Sec. 21a-61-4. Design and construction of frozen food processing equipment

(a) **Coverage.** (1) This section applies only to equipment acquired after April 10, 1962; provided, when processing equipment constitutes an immeditate health hazard, it shall be subject to the provisions of this section. In modifying machinery and equipment existing on said date, efforts shall be made to conform to these specifications. (2) This section applies to the design, materials, construction and installation of equipment used in the processing, holding and packaging of ready-to-eat frozen food and the processing and holding of gravies, batters and other food ingredients containing eggs, milk, broth and other food components capable of supporting rapid bacterial growth. (3) Articles and/or materials shall be subject to the Food Additives amendment to the Federal Food, Drug and Cosmetic Act and clearance for their use is necessary thereunder. Notwithstanding the provisions of this section, nothing herein contained is intended to prohibit the use of a food additive under and in accordance with the terms of an effective regulation pursuant to the Federal Food, Drug and Cosmetic Act.

(b) **General principles.** The design, materials, construction and installation of frozen food equipment shall be easily accessible for cleaning and sanitization.

(c) **Equipment classification.** (1) Equipment used for the processing, conveying, holding, refrigeration and packaging of gravies, batters, or other food ingredients containing eggs, milk or broth, alone or in combination with other food ingredients, which are capable of supporting rapid bacterial growth shall have a finish of corrosion-resistant material and shall be of smooth finish and readily accessible for cleaning. This includes, but is not limited to, the following: Pumps, valves, pipe lines and their fittings, heat exchangers, homogenizers, containers, hoppers and fillers. (2) Equipment used in the processing, holding and conveying of foods or food ingredients which are intended to be incorporated in ready-to-eat frozen food shall have a finish of corrosion-resistant material and shall be of smooth finish and readily accessible for cleaning. This includes, but is not limited to, reservoirs, holding tanks, kettles, mixers for liquids, mixers and blenders for powders, dough mixers, flour handling equipment, fryers, cutters, dicers, slicers, cutting boards, pumps, valves, tanks, lines and fittings for liquid sugar, oils and shortening.

(d) **Materials.** (1) All surfaces within the food product zone shall be smooth and free from pits, crevices and loose scale and shall be relatively nonabsorbent. Surfaces shall be nontoxic and unaffected by food products and cleaning compounds. (2) The finish of corrosion-resistant (stainless steel, nickel alloy, etc.) surfaces shall be of 125 grit, properly applied, or the equivalent. (3) The finish of cast iron, cast and forged steel and cast nickel alloy shall not exceed a reasonable surface standard of roughness. (4) The use of galvanized surfaces shall be minimal and, where used, shall be of the smoothness of high quality commercial hot dip. (5) 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. (6) Cadmium shall not be used in any manner or form on the food equipment. (7) 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 five per cent. (8) Plastics shall be abrasion resistant, heat resistant to the degree needed for the product and for the cleaning process, and shatterproof 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. (9) All gasketing and packing materials shall be relatively nonporous, 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. (10) Coatings used in the food product zone as a lining to prevent corrosion of the base material of food equipment shall be nontoxic, unaffected by, and inert to, the food in contact with it or cleaning preparations used on it. Such coatings shall be relatively nonabsorbent, odorless and tasteless.

(e) **Design and construction: Food product zone.** (1) All parts of the product zone shall be readily accessible or be readily removable for cleaning and inspection. (2) 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 pocket and patterns. (3) All permanent joints of metal parts shall be butt welded. (4) All welding within the food product zone shall be continuous, smooth, even and flush with the adjacent surfaces. (5) All interior corners shall be provided with a minimum radius of one-quarter inch, except where a greater radius is required to facilitate drainage or cleaning. (6) The equipment shall be constructed and installed to provide sufficient pitch so as to be completely self-draining. (7) Equipment which introduces air into the food product or uses air to convey the food product shall be fitted with a filter capable for withholding particles fifty microns or larger in size. Such filters shall be readily removable for cartridge replacement or cleaning. (8) 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. (9) 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. (10) 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. (11) Permanent screening and straining surfaces intended for use with a liquid or a semi-liquid product shall be fabricated from perforated metal. (12) Permanent screening and straining surfaces intended for use with a dry granular or a dry pulverized product shall be fabricated from perforated metal; provided wire screen of not less than thirty by thirty continuous mesh may be used. (13) All filtering surfaces shall be readily removable for cleaning and inspection. (14) Filter papers shall be of the single-service type. (15) Filter cloths and spun glass filters shall be launderable. (16) Hinges and latches shall be of the simple take-apart type. (17) Motors shall be of the totally enclosed finless type and shall be mounted on the equipment whenever possible. (18) 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.

(f) **Design and construction: Non-food product zone.** (1) All safety or gear guards shall be removable for cleaning and inspection. (2) All external surfaces shall be free of open seams, gaps, crevices, unused holes and inaccessible recesses. (3) Horizontal ledges and frame members shall be kept to a minimum; external angles shall be rounded, and

internal angles shall be avoided. (4) Where lubrication of equipment is required, provision shall be made to prevent leaking or dripping into the food product zone.

(g) **Installation of equipment.** (1) All equipment shall be installed on a foundation of durable, easily cleanable material. (2) Equipment shall be placed at least eighteen inches 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 (water-tight) to the floor. (3) Whenever equipment passes through walls or floors, it shall be sealed thereto or sufficient clearance shall be allowed to permit inspection, cleaning and maintenance. (4) Where necessary, drains and catch pans shall be provided and shall be of such dimensions as to collect all spill and drip and be readily accessible or readily removable for cleaning. (5) Where pipes pass through ceilings of processing areas, pipe sleeves shall be inserted in the floor above so that their upper periphery is at least two inches above the floor. (6) All electrical connections, such as switch boxes, control boxes, conduit and Bx cables, shall be installed a minimum of three-quarters inch away from the equipment and walls, or be completely sealed to the equipment or wall.

(Effective July 27, 1984)