NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION

PROFESSIONAL FOOD MANAGER POWERPOINT PRESENTATION

Chapter 6 | Facilities and Equipment

NEHA EDUCATION & TRAINING

Overview

After completing this lesson, you should be able to:

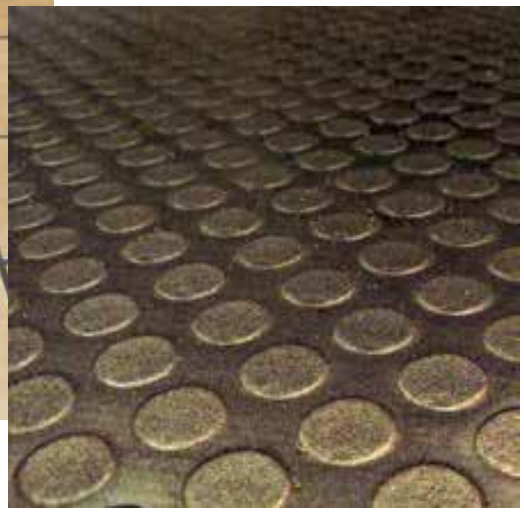
- Explain how the design of a food facility can reduce cross-contamination.
- Describe how the use of certain food contact materials can cause contamination.
- Explain the importance of cleaning and sanitizing the food service facility.
- Describe the various washing facilities found in a food establishment.
- Explain the importance of safe drinking water in a food service facility.

Lesson 1: Facility Design

- Good design and regular maintenance of food facilities are both essential to avoid hazards such as the contamination of food and multiplication of bacteria.

Lesson 1: Facility Design

Floors



Lesson 1: Facility Design

Walls & Ceilings

- Keep the walls sealed, sturdy, easy to clean
- Keep ceilings covered – joists and rafters cannot be exposed to moisture
- Utility lines and pipes cannot be exposed
- Attached fixtures must be easy to clean

Lesson 1: Facility Design

- Lighting

  - **108 lux (10 foot candles):** dry storage areas, walk-in refrigerators, and freezers
  - **215 lux (20 foot candles):** buffets, bars, reach-in and under-the-counter refrigerators, hand washing and dishwashing stations, equipment storage areas, restrooms
  - **540 lux (50 foot candles):** food preparation surfaces with knives, slicers, grinders, and other utensils

Lesson 1: Facility Design

Ventilation

Lesson 1: Facility Design

Waste

Lesson 2: Food Contact Materials

- To avoid contamination, food contact materials must be well designed and constructed, cleaned and sanitized as needed, properly maintained, and used correctly.

- Equipment that comes into contact with food should be smooth, waterproof, nontoxic, non-flaking, non-tainting, resistant to corrosion, durable, and easy to clean.

- Food equipment that is made from inappropriate materials or that is cracked, chipped, broken, worn, or badly designed is a haven for dirt and bacteria.

Lesson 2: Food Contact Materials

- **Utensils**
  - Safe
  - Corrosion resistant
  - Waterproof
  - Smooth
  - Easy to clean
  - Sturdy – resistant to chipping or scratching

Lesson 2: Food Contact Materials

- Non-food contact equipment
  - Parts of some equipment – such as legs, housings, and supports
  - Must be smooth, waterproof, corrosion resistant, easy to clean, and simply designed without ledges or hard-to-reach areas

Lesson 2: Food Contact Materials

- Large and immovable equipment
  - Arrange and position for easy access
  - At least six inches off the floor
  - At least four inches from the tabletop
  - Cracks or seams wider than 1/32 of an inch must be sealed
  - Cantilever mounted equipment

Lesson 2: Food Contact Materials

- Purchasing equipment
  - Approved equipment will be marked with the NSF or UL logos
  - Commercial-grade food service equipment only

Underwriters Laboratories

Certification

Lesson 3: Cleaning and Sanitizing

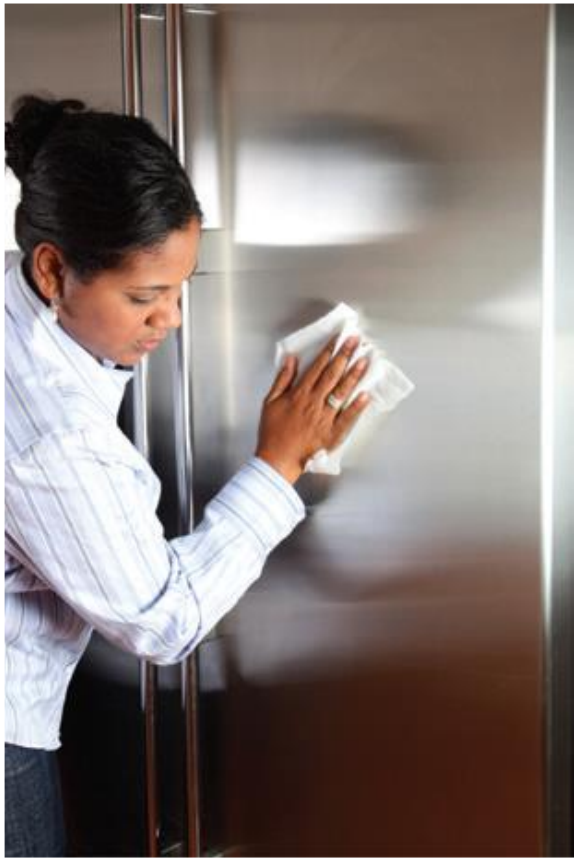
- Cleaning methods
  - Physical cleaning
  - Thermal cleaning
  - Chemical cleaning
  - Combination of all of these
- Cleaning agents
  - Detergents
  - Degreasers
  - Acid cleaners
  - Abrasive cleaners

Lesson 3: Cleaning and Sanitizing

- Cleaning tools
  - All tools should be cleaned and sanitized after use.
  - Tools should be left to air-dry.
  - Cleaning materials should not be left in dirty buckets or soaking in water.
  - Cleaning tools should be kept separate from food items.

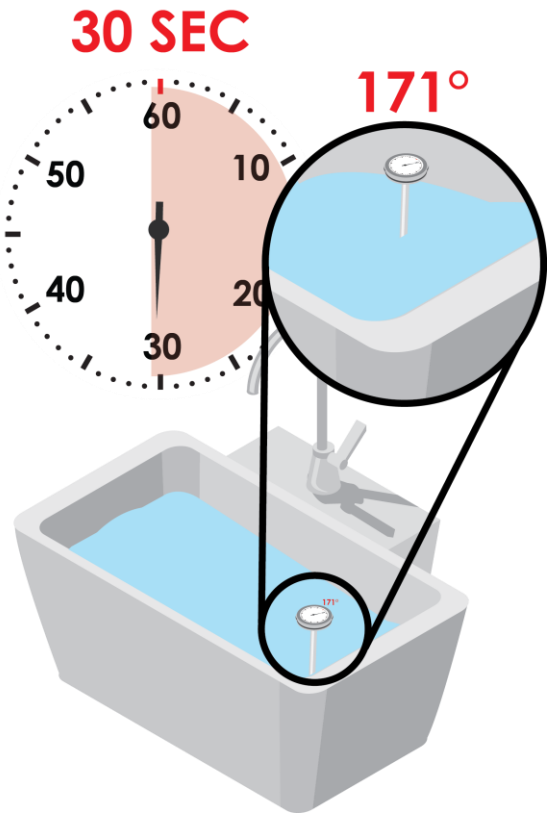
Lesson 3: Cleaning and Sanitizing

- Critical sanitizing times:
  - When changing to a different type of raw animal food
  - When changing from working with raw foods to RTE foods
  - When changing from raw fruits and vegetables to TCS foods
  - Before using or storing a food temperature-measuring device
  - At any time when contamination may have occurred



Lesson 3: Cleaning and Sanitizing

- Heat sanitization
  - Manually immerse the object for at least 30 seconds in water that is a minimum of 171°F (77°C).
  - High-temperature dishwashing machines must be set at 180°F (82°C). If the water is too hot, it can vaporize before it sanitizes the objects.



Lesson 3: Cleaning and Sanitizing

- Iodine
  - A minimum temperature of 68°F (20°C)
  - A pH of 5.0 or less, or a pH no higher than the level for which the manufacturer specifies the solution is effective
  - A concentration between 12.5 mg/L and 25 mg/L
- Quats
  - A minimum temperature of 75°F (24°C)
  - Concentration as indicated by the EPA-registered label use instructions
  - Only use in water with a hardness no greater than specified by the EPA-registered label use instructions

Lesson 3: Cleaning and Sanitizing

Chlorine

Concentration	Minimum temperature	
mg/L	**pH 10 or less**	**pH 8 or less**
25-49	120°F (49°C)	120°F (49°C)
50-99	100°F (38°C)	75°F (24°C)
100	55°F (13°C)	55°F (13°C)

Lesson 3: Cleaning and Sanitizing

Health First
Random Street, 123
DENVER CO, 80246

Alzar's Fine Cuisine
Fake Street, 123
DENVER CO, 80246

Daily General Cleaning Schedule				Date:	05/06/16
Area to clean	**How to clean**	**Cleaning supplies**	**Times**	**Staff Initials**	**Mgt. Initials**
Floors (daily and as needed)	Sweep, mop	Approved sanitizer	2	M.A/C.K	L.B.
Dry Storage (daily and as needed)	Sweep, mop	Approved sanitizer	1	C.K.	L.B./F.D.
Prep Areas (daily and as needed)	Wash, rinse, sanitize	Warm soapy water and 200 ppm sanitizer	3	M.A/C.K /S.E.	L.B.
Hood Grease Pan (daily and as needed)	Clean with degreaser, wash with dishwasher	Warm soapy water and 200 ppm sanitizer	2	S.E./C.K.	L.B.
Hood Filter (daily)	Soak in degreaser, rinse, air dry	Degreaser	1	C.K.	F.D.
Storage Bins (daily and as needed)	Use a clean, damp cloth to wipe exterior	Warm soapy water and 200 ppm sanitizer	1	S.E.	L.B.
Trash Bins (daily and as needed each shift)	Use a clean, damp cloth to wipe exterior and interior	Warm soapy water and 200 ppm sanitizer	3	M.A/C.K /S.E.	L.B./F.D.
Walk-in Cooler (daily and as needed)	Sweep, moop; wipe outside and inside	Approved sanitizer`	2	M.A/C.K	L.B.

Lesson 4: Washing Facilities

- There are a variety of washing facilities in every food establishment.
- Each washing facility should be used for its specific application and nothing else.

Lesson 4: Washing Facilities

Dishwashers

Lesson 4: Washing Facilities

Food equipment sink

- Items that cannot be washed and sanitized in a dishwashing machine must be washed manually
- Used if items are too large for machine washing
- Three-compartment most common
- Compartments must be able to fully immerse an item

Lesson 4: Washing Facilities

Manual dishwashing procedure

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Lesson 4: Washing Facilities

- **CIP**: Cleaning in place

    1. Pre-rinsing, to remove soil in the pipes
    2. Detergent circulation, to remove residual debris and dissolve grease or soiling
    3. Intermediate rinse with water
    4. Sanitization, to destroy the remaining organisms to a safe level
    5. Air-drying

Lesson 5: Plumbing

- All food premises must have a satisfactory, constant supply of drinking water. Only drinking water, also known as potable water, can be used in food preparation and for cleaning food or food-contact areas.

Lesson 5: Plumbing

Nondrinking water

- No contact with food or food contact surfaces
- Pipes must be labeled nondrinking: even condensation from pipes is dangerous if it drips onto food
- Only use for AC, fire protection, non-food equipment cooling

Lesson 5: Plumbing

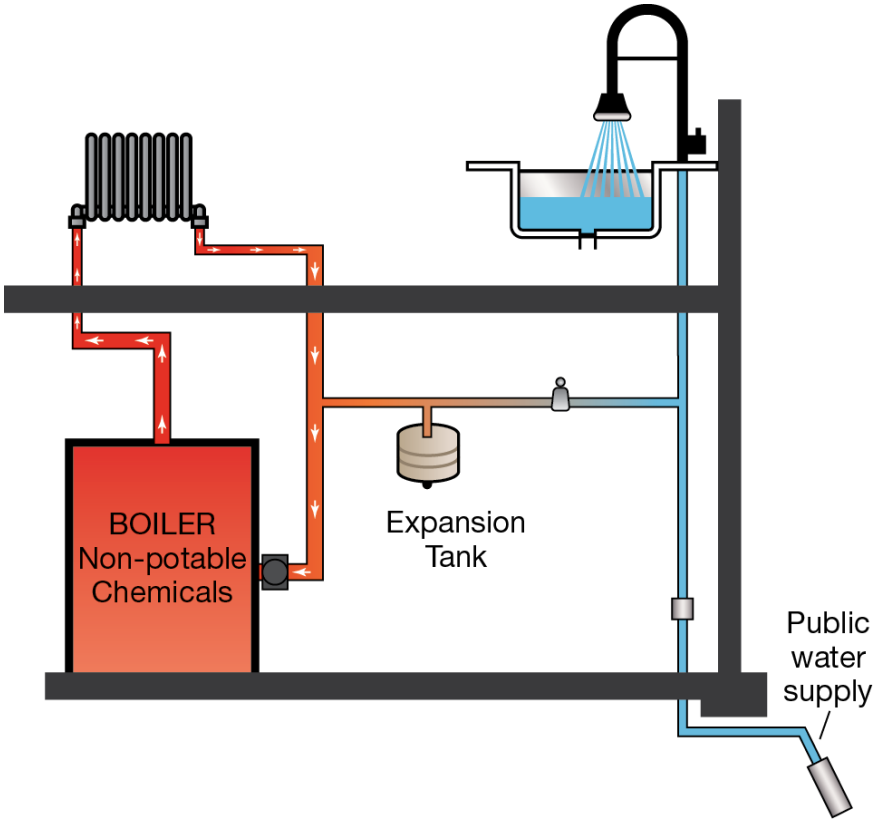
- Emergency guidelines:
  - Listen for announcements from local authorities.
  - If the water is deemed unsafe, boil it for 60 seconds.
  - Boiling will not remove chemical contaminants.
  - It is possible to treat water with bleach, chlorine tablets, or iodine tablets; be aware that parasitic organisms will not be killed.

Lesson 5: Plumbing

The main function of a plumbing system is to prevent drinking water from mixing with nondrinking water.

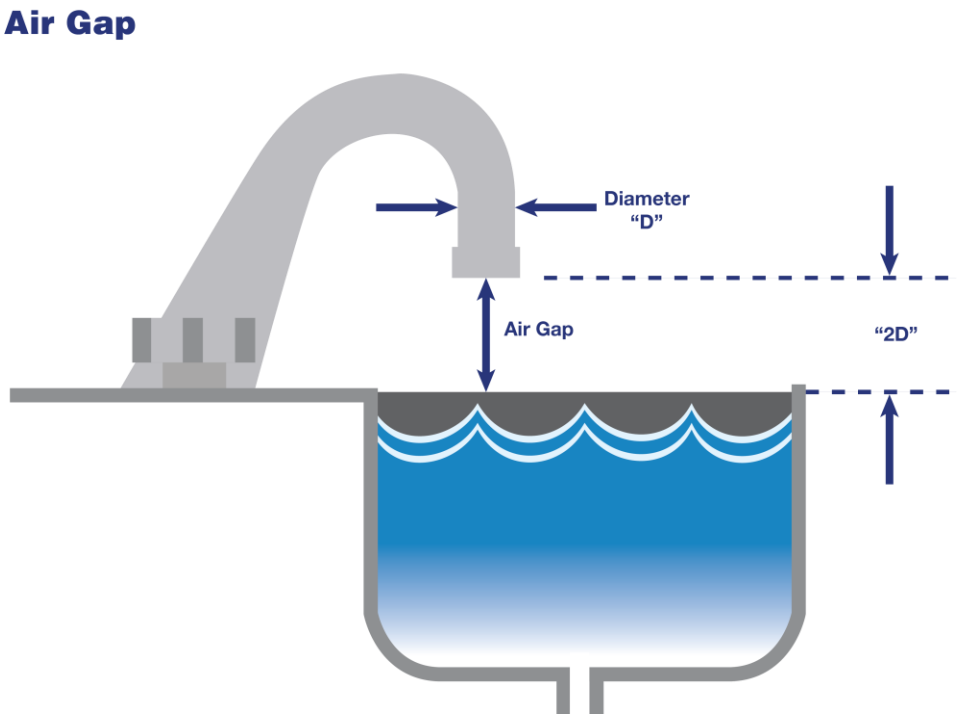
Lesson 5: Plumbing

Backflow as the Result of Back Pressure



Lesson 5: Plumbing

Air gap: The vertical air space that separates the end of a supply line and the flood level rim of a sink, drain, or tub.



Lesson 5: Plumbing

- Grease traps
  - Or grease interceptors, grease recovery devices, and grease convertors
  - Designed to intercept most greases and solids in wastewater before they flow into a wastewater disposal system
- Sewage and wastewater
  - Highly contaminated
  - Drainage system must allow for cleaning access
  - Constructed to prevent pest entrance
  - Must empty directly into public sewage treatment facility

Questions