

CHAPTER 10

TRAPS, INTERCEPTORS AND SEPARATORS

SECTION 1001 GENERAL

1001.1 Scope. This chapter shall govern the material and installation of traps, interceptors and separators.

SECTION 1002 TRAP REQUIREMENTS

1002.1 Fixture traps. Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm), and the horizontal distance shall not exceed 30 inches (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.4. A fixture shall not be double trapped.

Exceptions:

1. This section shall not apply to fixtures with integral traps.
2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.
3. A grease interceptor intended to serve as a fixture trap in accordance with the manufacturer's installation instructions shall be permitted to serve as the trap for a single fixture or a combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm) and the *developed length* of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm).

1002.2 Design of traps. Fixture traps shall be self-scouring. Fixture traps shall not have interior partitions, except where such traps are integral with the fixture or where such traps are constructed of an *approved* material that is resistant to corrosion and degradation. Slip joints shall be made with an *approved* elastomeric gasket and shall be installed only on the trap inlet, trap outlet and within the trap seal.

1002.3 Prohibited traps. The following types of traps are prohibited:

1. Traps that depend on moving parts to maintain the seal.
2. Bell traps.
3. Crown-vented traps.
4. Traps not integral with a fixture and that depend on interior partitions for the seal, except those traps constructed

of an *approved* material that is resistant to corrosion and degradation.

5. "S" traps.
6. Drum traps.

Exception: Drum traps used as solids interceptors and drum traps serving chemical waste systems shall not be prohibited.

1002.4 Trap seals. Each fixture trap shall have a liquid seal of not less than 2 inches (51 mm) and not more than 4 inches (102 mm), or deeper for special designs relating to accessible fixtures. Where a trap seal is subject to loss by evaporation, a trap seal primer valve shall be installed. Trap seal primer valves shall connect to the trap at a point above the level of the trap seal. A trap seal primer valve shall conform to ASSE 1018 or ASSE 1044.

1002.5 Size of fixture traps. Fixture trap size shall be sufficient to drain the fixture rapidly and not less than the size indicated in Table 709.1. A trap shall not be larger than the drainage pipe into which the trap discharges.

1002.6 Building traps. Building (house) traps shall be prohibited, except where local conditions necessitate such traps. Building traps shall be provided with a cleanout and a relief vent or fresh air intake on the inlet side of the trap. The size of the relief vent or fresh air intake shall not be less than one-half the diameter of the drain to which the relief vent or air intake connects. Such relief vent or fresh air intake shall be carried above grade and shall be terminated in a screened outlet located outside the building.

1002.7 Trap setting and protection. Traps shall be set level with respect to the trap seal and, where necessary, shall be protected from freezing.

1002.8 Recess for trap connection. A recess provided for connection of the underground trap, such as one serving a bathtub in slab-type construction, shall have sides and a bottom of corrosion-resistant, insect- and verminproof construction.

1002.9 Acid-resisting traps. Where a vitrified clay or other brittleware, acid-resisting trap is installed underground, such trap shall be embedded in concrete extending 6 inches (152 mm) beyond the bottom and sides of the trap.

1002.10 Plumbing in mental health centers. In mental health centers, pipes and traps shall not be exposed.

SECTION 1003 INTERCEPTORS AND SEPARATORS

1003.1 Where required. Interceptors and separators shall be provided to prevent the discharge of oil, grease, sand and other substances harmful or hazardous to the building drainage system, the *public sewer*, the private sewage disposal system or the sewage treatment plant or processes.

1003.2 Approval. The size, type and location of each interceptor and of each separator shall be approved by the plumbing official. Where the interceptor or separator is located within an onsite sewage treatment and disposal system, such interceptor or separator shall be approved by the health official. The interceptor or separator shall be designed and installed in accordance with the manufacturer's instructions and the requirements of this section. Wastes that do not require treatment or separation shall not be discharged into any interceptor or separator.

1003.3 Grease traps and grease interceptors for publicly owned or investor-owned sewage systems. Grease interceptors shall comply with the requirements of Sections 1003.3.1 through 1003.3.5.

1003.3.1 Grease interceptors and automatic grease removal devices required. A grease interceptor or automatic grease removal device shall be required to receive the drainage from fixtures and equipment with grease-laden waste located in food preparation areas, such as in restaurants, hotel kitchens, hospitals, school kitchens, bars, factory cafeterias and clubs. Fixtures and equipment shall include pot sinks, prerinse sinks; soup kettles or similar devices; wok stations; floor drains or sinks into which kettles are drained; automatic hood wash units and dishwashers without prerinse sinks. Grease interceptors and automatic grease removal devices shall receive waste only from fixtures and equipment that allow fats, oils or grease to be discharged.

1003.3.2 Food waste grinders. Where food waste grinders connect to grease interceptors, a solids interceptor shall separate the discharge before connecting to the grease interceptor. Solids interceptors and grease interceptors shall be sized and rated for the discharge of the food waste grinder. Emulsifiers, chemicals, enzymes and bacteria shall not discharge into the food waste grinder.

1003.3.3 Grease interceptors and automatic grease removal devices not required. A grease interceptor or an automatic grease removal device shall not be required for individual dwelling units or any private living quarters.

1003.3.4 Grease interceptors and automatic grease removal devices. Grease interceptors and automatic grease removal devices shall be sized in accordance with PDI G101, ASME A112.14.3 Appendix A, or ASME A112.14.4. Grease interceptors and automatic grease removal devices shall be designed and tested in accordance with PDI G101, ASME A112.14.3 or ASME A112.14.4. Grease interceptors and automatic grease removal devices shall be installed in accordance with the manufacturer's instructions.

Exception: Grease interceptors that are sized, constructed and approved in accordance with Rule 64E-6, *Florida Administrative Code* and that are located outside the building shall not be required to meet the requirements of this section.

1003.3.4.1 Grease interceptor capacity. Grease interceptors and grease traps shall have the grease retention

capacity indicated in Table 1003.3.4.1 for the flow-through rates indicated.

1003.3.4.2 Rate of flow controls. Grease interceptors and grease traps shall be equipped with devices to control the rate of water flow so that the water flow does not exceed the rated flow. The flow-control device shall be vented and terminate not less than 6 inches (152 mm) above the flood rim level or be installed in accordance with the manufacturer's instructions.

1003.3.5 Automatic grease removal devices. Where automatic grease removal devices are installed, such devices shall be located downstream of each fixture or multiple fixtures in accordance with the manufacturer's instructions. The automatic grease removal device shall be sized to pretreat the measured or calculated flows for all connected fixtures or equipment. Ready access shall be provided for inspection and maintenance.

1003.4 Oil separators required. At repair garages, car-washing facilities, at factories where oily and flammable liquid wastes are produced and in hydraulic elevator pits, separators shall be installed into which all oil-bearing, grease-bearing or flammable wastes shall be discharged before emptying into the building drainage system or other point of disposal.

Exception: An oil separator is not required in hydraulic elevator pits where an *approved* alarm system is installed.

**TABLE 1003.3.4.1
CAPACITY OF GREASE INTERCEPTORS^a**

TOTAL FLOW-THROUGH RATING (gpm)	GREASE RETENTION CAPACITY (pounds)
4	8
6	12
7	14
9	18
10	20
12	24
14	28
15	30
18	36
20	40
25	50
35	70
50	100
75	150
100	200

For SI: 1 gallon per minute = 3.785 L/m, 1 pound = 0.454 kg.
a. For total flow-through ratings greater than 100 (gpm), double the flow-through rating to determine the grease retention capacity (pounds).

1003.4.1 Separation of liquids. A mixture of treated or untreated light and heavy liquids with various specific gravities shall be separated in an *approved* receptacle.

1003.4.2 Oil separator design. Oil separators shall be designed in accordance with Sections 1003.4.2.1 and 1003.4.2.2.

1003.4.2.1 General design requirements. Oil separators shall have a depth of not less than 2 feet (610 mm) below the invert of the discharge drain. The outlet opening of the separator shall have not less than an 18-inch (457 mm) water seal.

1003.4.2.2 Garages and service stations. Where automobiles are serviced, greased, repaired or washed or where gasoline is dispensed, oil separators shall have a minimum capacity of 6 cubic feet (0.168 m³) for the first 100 square feet (9.3 m²) of area to be drained, plus 1 cubic foot (0.28 m³) for each additional 100 square feet (9.3 m²) of area to be drained into the separator. Parking garages in which servicing, repairing or washing is not conducted, and in which gasoline is not dispensed, shall not require a separator. Areas of commercial garages utilized only for storage of automobiles are not required to be drained through a separator.

1003.5 Grease interceptors for onsite sewage treatment and disposal systems. Grease interceptors are not required for a residence. However, one or more grease interceptors are required where grease waste is produced in quantities that could otherwise cause line stoppage or hinder sewage disposal. Where a grease interceptor is required or used, only kitchen wastewater shall first pass through the interceptor and then be discharged into the first compartment of a septic tank or other approved system. Grease interceptors shall be water and gas tight. Each interceptor shall be engineered to withstand the load, such as from vehicular traffic, to be placed on the interceptor.

1003.5.1 Grease interceptor capacity. Sizing of grease interceptors shall be based on the equations of Table 1003.5.1. The minimum tank volume of grease interceptors shall be 750 gallons (2839 L), and the maximum volume of

an individual grease interceptor chamber shall be 1,250 gallons (4731 L). When the required effective capacity of the grease interceptor is greater than 1250 gallons, installation of multi-chambered grease interceptors or grease interceptors in series is required.

1003.5.2 Construction of interceptor. Each interceptor shall be constructed and approved in accordance with Rule 64E-6, *Florida Administrative Code*. Minimum depth of the liquid shall be 40 inches (1016 mm). Each compartment shall be accessible with a manhole having a minimum area of 225 square inches. Interceptors must be located so as to provide easy access for routine inspection, cleaning and maintenance. Manholes shall be provided over the inlet and outlet of each interceptor and be brought to finished grade.

1003.5.3 Inlet and outlet piping. The inlet invert shall discharge a minimum 2¹/₂ inches above the liquid level line and the outlet pipe shall have a tee with a minimum diameter of 4 inches that extends to within 8 inches of the bottom of the tank. The tee shall be installed with the run in the vertical direction.

1003.6 Laundries. Laundry facilities not installed within an individual dwelling unit or intended for individual family use shall be equipped with an interceptor with a wire basket or similar device, removable for cleaning, that prevents passage into the drainage system of solids 1/2 inch (12.7 mm) or larger in size, string, rags, buttons or other materials detrimental to the public sewage system.

1003.7 Bottling establishments. Bottling plants shall discharge process wastes into an interceptor that will provide for the separation of broken glass or other solids before discharging waste into the drainage system.

1003.8 Slaughterhouses. Slaughtering room and dressing room drains shall be equipped with *approved* separators. The separator shall prevent the discharge into the drainage system of feathers, entrails and other materials that cause clogging.

TABLE 1003.5.1
SIZING FORMULAS FOR GREASE INTERCEPTORS

SIZING FORMULA FOR RESTAURANTS:	OTHER ESTABLISHMENTS WITH COMMERCIAL KITCHENS:
$(S) \times (GS) \times (HR/12) \times (LF) =$ Effective capacity of grease interceptor in gallons Where: <i>S</i> = Number of seats in dining area <i>GS</i> = Gallons of waste water per seat (Use 25 gallons for ordinary restaurants; Use 10 gallons for single service article restaurants) <i>HR</i> = Number of hours establishment is open <i>LF</i> = Loading Factor (Use 2.00 interstate highway; 1.50 other freeways; 1.25 recreational area; 1.00 main highway; 0.75 other roads)	$(M) \times (GM) \times (LF) =$ Effective capacity of grease interceptor in gallons Where: <i>M</i> = Meals prepared per day <i>GM</i> = Gallons of waste water per meal (Use 5 gallons) <i>LF</i> = Loading Factor (Use 1.00 with dishwashing and 0.75 without dishwashing)

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1003.9 Venting of interceptors and separators. Interceptors and separators shall be designed so as not to become air bound where tight covers are utilized. Each interceptor or separator shall be vented where subject to a loss of trap seal.

1003.10 Access and maintenance of interceptors and separators. *Access* shall be provided to each interceptor and separator for service and maintenance. Interceptors and separators shall be maintained by periodic removal of accumulated grease, scum, oil, or other floating substances and solids deposited in the interceptor or separator.

■ **1003.11 (IPC 1003.5) Sand interceptors in commercial establishments.** Sand and similar interceptors for heavy solids shall be designed and located so as to be provided with ready access for cleaning, and shall have a water seal of not less than 6 inches (152 mm).

SECTION 1004

MATERIALS, JOINTS AND CONNECTIONS

1004.1 General. The materials and methods utilized for the construction and installation of traps, interceptors and separators shall comply with this chapter and the applicable provisions of Chapters 4 and 7. The fittings shall not have ledges, shoulders or reductions capable of retarding or obstructing flow of the piping.