

**RULES AND REGULATIONS PERTAINING TO  
FROZEN FOOD PRODUCTS**

[R23-1-FF]

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Health

July 1966

*As Amended:*

**January 2002 (re-filing in accordance with  
the provisions of section 42-35-4.1 of the  
Rhode Island General Laws, as amended)**

**Authority:** Sections 1, 17, 18 and 26 of Chapter 1, Title 23 of the General Laws of 1956, as amended.

## **R23-1-FF1    DEFINITIONS**

The following definitions shall apply in the interpretation of these regulations.

**Accessible.** The term accessible shall mean easily exposed for cleaning and inspection with the use of simple tools, such as those normally used by maintenance personnel.

**Air temperature.** Air temperature shall mean the equilibrated temperature of the air environment in question.

**Break-up room.** The term break-up room shall mean any area, or space within a warehouse, used for the purpose of organizing cased frozen food into lots for individual consignment on route delivery.

**Carrier.** The term carrier shall mean any person, firm or corporation, operating or offering to operate, a vehicle for the purpose of transporting frozen food.

**Director.** The term director shall mean the Director of Health of the State of Rhode Island or his designated representative.

**Display cases.** Display cases shall mean any case, cabinet, or other facility, used for displaying frozen food for sale.

**Food product zone.** The term food product zone shall mean those surfaces with which food is normally in contact and those surfaces with which food may come in contact during processing, conveying, holding, refrigeration and packing, and which may drain onto product contact surfaces or into the product.

**Freezing cycle.** The term freezing cycle shall mean lowering of the internal product temperature of a food product to a temperature of 0°F. or lower.

**Frozen food.** The term frozen food shall mean any article used for food or drink for man, or other animals; (a) which is processed; (b) which is packaged and preserved by freezing in accordance with good commercial practices; and (c) which is intended for sale in the frozen state.

**Internal product temperature.** The term internal product temperature shall mean the equilibrated product temperature of frozen food.

**Operator.** The term operator shall mean any person, firm, or corporation, operating or maintaining a frozen food plant or warehouse for the purpose of commercially preparing or storing frozen food.

**Readily (or easily) accessible.** Readily (or easily) accessible shall mean easily exposed without the use of tools, for cleaning and inspection.

**Readily removable.** Readily removable shall mean that a component part shall be capable of being separated from the principal part without the use of tools.

**Ready to eat frozen food.** The term ready to eat frozen food shall mean a frozen food product which

has been factory processed to the point at which it is ready for use as a food, and may or may not require further heating before use.

**Removable.** The term removable shall mean that a component part shall be capable of being separated from the principal part with the use of simple tools such as those normally used by maintenance personnel.

**Retail outlet.** The term retail outlet shall mean any building, room, or parts thereof, where the sale of frozen food to the public is conducted.

**Route delivery.** The term route delivery shall mean the transportation of frozen food with frequent stops for partial unloading.

**Sale.** Sale shall mean any and every transaction including the dispensing, giving, delivering, serving, exposing, storing, or any other processing of frozen food wherein frozen food is subject to transfer to another person.

**Storage room or facility.** Storage room or facility shall mean any area or space, within a warehouse, used for the purpose of storing frozen food.

**Transportation.** Transportation shall mean the physical movement, or the acceptance for physical movement, of frozen food by a carrier.

**Vehicle.** The term vehicle shall mean any van, truck, trailer, automobile, wagon, ship, barge, freight car, airplane, or other means for transporting frozen food.

**Warehouse.** Warehouse shall mean any structure, room, or part thereof, used for the purpose of storing commercially manufactured frozen food.

## **R23-1-FF2 FROZEN FOOD: GENERAL**

**FF2.1** All frozen food shall be held at an air temperature of 0°F. or lower except for defrost cycles, loading and unloading, or for other temporary conditions beyond the immediate control of the person or company under whose care or supervision the frozen food is held: Provided, that only those frozen food destined for repackaging in smaller units may be defrosted for such purposes in accordance with good sanitary precautions.

**FF2.2** The internal product temperature of frozen food shall be maintained at 0°F. or lower except when the product is subjected to the above mentioned conditions; then the internal product temperature shall not exceed 10°F., and such product shall be returned to 0°F. as quickly as possible.

(1) Internal product temperature for any case of frozen food shall be determined in accordance with the following procedure:

(a) Only when an accurate determination of internal product temperature fails without sacrifice of packaged frozen food, shall representative packages or units be opened to allow for inserting the sensing element for temperature measurement to the approximate center of the packages in question.

(2) Internal product temperature of consumer packages of frozen food shall be determined in

accordance with the following procedure:

- (a) Open the top of the case and remove two corner packages.
  - (b) With an ice pick or similar tool punch a hole in the case from the inside. Do not use the stem of the thermometer.
  - (c) This hole is positioned so that, when the thermometer stem is inserted from the outside, it fits snugly between packages.
  - (d) Insert the thermometer stem about 3 inches. Replace the two packages. Close the case and place a couple of other cases on top to assure good contact on the sensing portion of the thermometer stem.
  - (e) After 5 minutes, read the temperature.
- (3) Thermometers or other temperature measuring devices shall have an accuracy of  $\pm 2^{\circ}\text{F}$ .

**FF2.3** These regulations shall not apply nor be deemed to apply to articles subject to the Frozen Desserts Ordinance and Code recommended by the U.S. Public Health Service - May, 1940.

## **R23-1-FF3 CONSTRUCTION AND LAYOUT OF FROZEN FOOD PLANTS**

### **FF3.1 Coverage:**

- a. This section covers in general the location, construction, and layout of frozen food preparation plants, including construction and design requirements to promote cleaning and sanitary maintenance.
- b. The provisions of this section shall be applicable only to those establishments initiating operations subsequent to the first inspection based upon the requirements of these regulations: Provided, that existing plants shall be subject to the provisions of these regulations when the plant facilities are remodeled or rebuilt subsequent to the adoption of these regulations, or when such plant or plant facility constitutes an immediate health hazard.

### **FF3.2 Location:**

- a. Food processing plants shall be located in areas reasonably free from objectionable odors, smoke, fly ash and dust or other contamination.<sup>1</sup>
- b. Adequate, dust-proof accessways for all vehicular traffic, connecting loading and unloading areas of the plant to the public streets, shall be available. Employee parking areas and access roads close by the food processing plant shall be hard surfaced with a binder of tar, cement or asphalt.

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<sup>1</sup> These objectionable conditions are sometimes prevalent in the environs of the following list of facilities, but not necessarily limited to those type facilities: Oil refineries, city dumps, chemical plants, sewage treatment plants, dye-works, and paper pulp mills. In planning a plant, due consideration should be given to providing space and an arrangement of buildings that will permit future expansion. To this end, coolers, freezers, and the various processing departments should be located so that they may be enlarged without adversely affecting other departments.

**FF3.3 Separation:**

- a. Frozen food preparation plants shall be completely separated from areas used as living quarters by solid, impervious floors, walls, and ceilings with no connecting openings.

**FF3.4 Water Supply:**

- a. The plant shall have an ample volume of potable water available from an approved public or private source. If a non-potable water supply is necessary it shall not be used in a manner which will bring it into contact with the product or product zone of equipment. Such non-potable water systems shall be kept entirely separate from the potable water supply and the non-potable water lines shall be positively identified by a distinctive color.
- b. All equipment shall be so installed and used so that back siphonage of liquids into the potable water lines is precluded.
- c. Hot and cold water in ample supply shall be provided for all plant clean-up needs. Hoses used for clean-up shall be stored on racks or reels when not in use.

**FF3.5 Plant Waste Disposal:**

- a. The disposal of liquid wastes shall be to the public sewerage system if available and permitted by applicable regulations, or to a properly designed and installed private facility. Private liquid waste treatment facilities shall be approved by the director.

**FF3.6 General Plant Layout:**

- a. Product preparation and processing (including freezing) departments shall be of sufficient size to permit the installation of all necessary equipment with ample space for plant operations and with unobstructed truckways for conveyances of raw materials and processed products. The plant shall be so arranged that there is a proper flow of product, without undue congestion or back-tracking, from the time raw materials are received until the frozen, packaged article is shipped from the plant.
- b. Raw material storage rooms and areas where preparatory operations, such as washing and peeling of fruits and vegetables and the evisceration of poultry, are carried on shall be separate from rooms or areas wherein frozen food is formulated, processed and packaged. Doors connecting various rooms or openings to the outside shall be tight fitted, solid, and kept in a closed position by self-closing devices.
- c. Facilities for holding product under refrigeration until processed shall be provided.
- d. Facilities for quick freezing the processed product efficiently shall be provided and so located as to be convenient to the food processing and packaging departments. Ample freezer storage shall be provided convenient to the quick freezing facilities: Provided, that when the frozen product is immediately removed from the establishment, such freezer storage shall not be required.
- e. A separate room for storing inedible materials such as fruit and vegetable peels, feathers, and bones, pending removal from the plant, shall be provided in a location convenient to the various

- preparation and processing areas. This waste storage room shall be of sufficient size to permit the proper storage of filled and empty metal or other relatively nonabsorbent refuse containers and their lids. It shall be equipped with an efficient power exhaust ventilation system, hot and cold water outlets and adequate floor drainage. The discharge from the exhaust system shall be located well away from fresh air inlets into the plant.
- f. Packaging and labeling materials shall be stored in a separately enclosed space convenient to the packaging department. Packaging and labeling materials shall not be stored in the product processing and packaging departments: Provided, that small quantities of such supplies as are necessary for maintaining continuity of operations is permissible in the processing and packaging departments.
  - g. Facilities for inedible products and catch basins shall be suitably located as to avoid objectionable conditions affecting the preparation and handling of edible products.
  - h. A separate room or area and proper facilities for cleaning equipment such as trays, hand trucks, and implements shall be provided in a location convenient to the processing department. A power exhaust system shall be provided to dispel steam and vapors from the room.
  - i. Dockage areas shall be of adequate size, constructed of impervious materials and so drained as to minimize the entrance into the plant of dust, dirt, and other contaminants from the receiving and shipping operations. If live animals are received, a separate dock shall be provided for this purpose.
  - j. Well located, properly ventilated dressing rooms and toilet rooms of ample size shall be provided for employees.<sup>2</sup> The ventilation and lighting of toilet and dressing rooms, the ratio of toilets, of hand-washing facilities, and of urinals to number of employees using such facilities, and the type of fixtures used and manner of installing all plumbing in such rooms shall conform strictly to applicable state laws and regulations.
  - k. Employees shall not eat in food processing or packaging area.

### **FF3.7 Plant Construction:**

- a. Floor shall be constructed of durable material which is easily cleanable and skid resistant. Where floors are wet cleaned, they shall be sloped to drain.
- b. Interior walls shall be of a smooth and washable surface applied to a suitable base.
- c. Coves with radii sufficient to promote sanitation shall be installed at the juncture of floors and walls in all rooms.
- d. Ceilings shall be of adequate height and of smooth, washable material.
- e. Window ledges shall be sloped at least 45° to the interior to promote sanitation.

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<sup>2</sup> Dressing room should be separated from adjoining toilet rooms by tight, full height walls or partitions. The toilet room should not be entered directly from a work room but through an intervening dressing room or a properly ventilated toilet room vestibule.

- f. Frozen food plants and warehouses shall be so constructed as to be rodent resistant.
- g. All exterior window and door openings shall be equipped with effective insect and rodent screens. Where doors in outside walls of food handling areas are used for loading or unloading, "fly chaser" fans and ducts or other effective means shall be provided at such doors to prevent the entrance of insects.
- h. Dressed lumber shall be used for exposed interior woodwork.
- i. All exposed wood surfaces shall be finished with non-toxic oil or plastic paint or treated with hot linseed oil or clear wood sealer.
- j. Stairs in product handling departments shall be constructed with solid treads and closed risers and shall have side curbs of similar material, 6 inches high measured at the front edge of the tread.
- k. Refrigerator doors and jambs shall be covered with rust-resisting metal securely affixed to the doors and jambs. Joints necessary for installation shall be welded, soldered, or otherwise effectively sealed. The juncture of the metal covering on jambs and walls shall be sealed with a flexible type sealing compound. Doorways through which product is transferred on overhead rails or hand trucks shall be sufficiently wide to permit free passage of the largest trucks or widest suspended product without contact with the jambs.

#### **FF3.8 Plumbing and Floor Drainage:**

- a. The minimum slope of the floor for drainage shall be 1/8-inch to 1/4-inch per foot toward a properly located drain. Floor drains should be provided at the rate of one drain for each 400 square feet of floor area. The type and size of floor drains and sanitary sewage lines used and the method of installing such facilities and other plumbing equipment shall conform strictly to state laws and regulations.
- b. Hand-washing facilities shall be provided convenient to all locations where product is prepared and processed. Each lavatory shall be supplied with hot and cold or warm running water; powdered or liquid soap in a suitable dispenser; and ample supply of single service towels; and a suitable receptacle for used towels. Lavatories in work-rooms and toilet rooms shall be pedal operated.
- c. Where sterilizers are required they shall be of a size that will permit complete immersion of tools and other implements. Such sterilizing receptacle shall be equipped with a water line, means for heating the water, an overflow outlet, and means for emptying the receptacle.

#### **FF3.9 Lighting, Ventilation:**

- a. Work-rooms and employee dressing rooms shall have means for furnishing adequate natural light (approximately 25% of the floor area in windows and/or skylights) and ventilation or an efficient air conditioning or mechanical ventilation system and adequate artificial lighting provided
- b. Fresh air intakes for mechanical ventilation systems shall be equipped with effective replaceable filters to prevent the entrance of air-borne contaminants. Fresh air intakes shall

be located well away from power exhaust system discharges and other sources of air-borne contaminants.

- c. The general light intensities in product preparation, processing and packaging areas shall be not less than 20-foot candles measured 30 inches above the floor. Where detailed visual tasks are required to assure a safe, wholesome product, the intensity of light on the surface of the product or product container shall be not less than 50-foot candles. At least 10-foot candles of light shall be provided in all dressing and toilet rooms and at least 5-foot candles in all other areas of the plant.

## **R23-1-FF4 DESIGN AND CONSTRUCTION OF FROZEN FOOD PROCESSING EQUIPMENT**

### **FF4.1 Coverage:**

- a. These specifications apply only to equipment acquired after these regulations are adopted. Provided, however, when processing equipment constitutes an immediate health hazard it shall be subject to the provisions of these regulations. In modifying existing machinery and equipment, efforts shall be made to conform to these specifications.
- b. These specifications apply to the design, materials and construction of equipment used in the processing, holding and packaging of ready-to-eat frozen food.

### **FF4.2 General Principles:**

- a. The design, materials and construction of frozen food equipment shall be easily accessible for cleaning and sanitization.<sup>3</sup>

### **FF4.3 Equipment.**

#### **(1) Materials<sup>4</sup>**

- (a) All surfaces within the food product zone must be smooth, free from pits, crevices, and loose scale; and must be relatively non-absorbent. Furthermore, surfaces shall be non-toxic, and unaffected by food products and cleaning compounds.
- (b) The finish of corrosion-resistant (stainless steel, nickel alloy, etc.) surfaces must be of 125 grit, properly applied, or equivalent.
- (c) The finish of cast iron, cast and forged steel, and cast nickel alloy are not to exceed a surface roughness of American Standard #125 or equivalent.
- (d) The use of galvanized surfaces shall be minimal and where used of the smoothness of high quality commercial hot dip.

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<sup>3</sup> In order to encourage the cleaning of equipment, the time factor and the ease of disassembly are important considerations. The unit or units of equipment should contain the fewest number of parts to permit easy reassembly by unskilled labor following cleaning.

<sup>4</sup> Sponge rubber, stone slab, linoleum, flannel, unglazed ceramic material and other porous materials are basically objectionable and should not be used.

- (e) Copper and its alloys shall not be used in equipment where edible oils, liquid shortening, chocolate liquor, and other fatty food products come in contact with the metal.
- (f) Cadmium shall not be used in any manner or form on the food equipment.
- (g) Lead shall not be used within or adjacent to the food product zone with the exception of its inclusion in dairy solder in an amount not to exceed 5%.
- (h) Plastics shall be abrasion resistant, heat resistant, to the degree needed for the product and for the cleaning process, shall be shatter-proof, and shall not contain free phenol, formaldehyde, or a constituent which may result in the migration of any of the substances to the food or otherwise affect the characteristics of the food with which it comes in contact.
- (i) All gasketing and packing material shall be relatively non-porous, relatively nonabsorbent, and installed in a manner that results in a true fit to prevent protruding into the product zone or creating recesses or ledges between the gasketed joints.
- (j) Coatings used in the food product zone as a lining to prevent corrosion of the base material of food equipment shall be non-toxic, unaffected by, and inert to the food in contact with it or cleaning preparations used on it. Furthermore, such coatings shall be relatively nonabsorbent, odorless and tasteless.

(2) Design and Construction - Food Product Zone

- (a) All parts of the product zone shall be readily accessible or be readily removable for cleaning and inspection.
- (b) All parts of the food product zone shall be free of recesses, dead ends, open seams, and gaps, crevices, protruding ledges, inside threads, inside shoulders and bolts or rivets which form pockets and patterns.<sup>5</sup>
- (c) All permanent joints of metal parts shall be butt welded.<sup>6</sup>
- (d) All welding within the food product zone shall be continuous, smooth, even, and flush with the adjacent surfaces.
- (e) All interior corners shall be provided with a minimum radius of 1/4 inch, except where a greater radius is required to facilitate drainage or cleaning.
- (f) The equipment shall be constructed and installed to provide sufficient pitch so as to be completely self-draining.
- (g) Equipment which introduces air into the food product or uses air to convey the food

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<sup>5</sup> To prevent protruding ledges and impediment to flow following assembly of parts, factory pre-alignment of parts is urged.

<sup>6</sup> Dissimilar metals should not be used in equipment construction if their contact with liquid products may create deleterious chemical and electrolytic action.

product shall be fitted with a filter capable of withholding particles 50 microns or larger in size. Such filters shall be readily removable for cartridge replacement or cleaning.

- (h) Bearings shall be located outside the food product zone or outboard and shall be of the sealed or self-lubricated type. Those intended for use with a dry granular or a dry pulverized product directly adjacent to the food product zone shall be of the sealed type, without grease fittings. The bearings shall be installed flush to eliminate any recessed areas around the shaft within the food product zone.
  - (i) Shaft seal assemblies and packing glands shall be outboard, and shall be readily removable. The shaft seal or packing shall be retractable within a space between the assembly and bearing to facilitate easy removal of the sealing assembly and materials, for cleaning and inspection.
  - (j) Screening and Straining Surfaces: All permanent screening and straining devices shall be readily removable for cleaning and inspection. They shall be designed to prevent replacement in an improper position.
    - (1) Liquid: Permanent screening and straining surfaces intended for use with a liquid or a semi-liquid product shall be fabricated from perforated metal.
    - (2) Dry: Permanent screening and straining surfaces intended for use with a dry granular or a dry pulverized product shall be fabricated from perforate metal. Provided, that wire screen of not less than 30 x 30 continuous mesh may be used.
  - (k) All filtering surfaces shall be readily removable for cleaning and inspection.
    - (1) Filter papers shall be of the single-service type.
    - (2) Filter clothes and spun glass filters shall be launderable.
  - (l) Hinges and latches shall be of the simple take-apart type.
  - (m) Motors shall be of the totally enclosed finless type and shall be mounted on the equipment whenever possible.
  - (n) Covers shall be provided on reservoirs, hoppers or other vessels, and they shall be readily removable and shall be fitted with drip protective devices or facilities to prevent foreign substances from falling into the product.
- (3) Design and Construction Non-Food Product Zone:
- (a) All safety or gear guards shall be removable for cleaning and inspection.
  - (b) All external surfaces shall be free of open seams, gaps, crevices, unused holes, and inaccessible recesses.
  - (c) Horizontal ledges and frame members shall be kept to a minimum; external angles shall be rounded and internal angles shall be avoided.

- (d) Where lubrication of equipment is required, provision shall be made to prevent leaking or dripping into the food product zone.

**FF4.4 Installation of Equipment:**

- a. All equipment shall be installed on a foundation of durable, easily cleanable material.
- b. Equipment shall be placed at least 18 inches<sup>7</sup> from walls and ceiling, or sealed watertight thereto. All portions of the equipment shall be installed sufficiently spaced above the floor on a minimum number of supporting members to provide access for inspection and cleaning, or be installed completely sealed (watertight) to the floor.
- c. Whenever equipment passes through walls or floors, it shall be sealed thereto or sufficient clearance shall be allowed to permit inspection, cleaning and maintenance.
- d. Where necessary, drains and catch pans shall be provided and shall be of such dimensions to collect all spill and drip and be readily accessible or readily removable for cleaning.
- e. Where pipes pass through ceilings or processing areas, pipe sleeves shall be inserted in the floor above so that their upper periphery is at least 2 inches above the floor.

**FF4.5 Connections:**

- a. All electrical connections, such as switch boxes, control boxes, conduit and bx cables, shall be installed a minimum of 3/4 inch away from the equipment and walls, or be completely sealed to the equipment or wall.

**R23-1-FF5 OPERATING PRACTICES FOR THE COMMERCIAL MANUFACTURE OF FROZEN FOOD**

**FF5.1 Handling and Storage of Materials:**

- a. Foods - All food ingredients received at the plant shall be wholesome. Storage shall be in rooms completely separate from food preparation and processing operations. Storage conditions shall preclude contamination from rodents, insects, and other sources. Temperatures of storage shall be in accordance with the following practices:
  - (1) Ingredients requiring refrigeration shall be stored at an air temperature of 40°F. or lower;
  - (2) Frozen ingredients shall be stored at an air temperature of 0°F or lower.
- b. Packaging Materials - Storage shall be in rooms completely separate from food preparation and processing operations. Conditions of storage shall preclude contamination from rodents, insects, and other sources.
- c. General Housekeeping - Plant and premises shall be maintained so as to present a neat and orderly appearance at all times.

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<sup>7</sup> Space between walls or ceilings and equipment should be 30 inches preferably.

## **FF5.2 Personnel Hygiene:**

- a. The services of an employee with any open sore on an exposed portion of the body or one afflicted with an infectious or contagious disease shall not be used. Provided that services of employees with finger cuts, or with bandages, finger cots, and similar type coverings may be utilized on the condition that said employee wears rubber gloves. Any employee with an upper respiratory infection shall be assigned duties outside of the areas of food preparation, processing, and packaging.
- b. Visitors to food preparation, processing and packaging areas shall comply with employee requirements and such visits by unauthorized persons shall be restricted.
- c. Practices for Employees Handling Unpackaged Food.
  - (1) Employees shall wear head covering and shall keep clothing in a clean condition consistent with the duty being performed.
  - (2) Before beginning work, after each absence from post of duty, and after contact with non-sanitized surfaces, each employee shall:
    - (a) Wash hands with liquid or powdered soap and warm water dispensed from a foot or elbow operated device;
    - (b) Rinse hands in a chlorinated spray or other approved sanitizing agent;
    - (c) Dry hands with single-service towels.
  - (3) Minimize hand contact with food products.
  - (4) The use of a common dip bowl or tank is prohibited.
  - (5) In the event that rubber gloves are used, they shall be cleaned and sanitized in accordance with hand washing specifications in FF5.2c, 2(a) and (b) of this section.
  - (6) Using tobacco in any form, chewing gum, or eating in rooms where food products are stored, handled, or prepared shall not be permitted.

## **FF5.3 Plant and Equipment - Sanitation:**

- a. Plant and equipment shall be clean when put into service.
- b. All floors, tables, splash boards, work surfaces, equipment, and utensils, shall be cleaned and sanitized with approved agents and methods at the close of each shift. Critical areas and all food contact surfaces shall be cleaned and sanitized at least once during each shift.
- c. Equipment such as pipes, pumps, fillers and valves shall be dismantled for cleaning and sanitizing; provided, that approved and effective in-place cleaning and sanitizing methods will be acceptable.<sup>8</sup>

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<sup>8</sup> Suggested criteria for accepting cleaned-in-place systems are: (a) arranged so that cleaning and bactericidal

- d. A thorough rinse with potable water shall follow any sanitizing operation that has been completed with a chemical sanitizing agent.

**FF5.4 Preparation and Processing:**

- a. Fans, blowers or air cooling systems shall not move air from raw material or preparation rooms into processing rooms.
- b. Only adequately cleaned, prepared raw materials shall be introduced into areas where frozen pre-cooked foods are cooked and subsequently handled in processing operations.
- c. Preparatory operations feeding to the packing line shall be so timed to permit expeditious handling of consecutive packages in production and under conditions to prevent contamination, loss of quality, or spoilage.
- d. When batter, egg wash, or milk is an ingredient, it shall be maintained at a product temperature not to exceed 45°F. Cracked or flaked ice used to refrigerate batters shall meet bacterial standards for potable water. Batter remaining in machines and equipment at clean-up time shall be discarded.
- e. Breeding materials that have come in contact with batter and have been removed by screening shall be discarded.
- f. Food ingredients or mixtures that are capable of supporting rapid bacterial growth shall be maintained either at a product temperature above 160°F., or below 45°F.
- g. Cooked food such as meat, poultry, sauces, and gravies shall be:
  - (1) Refrigerated or incorporated into the finished product within one hour following preparation;
  - (2) Refrigerated within 30 minutes following preparation at an air temperature of 50°F. or less if the product is to be held from one to eight hours after preparation;
  - (3) Refrigerated within 30 minutes following preparation such that the internal temperature of the food product will be 40°F., or lower, within two hours or refrigeration if the food product has been comminuted, sliced, or is a liquid, and if the food is to be held more than eight hours. Large solid food components such as those that must be cooled before slicing shall be refrigerated at an air temperature of 40°F. or lower.
- h. Trays, pans, or other containers of ingredients destined for incorporation into the finished product shall be protected with a clean cover unless these ingredients are used within 30 minutes of preparation. The cover shall not be of porous material..
- i. Permanently legible code marks shall be placed on each immediate container or package

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solution can be circulated throughout the fixed system; (b) such solutions will contact all interior surfaces; (c) the system is self-draining or otherwise completely evacuated; and (d) the cleaning procedures result in thorough cleaning of the equipment.

at time of packing. Such code marks, as devised by management, shall include date of packing and establishment where packed.

- j. The packaged product shall be placed in the freezer within 30 minutes of packaging. Placement of packages in cases before freezing is prohibited.
- k. Refuse from the food operations shall be promptly placed in containers that are prominently marked "REFUSE" and equipped with lids. The handling of refuse shall be done in such a manner as not to constitute a nuisance. All refuse shall be removed from the premises on a daily basis and in such a manner as not to contaminate food products being manufactured within the plant. Refuse containers shall be thoroughly cleaned immediately after each emptying.

#### **FF5.5 In-Plant Freezing:**

- a. During the freezing cycle products shall be cooled to 50°F. or lower within 2 hours and to 0°F. or lower within 36 hours.
- b. Products shall be frozen by approved commercial methods.
- c. When necessary, products shall be protected so that dehydration and discoloration will not occur during the freezing cycle.
- d. The freezer shall be precooled to an air temperature of 0°F. before loading. However, during loading, the freezer may rise to temperatures above 0°F. for short periods of time.
- e. If cold air is used as the freezing medium, the product shall be arranged by staggering the individual items or by employing dunnage, spacers, or other suitable methods to permit satisfactory circulation of cold air around the products. Also, the cold air shall be circulated by a positive methods; natural air circulation is not satisfactory.
- f. The freezer and associated equipment used for handling the product shall be maintained in a clean and sanitary condition at all times.
- g. A suitable indicating or recording instrument shall be used to measure the temperature of the cooling medium (i.e., air, liquid, refrigerated plates or pipe coils).
- h. Packaged items are to be frozen in a manner that will result in a minimum amount of bulging or distortion.
- i. After the freezing cycle the frozen product shall be transferred to a storage facility as quickly as possible.

#### **R23-1-FF6 TRANSPORTATION**

##### **FF6.1 Equipment:**

- a. Vehicles of transportation shall be equipped:
  - (1) With a combination on insulation and mechanical refrigeration system, or other

refrigeration methods or facilities, capable of maintaining an air and product temperature of 0°F., or lower, while loaded with any frozen food; and

- (2) With a thermometer, or other appropriate means of temperature measurement indicating air temperature inside the vehicle. the dial or reading element of the thermometer shall be mounted on the outside of the vehicle.
- b. Vehicles used for route delivery shall comply with all equipment provisions herein specified for vehicles of transportation and shall be equipped with curtains or flaps in the doorway area, or with port doors, to maintain refrigeration during stops.

#### **FF6.2 Handling Practices for Over-the-Road Transportation**

- a. Vehicles shall be precooled to an air temperature of 20°F., or lower, before loading.
- b. Frozen food shipments shall not be accepted for transportation when the internal product temperature exceeds 0°F.
- c. Frozen food shall be loaded within a vehicle of transportation to provide for free circulation of refrigerated air at the front, rear, top, bottom, and both sides of the load, except for vehicles of envelope type construction wherein refrigerated air circulates within walls of said vehicles.
- d. The mechanical refrigerating unit of vehicles shall be turned on and doors of vehicles shall be kept closed during any time interval when loading, or unloading, operations cease.
- e. The average product temperature of any shipment of frozen food shall be determined during loading and unloading by adequate temperature readings.

#### **FF6.3 Handling Practices for Route Delivery:**

- a. In addition to all provisions specified in FF6.2 of this section, the following provisions shall be met:
  - (1) Each lot for individual consignment shall be refrigerated by means of mechanical refrigeration, dry ice, or by any other means capable of maintaining an air and product temperature of 0°F., or lower;
  - (2) Insulated containers shall be precooled to a temperature of 20°F., or lower, before being loaded with frozen food; and
  - (3) Doors of vehicles shall be kept closed during any time interval that loading, or unloading, operations cease.

#### **FF6.4 Sanitary Provisions:**

- a. All interior surfaces of vehicles and devices used for transporting frozen food shall be clean and free of objectionable odors before being loaded with frozen food.
- b. Frozen food shall be securely packaged, or wrapped, in a sanitary manner before they are

accepted for transportation.

## **R23-1-FF7 WAREHOUSING**

### **FF7.1 Equipment:**

- a. Each warehouse shall be equipped with suitable mechanical refrigeration capacity to maintain, under extreme outside temperature and peak load conditions, an air temperature of 0°F. or lower.
- b. Each storage room and part thereof shall be maintained at an air temperature of 0°F., or lower.
- c. Each storage room shall be equipped with a thermometer, or other temperature measuring device which is easily visible.
  - (1) The sensing element of thermometers and other temperature measuring and recording devices shall be located not more than six feet or less than five feet from the floor and not in a direct blast of refrigerated air or near entrance doors. When indicating thermometers only are used they shall be read and recorded at least once every twenty-four hours during each calendar day.
    - (a) Recording thermometers equipped with charts shall have a chart perforator. Charts so used shall designate an operating range of at least 10° above and 10° below 0°F. in graduations of one degree.
    - (b) The use of electric or hand wound clocks, as well as 24-hour or 7-day charts, for recording thermometers shall be optional at the operator's discretion.
  - (2) Each chart, or record of observed temperatures, shall be dated showing the time interval covered thereby and shall be kept on file for a period of at least one calendar year.
- d. Each breakup room shall be maintained at a temperature not to exceed 20°F.

### **FF7.2 Handling Practices:**

- a. The operator of a warehouse shall not accept custody of a lot or shipment of frozen food if internal product temperature exceeds 0°F., except as provided in subsections FF2.1 and FF2.2 of these regulations and such exception is duly recorded.
  - (1) Notwithstanding this prohibition, custody of lots with an internal product temperature in excess of 10°F, may be accepted by the operator on request of the owner of said lot, provided said foods are detained from sale and the temperature of such product is promptly returned to and maintained at 0°F., or lower, for the purpose of maintaining residual quality pending chemical, bacteriological, or organoleptic examination.
- b. Before a lot of frozen food is placed in storage, it shall be marked, or stamped, with a code for effective identification.

- c. Frozen food in storage shall be placed on pallets, racks, or skids and shall be stored no closer than 18 inches to the ceiling and otherwise stored so as to permit free circulation of refrigerated air.
- d. Frozen food shall be stored under good sanitary conditions that preclude injury and contamination from, or to other food held within the warehouse.
- e. During the defrosting of overhead coils in storage rooms, stacks of frozen food shall be effectively protected from contamination by condensation, drip or leakage.
- f. Break-up rooms shall not be used for storage.
- g. At time of removal from warehouse custody, the internal product temperature of frozen food shall not exceed 0°F.

**FF7.3 Sanitary Provisions:**

- a. Floors, walls, and ceiling of a warehouse shall be maintained in a good sanitary condition.
- b. Premises of a warehouse shall be maintained in a good sanitary condition.
- c. Toilet, Hand-Washing and Dressing Room Facilities:
  - (1) Warehouses shall have water-flush toilets so located as to be convenient to employees. Toilet room or rooms shall be well lighted and ventilated and shall be maintained in a sanitary condition. The doors of all toilet rooms shall be full-length and self-closing.
  - (2) Adequate hand-washing facilities, including hot and cold or warm running water, powdered or liquid soap in a suitable dispenser, and single service towels, shall be provided adjacent to all toilet rooms. The use of a common towel is prohibited. Washrooms shall be well lighted and ventilated and shall be maintained in a sanitary condition.
  - (3) Warehouses shall have a dressing room or rooms for the changing and hanging of wearing apparel. If individual lockers are provided, they shall be well vented and maintained in a clean, sanitary condition and shall be free from disagreeable odors. The dressing room or rooms shall be adequately lighted and ventilated and shall be maintained in a clean, sanitary condition.

**R23-1-FF8 RETAIL**

**FF8.1 Equipment:**

- a. Each storage facility shall be equipped with suitable mechanical refrigeration capacity to maintain, under extreme outside temperature and peak load conditions, an air temperature of 0°F., or lower.
- b. When storage facilities of the cabinet type are used:

- (1) They shall be defrosted as frequently as necessary to maintain refrigeration efficiency specified; and
  - (2) They shall be equipped with a thermometer indicating a representative air temperature.
- c. When storage facilities of the walk-in freezer type are used:
- (1) Frozen food in storage shall be on pallets, racks, or skids, and shall be stored in no closer than 18 inches to the ceiling and otherwise stored so as to permit free circulation of refrigerated air.
  - (2) They shall be equipped with a thermometer, the sensing element of which shall be located within the upper third of the distance between floor and ceiling. Said sensing elements shall not be placed in a direct blast of air from cooling units, cooling coils, and heat exchange devices, or near the entrance door; and
  - (3) They shall be equipped with an automatic mechanism for defrosting refrigerated coils when forced air blower type of refrigeration is used.
- d. All frozen food display cases shall be designed, constructed, and equipped with mechanical refrigeration facilities capable of maintaining an air temperature of 0°F., or lower.
- e. Frost on refrigerator coils and in air passages of display cases shall be removed as frequently as necessary to maintain refrigeration efficiency specified in subsection FF8.1d.
- f. Each display case shall be equipped with a thermometer, the sensing element of which shall be located in an appropriate place within the path of refrigerated air being returned to the coils.
- g. The product load line shall be designated by a distinctive line at inside terminal ends of each display case, and such lines shall be at the highest point of discharge and return of refrigerated air.
- h. Each display case shall be equipped with separators to provide false walls located a minimum of one-half inch from terminal ends to provide for free circulation of refrigerated air between said terminal ends and displayed product.
- i. All display cases in a retail outlet shall be so placed as to be relatively free:
- (1) Of air currents resulting from door drafts, electric fans, and other factors that adversely deflect the current of refrigerated air within the display case; and
  - (2) Of heat elements such as lights, heating units, and related devices that tend to raise the temperature of refrigerated air within the display case.

## **FF8.2 Handling Practices:**

- a. Frozen food shall not be accepted for delivery by a retail outlet when the internal product temperature exceeds 0°F., except as provided in section FF2.1 and FF2.2 of these regulations and such exception is duly recorded.
- b. All frozen food received at a retail outlet<sup>9</sup> shall be immediately placed in storage facilities.
- c. Each retail outlet shall be equipped with storage facilities of sufficient cubic displacement to accommodate the storage of frozen food.
- d. Frozen food shall not be placed above the product food lines within any display case.
- e. All frozen food in a retail outlet shall be stored, and displayed under good sanitary conditions.

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<sup>9</sup> Retail outlets should employ the first-in first-out basis of inventory control.