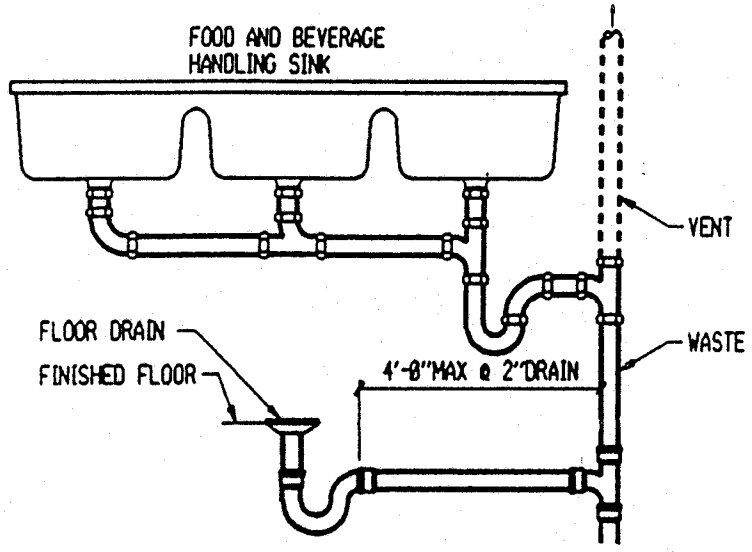




Section 890.Appendix H Illustrations for Subpart H

ILLUSTRATION A Indirect Waste Piping #1

(Referenced in Section 890.1010(a))



SUBPART H: INDIRECT WASTE PIPING, SPECIAL WASTE

Section 890.1010 Indirect Waste Piping

a) Food and Beverage Handling. Commercial dishwashing machines, dishwashing sinks, pot washing sinks, pre-rinse sinks, silverware sinks, bar sinks, soda fountain sinks, vegetable sinks, potato peelers, ice machines, steam tables, steam cookers and other similar fixtures shall have their drain lines indirectly discharged to a proper receptor. The only exception shall be when such fixtures are located adjacent to a floor drain. The waste may be directly connected on the sewer side of the floor drain trap provided the fixture waste is trapped and vented as required by this Part (see Appendix H: Illustrations A and B), and the floor drain is located within four (4) feet horizontally of the fixtures and in the same room. In the case of direct connection, no other fixture waste shall be connected between the floor drain trap and the fixture protected. All indirect waste shall discharge to a vented trap located as close as possible to the fixture and in the same room (See Appendix H: Illustrations C and D).

b) Connection. Indirect waste connections shall be provided for drains, overflows, and relief valves from the water supply system. (See Appendix H: Illustration E.) A clear water waste shall discharge through an indirect waste into a sanitary or storm drain system.

c) Sterile Materials. Stills, sterilizers and other appliances, fixtures, devices and water and waste connections used for preparation of sterile material shall be indirectly discharged to the drainage system.

d) Swimming Pools. Piping carrying backwash or other washwater from a swimming pool filter shall be installed as an indirect waste to the building drain or building sanitary waste system. Piping utilized to drain water from the pool proper, such as the main drain waste and gutter waste, shall be installed as an indirect waste to a storm sewer. Piping utilized for carrying wastewater from deck drains around a pool shall be installed as an indirect waste to the storm or sanitary sewer when the deck drains toward the pool.

Section 890.Appendix H Illustrations for Subpart H

ILLUSTRATION B Indirect Waste Piping #2

(Referenced in Section 890.1010(a))