

Florida Department of Agriculture and Consumer Services
Division of Food Safety
Bureau of Dairy Industry

MILK PRODUCER PLAN REQUIREMENTS
Rev. 02/2018

Plans indicating the following information must be sent to the appropriate Bureau of Dairy Industry specialist and approved before construction begins. The plans should be accompanied by a legal description of the site where the facility will be located and the date on which construction is anticipated to begin.

Plans will be reviewed by Division of Food Safety, Bureau of Dairy staff. Necessary changes will have to be made before approval. Only after approval, can construction begin on new or existing facilities.

Please note: These are basic requirements put together for producers who wish to submit an application to start a new milking operation in assisting with the submittance of plans. The full set of regulations a producer will need to abide by can be found in the documents listed below:

- Grade “A” Pasteurized Milk Ordinance (PMO) 2015 Revision
- Chapter 502, Florida Statutes -
<http://www.flsenate.gov/Laws/Statutes/2014/Chapter502>
- Chapter 5K-10, Florida Administrative Code -
<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=5K-10>

Milk Room

Floor – Shall be smooth, constructed of concrete or equally impervious material; graded to drain; and maintained in good repair. The floor shall be maintained free of breaks, depressions and surface peeling. The floor shall be sloped to drain so that there are no pools of standing water. The joints between the floor and the wall shall be watertight.

Floor Drain – Floor drains should not be located directly under milk tank valve. Drains should be accessible and trapped. However, a trench drain can be under a milk tank outlet valve as long as the drain pipe connection is not located directly under the outlet valve.

Wall Material – Walls shall be of smooth finish, impervious to water. Preferred materials include light colored plastic wall board or cement stucco over concrete block walls. Holes in milk room wall caused by either piping or bulk headed milk tanks shall be sealed in an appropriate manner.

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Doors and Windows – Shall be constructed of material and finish to resist decay or corrosion. Outer milk room doors must be tight and self-closing. If a screen door is used, it shall open outward. There is no direct opening into any barn, stable or parlor or room used for domestic purposes. Except that an opening between the milk room and milking barn, stable or parlor is permitted when a tight-fitting, self-closing, solid door(s) hinged to be single or double acting is provided. Except that screened vents are permitted in the wall between the milk room and a breezeway, which separates the milk room from the milking parlor, provided animals are not housed within the milking facility.

Ventilation - Windows or mechanical devices must be of sufficient size and location to minimize odors and prevent condensation upon walls and ceiling. If windows are used for ventilation, ten percent of the wall area shall be windowed and screened. If adequate mechanical ventilation and light is furnished, windows are not necessary. Milk room must be adequately ventilated to minimize condensation on floors, walls, ceiling and clean utensils. Vents must be installed in a manner to preclude the contamination of bulk milk tanks and clean utensils.

Ceiling – The milk room ceiling shall be a minimum of nine feet from floor to ceiling. A minimum of four feet is required between the top of a milk tank and ceiling. Pipes entering through the ceiling must fit tight to prevent any open space between pipe and ceiling, or a direct opening.

Ceiling Material – Ceilings shall be of smooth finish. Preferred materials include plastic wallboard or smooth dressed lumber or similar material, well painted with light colored washable paint. There should be no open beams beneath the ceiling.

Lighting – A minimum of 20 foot-candles of light is provided in all working areas from natural and/or artificial sources. A ceiling light directly above the tank lid is not allowed. A sight glass observation light should be offset from the tank opening to assist in visual inspection. Lighting shall be installed in a manner to preclude the contamination of bulk milk tanks and clean utensils.

Equipment Location – Plans should show the location of all equipment in the milk room including two compartment sink, hand-washing sink, milk tanks, hose port & slab, etc. Initial plans should indicate that the milk room is of sufficient size to handle the storing and cooling of milk and the washing, sanitizing and storage of milk containers and utensils. Please note, a two (2) compartment wash vat and hand washing sink are required in all milk rooms. The size of the

milk room shall be sufficient as to adequately clean in and around all equipment inside the milk room.

Milk Room Continued

Equipment Placement - There shall be a minimum distance of 18 inches between milk storage tank and wall; and a distance of 3 feet between milk storage tanks within the same room to secure adequate ventilation and sufficient space for cleaning. Milk storage tanks may be bulk-headed through the wall into the milk room. If the tanks protrude through the wall to accommodate a top-opening manhole and/or agitator, the distance between tanks, side walls and ceiling still apply. Pumps, motors, sinks and other permanent type equipment should be fastened to the wall with no contact to the floor, if possible.

Piping Installation - New piping installations should be designed so that piping joints are not located directly above a milk tank lid or vent. Connections for milking, especially the pot herd, should be offset from any tank opening.

Milk Storage Tank Design - A sampling cock shall be provided on all milk storage silos and horizontally mounted tanks designed with the manhole lid in the vertical end or wall of the tank. The sampling cock shall be installed on the door to allow for easy removal for cleaning and sanitizing and shall be considered part of the milk tank. The sampling cock shall be used for the purpose of regulatory and hauler sampling only. Bulk milk tanks containing a manhole on top of the tank, shall only be sampled through the manhole enclosed within the milk room.

Hose Port & Slab - The transfer of milk from a bulk milk tank to a bulk milk pickup tanker is through a hose port located in the milkhous wall. The port shall be fitted with a tight door, which shall be in good repair. It shall be kept closed and clean except when the port is in use. An easily cleanable surface shall be constructed under the hose port, adjacent to the outside wall and sufficiently large to protect the milk hose from contamination. The milk tank truck shall be parked on a self-draining concrete or equally impervious surface during filling.

Transfer Hose Stubbed Outside Milk Room - Milk can be transferred from a bulk milk tank to a bulk milk pickup tanker by stubbing the milk transfer and associated mechanically cleaned lines outside the milkhous wall, provided:

- a. A concrete slab of adequate size to protect the transfer hose shall be provided under the stubbed sanitary milk and mechanically cleaned lines.
- b. The outside wall of the milkhous, where the sanitary piping and concrete slab are located, shall be properly maintained and kept in good repair.
- c. The sanitary piping, stubbed outside the milkhous, shall be properly sloped to assure complete drainage and the ends of the piping, which are located outside, shall be capped when the transfer hose is disconnected.

- d. After the completion of milk transfer, the milk lines and transfer hose shall be properly mechanically cleaned.
- e. After the mechanical cleaning process has been completed; the transfer hose shall be disconnected, drained and stored in the milkhous. Proper storage of the transfer hose includes capping the ends and storing the entire hose up off the floor. The sanitary piping outside the milkhous shall be capped at all times, except when transferring milk or being mechanically cleaned. When the caps are not being used, they shall be properly cleaned and sanitized after each use and stored in the milkhous to protect them from contamination. A transfer hose manufactured with permanent hose end fittings, attached in such a manner that will assure a crevice-free joint between the hose and the fitting, may be stored outside of the milkhous, provided it is mechanically cleaned; the stubbed piping and hose length are of sufficient design to allow complete drainage after cleaning and sanitizing; and the hose remains connected to the stubbed piping when not in use.
- f. Means shall be provided to sanitize the milk-contact surfaces of the transfer hose and bulk milk pickup tanker fittings prior to the connection of the transfer hose to the bulk milk pickup tanker.
- g. At all times, the bulk milk pickup tanker manhole openings(s) shall remain closed, except for brief periods for sampling and examination when environmental conditions permit.

Direct Loading – A transportation tank, with or without overhead protection, may be used for cooling and/or storing milk on a dairy farm. If a suitable shelter is provided for a transportation truck, used for cooling and/or storing of milk, such shelter shall be adjacent to, but not part of, the milkhous and shall comply with the prerequisites of the milkhous with respect to construction items. In addition, the following criteria shall be met:

- a. An accurate, accessible temperature-recording device shall be installed in the milk line downstream from the effective cooling device, which cools the milk to 45°F or less. Electronic records need to comply with the regulations set forth in the PMO. An indicating thermometer shall be installed as close as possible to the recording device for verification of the recording temperatures.
- b. Temperature-recording records shall be maintained on the premises for a period of six (6) months and available for review by the Regulatory Agency.

Please Note: Additional requirements for direct loading are required; these are not included in this document because they are not related to construction or issues

Milk Tanks

Milk tanks shall be so designed to permit accessibility for sampling. Accessibility from the lid or a sample cock shall be provided. Outlet valves must have a clearance of at least 8 inches from the valve base to the floor. Outlet valves shall not be placed directly over floor drains in the milk room.

Milk Tanks Continued

A sampling cock shall be provided on all milk storage silos and horizontally mounted tanks designed with the manhole lid in the vertical end or wall of the tank. The sampling cock shall be installed in the door to allow for easy removal for cleaning and sanitizing and shall be considered part of the milk tank. The sampling cock shall be used for the purpose of regulatory and hauler sampling only.

A minimum of four feet is required between the top of a milk tank and ceiling.

All milk tanks must be equipped with oil slingers mounted under the agitator motor to prevent gear box oil from leaking into the tank.

Bulk-headed milk tanks that have agitators mounted outside of the milk room must be equipped with transparent shielding that allows for the visual inspection of the rubber oil slinger and agitator shaft. Rubber oil slinger shall be tight fitting to the agitator shaft to prevent contamination of milk from agitator motor. Agitator shafts equipped with a sealed bushing are exempt from this requirement.

A physical break is required between milk and CIP circuits.

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All farm bulk milk tanks manufactured after January 1, 2000 shall be equipped with an approved temperature-recording device.

- a. The recording device shall be operated continuously and be maintained in a properly functioning manner. Circular charts shall not overlap.
- b. The recording device shall be verified every six (6) months and documented in a manner acceptable to the Regulatory Agency using an accurate (+/- 1°C (2°F)) thermometer that has been calibrated by a traceable standard thermometer, within the past six (6) months, with the results and date recorded and the thermometer being properly identified, or by using a traceable standard thermometer that has been calibrated within the last year.
- c. Recording thermometer charts shall be maintained on the premises for a period of a minimum of six (6) months and available to the Regulatory Agency.
- d. The recording thermometer should be installed in an area convenient to the milk storage tank and acceptable to the Regulatory Agency.
- e. The recording thermometer sensor shall be located to permit the registering of the temperature of the contents when the tank contains no more than ten percent (10%) of its calibrated capacity.
- f. The recording thermometer shall comply with the current technical specifications for tank recording thermometers.

- g. A recording thermometer and/or any other device that meets the intent of these Administrative Procedures and technical specifications and is acceptable to the Regulatory Agency can be used to monitor/record the bulk tank temperature.
- h. The recording thermometer charts shall properly identify the producer, date, and signature of the person removing the chart.
- i. The recording thermometer charts shall be verified every thirty (30) days and documented in a manner acceptable to the Regulatory Agency using an accurate ($\pm 2^{\circ}\text{F}$) thermometer by a certified sampler/hauler.

There shall be no partial removal of milk from milk storage/holding tanks by the bulk milk hauler/sampler, except partial pickups may be permitted when the milk storage/holding tank is equipped with a seven (7) day recording device complying with the specifications of Appendix H. or other recording device acceptable to the Regulatory Agency, provided the milk storage/holding tank shall be clean and sanitized when empty and shall be emptied at least every seventy-two (72) hours. Milk haulers must sign and date and write the temperature of the milk in comparison to the trace line on the recording charts at least every 30 days. In the absence of a temperature-recording device, partial pickups may be permitted as long as the milk storage/holding tank is completely empty, clean and sanitized prior to the next milking. In the event of an emergency situation, such as inclement weather, natural disaster, etc., a variance may be permitted at the discretion of the Regulatory Agency.

Water Heating Facilities

Water Heater Location – If possible, the water heater should be located in a room separate from the milk room and barn or parlor.

Capacity – Heater capacity should be in excess of the volume necessary to completely fill the entire CIP system. A rule of thumb is two times the volume of the CIP system. If the hot water heater is electric, it should contain a quick recovery element.

Milking Barn or Parlor

Floor Material – Floors, gutters and feed troughs are constructed of good quality concrete or equally impervious material. Concrete or tile floors shall be slip-proof to animals. Rubber floor mats may be used in the parlor. If secured to the parlor floor, only one end of the mats can be permanently bolted/screwed to concrete. Facilities must maintain the ability to flip up or remove mats on a daily basis for cleaning.

Floor Slope – Floors shall slope a minimum of one-quarter inch per foot to drain. This includes milking pit. Show location of gutters and drains on plans. If a floor flush system is installed a minimum slope of one-eighth inch per foot is required. Clean water (pre-cooler recovery, non-potable well water) can be used to flush the parlor floor and to wash the cows. Re-circulated lagoon water may not be used in the parlor, but can be used to flush the holding area, exit laneways, etc..

Milking Barn or Parlor Continued

Milking Pit Dimensions – The milking pit shall be a minimum of five feet wide.

Wall Material – Walls shall be of smooth finish and impervious to water. Preferred materials include light colored plastic wall board or cement stucco over concrete block walls. Approved after market sealants can be used over concrete block as approved by FDACS.

Ceiling Height – A stanchion type barn shall be a minimum of nine feet in height and a parlor type ten feet, six inches. A stanchion parlor type barn used for milking goats shall have a minimum of eight foot ceiling.

Ceiling Material – Ceiling shall be constructed of smooth material; be in good repair; and be well painted or finished in an equally suitable manner. If there is a feed storage area above the barn or parlor, the ceiling should be tongue and groove double floor with a layer of felt between the floors. There should be no open beams beneath the ceiling to prevent birds from roosting over milking operations.

Doors and Windows (if applicable) – Door and window frames shall be constructed of materials that are resistant to decay or corrosion.

Light and Ventilation – The milking barn or parlor shall be provided with at least ten foot-candles of light in all working areas from natural or artificial sources. Air circulation by means of windows or mechanical devices must be sufficient to minimize odors and prevent condensation upon walls and ceiling.

Equipment Location – Milking equipment should be located or otherwise protected through the use of splashguards and/or shields or curbs to prevent any contamination of milk, containers, utensils and equipment. Plate coolers which are designed for mechanical cleaning may be located in the milking barn or parlor, provided this equipment is designed, installed and operated to protect the product and solution contact surfaces from contamination at all times (location in milk room or breezeway is preferred).

Milking / CIP System Plans

When the design and/or installation of milking/CIP systems are performed by outside contractors/suppliers, the owner/operator should submit the manufacturer's specifications for operation and maintenance.

Installation plan for milk lines, CIP lines, vacuum lines, receiver, CIP tank and manifold, milk tank(s), vacuum pump, CIP pump (if any), milk pump(s) and transfer system will include the following information:

- a. Size of milk line, cleanup line and vacuum line.
- b. Number of units.
- c. Location of joints and valves in milk line.

Milking / CIP System Plans Continued

- d. Location of tees in milking vacuum line.
- e. Location of any reducers or risers.
- f. Capacity of wash vat.

Air under pressure used in milking/CIP systems must meet Appendix H criteria.

Toilet Facilities

There shall be at least one flush toilet connected to a public sewer or to an individual sewage-disposal system or a chemical toilet.

Adequate hand-washing facilities shall be provided in conjunction with a flush toilet, including a lavatory fixture with cold and hot or warm running water, soap or detergent and individual sanitary towels.

A toilet is convenient to the milking barn and the milk room.

A toilet facility cannot open directly into the milk room.

Toilet room doors are tight self-closing and open outward.

All outer openings of toilet rooms shall be screened or otherwise protected against the entrance of flies. Floor drains should be provided for washing.

Feed Storage

A dust tight partition, provided with doors that are kept closed except when in actual use, shall separate the milking portion of the barn from the feed room or silo in which feed is ground or mixed, or in which sweet feed is stored.

Feed troughs in the parlor must be properly maintained to prevent attraction of birds, rodents and insects. If feed carts are used they may be stored in the milking barn provided the carts are fitted with a tight cover.

Hand-Washing Facilities

Adequate hand-washing facilities shall be provided, including a lavatory fixture with hot and cold, or warm running water, soap or detergent and individual sanitary towels, convenient to the milk room, milking barn, stable, parlor and flush toilet. Utensil wash and rinse vats shall not be considered as hand-washing facilities or used as such. Hand-washing facilities shall be convenient to all milking operations.

Water Supplies

The Pasteurized Milk Ordinance (PMO) prohibits direct connection between safe and unsafe water supplies and submerged inlets. These requirements can be satisfied with the following:

A physical break, air gap or overflow that is at least two times the diameter of a single water inlet, or two times the cumulative diameter of multiple inlets.

An atmospheric vacuum breaker should be used for water lines that have no continual pressure. Atmospheric vacuum breakers are designed to prevent back siphonage only and are not effective against backflow under continuous operating pressure.

Pressure type vacuum breakers are designed to prevent back siphonage of contaminated water into a potable supply. These valves are designed for installation in a continuous pressure line.

A reduced pressure zone back flow preventer (RPZ) should be used in continuous pressure situations subject to back pressure or back siphonage where a high potential health hazard exists.

Back Pressure/Back Flow Prevention devices must be designed and installed to meet PMO specifications and are usually stamped with an approved model or ASSE number. Check valves and vacuum breakers used in irrigation, chemical and fertilizer applications may not meet these specifications. Questionable applications should be reviewed with a dairy specialist.

Pressure washers that operate with potable water hose connections must be equipped with low pressure or low volume cut-off switches.

DISTANCE OF A WELL FROM SOURCES OF CONTAMINATION

Formation	Minimum Acceptable Distance of a Well from Sources of Contamination
Favorable (Unconsolidated)	15 meters (50 feet) – Lesser distances only on Health Department approval following a comprehensive sanitary survey of the proposed site and immediate surroundings
Unknown	15 meters (50 feet) – Only after a comprehensive geological survey of the site and its surroundings has established, to the satisfaction of the Health Department that favorable formations do exist.
Poor (Consolidated)	Safe distances can be established only following both the comprehensive geological and comprehensive sanitary surveys. These surveys also permit determining the direction in which a well may be located with respect to sources of contamination. In no case should the acceptable distance be less than 15 meters (50 feet).

The chart below is provided as a guideline for back siphonage protection devices.

BACK SIPHONAGE PROTECTION DEVICES

TYPE AND PURPOSE	DESCRIPTION	APPLICATION	EXAMPLES
ATMOSPHERIC TYPE VACUUM BREAKER	Single float and disc with large atmospheric port ASSE # 1001	Cross connection not subject to backpressure or continuous pressure. Install at least 6" above fixture rim	Properly designed faucets or other non-pressure applications. (must be installed downstream from last cut off valve) Ex: WATTS 288A series
HOSE CONNECTION VACUUM BREAKER	Single check with atmospheric vacuum breaker vent ASSE # 1011	Installed directly on hose bibs, utensil sinks and wall faucet. Not for continuous pressure.	Hose bibs over wash vats, hose bibs on wall or outside of buildings, hydrants Ex: WATTS 8 series
PRESSURE TYPE VACUUM BREAKER	Spring loaded single float and disc with independent 1st check. Supplied with shut-off valves and ball type test cocks ASSE # 1020	Designed for installation in a continuous pressure line. To be installed 12" above the overflow level of the system being supplied. Protection against back siphonage only.	Livestock water systems, lawn sprinklers, chemical tanks, cooling towers. Ex: WATTS 800 series
SPECIALITY TYPE VACUUM BREAKER	Two independent check valves with intermediate vacuum breakers and relief valve. ASSE # 1012	For use in low hazard cross connections in small pipes under continuous pressure.	Dairy equipment, residential use, any low hazard cross connection with continuous pressure. Ex: WATTS 9D series
REDUCED PRESSURE ZONE BACKFLOW PREVENTER	Two independent check valves with intermediate relief valve. Supplied with shut-off valves and ball type test cocks. ASSE # 1013	For use on continuous pressure situation subject to back pressure or back siphonage where a high potential health hazard exists.	Processing tanks, cooling towers, sewerage treatment, boilers, toxic chemical applications. Ex: WATTS 909 series

LISTING OF THE WATTS SERIES DOES NOT IMPLY AN ENDORSEMENT OF THEIR USE FOR BACK FLOW PROTECTION

