



NAVY AND MARINE CORPS PUBLIC HEALTH CENTER

IMPROVING READINESS THROUGH PUBLIC HEALTH ACTION

Commercial Kitchen Indirect Waste

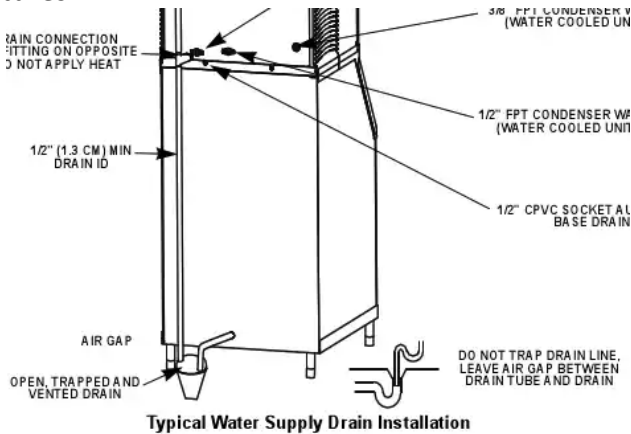
Background

Plumbing design defects are frequently missed by local regulatory authorities, and professional plumbers. It's critical to understand plumbing designs, function, local plumbing codes, and why they are important in maintaining sanitary standards.



Three-Compartment Sink w/ Sanitary Sink

Commercial kitchen plumbing designs and configurations vary widely across Navy installations and vessels. Components most commonly associated with indirect waste piping design issues include; three-compartment sinks, steam tables, ice machines, steam cookers, ice bins, walk-in refrigerator or freezer condensate and other similar fixtures.

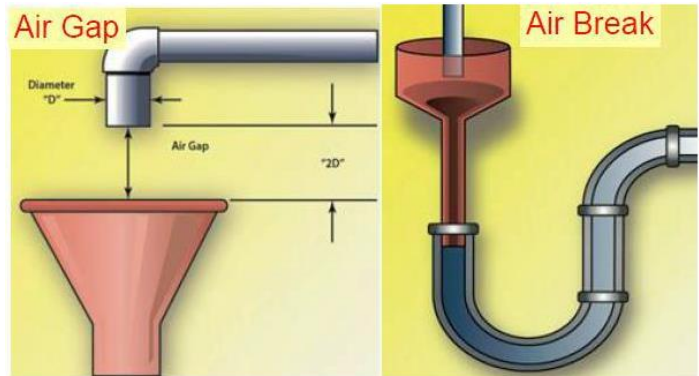


Manitowoc S Model Ice Machine Manufacturer Drain Diagram

Without proper backflow prevention, a reverse flow of contaminants event will lead to costly repairs, contaminated equipment replacement, and even facility closures. Avoid these costly mistakes by ensuring all food service establishment plans for new construction, remodeling, or redesigns are reviewed, and approved by Preventive Medicine (PM). Close working relationships with Public Works, and Navy Facilities Engineering Systems Command (NAVFAC) are crucial to preventing and correcting indirect waste plumbing shortfalls.

What are the requirements?

Health and sanitation requirements for indirect waste piping are covered in several documents, based upon the local municipality's plumbing requirements, and food establishment minimum construction standards.



NAVMED P 5010-1, *Tri-Service Food Code*, does not specifically address indirect waste requirements but details Plumbing Systems requirements in section [5.1]. The 2015 International Plumbing Code (IPC) Chapter 8 establishes the standards for most local municipality codes where and why indirect wastes are required.



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Discussion

Indirect waste requirements are established for devices, and appliances intended to serve special functions such as sterilization, distillation, processing, cooling or storage of ice or foods, and that discharge through a drainage system.

Such devices and appliances shall be protected against backflow, flooding, fouling, contamination and stoppage of the drain.



Flooded Commercial Kitchen Floor.

Guidance for Preventive Medicine Personnel

NAVMED P 5010-1, *Tri-Service Food Code*, contains two codes that are best suited to address indirect waste issues; [5-202.11] *Approved System and Cleanable Fixtures**, [5-202.13] *Backflow prevention, air gap**.

During sanitation inspections, PM personnel should visually inspect three-compartment sinks, steam tables, ice machines, steam cookers, ice bins, walk-in refrigerator or freezer condensate and other similar fixtures for adherence to food facility indirect waste plumbing standards.

Three compartment sinks should have **TWO AIR GAPS**. One on the topside protecting the water supply and one on the bottom side protecting the clean utensils or food prep equipment.

An ideal design below.



Required Two Air Gap Design Into Floor Sink.

Improper design below.



Three-Compartment Sink with No Air Gap, Directly connected to Sanitary Sewer System.



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Improper Ice Machine Drain Design.



Ice Machine installed with No Air Gap, Directly connected to Sanitary Sewer System.

It is important to remember that PM personnel play a supporting role for food establishments. While we are performing routine sanitary inspections we must provide public health education while enforcing public health compliance. Public health education is considered the silver bullet that cements

understanding of “why” compliance is important and significantly increases adherence to standards.

PM professionals must work with the facility to correct these major discrepancies and understand that corrections may take time, and ample resources to complete. Having well established communication and solid working relationships with your local NAVFAC personnel cannot be understated.

Citing or addressing plumbing design issues can be daunting especially to PM personnel, who many not fully understand plumbing design flaws or have experience addressing plumbing design issues. Interdepartmental continued education programs should be a regular occurrence to expand food safety practices and food safety knowledge of junior and senior PM professionals alike. Utilizing NMCPHC publications and products provides an excellent starting point for any PM professional training program.

When in doubt, reach out. Consulting with regional Navy Environmental and Preventive Medicine Units (NEPMUs) can be critical to addressing indirect waste concerns.

For more information on Indirect Waste:

Learn more: [FOOD ESTABLISHMENT MINIMUM CONSTRUCTION STANDARDS](#)

Learn more: [INTERNATIONAL PLUMBING CODE CHAPTER 8 – INDIRECT/SPECIAL WASTE](#)