Indirect-waste requirements can pertain to a number of types of plumbing fixtures and equipment. These might include a clothes washer drain, a condensate line, a sink drain, or the blowoff pipe from a relief valve, just to name a few. These indirect wastes are piped in this manner to prevent the possibility of contaminated matter backing up the drain into a potable water or food source, among other things.

Most indirect-waste receptors are trapped. If the drain from the fixture is more than 2 feet long, the indirect-waste receptor must be trapped. However, this trap rule applies to fixtures such as sinks, not to an item such as a blowoff pipe from a relief valve. In some areas, a drain that is less than 5 feet long does not have to be trapped. If a floor drain is located within an area subject to freezing, the waste line serving the drain must not be trapped and must indirectly discharge into a waste receptor located outside the area subject to freezing.

The safest method of indirect waste disposal is accomplished by using an air gap. When an air gap is used, the drain from the fixture terminates above the indirect-waste receptor, with open-air space between the waste receptor and the drain. This prevents any backup or back-siphonage.

Some fixtures, depending on local code requirements, may be piped with an air break rather than an air gap. With an air break, the drain may extend below the flood-level rim and terminate just above the trap’s seal. The risk of an air break is the possibility of a backup. Since the drain is run below the flood-level rim of the waste receptor, it is possible that the waste receptor could overflow and back up into the drain. This could create contamination; in cases where contamination is likely, an air gap will be required. Check with your local code office before using an air break.
Fast fact

If the drain from the fixture is more than 2 feet long, the indirect-waste receptor must be trapped.
Domestic dishwashing machines must discharge indirectly through an air gap or air break into a standpipe or other approved receptor. One such approved receptor is the tailpiece of a kitchen sink when the waste line from the dishwasher is connected to and discharging through an air gap and wye-branch fitting. It is also acceptable for a garbage disposer to receive the waste that has passed through an air gap.

Standpipes, such as those used for washing machines, are a form of indirect-waste receptor. A standpipe used for this purpose in most jurisdictions must extend at least 18 inches but not more than 42 inches above the trap seal. Standpipes are to be individually trapped and accessible. If a clear-water waste receptor is located in a floor, some codes require the lip of the receptor to extend at least 2 inches above the floor. This prevents the waste receptor from being used as a floor drain.

Trade tip

The safest method of indirect waste disposal is accomplished by using an air gap.

FIGURE 8.2  Restaurant kitchen with indirect waste and an air gap. Copyright 2002, International Code Council, Inc., Falls Church, Virginia. Reproduced with permission. All rights reserved.
The standpipe for an automatic clothes washer must have a minimum diameter of 2 inches. The fixture drain must connect to a branch drain or drainage stack that has a minimum diameter of 3 inches.

Choosing the proper size for a waste receptor is generally based on the receptor’s ability to handle the discharge from a drain without excessive splashing. If you are concerned with sizing a particular waste receptor, talk with your local code officer for a ruling.

**Fastfact**

Domestic dishwashing machines must discharge indirectly through an air gap or air break into a standpipe or other approved receptor.

**Did you know**

Standpipes, such as those used for washing machines, are a form of an indirect-waste receptor.

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Choosing the proper size for a waste receptor is generally based on the receptor’s ability to handle the discharge from a drain without excessive splashing. If you are concerned with sizing a particular waste receptor, talk with your local code officer for a ruling.

**FIGURE 8.3** Typical standpipe installations. Copyright 2002, International Code Council, Inc., Falls Church, Virginia. Reproduced with permission. All rights reserved.
Buildings used for food preparation, storage, and similar activities are required to have their fixtures and equipment discharge drainage through an air gap. Dishwashers and open culinary sinks are sometimes excepted. Some code regions require that a discharge pipe terminate at least 2 inches above the receptor. Other regions require the distance to be a minimum of 1 inch. You may find that your local code requires the air-gap distance to be a minimum of twice the size of the pipe discharging the waste. For example, a .5-inch discharge pipe would require a 1-inch air gap. Check your local code requirements closely on this matter.

Floor drains located within walk-in refrigerators or freezers in food service and food establishments must be indirectly connected to the sanitary drainage system by means of an air gap. There is an exception to this rule. Where protected against backflow by a backwater valve, such floor drains can be indirectly connected to the sanitary drainage system by means of an air break or an air gap. Waste receptors are permitted in the form of a hub or pipe extending not less than 1 inch above a water-impervious floor and are not required to have a strainer.

Most codes prohibit the installation of an indirect-waste receptor in any room containing toilet facilities. There can be an exception. The exception is the installation of a receptor for a clothes washer when it is installed in the same room. Indirect-waste receptors may not be installed in closets and other unvented areas. Indirect-waste receptors must be accessible. Code generally requires all receptors to be equipped with a means of preventing solids with diameters of .5 inch or larger from entering the drainage system. These straining devices must be removable to allow for cleaning.

When you are dealing with extreme water temperatures in wastewater, such as with a commercial dishwasher, the drain must be piped to an indirect waste. The

Fastfact

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indirect waste will be connected to the sanitary plumbing system, but the dishwasher drain may not connect to the sanitary system directly if the wastewater temperature exceeds 140 degrees F. The discharge from a commercial dishwasher must pass through an air gap or air break and enter a standpipe or approved waste receptor. Steam pipes may not be connected directly to a sanitary drainage system. Local regulations may require the use of special piping, sumps, or condensers to

**Trade tip**

When you are dealing with extreme water temperatures in wastewater, such as with a commercial dishwasher, the drain must be piped to an indirect waste.

**FIGURE 8.4** Sterilizer piping. Copyright 2002, International Code Council, Inc., Falls Church, Virginia. Reproduced with permission. All rights reserved.
Fastfact

Clear water waste from a potable source must be piped to indirect waste through an air gap.

FIGURE 8.5  Indirect waste arrangement for clear-water waste. Copyright 2002, International Code Council, Inc., Falls Church, Virginia. Reproduced with permission. All rights reserved.
accept high-temperature water. The direct connection of any dishwasher to the sanitary drainage system is likely to be prohibited.

Clear water waste from a potable source must be piped to indirect waste through an air gap. Sterilizers and swimming pools might provide two examples of when this rule would be used. Clear water from nonpotable sources, such as a drip from a piece of equipment, must be piped to an indirect waste receptor. Some jurisdictions allow an air break in place of an air gap. Other code regions require any waste entering the sanitary drainage system from an air conditioner to do so through an indirect waste.

**SPECIAL WASTES**

Special wastes are wastes that may have a harmful effect on a plumbing or waste-disposal system. Possible locations for special waste piping might include photographic labs, hospitals, or buildings where chemicals or other potentially dangerous wastes are dispersed. Small, personal-type photo darkrooms do not generally fall under the scrutiny of these regulations. Buildings that are considered to have a need for special-wastes plumbing are often required to have two plumbing systems, one system for normal sanitary discharge and a separate system for the special wastes. Before many special wastes are allowed to enter a sanitary drainage system, the wastes must be neutralized, diluted, or otherwise treated.

Depending upon the nature of the special wastes, special materials may be required. When you venture into the plumbing of special wastes, it is always best to consult the local code officer before proceeding with your work.

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**Did you know**

Where wastewater from swimming pools, backwash from filters, and water from pool deck drains discharge to the building drainage system, the discharge must be through an indirect waste pipe by means of an air gap.