**Section 740.40 Equipment and Utensils**

a) Suitable for intended use. All equipment and utensils being used shall be of the type designed and manufactured for use in a food processing or beverage manufacturing plant.

b) Cleanable

1) Design

A) All equipment and utensils shall be so designed and of such material and workmanship as to be smooth, easily cleanable, and durable, and shall be in good repair; food-contact surfaces of such equipment and utensils shall, in addition, be easily accessible for cleaning, nontoxic, corrosion resistant and relatively nonabsorbent. Bottle washers shall be properly designed to fulfill the washing procedure outlined in Section 740.70 (f) and shall be equipped with accurately functioning indicating thermometers. In all new installations the thermometer determining the temperature of the alkali washing solution shall be of the recording type or shall be of the dial-type with temperatures being recorded on quality control records at least every two hours while the bottle washer is in operation. All bottling plants shall record the temperature of the main tank of the bottle washer on the quality control records at least every two hours during operation of the bottle washer. This record shall also include the start-up time and close-down time of the bottle washer.

B) All apparatus used in syrup making or storage of liquid sugar and finished syrups shall be free from recesses, self-draining, covered and equipped with a mechanical means of mixing the syrup where mixing is required.

C) Equipment shall be so designed that ingredient contact surface shall be free of difficult to clean internal corners and crevices and all pipe threads which contact beverages or ingredients shall be of a sanitary design. All piping, fittings and connections carrying finished syrup and beverage shall be designed to permit easy cleaning and shall be free of breaks or corrosion. All interior surfaces of demountable piping, including valves, fittings, and connections shall be designed, constructed and installed to permit visual inspection.

2) Equipment Designed for In-place Cleaning

A) Piping and other equipment intended for in-place cleaning shall be so designed, constructed and installed that cleaning and sanitizing solutions can be circulated throughout a fixed system, so that cleaning and sanitizing solutions will contact all interior surfaces and the cleaning and sanitizing procedure results in a thoroughly cleaned and sanitized piece of equipment or piping.

B) Where necessary, each cleaning circuit shall have access points such as valves, removable sections, fittings, etc., that are adequate for inspection of the interior of the line in addition to the entrances and exits. These access points shall be located at sufficient intervals to determine the general condition of the interior surface of the piping and shall be so constructed as to not create a nuisance or reduce the effectiveness of the in-place cleaning.

C) Cleaned in-place beverage pipelines and return solution lines (if used) shall be rigid, self-draining, and supported in a manner as to maintain uniform slope and alignment. Return solution lines shall be constructed of sanitary piping as designated in Section 740.40 (b)(3).

D) All gaskets shall be of a material approved for use as a beverage ingredient contact surface and shall form a smooth, flush interior surface. Interior surfaces of welded joints in pipelines shall be smooth and free from pits, cracks, or inclusions.

3) Food Contact Surfaces

A) All beverage or beverage ingredient contact surfaces of equipment, containers, utensils and sanitary piping shall be smooth, free of breaks, cracks, chips, pits, open seams or other imperfections and shall be constructed of stainless steel of the American Iron and Steel Institute 300 series, equally corrosion-resistant metal which is non-toxic and non-absorbent, heat resistant glass or plastic materials which are relatively inert, resistant to scratching, scouring, decomposition, cracking, chipping and distortion under normal use and which are non-toxic, non-absorbent, and do not impart flavor or odor to the product.

B) Tanks used for holding water prior to treatment to prepare the water for use in the filling operation may be of construction other than that listed above, provided that they are constructed of materials which will not contaminate the water.

C) Carbonated water, finished syrups, and finished products shall not be conveyed in pipelines of galvanized iron, lead, zinc, copper or other deleterious materials.

4) Non-food Contact Surfaces. Surface of equipment not intended for contact with beverages or beverage ingredients, but which are exposed to splash, debris or otherwise require frequent cleaning, shall be reasonably smooth; washable; free of unnecessary ledges; projections, or crevices; readily accessible for cleaning; and of such material as to be readily maintained in a clean and sanitary condition.

c) Maintenance. All equipment and utensils shall be maintained in good repair and shall be clean to sight and touch. Beverage and beverage ingredient contact surfaces not designed for in-place cleaning shall be accessible for manual cleaning and inspection without being disassembled, by disassembling without the use of tools or by easy disassembling with the use of simple tools kept available near the equipment.

d) Prevents Contamination.

1) Lubricated Bearings and Gears. Lubricated bearings and gears of equipment shall be so constructed and installed that lubricants cannot get into the product or onto beverage or beverage ingredient contact surfaces.

2) Solder. Soft solder, when used as a beverage or beverage ingredient contact surface, shall be limited to joining metal or closing seams between abutting metal surfaces; shall be non-toxic under use conditions; containing a minimum of 50 percent tin; no more lead than necessary under good manufacturing procedures; and free of cadmium, antomony, bismuth, and other toxic materials. Hard solder (silver solder), when used as a beverage or beverage ingredient contact surface, shall be of such formulation as to be non-toxic under use conditions; shall be corrosion resistant; and shall, consistent with good industrial practice in the refining of its constituent elements, be free of cadmium, antimony, bismuth and other toxic materials.

3) Other Contaminants

A) When liquid sugar storage tanks are of the type which contain vents, they shall be equipped with air filter-type vents in order to reduce the possibility of surface growth of mold or air contamination within these tanks. Air vents shall be designed in such a manner that all parts are readily accessible and easily removable for cleaning.

B) Compressed air utilized for air cleaning of cans or other single-service containers prior to filling or used for any other purpose where it contacts a beverage or beverage ingredient contact surface or which is introduced into the product, shall be filtered. Where piston-type compressors are used, the air lines shall be equipped with oil and moisture traps.

e) Installation

1) Floor-mounted Equipment. All floor mounted equipment that is not readily movable shall be installed on raised platforms of concrete or equivalent in such a manner as to prevent liquids or debris from seeping or settling underneath, between or behind such equipment in spaces which are not fully open for cleaning and inspection; or shall be elevated at least six inches above the floor. The space between adjoining units, and between a unit and the adjacent wall, shall be closed unless exposed to seepage, in which case it shall be sealed; or sufficient space shall be provided to facilitate easy cleaning between, behind and beside all such equipment.

2) Aisles and Working Spaces. Aisles and working spaces between equipment and walls, and between pieces of equipment, shall be unobstructed and of sufficient width to permit employees to perform readily their duties without contamination of food or food products, or food contact surfaces by clothing or through personal contact.

3) Equipment Drain Lines. Drain lines from equipment shall not discharge waste water in such a manner as will permit the flooding of floors or the flowing of water across working or walking areas or into difficult-to-clean areas, or otherwise create a nuisance.

4) Bottle Washing, Filling and Closing Devices. These units shall be arranged so as to prevent human contact with the necks or tops of the bottles from the time of washing until they have been crowned.