2018 NC PLUMBING CODE

Chapter 8
Indirect/Special Waste

James Rhodes

INTRODUCTION

- James Rhodes - Senior Plumbing Inspector
- Winston-Salem/Forsyth County Inspections
  - 40+ years within the plumbing industry
  - Level III Plumbing Inspector Certification
  - Level III Mechanical Inspector Certification
  - Probationary I Building Inspector Certification
  - Forsyth County Emergency Management – Damage Assessment Certification
  - FEMA – Emergency Management Certificates
  - P1 - Plumbing Contractor license
  - Backflow Testing Certification
  - Residential Fire Sprinkler Installation Course - 2012

OVERVIEW

NC BIA Winter Code seminars - 2hrs. plumbing course
2018 North Carolina Plumbing Code – Chapter 8
Participants of the course should be able to leave with a better understanding of:

1. Identifying Indirect wastes requirements
2. Sizing of indirect waste pipes and Indirect waste receptors
3. Recognizing indirect waste types and uses
4. Installation of Indirect waste piping
5. Understanding Special Wastes regulations and concerns

CHAPTER 8

Chapter 8 regulates drainage installations requiring an indirect connection to the sanitary drainage system. Fixtures and plumbing appliances, such as those associated with food preparation or handling, health care facilities and potable liquids, must be protected from contamination that can result from connection to the drainage system. An indirect connection prevents sewage from backing up into a fixture or appliance, thus providing protection against potential health hazards. The chapter also regulates special wastes containing hazardous chemicals. The waste must be treated to prevent any damage to the piping or sewage treatment process.

1. IDENTIFYING INDIRECT WASTES REQUIREMENTS

1. What types of plumbing should be directly connected to the drainage system?

2. What types of plumbing should be indirectly connected to the drainage system?

INDIRECT WASTE PIPE. A WASTE PIPE THAT DOES NOT CONNECT DIRECTLY WITH THE DRAINAGE SYSTEM, BUT THAT DISCHARGES INTO THE DRAINAGE SYSTEM THROUGH AN *AIR BREAK* OR *AIR GAP* INTO A TRAP, FIXTURE, RECEPTOR OR INTERCEPTOR.

- **301.3 Connections to Drainage System**
- Plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid waste or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems required by Chapter 8.

  Exception: All drain, waste and vent piping associated with gray water or rain water recycling systems shall be installed in compliance with this code.

WASTE RECEPTOR. A FLOOR SINK, STANDPIPE, HUB DRAIN OR FLOOR DRAIN THAT RECEIVES THE DISCHARGE OF ONE OR MORE INDIRECT WASTE PIPES.

- **INDIRECT WASTE RECEPTOR**. A plumbing fixture designed to collect and dispose of liquid waste from other plumbing fixtures, plumbing equipment or appliances that are required to discharge to the drainage system through an air gap. The following types of fixtures fall within the classification of indirect liquid waste receptors: floor sinks, mop receptors, service sinks and standpipe drains with integral air gaps.

[R] FLOOR DRAIN. A PLUMBING FIXTURE FOR RECESS IN THE FLOOR HAVING A FLOOR-LEVEL STRAINER INTENDED FOR THE PURPOSE OF THE COLLECTION AND DISPOSAL OF WASTE WATER USED IN CLEANING THE FLOOR AND FOR THE COLLECTION AND DISPOSAL OF ACCIDENTAL SPILLAGE TO THE FLOOR.

412.1 Approval

Floor drains shall conform to ASME A112.3.1, ASME A112.6.3 or CSA B79. Trench drains shall comply with ASME A112.6.3.

[R] FLOOR DRAIN. A PLUMBING FIXTURE FOR RECESS IN THE FLOOR HAVING A FLOOR-LEVEL STRAINER INTENDED FOR THE PURPOSE OF THE COLLECTION AND DISPOSAL OF WASTE WATER USED IN CLEANING THE FLOOR AND FOR THE COLLECTION AND DISPOSAL OF ACCIDENTAL SPILLAGE TO THE FLOOR.

- **Commentary:**
- **A common assumption is that only floor drains and hub drains are waste receptors. Standpipes and floor drains are rarely thought of as being waste receptors, but they are commonly installed for capturing the flow from indirect waste pipes. A floor drain in only considered to be a waste receptor where it receives the discharge of one or more indirect waste pipes.**

IDENTIFYING INDIRECT WASTES REQUIREMENTS

- **301.6 Prohibited Locations**
- Plumbing systems shall not be located in an elevator shaft or in an elevator equipment room.

  Exception: Floor drains, sumps and sump pumps shall be permitted at the base of the shaft, provided that they are indirectly connected to the plumbing system and comply with Section 1003.4 or other approved means of disposal.

IDENTIFYING INDIRECT WASTES 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 802.3.3. A fixture shall not be double trapped.

- **Exceptions:**

- **1.** This section shall not apply to fixtures with integral traps.

- **2.** A combination plumbing fixture or up to three similar fixtures shall be 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).

- **4.** The connection of a laundry tray complying with Section 802.3.3.

IDENTIFYING INDIRECT WASTES REQUIREMENTS

The Plumbing code is a reactive code.

Plan review plays a large roll with indirect waste and catching this before it gets missed.

Minimum Plumbing Fixtures Count

What about all the minimum Plumbing required from other Authorities Having Jurisdiction?

IDENTIFYING INDIRECT WASTES REQUIREMENTS

NC DOI	Local Health Department	Local Utility Department	State Utility Commission	NC DHHS & DHSR
NC Department Of Agriculture	ABC Licensing	NC DOL	OSHA	NC DENR

2. SIZING OF INDIRECT WASTE PIPES AND INDIRECT WASTE RECEPTORS

- **709.2 Fixtures Not Listed in Table 709.1**
- Fixtures not listed in Table 709.1 shall have a *drainage fixture unit* load based on the outlet size of the fixture in accordance with Table 709.2. The minimum trap size for unlisted fixtures shall be the size of the drainage outlet but not less than $1\,^1/_4$ inches (32 mm).

TABLE 709.2
DRAINAGE FIXTURE UNITS FOR FIXTURE DRAINS OR TRAPS

FIXTURE DRAIN OR TRAP SIZE (inches)	DRAINAGE FIXTURE UNIT VALUE
$1\,^1/_4$	1
$1\,^1/_2$	2
2	3
$2\,^1/_2$	4
3	5
4	6

For SI: 1 inch = 25.4 mm.

SIZING OF INDIRECT WASTE PIPES AND INDIRECT WASTE RECEPTORS

- **709.3 Values for Continuous and Semicontinuous Flow**
- *Drainage fixture unit* values for continuous and semicontinuous flow into a drainage system (hub drains, sewage lift pumps, etc.) shall be computed on the basis that 1 gpm (0.06 L/s) of flow is equivalent to two fixture units.

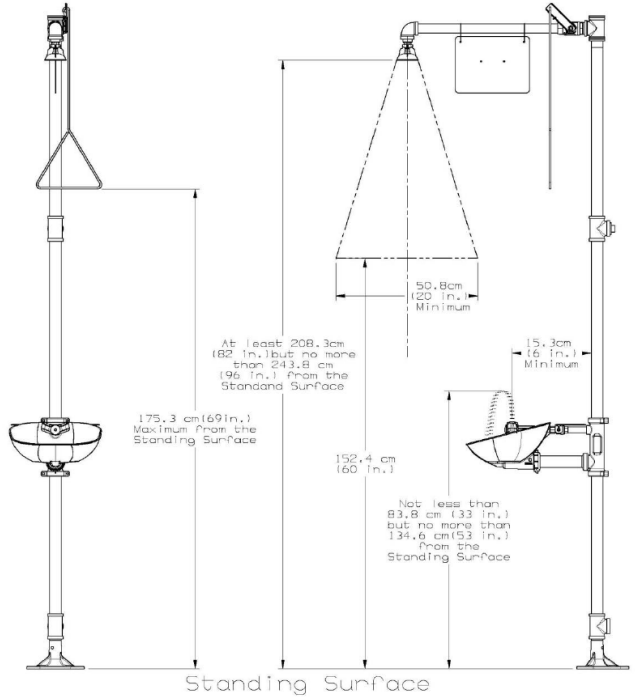


Illustration 9
Combination Unit

TABLE 710.1(1)
BUILDING DRAINS AND SEWERS

DIAMETER OF PIPE (inches)	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS CONNECTED TO ANY PORTION OF THE BUILDING DRAIN OR THE BUILDING SEWER, INCLUDING BRANCHES OF THE BUILDING DRAIN[a]			
	Slope per foot			
	1/16 inch	1/8 inch	1/4 inch	1/2 inch
1 1/4	—	—	1	1
1 1/2	—	—	3	3
2	—	—	21	26
2 1/2	—	—	24	31
3	—	36	42	50
4	—	180	216	250
5	—	390	480	575
6	—	700	840	1,000
8	1,400	1,600	1,920	2,300
10	2,500	2,900	3,500	4,200
12	3,900	4,600	5,600	6,700
15	7,000	8,300	10,000	12,000

For SI: 1 inch = 25.4 mm, 1 inch per foot = 83.3 mm/m.
a. The minimum size of any building drain serving a water closet shall be 3 inches.

SIZING OF INDIRECT WASTE PIPES AND INDIRECT WASTE RECEPTORS

- **709.4 Values for Indirect Waste Receptor**
- The *drainage fixture unit* load of an indirect waste receptor receiving the discharge of indirectly connected fixtures shall be the sum of the *drainage fixture unit* values of the fixtures that discharge to the receptor, but not less than the *drainage fixture unit* value given for the indirect waste receptor in Table 709.1 or 709.2

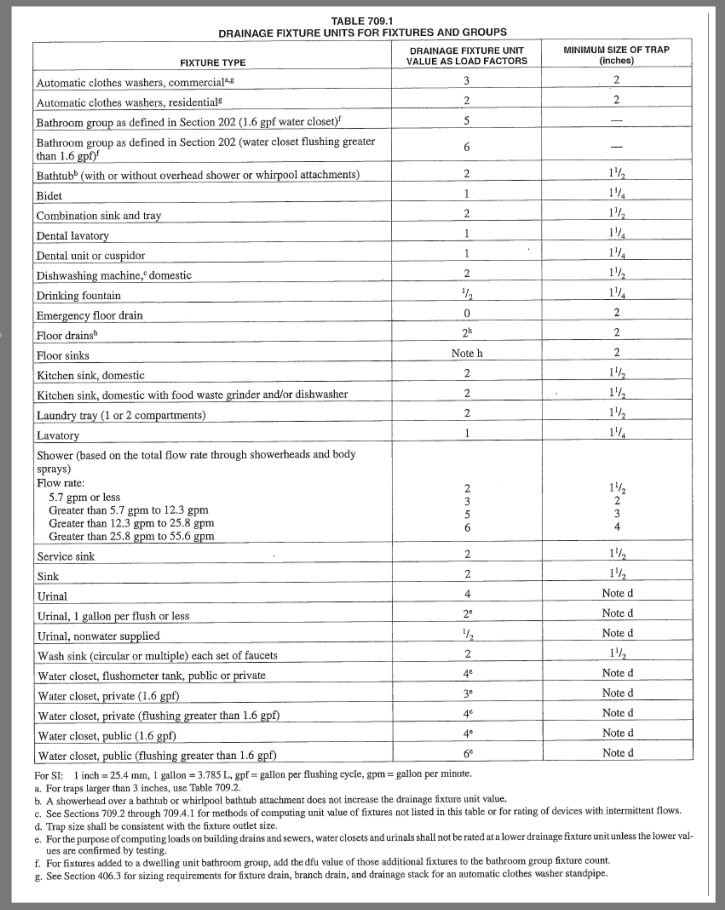


TABLE 709.1
DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS

FIXTURE TYPE	DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS	MINIMUM SIZE OF TRAP (inches)
Automatic clothes washers, commercial[a,g]	3	2
Automatic clothes washers, residential[g]	2	2
Bathroom group as defined in Section 202 (1.6 gpf water closet)[f]	5	—
Bathroom group as defined in Section 202 (water closet flushing greater than 1.6 gpf)[f]	6	—
Bathtub[b] (with or without overhead shower or whirlpool attachments)	2	1 1/2
Bidet	1	1 1/4
Combination sink and tray	2	1 1/2
Dental lavatory	1	1 1/4
Dental unit or cuspidor	1	1 1/4
Dishwashing machine,[c] domestic	2	1 1/2
Drinking fountain	1/2	1 1/4
Emergency floor drain	0	2
Floor drains[h]	2[h]	2
Floor sinks	Note h	2
Kitchen sink, domestic	2	1 1/2
Kitchen sink, domestic with food waste grinder and/or dishwasher	2	1 1/2
Laundry tray (1 or 2 compartments)	2	1 1/2
Lavatory	1	1 1/4
Shower (based on the total flow rate through showerheads and body sprays) Flow rate: 5.7 gpm or less Greater than 5.7 gpm to 12.3 gpm Greater than 12.3 gpm to 25.8 gpm Greater than 25.8 gpm to 55.6 gpm	 2 3 5 6	 1 1/2 2 3 4
Service sink	2	1 1/2
Sink	2	1 1/2
Urinal	4	Note d
Urinal, 1 gallon per flush or less	2[a]	Note d
Urinal, nonwater supplied	1/2	Note d
Wash sink (circular or multiple) each set of faucets	2	1 1/2
Water closet, flushometer tank, public or private	4[e]	Note d
Water closet, private (1.6 gpf)	3[e]	Note d
Water closet, private (flushing greater than 1.6 gpf)	4[e]	Note d
Water closet, public (1.6 gpf)	4[e]	Note d
Water closet, public (flushing greater than 1.6 gpf)	6[e]	Note d

For SI: 1 inch = 25.4 mm, 1 gallon = 3.785 L, gpf = gallon per flushing cycle, gpm = gallon per minute.
a. For traps larger than 3 inches, use Table 709.2.
b. A showerhead over a bathtub or whirlpool bathtub attachment does not increase the drainage fixture unit value.
c. See Sections 709.2 through 709.4.1 for methods of computing unit value of fixtures not listed in this table or for rating of devices with intermittent flows.
d. Trap size shall be consistent with the fixture outlet size.
e. For the purpose of computing loads on building drains and sewers, water closets and urinals shall not be rated at a lower drainage fixture unit unless the lower values are confirmed by testing.
f. For fixtures added to a dwelling unit bathroom group, add the dfu value of those additional fixtures to the bathroom group fixture count.
g. See Section 406.3 for sizing requirements for fixture drain, branch drain, and drainage stack for an automatic clothes washer standpipe.

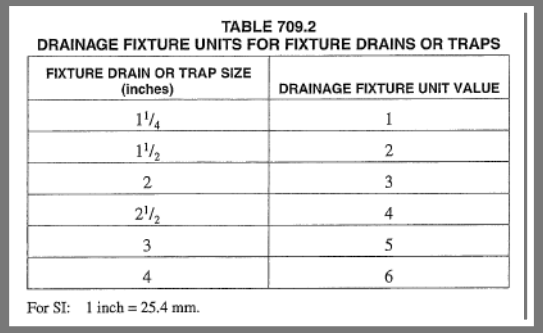


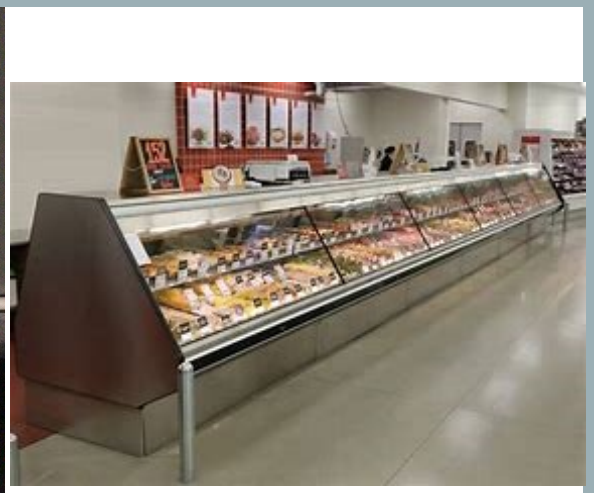
TABLE 709.2
DRAINAGE FIXTURE UNITS FOR FIXTURE DRAINS OR TRAPS

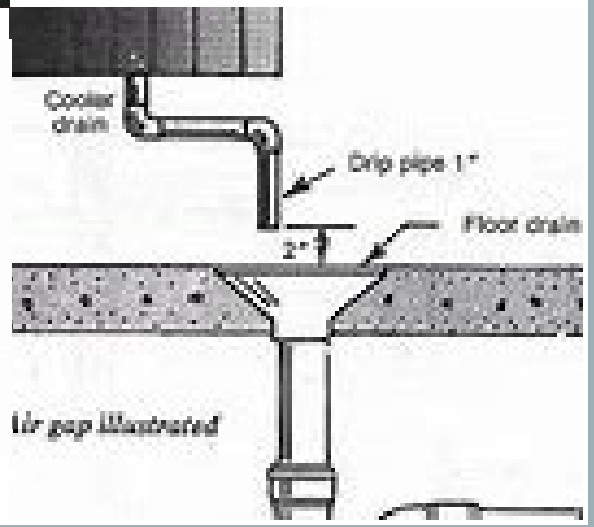
FIXTURE DRAIN OR TRAP SIZE (inches)	DRAINAGE FIXTURE UNIT VALUE
1 1/4	1
1 1/2	2
2	3
2 1/2	4
3	5
4	6

For SI: 1 inch = 25.4 mm.

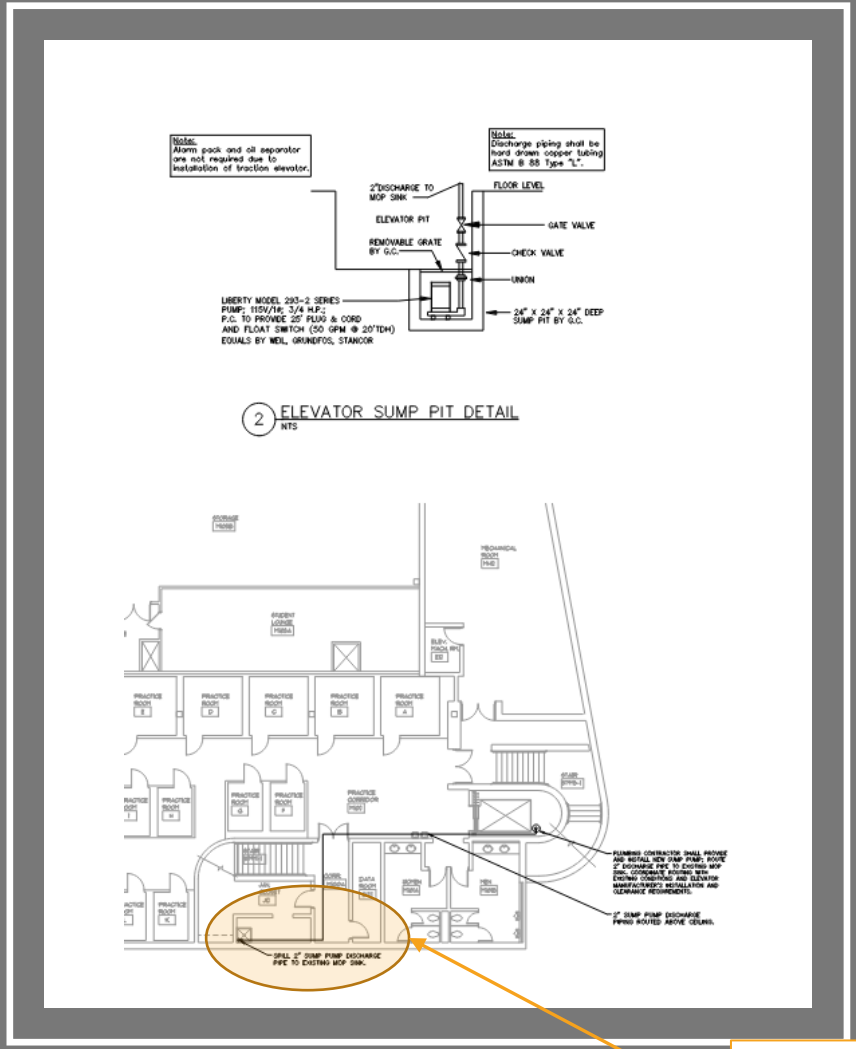
SIZING OF INDIRECT WASTE PIPES AND INDIRECT WASTE RECEPTORS

- **709.4.1 Clear-Water Waste Receptors**
- Where waste receptors such as floor drains, floor sinks and hub drains receive only clear-water waste from display cases, refrigerated display cases, ice bins, coolers and freezers, such receptors shall have a *drainage fixture unit* value of one-half.





SIZING OF INDIRECT WASTE PIPES AND INDIRECT WASTE RECEPTORS

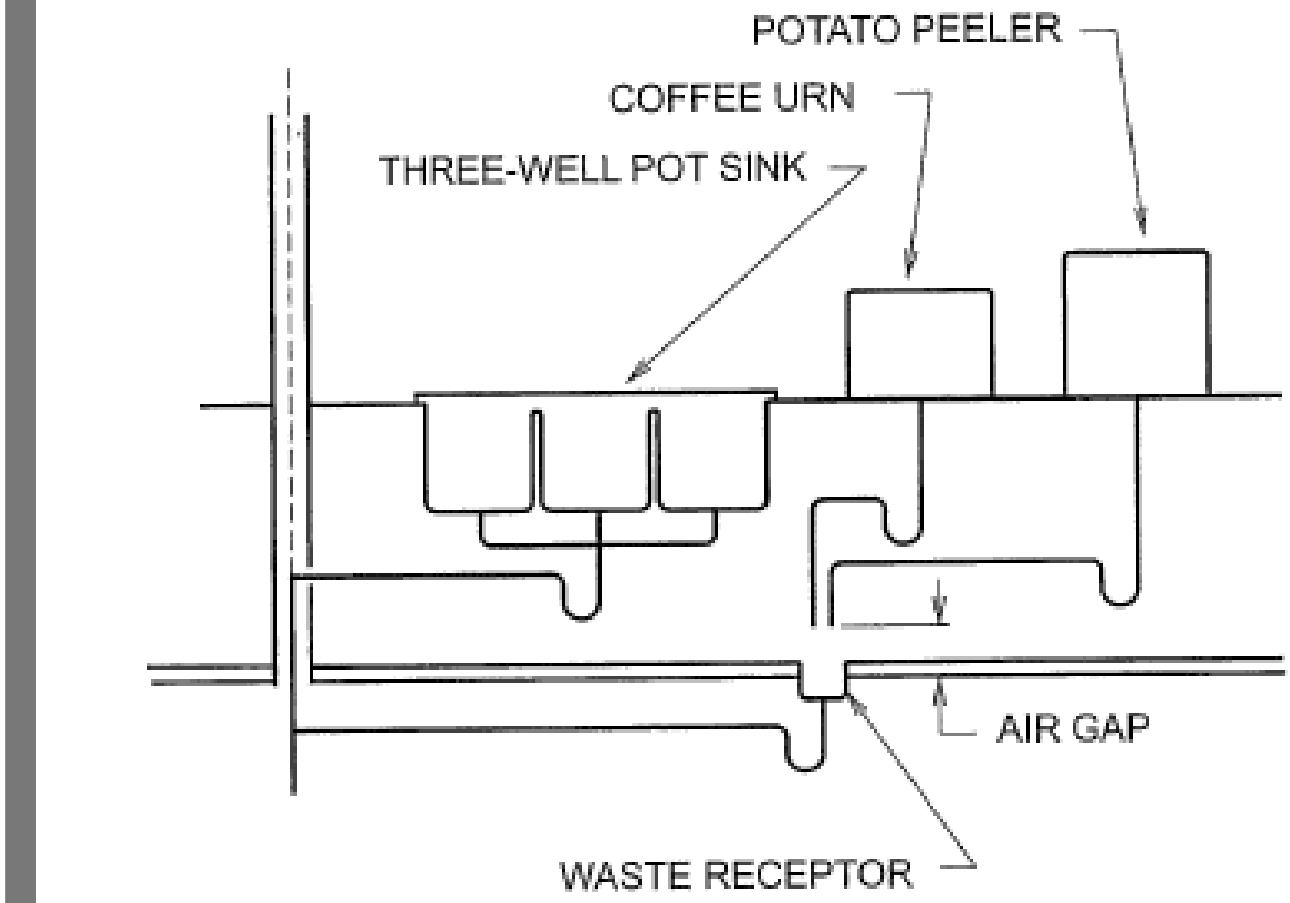


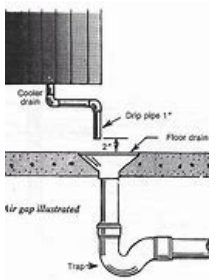
SPILL 2" SUMP DISCHARGE LINE TO EXISTING MOP SINK

- **301.6 - Exception**
- Floor drains, sumps and sump pumps shall be permitted at the base of the shaft, provided that they are indirectly connected to the plumbing system and comply with Section 1003.4 or other approved means of disposal.

3. RECOGNIZING INDIRECT WASTE TYPES AND USES

- **801.1 Scope**
- This chapter shall govern matters concerning indirect waste piping and special wastes. This chapter shall further control matters concerning food-handling establishments, sterilizers, clear-water waste, swimming pools, methods of providing *air breaks* or *air gaps*, and neutralizing devices for corrosive wastes.





RECOGNIZING INDIRECT WASTE TYPES AND USES

- **801.2 Protection**
- DEVICES, APPURTENANCES, APPLIANCES AND APPARATUS INTENDED TO SERVE SOME SPECIAL FUNCTION, SUCH AS STERILIZATION, DISTILLATION, PROCESSING, COOLING, OR STORAGE OF ICE OR FOODS, AND THAT DISCHARGE TO THE DRAINAGE SYSTEM, SHALL BE PROVIDED WITH PROTECTION AGAINST BACKFLOW, FLOODING, FOULING, CONTAMINATION AND STOPPAGE OF THE DRAIN.

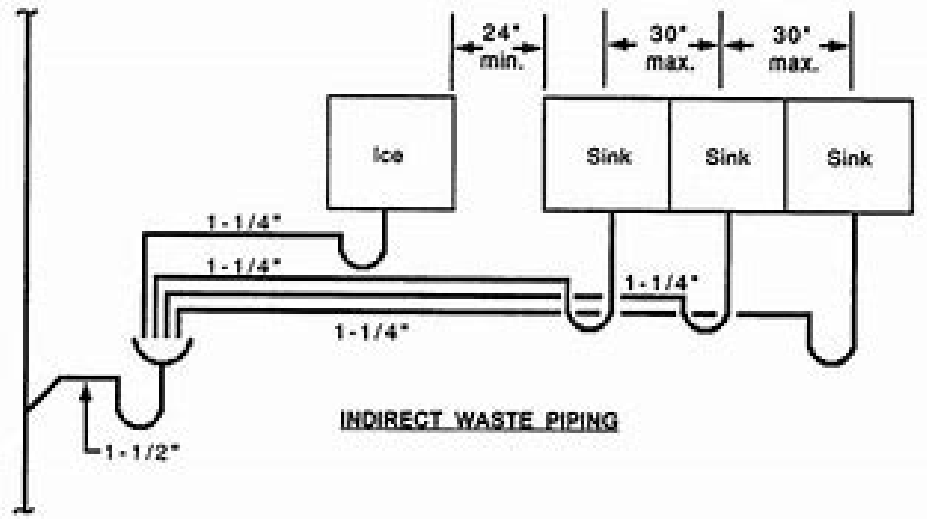
RECOGNIZING INDIRECT WASTE TYPES AND USES

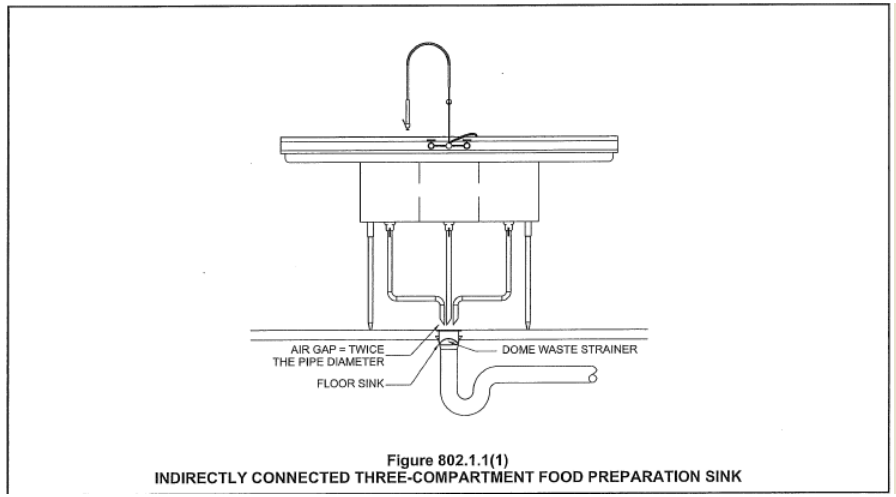
- **802.1 Where Required**
- Food-handling equipment, in other than dwelling units, clear-water waste, dishwashing machines and utensils, pots, pans and dishwashing sinks shall discharge through an indirect waste pipe as specified in Sections 802.1.1 through 802.1.8. Health-care related fixtures, devices and equipment shall discharge to the drainage system through an indirect waste pipe by means of an *air gap* in accordance with this chapter and Section 713.3. Fixtures not required by this section to be indirectly connected shall be directly connected to the plumbing system in accordance with Chapter 7.

RECOGNIZING INDIRECT WASTE TYPES AND USES

- **802.1.1 Food Handling**
- Equipment and fixtures utilized for the storage, preparation and handling of food shall discharge through an indirect waste pipe by means of an air gap. Each well of a multiple-compartment sink shall discharge independently to a waste receptor.

RECOGNIZING INDIRECT WASTE TYPES AND USES





RECOGNIZING INDIRECT WASTE TYPES AND USES

- **802.1.2 Floor Drains in Food Storage Areas**
- Floor drains located within walk-in refrigerators or freezers in food service and food establishments shall be indirectly connected to the sanitary drainage system by means of an *air gap*. Where a floor drain is located within an area subject to freezing, the waste line serving the floor drain shall not be trapped and shall indirectly discharge into a waste receptor located outside of the area subject to freezing.

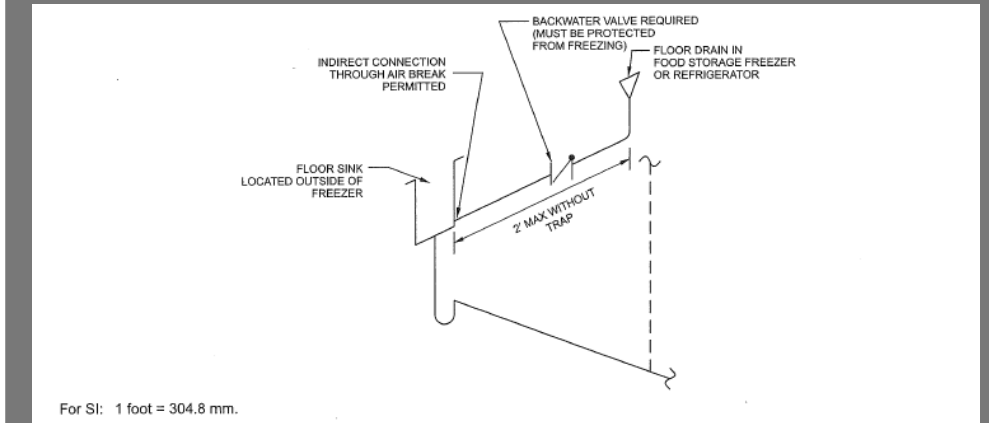


Figure 802.1.2
FLOOR DRAIN IN FOOD STORAGE FREEZER

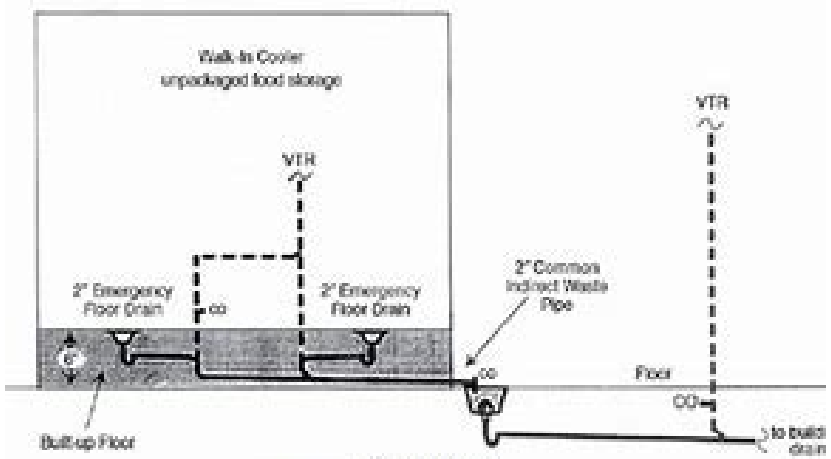
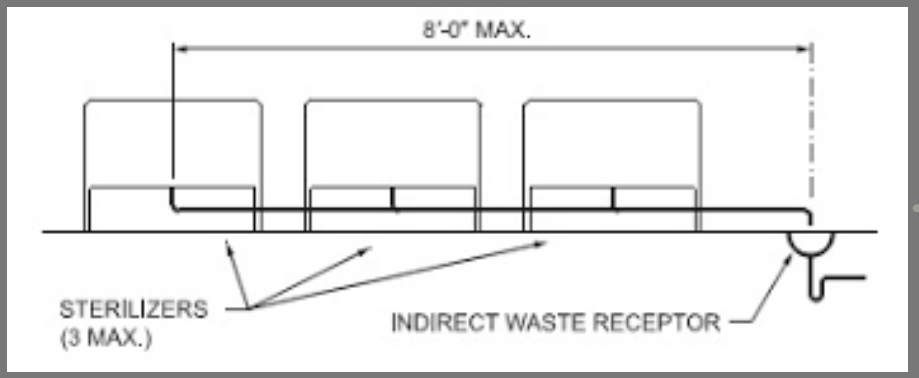


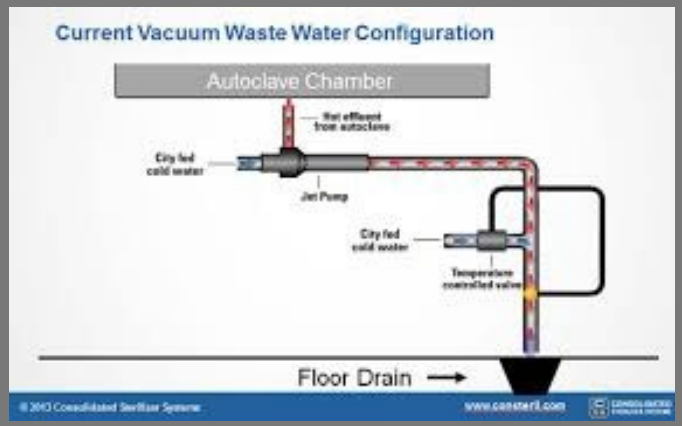
FIGURE 801.3.2B
WALK-IN COOLER FLOOR DRAIN PIPING

FLOOR DRAINS IN FREEZERS AND COOLERS

- **802.1.3 POTABLE CLEAR-WATER WASTE**
- Where devices and equipment, such as sterilizers and relief valves, discharge potable water to the building drainage system, the discharge shall be through an indirect waste pipe by means of an *air gap*. Drinking fountains may be connected directly or indirectly.

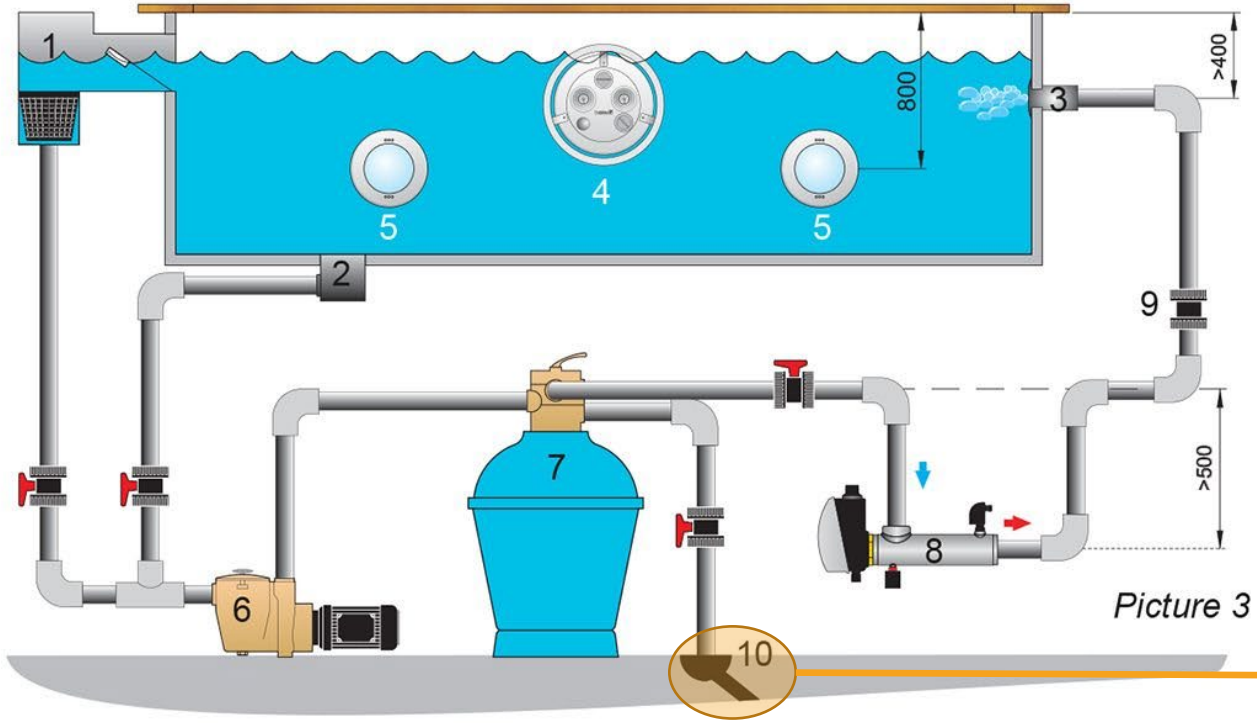
RECOGNIZING INDIRECT WASTE TYPES AND USES


8'-0" MAX.
STERILIZERS
(3 MAX.)
INDIRECT WASTE RECEPTOR


Current Vacuum Waste Water Configuration
Autoclave Chamber
Floor Drain

RECOGNIZING INDIRECT WASTE TYPES AND USES

- **802.1.4 SWIMMING POOLS**
- Where waste water from swimming pools, backwash from filters and water from pool deck drains discharge to the building drainage system, the discharge shall be through an indirect waste pipe by means of an *air gap*.



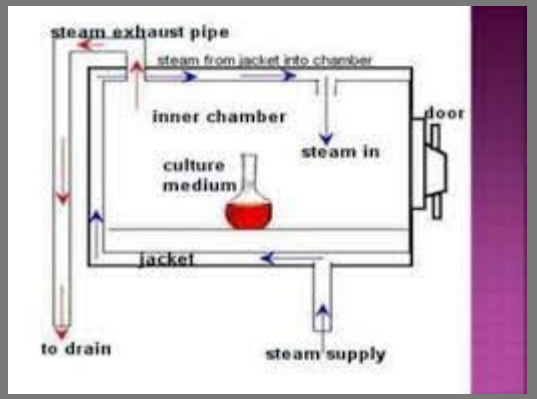
Picture 3

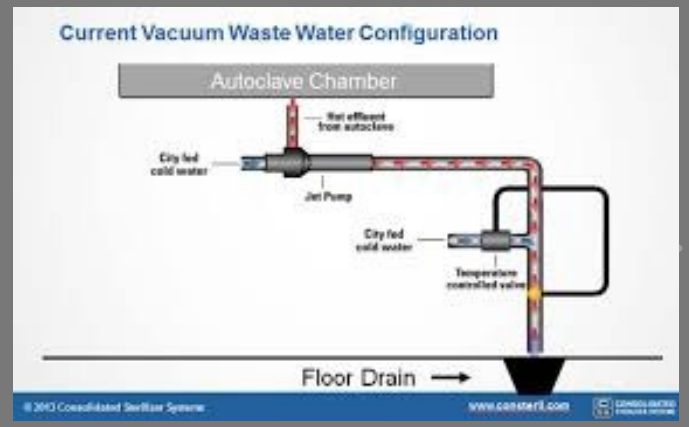
1. Skimmer
2. Main drain
3. Inlet
4. JetSwim
5. Light
6. Pump
7. Filter
8. Electric heater
9. Check valve
10. Drain

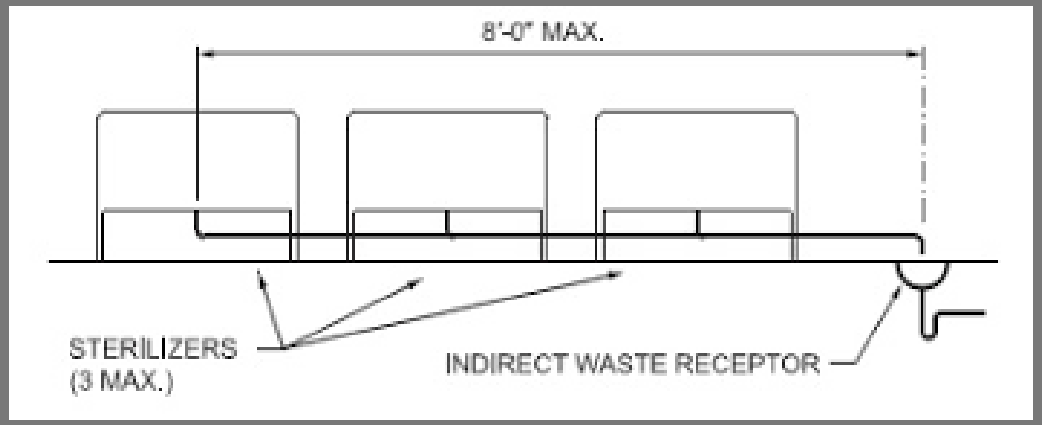
RECOGNIZING INDIRECT WASTE TYPES AND USES

- **802.1.5 NONPOTABLE CLEAR-WATER WASTE**
- Where devices and equipment such as process tanks, filters, condensate drains, drips and boilers discharge nonpotable water to the building drainage system, the discharge shall be through an indirect waste pipe by means of an *air break* or an *air gap*.

RECOGNIZING INDIRECT WASTE TYPES AND USES


steam exhaust pipe
steam from jacket into chamber
inner chamber
door
steam in
culture medium
jacket
to drain
steam supply


Current Vacuum Waste Water Configuration
Autoclave Chamber
Floor Drain


8'-0" MAX.
STERILIZERS
(3 MAX.)
INDIRECT WASTE RECEPTOR

RECOGNIZING INDIRECT WASTE TYPES AND USES

- **802.1.6 DOMESTIC DISHWASHING MACHINES**
- Domestic dishwashing machines shall discharge indirectly through an *air gap* or *air break* into a waste receptor in accordance with Section 802.2, or discharge into a wye branch fitting on the tailpiece of the kitchen sink or the dishwasher connection of a food waste disposer. The waste line of a domestic dishwashing machine discharging into a kitchen sink tailpiece or food waste disposer shall connect to a deck-mounted air gap or the waste line shall rise and be securely fastened to the underside of the sink rim or counter.

802.1.6 DOMESTIC DISHWASHING MACHINES

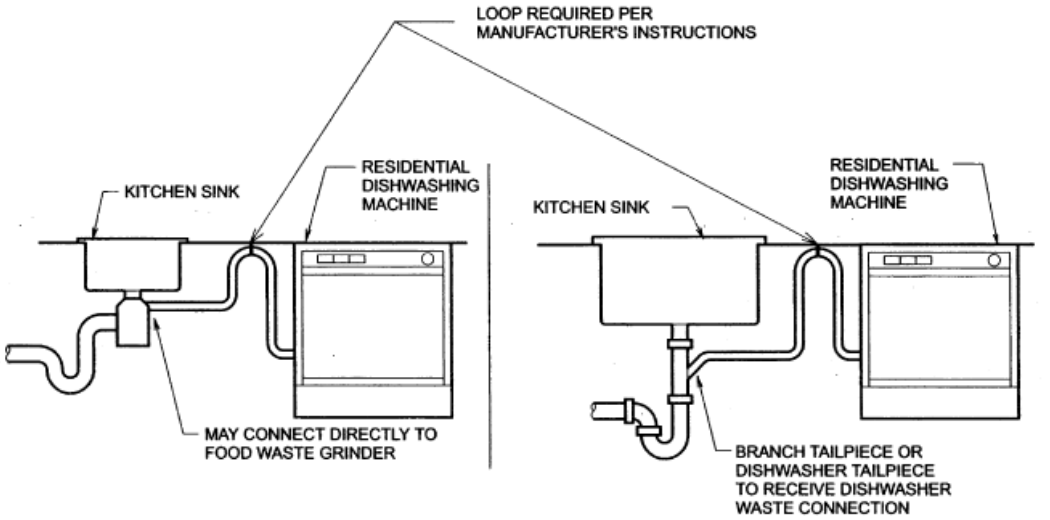


Figure 802.1.6
RESIDENTIAL DISHWASHER WASTE CONNECTIONS

RECOGNIZING INDIRECT WASTE TYPES AND USES

- **802.1.7 COMMERCIAL DISHWASHING MACHINES**
- The discharge from a commercial dishwashing machine shall be through an *air gap* into a waste receptor in accordance with Section 802.2.1.
- **802.2.1 Air Gap**

802.1.7 COMMERCIAL DISHWASHING MACHINES

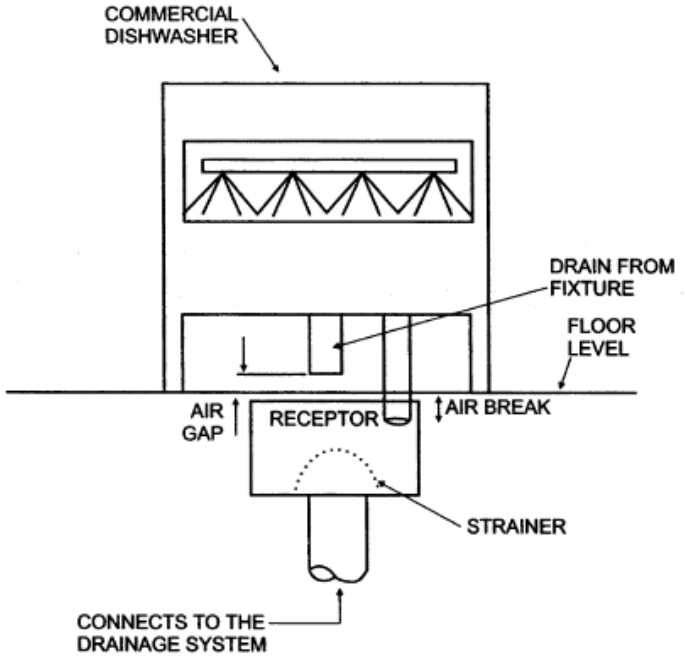
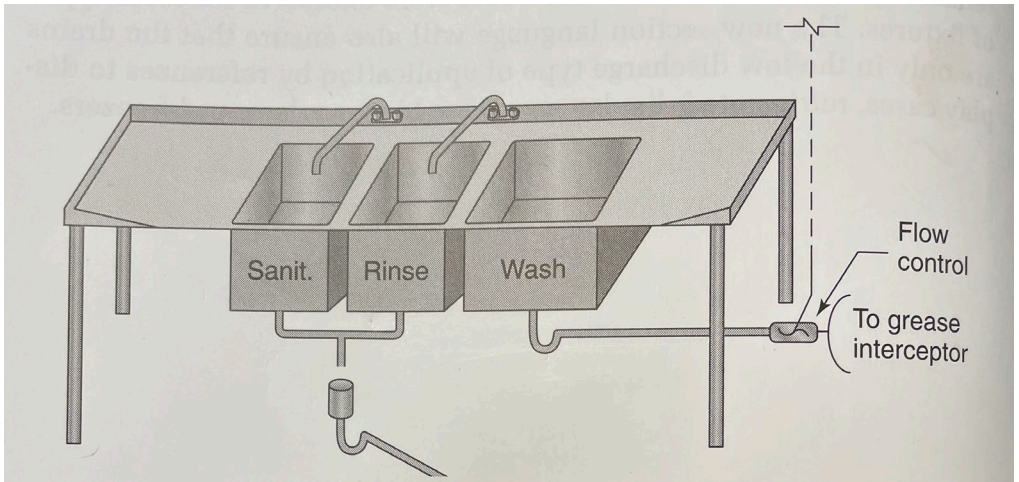


Figure 802.1.7
COMMERCIAL DISHWASHER WASTE CONNECTION

RECOGNIZING INDIRECT WASTE TYPES AND USES

- **802.1.8 Food Utensils, Dishes, Pots and Pans Sinks**
- Sinks, in other than dwelling units, used for the washing, rinsing or sanitizing of utensils, dishes, pots, pans or service ware used in the preparation, serving or eating of food shall discharge indirectly through an *air gap* or an *air break* to the drainage system.

802.1.8 FOOD UTENSILS, DISHES, POTS AND PANS SINKS



The three-compartment sink illustrates how a small commercial food service area might connect its utensil cleaning equipment.

RECOGNIZING INDIRECT WASTE TYPES AND USES

- **802.2 INSTALLATION**
- Indirect waste piping shall discharge through an *air gap* or *air break* into a waste receptor. Waste receptors shall be trapped and vented and shall connect to the building drainage system. Indirect waste piping that exceeds 30 inches (762 mm) in *developed length* measured horizontally, or 54 inches (1372 mm) in total *developed length*, shall be trapped.
- **Exception:** Where a waste receptor receives only clearwater waste and does not directly connect to a sanitary drainage system, the receptor shall not require a trap.

4. INSTALLATION OF INDIRECT WASTE PIPING

4. INSTALLATION OF INDIRECT WASTE PIPING

- **802.2 INSTALLATION COMMENTARY**
- To minimize bacterial growth and odor in indirect waste piping, a trap is required when the piping exceeds 30 inches (762 mm) in developed length measured horizontally or 54 inches (1372 mm) in total developed length. The trap requirement is intended to apply only to fixtures or devices that are open to the room atmosphere. It does not apply to an indirect waste pipe making a direct connection to a device such as a water heater relief valve. A trapped relief valve discharge pipe is prohibited because it creates a restriction, causes backpressure to develop and could possibly freeze, creating a blockage. The trap prescribed by this section does not require a vent because such trap does not serve the same purpose as other traps in the drainage system.

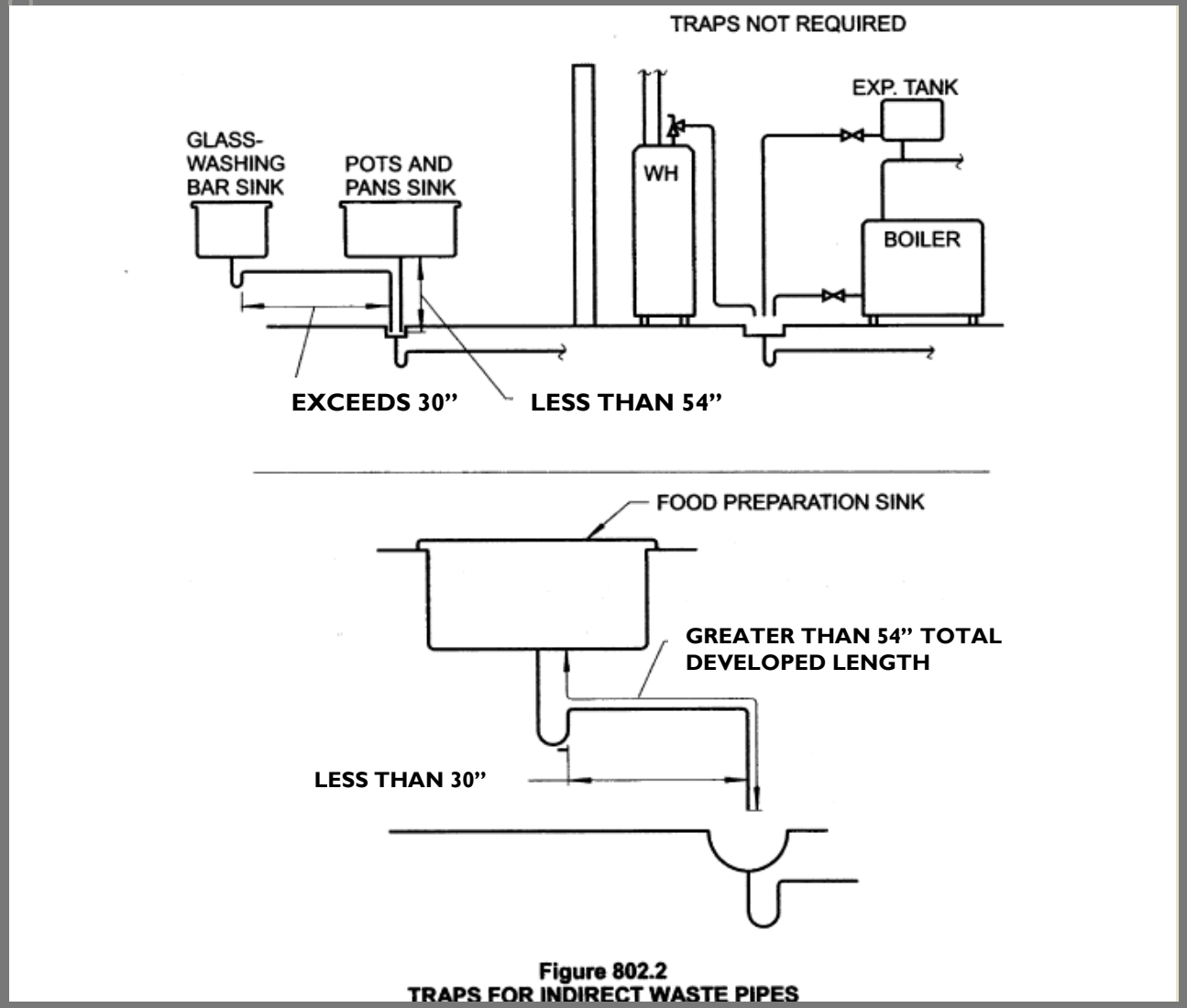


Figure 802.2
TRAPS FOR INDIRECT WASTE PIPES

3. INSTALLATION OF INDIRECT WASTE PIPING

INSTALLATION OF INDIRECT WASTE PIPING

- **802.2.1 Air Gap**
- The *air gap* between the indirect waste pipe and the *flood level rim* of the waste receptor shall be not less than twice the effective opening of the indirect waste pipe.

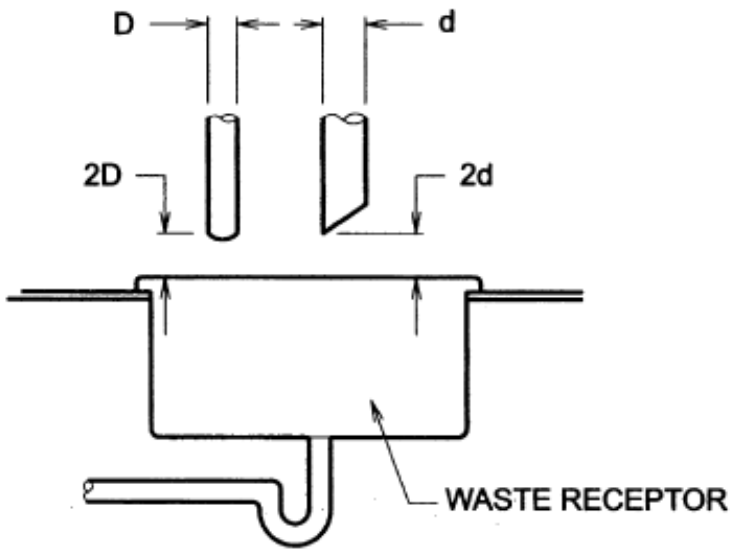


Figure 802.2.1
AIR GAP

INSTALLATION OF INDIRECT WASTE PIPING

- **802.2.2 Air Break**
- An *air break* shall be provided between the indirect waste pipe and the trap seal of the waste receptor.

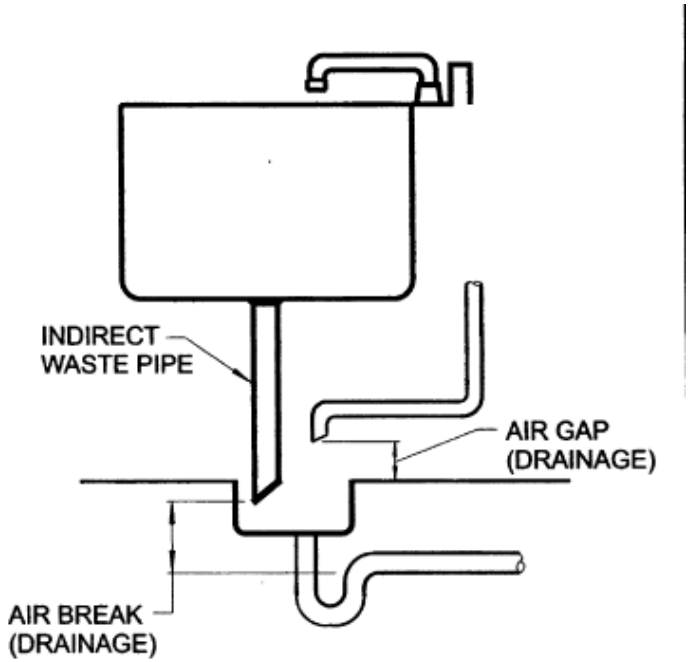


Figure 202(4)
AIR GAP, AIR BREAK

INSTALLATION OF INDIRECT WASTE PIPING

- **802.3 Waste Receptors**
- Every waste receptor shall be of an *approved* type. A removable strainer or basket shall cover the waste outlet of waste receptors. Waste receptors shall be installed in ventilated spaces. Waste receptors shall not be installed in concealed spaces. Waste receptors shall not be installed in plenums, crawl spaces, attics, interstitial spaces above ceilings and below floors. Ready *access* shall be provided to waste receptors.

  Exception: Where hub drains are installed in a crawl space for condensate waste.

802.3 WASTE RECEPTORS

EXCEPTION: WHERE HUB DRAINS ARE INSTALLED IN A CRAWL SPACE FOR CONDENSATE WASTE.

- 715.6 Crawl Spaces
- All hub drains or floor drains installed in crawl spaces shall be protected from backflow into the building by a check valve or backwater valve installed in the lateral serving the said hub drain or floor drain. Trap seal protection shall be by the use of a deep seal trap.

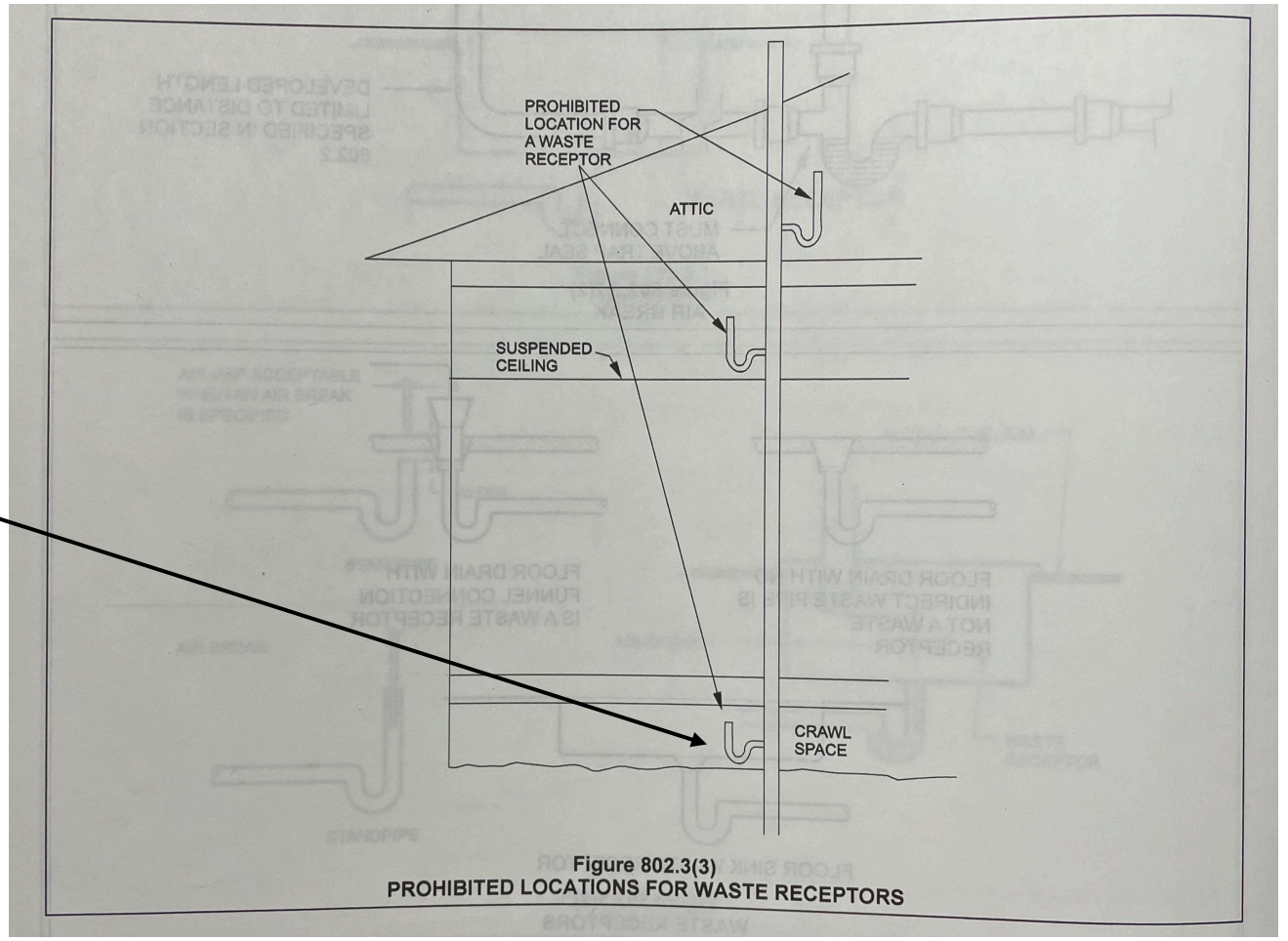
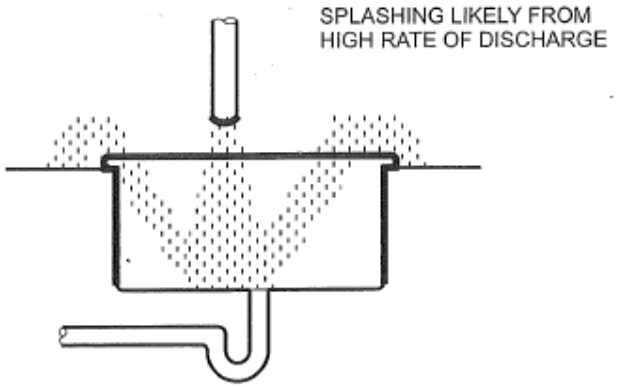


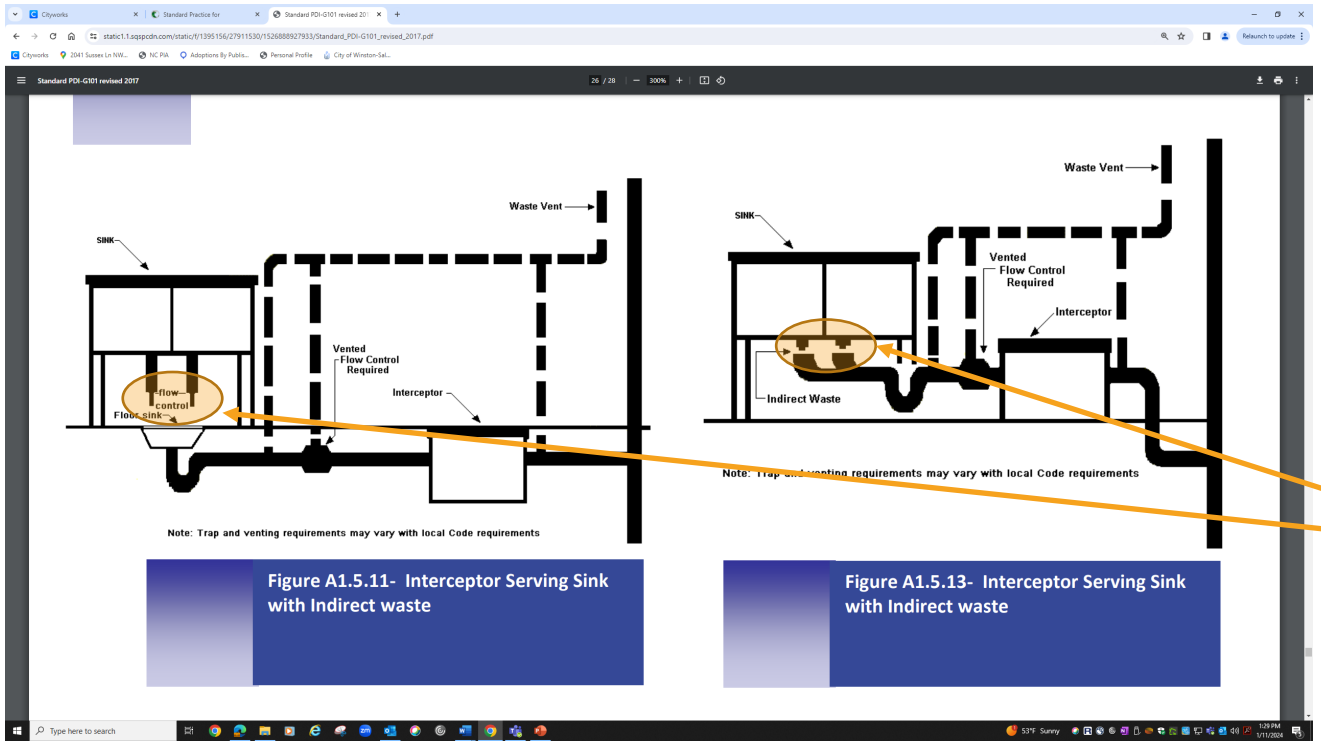
Figure 802.3(3)
PROHIBITED LOCATIONS FOR WASTE RECEPTORS



INSTALLATION OF INDIRECT WASTE PIPING

- **802.3.1 Size of Receptors**
- A waste receptor shall be sized for the maximum discharge of all indirect waste pipes served by the receptor. Receptors shall be installed to prevent splashing or flooding.

STANDARD PDI-G 101 - 2017

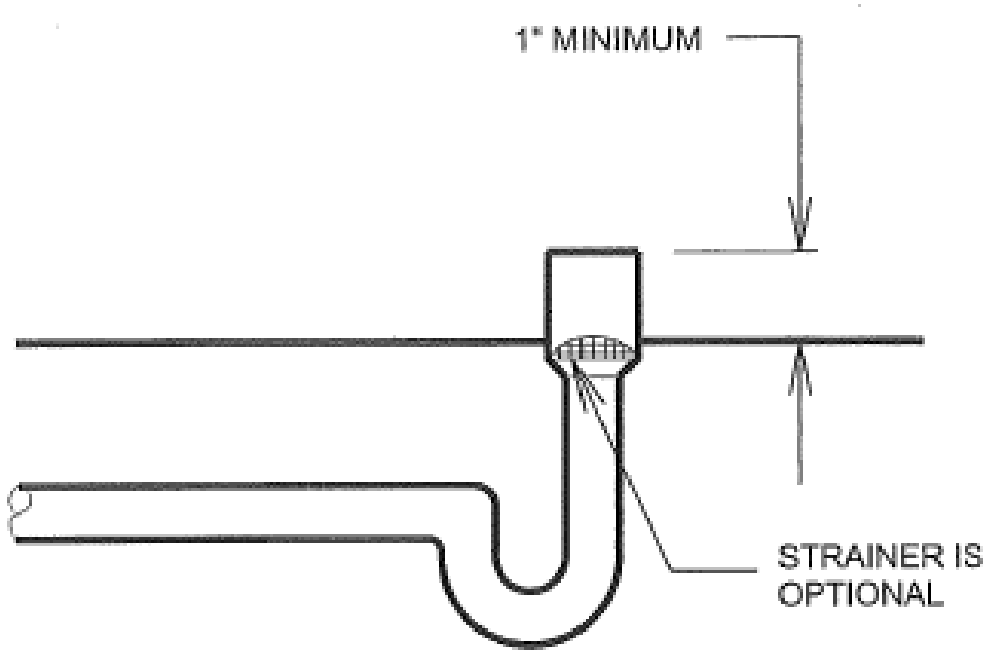


A picture is worth 1000 words.

Notice it is okay per the standard to add flow control devices in the outlets of the indirect wastes.

INSTALLATION OF INDIRECT WASTE PIPING

- **802.3.2 Hub Drains**
- A hub drain shall be in the form of a hub or a pipe extending not less than 1 inch (25 mm) above a water-impervious floor and shall not be required to have a strainer.



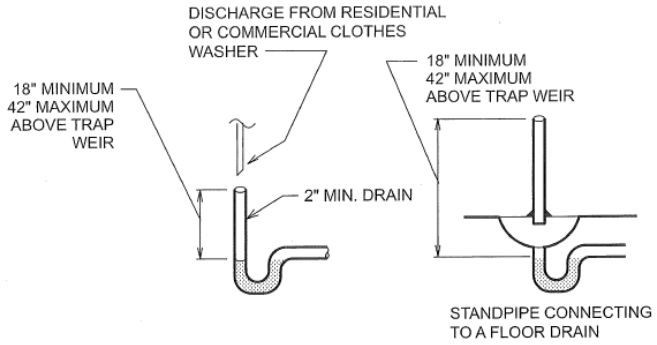
OPEN HUB DRAIN WITH TRAP FOR RECEIVING INDIRECT WASTE PIPE

WHAT IS A WATER-IMPERVIOUS FLOOR?

- **There are three stages of submergibility.** The main difference between waterproof, water-resistant and water repellent material is given by the degree to which water is prevented from getting through.
- **1. Water Resistant –** Water resistant material offers the lowest protection from water.
- **2. Water Repellent –** Water repellent materials offers a medium level of protection.
- **3. Waterproof – also known as water-impervious -** Waterproof materials offer the highest level of protection.

INSTALLATION OF INDIRECT WASTE PIPING

- **802.3.3 Standpipes**
- Standpipes shall be individually trapped. Access shall be provided to standpipes and drains for rodding. Standpipes shall be 2 inches (51 mm) in diameter and not less than 18 inches (762 mm) or more than 48 inches (1219 mm) in height as measured from the crown weir. The standpipe shall extend 34 inches (864 mm) minimum above the base of the clothes washer unless recommended otherwise by the manufacturer. The connection of a laundry tray waste line may be made into a standpipe for the automatic clothes-washer drain. The standpipe shall extend above the flood level rim of the laundry tray. The outlet of the laundry tray shall be a maximum horizontal distance of 30 inches (762 mm) from the standpipe trap.



INSTALLATION OF INDIRECT WASTE PIPING

- **802.3.3 Standpipes**

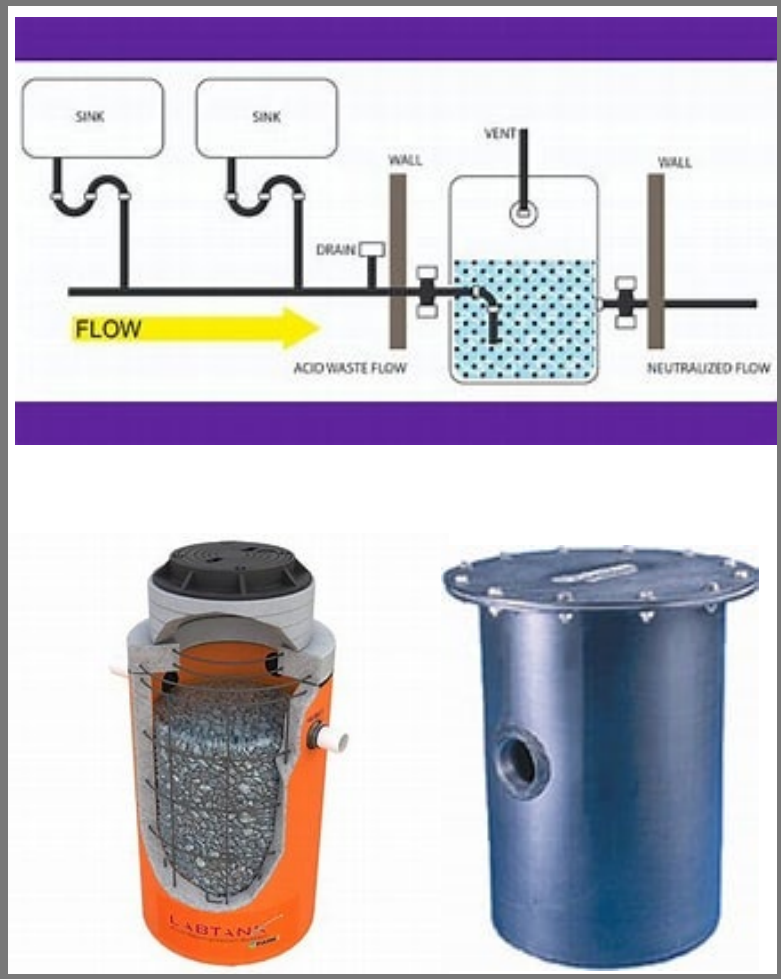
Washer and dryer sold separately.

5. UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

ACID SOIL AND WASTE PIPING

SECTION 803 SPECIAL WASTES

- **803.1 Neutralizing Device Required for Corrosive Wastes**
- Corrosive liquids, spent acids or other harmful chemicals that destroy or injure a drain, *sewer*, soil or waste pipe, or create noxious or toxic fumes or interfere with sewage treatment processes shall not be discharged into the plumbing system without being thoroughly diluted, neutralized or treated by passing through an *approved* dilution or neutralizing device. Such devices shall be automatically provided with a sufficient supply of diluting water or neutralizing medium so as to make the contents noninjurious before discharge into the drainage system. The nature of the corrosive or harmful waste and the method of its treatment or dilution shall be *approved* prior to installation.



UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

- **803.3 Piscina Drain**
- The drain from a wash basin (piscina) located in a sacristy may be connected directly to a dry well.

A **piscina** is a shallow basin placed near the altar of a church, or else in the vestry or sacristy, used for washing the communion vessels.

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

- **803.4 ACID SOIL AND WASTE PIPING**
- For engineered acid soil and waste drainage systems, the type of pipe shall be selected by a registered design professional. For non-engineered acid soil and waste drainage systems, the piping shall be of a material that is designed and recommended by the manufacturer as suitable for the type of waste drained. Piping shall be installed in accordance with the manufacturer's installation instructions. When installed within buildings, piping of combustible materials shall be of a flame-retardant type rated at least V-2 in accordance with UL 94. Concentrations of acid waste that are sufficient to adversely affect the conventional drainage system shall be suitably diluted or neutralized before interconnection. Fittings shall conform to the type of piping used.

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

ACID WASTE PIPING

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

- **803.5 Wastewater Temperature**
- Steam pipes shall not connect to any part of a drainage or plumbing system and water above 140°F (60°C) shall not be discharged into any part of a drainage system. Such pipes shall discharge into an indirect waste receptor connected to the drainage system.
- **702.5 Temperature Rating**
- Direct connection of a steam exhaust, blowoff or drip pipe shall not be made with the building drainage system. Where the waste water temperature will be greater than 140°F (60°C), the sanitary drainage piping material shall be rated for the highest temperature of the waste water or approved cooling methods shall be provided.

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

- **SECTION 804 MATERIALS, JOINTS AND CONNECTIONS**
- **804.1 General**
- The materials and methods utilized for the construction and installation of indirect waste pipes and systems shall comply with the applicable provisions of Chapter 7.
- **701.7 Engineered Systems**
- Engineered sanitary drainage systems, shall conform to the provisions of Section 316.

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

- 105.4 Alternative Engineered Design
- Section 316 Alternative Engineered Design
- 316.1 Alternative Engineered Design
- The design, documentation, inspection, testing and approval of an *alternative engineered design* plumbing system shall comply with Sections 316.1.1 through 316.1.6.

- **316.1.1 Design Criteria**
- An *alternative engineered design* shall conform to the intent of the provisions of this code and shall provide an equivalent level of quality, strength, effectiveness, fire resistance, durability and safety. Material, equipment or components shall be designed and installed in accordance with the manufacturer's instructions.

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

- **316.1.2 Submittal**
- The registered design professional shall indicate on the permit application that the plumbing system is an *alternative engineered design*. The permit and permanent permit records shall indicate that an *alternative engineered design* was part of the *approved* installation.

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

- **316.1.3 Technical Data**
- The registered design professional shall submit sufficient technical data to substantiate the proposed *alternative engineered design* and to prove that the performance meets the intent of this code.

- **316.1.4 Construction Documents**
- The registered design professional shall submit to the code official two complete sets of signed and sealed construction documents for the *alternative engineering design*. The construction documents shall include floor plans and a riser diagram of the work. Where appropriate, the construction documents shall indicate the direction of flow, all pipe sizes, grade of horizontal piping, loading and location of fixtures and appliances.

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

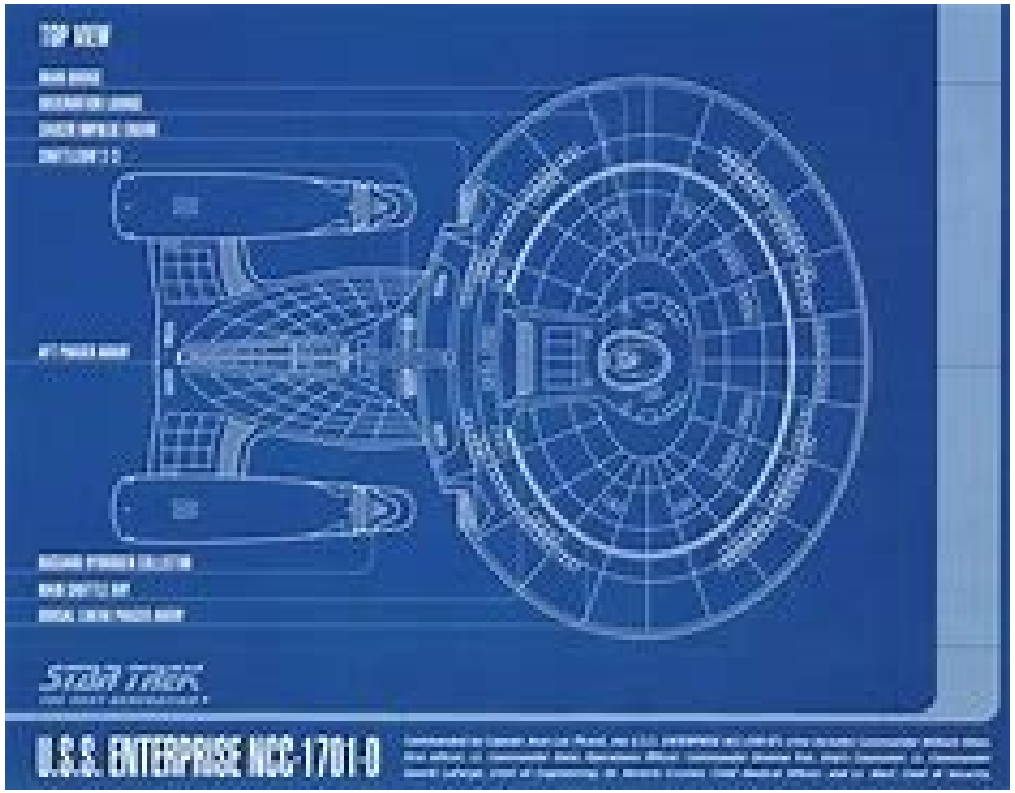
UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

316.1.5 Design Approval

Where the code official determines that the *alternative engineered design* conforms to the intent of this code, the plumbing system shall be *approved*. If the *alternative engineered design* is not *approved*, the code official shall notify the registered design professional in writing, stating the reasons thereof.

UNDERSTANDING SPECIAL WASTES REGULATIONS AND CONCERNS

- **316.1.6 Inspection and Testing**
- The *alternative engineered design* shall be tested and inspected in accordance with the requirements of Sections 107 and 312.



QUESTIONS?

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PLANNING AND DEVELOPMENT SERVICES
INSPECTION DIVISION

THE END