**Section 785.415 Equipment and Utensils**

a) General Construction, Repair, and Installation

1) The equipment and utensils used for processing milk and manufacture of dairy products shall be constructed to be easily demountable where necessary for cleaning and sanitizing. The product contact surfaces of all utensils and equipment such as holding tanks, pasteurizers, coolers, vats, agitators, pumps, sanitary piping, and fittings or any specialized equipment shall be constructed of stainless steel, or other equally corrosion-resistant material. Nonmetallic parts other than glass having product contact surfaces shall meet 3-A Sanitary Standards for Plastic or Rubber and Rubberlike Materials.

2) All equipment and piping shall be designed and installed so as to be easily accessible for cleaning, and shall be kept in good repair, free from cracks and corroded surfaces. New or rearranged equipment shall be set away from any wall or spaced in such a manner as to facilitate cleaning and to maintain good housekeeping. All parts or interior surfaces of equipment, pipes (except certain piping cleaned in place) or fittings, including valves and connections, shall be accessible for inspection. Milk and dairy product pumps shall be of a sanitary type and easily dismantled for cleaning or shall be of approved construction to allow effective cleaning in place in accordance with 3-A Sanitary Standards.

3) All CIP systems shall comply with the 3-A Sanitary Practices for permanently Installed Sanitary Product, Pipelines, and Cleaning Systems.

b) Weigh Cans and Receiving Tanks: Weigh cans and receiving tanks shall meet the 3-A Sanitary Standards and shall be easily accessible for cleaning both inside and outside and shall be elevated above the floor and protected sufficiently with covers and baffles to prevent contamination from splash, condensate, and drippage. When necessary to provide easy access for cleaning of floors and adjacent wall areas, the receiving tank shall be equipped with wheels or casters to allow easy removal.

c) Can Washers: Can washers shall have sufficient capacity and ability to discharge a clean, dry can and cover and shall be kept properly timed in accordance with the instructions of the manufacturer. The water and steam lines supplying the washer shall maintain a uniform pressure and be equipped with pressure regulating valves.

d) Product Storage Tanks or Vats: Storage tanks or vats shall be fully enclosed or tightly covered and well insulated. The entire interior surface, agitator and all appurtenances shall be accessible for thorough cleaning and inspection. Any opening at the top of the tank or vat including the entrance of the shaft shall be protected against the entrance of dust, moisture, insects, oil, or grease. The sight glasses, if used, shall be sound, clear, and in good repair. Vats which have hanged covers shall be so designed that moisture or dust on the surface cannot enter the vat when the covers are raised. If the storage tanks or vats are equipped with air agitation, the system shall be of an approved type and properly installed in accordance with the 3-A Accepted Practices for Supplying air Under Pressure. Storage tanks or vats intended to hold product for longer than approximately 8 hours shall be equipped with refrigeration and/or have insulation. All new storage tanks or vats shall meet the appropriate 3-A Sanitary Standards and shall be equipped with thermometers in good operating order.

e) Separators: All product contact surfaces of separators shall be free from rust and pits and insofar as practicable shall be a stainless steel or other equally noncorrosive metals.

f) Coil or Dome-type Batch Pasteurizers: Coil or dome-type batch pasteurizers shall be stainless steel lined and if the coil is not stainless steel or other equally noncorrosive metal it shall be tinned over the entire surface. Sanitary seal assemblies at the shaft ends of coil vats shall be of the removable type, except that existing equipment not provided with this type gland will be acceptable if the packing glands are maintained and operated without contaminating the milk or milk products. New or replacement units shall be provided with removable packing glands. Dome-type pasteurizer agitators shall be stainless steel except that any nonmetallic parts shall meet 3-A Sanitary Standards for Plastic or Rubber and Rubberlike Materials, as applicable. Each pasteurizer used for heating product at 165º F. or lower for 30 minutes or less shall be equipped with space heating equipment and the necessary thermometers to insure a temperature at least 5º F. above that required for pasteurization of the product. There shall be a means of controlling the temperature of the heating medium. Batch pasteurizers shall have temperature indicating and recording devices.

g) High-temperature, Short-time (HTST) Pasteurizers: When pasteurization is intended or required, an approved timing pump or device recorder-controller, automatic flow diversion valve and holding tube or its equivalent, if not a part of the existing equipment, shall be installed on all HTST equipment used for pasteurization, to assure complete pasteurization (21 CFR 133 and 135). The entire facility shall meet the 3-A Accepted Practices for the Sanitary Construction, Installation, Testing, and Operation of High-Temperature, Short-Time Pasteurizers. After the HTST unit has been tested according to the 3-A Accepted Practices, the timing pump or device and the recorder controller shall be sealed at the correct setting to assure pasteurization. Sealing of the HTST unit shall be performed by the Department. The H.T.S.T. pasteurizer shall be tested initially and annually by the Department, also whenever any alteration or replacement is made which affects the proper operation of the instrument or device. When direct steam pasteurizers are used, the steam, prior to entering the product, shall be conducted through a steam strainer and a steam purifier equipped with a steam trap and only steam meeting the requirements for culinary steam shall be used (See Section 785.410(d)).

h) Thermometers and Recorders

1) Indicating Thermometers:

A) Long-stem indicating thermometers which are accurate within 0.5º F., plus or minus, for the applicable temperature range, shall be provided for checking the temperature of pasteurization and cooling of products in vats and checking the accuracy of recording thermometers.

B) Short-stem indicating thermometers, which are accurate within 0.5º F., plus or minus, for the applicable temperature range, shall be installed in the proper stationary position in all HTST, and dome-type pasteurizers. Storage tanks where temperature readings are required shall have thermometers which are accurate within 2.0º F., plus or minus.

C) Air-space indicating thermometers, where applicable, which are accurate within 1.0º F., plus or minus, for the proper temperature range shall also be installed above the surface of the products pasteurized in vats, to make certain that the temperature of the foam and/or air above the products pasteurized also received the required minimum temperature treatment.

2) Recording Thermometers:

A) HTST recording thermometers that are accurate within 1º F., plus or minus, for the applicable temperature range shall be used on each heat treating, pasteurizing, or sterilizing unit to record the heating process.

B) Additional use of recording thermometers accurate within 2º F., plus or minus, shall be required where a record of temperature or time of cooling and holding is of significant importance.

i) Surface Coolers: Surface coolers shall be equipped with hinged or removable covers, for the protection of the product. The edges of the fins shall be so designed as to divert condensate on nonproduct contact surfaces away from product contact surfaces. All gaskets or swivel connections shall be leak proof.

j) Plate-type Heat Exchangers: Plate-type heat exchangers shall meet the 3-A Sanitary Standards for Construction and Installation. All gaskets shall be tight and kept in good operating order. Plates shall be opened for inspection by the operator at sufficiently frequent intervals to determine if the equipment is clean and in good repair (e.g. free of dents, holes, broken gaskets and cracks). A cleaning regimen shall be posted to insure cleaning procedures between inspection periods.

k) Internal Return Tubular Heat Exchangers: Internal return tubular heat exchangers shall meet the 3-A Sanitary Standards for Construction and Installation.

l) Pumps: Pumps used for milk and dairy products shall be of the sanitary type and constructed to meet 3-A Sanitary Standards. Unless pumps are specifically designed for effective cleaning in place they shall be disassembled and thoroughly cleaned after use.

m) Homogenizers: Homogenizers and high pressure pumps of the plunger type shall meet the 3-A Sanitary Standards.

n) New Equipment and Replacements: New equipment and replacements, including all plastic parts and rubber and rubberlike materials for parts and gaskets having product contact surfaces, shall meet the 3-A Sanitary Standards. If equipment or replacements are not approved by 3-A Sanitary Standards, such equipment and replacements shall meet the general requirements of this section.

o) Vacuum Chamber: The vacuum chamber, as used for flavor control, shall be made of stainless steel or other equally noncorrosive metal. The unit shall be constructed to facilitate cleaning and all product contact surfaces shall be accessible for inspection. It shall be equipped with a vacuum breaker and a check valve at the product discharge line. Only steam which meets the requirements for culinary steam shall be used (See Section 785.410(d)). The incoming steam supply shall be regulated by an automatic solenoid valve which will cut off the steam supply in the event the flow diversion valve of the HTST pasteurizer is not in the forward flow position. Condensers when used shall be equipped with a water level control and an automatic safety shutoff valve.