Chapter L
RESTAURANT EQUIPMENT
Code References

GENERAL

a. Definition
   (1) air-gap, water system Comm 81.01(7)
   (2) air-gap, drain system Comm 81.01(6)
   (3) floor sink Comm 81.01(105)
   (4) grease interceptor Comm 81.01(113)
   (5) indirect waste piping Comm 81.01(131)
   (6) receptor Comm 81.01(201)
   (7) waste sink Comm 81.01(275)

b. Floor sink installation Comm 82.33(8)(a) & (b)

c. Receptor installation Comm 82.33(8) & (8)(a)

d. Indirect waste piping Comm 82.33(1)(b)

e. Indirect waste piping materials Comm 82.33(2)

f. Indirect waste piping (without traps) Comm 81.01(113)

g. Indirect waste piping (with traps) Comm 82.33(5)

h. Waste sink installation Comm 82.33(8)(a)

i. Grease interceptor drains flowing to Comm 82.34(5)(d)7.

j. Restaurant sinks (scullery) See Chapter M in this manual.


l. Restaurant sinks (Prep sinks) See Chapter M in this manual.

m. Accessibility Requirements (ADA) hand sinks plumbing rough-in measurements See Chapter M in this manual.


Chapter L
RESTAURANT EQUIPMENT
Code References

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Drain Options
UNDER COUNTER COMMERCIAL DISHWASHERS
Some under counter dishwashers discharge as a dump machine meaning that they do not have a pump. However, there are under counter dishwashers which have a pump, when the machine has a pump, then the drain may be in the floor or in the wall. When the drain is in the floor, it may be installed under the machine (if accessible) or to one side or the other as shown above. Access to the drain is required and when the drain is in the wall or above floor, a pump type dishwasher is required. The top of the drain which receives the discharge from the dishwasher shall be as required by the manufacturer. Some machines will only pump 12" high but others can pump up to 42" high. Therefore, the installer must have the rough-in drawings before installation.

Water Options
Hot water for dishwashers can be 180° or 140°. If 140° water is provided, then a sanitation device is provided for the dishwasher. In most machines, if 180° is required, then a pre-heater is part of the machine. A pressure reducing valve reducing the water pressure to 25 psi is required. Also a shock stop and temperature gauge should be part of the installation.
Chapter L

RESTAURANT EQUIPMENT
Under Counter Commercial Dishwashers

This pipe is an indirect waste and sized in accordance with the specifications of the manufacturer of the appliance. Com 82.33 (3)(b)

Existing Plumbing: Existing piping in the walls. This piping may make it more practical to install a proper drain for the dishwasher above the floor. The site waste for the standpipe receptor for the dishwasher can be installed at various heights. All manufacturers design their machines to pump to various elevations. Since each manufacturer installs different pumps, it is up to the plumber to verify the rough-in measurement above floor. Also keep in mind that the majority of the pump dishwashers can discharge into a site waste in the floor as well as pump up into a standpipe receptor.

If the machine has a pump, it could be piped as shown without draining the contents of the washing or rinsing cycles of the dishwasher because the drain has a positive closure.

Commercial dishwashers must discharge into a vented and trapped receptor or site waste by means of an air gap or an air break. The indirect waste pipe (the piece of pipe from the machine to the vented and trapped receptor) may not be more than 30" in length. See Com 82.33 (9)(d) 2.

A 4" trap and drain is recommended. The dfu of a 4" receptor for a dishwasher drain is 6. See Table 82.30-1 (Commercial Dishwasher) Also a floor sink is an acceptable method of draining a dishwasher.
Chapter L
RESTAURANT EQUIPMENT
Commercial Dishwashers

Vacuum breaker by manuf.

Shock stop
Temp-pressure gauge (180°)
Pressure reducing valve (20-30 psi)

Booster heater
Temp-pressure gauge (130°)

Ball valve (3/4")

180° Hot water to rinse and wash dishes

Commercial Dishwasher

2" indirect drain (max. of 30" long)

Temperature and pressure relief valve

2'-0" min recommended

Vented and trapped receptor. Com 82.33 (9)(d) 2. Indirect waste pipe (30" max.) Com 82.33 (9)(d) 2. 4" Minimum drain - Table 82.30-1 (Dishwasher, Commercial) Fixture unit value of 4" receptor is 6. Table 82.30-1. Minimum size vent - Table 82.31-3. Minimum drain size of dishwasher receptor - Table 82.30-1.

Commercial Dishwasher

Pre-wash sink
Dish tray drain

FWG
Size of drain for FWG is determined by drain opening on the FWG

Over 30" long needs a trap

Trap size of sink is determined by the size of the sink drain outlet. See Table 82.30-1.

The three (3) compartment sink has a dfu value of 3. See Table 82.30-1.
Coffee Brewer (wsfu = .5) Table 82.40-2

Indirect drain of approved flexible plastic or other approved material sized by drain opening of manufacturer.
Air gap or air break

Drain tray

Backflow preventer
Apollo #4C-102-01 (ASSE 1022)
3/8" taping in inlet & outlet

Ball valve

1 1/4"

1 1/4"

30" max of indirect drain pipe - Com 82.33 (9)(d) 2.

Min. drain size is 1 1/4" - Table 82.30-1
dfu value = 1/2 - Table 82.30-1

Watts SD-3 BFP (ASSE 1022)

Soda and ice tray drain

30" max indirect drain

2 dfu because of the 2" trap size

Air break permitted if only spillage from tray
Air-gap required if drain is draining ice bin
Air break permitted if only condensate from coils

The drain from the soda & ice tray is draining spillage and is permitted to discharge by means of an air break. The second drain discharging from the bottom of the Dispenser must discharge by means of an air gap if it is draining an ice bin or similar. If it is draining a condensate area of the Dispenser, it would be permitted to drain by means of an air break.
Coffee Brewer

Some units are provided with a hot water faucet. Requires an ASSE 1022 backflow preventer. IE: Apollo No. 4C-102-01
Plumbing: 20-80 psi. Machine supplied with 1/4" male flare fitting

Coffee Urn

Coffee urn with 3/8" male fitting. The model shown is with a swing spout for water by-pass, water connection at side and back of unit. Requires an ASSE 1022 back flow preventer. IE: Apollo No. 4C-102-01. Provide an air-gap on the drain. Install a filtering device if required.
Comm 82.33(9)2.a.
The temperature of the water discharging from a steamer is usually over 160° and therefore shall have iron piping or piping which can withstand the high temperatures.

Drains shall be trapped as per Comm 82.33(5)(a)2. Indirect drains 20 feet or less shall be 1" or larger. See Comm 82.33 (3)(a). The maximum length of a horizontal indirect drain shall not exceed 30'.

Materials for the receptor drain and related piping for a steamer shall be capable of withstanding high water temperatures.

Chinese ranges that are provided with multiple frying kettles and multiple faucets with 1/2" water piping installed at the factory to serve those faucets would be acceptable to the Department of Commerce if all other codes are met.
Chapter L

RESTAURANT EQUIPMENT

For salad cases with bottom automatic water fills approved backflow preventer would be ASSE 1056 (Watts #008) or ASSE 1013 (Watts #919, #909).

1" Drain

Cold Salad Case

Air-gap required

Receptor

Water supply in bottom of unit

ASSE 1012

Hot water supply not to exceed 140°

Backflow preventer required which can withstand hot water temperatures. ASSE 1012 (Watts #9D)

Iron piping or pipe and fittings which can withstand high temperature water discharge is recommended.

1 1/2" vent

Hot Food Table

Water fill is above rim of hot food table and will not require back flow protection

Provide trap on drain, 1" minimum. Extend 1" indirect waste to receptor drain. Drain air gap required.
Chapter L

RESTAURANT EQUIPMENT

If an interior air-gap is not provided for, the water supply to an ice maker, a ASSE 1022 backflow preventer shall be installed. An example of ASSE 1022 would be an Apollo 4C-102-01 BFP.

Indirect waste piping. Size based on manufacturer. 30" maximum length as per Comm 82.33 (9) (g) 3.

Refrigerated ice bin requires trap as per Comm 82.33 (5) 2.

2" receptor chosen min 1 1/2" for ice chest Table 82.30-1

Floor Sink

Floor

2" receptor = 3 dfu

All downstream drain & vent piping sized based on floor sink dfu load

DRIP PANS FOR Coffee Makers, Beer Taps, Glass Fillers & Soda Dispensers

When the indirect piping is less than 30" long, the drain piping can be sized as the taping on the drip pan. The materials are not specified in the plumbing code for over 30" long. Size as Table 82.30-1.

Air-break or air-gap. See Comm 82.33(9)(g)2.

This piping is sized as Table 82.30-1 and the materials will be as specified in Table 84.30-1

ENCLOSED FOOD PROCESSING EQUIPMENT

Such as coffee urns, egg boilers, potato peelers & steam kettles shall be provided with an air-gap. See Comm 82.33(9)(g)5.

Indirect waste pipe sized by tapping on fixture.

Air gap

Receptor

The minimum size receptor is 1-1/4" as per Table 82.30-1.

Type of the material for the receptor and related piping is as stated in Table 84.30-1.
Chapter L

RESTAURANT EQUIPMENT

Waitress Station With Water Tower And Ice Compartment

Water tower

Ice compartment

Receptor

1/2" Water supply
BFP not required

Air gap required

Drain

Food Waste Disposal

Vacuum breaker 6"
above flood level of
rim of fixture

Vacuum breaker

Solenoid valve

Control valve

Potato
Peeler

Food waste grinder

Air-gap as per Comm
82.33(9)(g)5.

Properly sized and vented
trap receptor as per Table
82.30-1

Proprietary spray with
spring on hose.

Well-type food
waste disposal or
pre-wash sink.

Solenoid valve

Control valves

Cold water

Hot water

Properly sized drain
and trap as per
Tables 82.30-1
Size as tapping of
food waste grinder.
Chapter L
RESTAURANT EQUIPMENT

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1. **Question:** If a chemical/soap dispenser is installed on a commercial dishwasher, where shall it be located?

**Answer:** The chemical/soap dispenser may be located anywhere but the pipe leading from the dispenser to the water supply must be located 6” below the vacuum breaker. Refer to the drawing in this chapter.

2. **Question:** What type of drain shall be installed for the commercial dishwasher?

**Answer:** Refer to the drawings in this section and note that the drain must be installed above the floor and be provided with an air-gap or air break as part of the drain. See Table 82.30-1 which refers you to Note "c". The Note "c" under this Table recommends a drain size of 4”.

3. **Question:** May a commercial dishwasher which has a single water supply be installed?

**Answer:** Yes, provided that a commercial sanitation cycle is part of the dishwasher. The minimum temperature of the water shall not be less than 130° and the maximum is not recommended above 150°.

4. **Question:** What should the temperature of the water be for a commercial dishwasher which does not have a chemical sanitation cycle?

**Answer:** The wash cycle shall be the same as in question #3 but the water temperature for the sanitation cycle shall be 180°.

5. **Question:** When a restaurant operator installs a commercial dishwasher which will wash all of his utensils (in lieu of a three compartment sink), are there any other sink requirements?

**Answer:** When an operator chooses to install a commercial dishwashing machine in lieu of a three compartment scullery sink, an additional sink (NSF approved) may be necessary for food rinsing, vegetable washing, etc. The three compartment sink shall not be used for food rinsing or vegetable washing. In existing operations, food washing sinks may be required based on the type of food service. Hand washing sink or sinks are required in all eating establishments.

6. **Question:** Where in the code book is information located about drips from pans, floor sinks and receptor information?

**Answer:** Drips and drain outlets Comm 82.33(9)(e)(air-gaps)
Floor sinks Comm 82.33(8)(b)
Drip pans for small appliances Comm 82.33(9)(g)2.
Enclosed food processing equipment Comm 82.33(9)(g)5.

7. **Question:** When a food prep sink is installed, what type of drain connection is required?

**Answer:** The drain from the food prep sink shall discharge into a trap with an air-gap connection.
Chapter L
RESTAURANT EQUIPMENT
Questions & Answers

8. Question: When are hand sinks required in an establishment serving food?

Answer: Hand sinks may be required by the health agency serving your area in various areas of the kitchen and serving area. One area where a hand sink may be required is the cooking area, another in food prep area and another where the person handling money is also handling food. Check with your local health agency for your kitchen/food serving establishment requirements.