

Second edition

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**Milk collection centre— Basic
requirements**

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS293 was prepared by joint Technical Committees RSB/TC 004, *Milk and milk products* and RSB/TC 009 *Civil engineering and building materials*.

In the preparation of this standard, reference was made to the following standard (s):

- 1) TAS 6401: 2005: Good manufacturing practices for milk collection centre

The assistance derived from the above source is hereby acknowledged with thanks.

This second edition cancels and replaces the first edition (RS 293: 2016), which has been technically revised.

Committee membership

The following organizations were represented on the joint Technical Committee on *Milk and milk products* (RSB/TC 004) and *RSB/TC 009 Civil engineering and building materials* in the preparation of this standard.

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Milk collection centres— Basic requirements

1 Scope

This Draft Rwanda Standard provides requirements for premises, utilities, equipment, personnel, operations and management of milk collection centres.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

RS CAC/RCP 1, *General principles for food hygiene — Code of practice*

RS CAC/RCP 57, *Code of hygienic practice for milk and milk products*

RS EAS 67, *Raw cow milk—Specification*

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply

3.1

raw milk

normal, clean and fresh secretion extracted from the udder of a healthy cow but excluding that obtained during the first seven days after calving

3.2

Milk Collection Centre (MCC)

premises where milk collected from dairy farmers is delivered, tested and cooled.

3.3

laboratory

room within the complex of the MCC where raw milk is subjected to quality and safety tests

3.4

reception tank

specifically designed container used for receiving raw milk that has passed quality and safety tests before transferring to the cooling tank

3.6

cooling tank

container used for cooling raw milk between 2 °C and 4 °C and able to maintain that temperature constant during the period of storage.

4 Operational License

Milk Collection Centre shall be licensed by the competent authority.

5 Location

5.1 The location of milk collection center shall comply to the land use and zoning requirements provided by the competent authority

5.2 Milk collection center shall be in the appropriate location distanced from any source of pollution, such as smoke and rubbish dump and waste disposal area.

5.3 Where possible, selection of location shall consider areas not prone to flooding. However, where it is unavoidable, foundation designs for the facility shall comply to the requirements of RS 113 and national building code requirements so as to prevent cracking, settlements, and structural failures.

5.4 There shall be sufficient space for accommodation of minimum 2 trucks/vehicle parking and other essential inputs.

5.5 The Milk Collection Centre shall be accessible by road.

5.6 The Milk Collection Centre shall have access to facilities such as clean water, communication facilities

5.7 The Milk Collection Centre shall have sufficient power supply.

6 General facility design requirements

6.1 The design and construction shall conform to the requirements of the national building codes and relevant Rwanda Standards.

6.2 The building materials used shall comply with relevant Rwanda standards. Materials shall be durable and non-toxic

- 6.3** Building shall be structurally sound and hygienically designed and constructed to prevent cross-contamination from exterior, and to be safe and proper for operation.
- 6.4** Building design and layout shall be designed so that there is a separation of clean and unclean working operations.
- 6.5** The buildings and facilities shall be designed to prevent the entrance and harboring of pest and the entry of environmental contaminants such as smoke and dust.
- 6.6** The foundations shall be adequately designed to carry the all loads of the building and shall be termite proofed.
- 6.7** The floor shall be finished with non-absorbent, easy to clean, non-slip materials and without crevices.
- 6.8** Wall finishes shall be made of materials that do not cause contamination. Interior surface shall be smooth without dirt accumulation, clean and undamaged, with no opening passage to prevent the entry of disease carrier animals.
- 6.9** All in door corners and edges of MCC shall have curved finishing.
- 6.10** The roof of the milk collection center shall be such that it does not transmit any undesirable substance to the raw milk being handled.
- 6.11** Ceiling shall be designed, constructed and finished as to prevent the accumulation of dirt and minimize condensation, mould development and flaking and shall be easy to clean.
- 6.12** All doors shall be flush finished on the interior side, capable of easy cleaning, non-absorbent and shall be protected on both sides by non-corroding metal kick plates to prevent damage which may provide access for rodents, where appropriate, be self-closing and close fitting.
- 6.13** All windows shall be provided with non-corrosive screens fitted to the outside which shall be removable for cleaning and the sills shall be slopping.
- 6.14** The MCC shall be fenced with at least 2 m high fence to avoid unauthorized entrance.
- 6.15** Wash hand basins (Hand washing facilities) shall be either knee or pedal operated, with suitable hand cleaning preparation and with suitable hygienic means of drying hands.

7 MCC layout requirements

7.1 Reception area

7.1.1 Hygienic measures shall be in place before entering the building, room or area for raw milk receiving, i.e., disinfectant solution basin for boots or shoes to prevent contamination, non-hand operated hand wash basin and equipped with liquid soap and hand drying kits.

7.1.2 Clean and undamaged doors or plastic curtains shall be closed tightly to prevent dust and insect.

7.1.3 Floor shall be made of non-abrasive, non-corrosive, non-absorbent and easy to clean materials, undamaged, and shall drain easily. Wall and floor connection shall be of curved angle.

7.1.4 A drainage system shall be well flown, undamaged, clean, and shall be:

- a) equipped with wire-mesh before draining out of the building, in case of closed drains, and
- b) equipped with U-shaped gutters, in case of open drains.

7.2 Areas for raw milk receiving tanks

7.2.1 The area shall be distanced from parking area to prevent contamination.

7.2.2 Raw milk receiving tank shall be placed at the height that cause no risk of contamination

7.3 Laboratory

7.3.1 The laboratory shall have sufficient area for the purpose and comply to relevant laboratory design standards.

7.3.2 The floor shall be of non-absorbent, washable and non-slip materials, without crevices, easy to clean and disinfect.

7.3.3 The wall shall be non-absorbent and easy to clean

7.3.4 Hot and cold water supply shall be available in the laboratory.

7.3.5 Laboratory shall be equipped with appropriate equipment and materials to conduct basic test, such as resazurin, milk fat content, density and alcohol test.

7.4 Cleaning area for equipment

7.4.1 Milk collection center shall be provided with indoor cleaning room as follows:

- a) the floor shall be made of non-absorbent, washable and non-slip materials without crevices, easy to clean and disinfect.
- b) the wall shall be finished with non-absorbent, washable and easy to clean materials
- c) hot and cold water supply shall be available in the cleaning room.

7.4.2 Raw milk container washing areas shall be provided for members as follows:

- a) the washing area shall be distanced from parking area to prevent contamination;
- b) washing areas for members shall be designed and finished as to facilitate the operations;

- c) washing areas shall be finished with non-absorbent materials and easy to clean;
- d) floor shall be slope and able to rapidly drain out the water;
- e) sufficient and appropriate cleaning tools for empty raw milk containers shall be provided

7.5 Office space

7.5.1 Office in the milk collection center shall not cause any contamination to the raw milk receiving building.

7.5.2 The office space shall be:

- a) easily accessible for staff and other visitors;
- b) clearly signposted;
- c) well aerated;
- d) safe and unobstructed; and
- e) clean, naturally well-lit and suitably furnished.

7.6 Toilets and urinals

7.6.1 Milk Collection Center shall be provided with separate and designated toilets and urinals for members and for staff as follows:

- a) toilets and urinals for male and female shall be separately constructed in an area that does not bring ill effect on the collected milk;
- b) toilets inside the milk collection center shall be hygienic, located in appropriate position, adequate and able to prevent cross-contamination effectively;
- c) the floor of the toilets and urinals shall be non-absorbent, washable and non-slip, without crevices and shall be easy to clean and disinfect. The floors shall slope sufficiently for liquids to drain to trapped outlets including grates;
- d) the wall shall be constructed from non- absorbent, washable materials and they shall be smooth and without crevices and shall be easy to clean and disinfect;
- e) the toilets and urinals shall be furnished with appropriate hand washing facilities equipped with hygienic materials such as liquid soap or solid soap sanitizers, nail brushes, disposable towels or air-drying equipment or tissue paper hunger.

- f) Design shall take into consideration of toilet facilities for persons with disabilities as per RS 115 requirements

7.7 Shower and changing rooms

7.7.1 There shall be separate changing room (s) and shower(s) for male and female workers

7.7.1.1 Shower and changing room shall be hygienic, located in appropriate positions, adequate and able to prevent cross-contamination effectively. They shall have shower faucets and other plumbing fixtures

7.7.1.2 Showers and changing room shall be finished with non-absorbent, washable and easy to clean materials

7.7.1.3 Changing rooms shall be furnished with labelled lockers.

7.7.1.4 All cleaning materials shall be provided.

7.8 Ventilation and Lighting

Indoor ventilation shall be as follows:

- a) ventilation system shall be designed and installed as to allow better air flow and not being dampening shall be available. Passive ventilation systems designs shall be used where necessary;
- b) Such system or device shall not be installed in an area that may pose a risk of contamination to raw milk.
- c) Lighting shall be adequately provided as per relevant standards specific to the use of each room. Natural lighting shall be utilized where possible.

8 Utilities

8.1 Road accessibility

8.1.1 Access roads to Milk Collection Center shall be at least designed as per RS 267 requirements for feeder roads.

8.1.2 The building verge, main internal access road, loading bays and all areas serving vehicular traffic shall be either paved or tarred.

8.2 Water and electricity

8.2.1 Running water under pressure shall be easily accessible to all rooms and areas in which milk is handled and equipment are washed.

8.2.2 The water shall meet potable water standards requirements (See RS EAS 12). The water shall be microbiologically tested at least twice a year and especially following cleaning and disinfection of water storage tanks.

8.2.3 MCC shall be equipped with Water storage tanks of adequate capacity to ensure the availability of water all the times. Where possible water storage shall be equipped with a pumping system.

8.2.4 The tanks and contents shall be inspected at frequent intervals and emptied cleaned and disinfected as necessary and at least once per year.

8.2.5 In cases where the total water hardness exceeds 500 mg/l (as CaCo₃). Water softeners shall be used for all water where heat treatment cleaning or rinsing is involved.

8.2.6 Cold and hot water point, at a sufficient pressure shall be installed for cleaning milk transporting tanks and the washing area shall be located downward of the MCC and shall be connected to the main drainage canal.

8.2.7 The electrical installation shall comply with Rwanda Electrical code and standards

8.2.8 Installation of electric wires and sockets shall be neat, well arranged and shall be in the position that cause no contamination but safe for operators.

8.2.9 Light bulb shall be equipped with clean bulb cover that has no dust, cobweb or dirty stain, particularly in the risky areas, such as an area over the raw milk receiving tank.

8.2.10 Light bulb shall be undamaged, able to provide sufficient light and functional at every operating area, particularly those areas that are the critical control point of food safety such as raw milk receiving tank area, cleaning area for equipment and tools and chemical preparation area for cleaning,

8.2.11 MCC shall be provided with power back-up systems. It may be electric generators or solar systems.

9 Raw milk receiving machines, equipment and tools

9.1 General requirements

9.1.1 Adequate and effective machines and equipment shall be provided

9.1.2 Machines and equipment installation system shall be in accordance with raw milk receiving lines.

9.1.3 Machines and equipment surface in contact with raw milk shall be made of rust-free metal.

9.1.4 Machines and equipment shall be installed in the positions that facilitate the operation, maintenance and cleaning.

9.1.5 Safety systems for personnel protection shall be in place.

9.2 Equipment and tools relevant to raw milk receiving

9.2.1 Filter of raw milk before pouring into the receiving tank shall be provided.

9.2.2 Raw milk receiving tank shall be rust-free metal without dead-end area and positioned at the height of no risk of contamination.

9.2.3 Raw milk scale shall be precise and regularly calibrated

9.2.4 Pumps, valves and joints shall be strong, clean and hygienic. Part of contact surface shall be made of rust-free metal without any reaction to raw milk.

9.3 Milk hoses, water hoses and cleaning hoses

9.3.1 Hoses shall be separated by types of operation, namely water hoses, milk hoses.

9.3.2 Milk hoses shall be made of materials that cannot cause any contamination.

9.3.3 They shall be Clean, undamaged, and no crack

9.3.4 Tools used in combination with the hoses such as hose belt shall be made of rust-free metal.

9.3.5 After use, equipment and tools shall be properly placed and stored without contact to the floor.

9.4 Hygienic condition of pipe system

9.4.1 Pipes shall be clean, undamaged and no crack in order to prevent raw milk contamination.

9.4.2 Raw milk contacted surface shall be made of rust-free materials without any reaction to raw milk.

9.4.3 Pipes shall be protected from damage in accordance with their use.

9.4.4 The symbols and signs shall be provided for each type of pipe and flow direction.

10 Raw milk cooling system

10.1 The cooling system shall be able to reduce the raw milk temperature to the range of 2 °C and 4 °C within two hours and maintain the raw milk temperature constantly.

10.2 The device shall be regularly maintained and calibrated

10.3 Temperature shall be monitored and record kept.

10.4 Where water is used in the cooling system it shall be treated for its quality. In case the chemicals are used, only food grade chemicals shall be used.

11 Transportation and Vehicles

11.1 Transportation

11.1.1 Transportation of raw milk shall be prepared appropriately and hygienically so as to prevent crosscontamination.

11.1.2 Raw milk shall be tested before transporting to processing plants.

11.1.3 Transport vehicle shall be cleaned after each delivery of raw milk to processing plants.

11.1.4 Results of transportation shall be inspected, monitored and evaluated by observing and interviewing operators.

11.1.5 Records or reports shall be kept at the milk collection center for not less than two years.

11.1.6 The milk tankers shall be provided with seals/lock.

11.2 Raw milk transport vehicle

11.2.1 Raw milk transport tanks shall be designed and insulated to maintain steady/constant temperature or its variation not over 4 °C until reaching its destination.

11.2.2 Outlet valve system shall be independently controlled and installed at an appropriate position in a hygienic manner without any dead-end area or crevice leading to the leftover of raw milk in the tank. The system shall be equipped with device to prevent cross-contamination.

11.2.3 Rubber seal of the tank lid shall be in good condition, no cracking, clean, and insulated to maintain a constant temperature.

11.2.4 Security device for unattended opening of lid and valve during transportation shall be available.

11.2.5 Tank chamber, valves, lid and pipe shall be able to be cleaned thoroughly by using CIP system or other cleaning methods. The cleaning shall include outside surface of the tank.

11.2.6 Loaded raw milk transport vehicle shall be parked in shaded area.

12 Management of unprocessed milk

12.1 Time schedule for raw milk receiving shall be set.

12.2 Quality of raw milk from members shall be tested according to the quality requirements specified in RS35 and clear criteria for rejection shall be announced.

12.3 The holding time of the unprocessed milk at MCC shall not exceed 24 h.

13 Hygiene

13.1 General requirements

Operation in the Milk Collection Centre shall be done accordance with the provisions in RS CAC/RCP 1 and RS CAC/RCP 57.

13.2 Personal hygiene management

13.2.1 Hygiene of unprocessed milk receiving operators shall be monitored in order to reduce the possibility of contamination during the operations and recorded regularly for assessment as follows:

- a) nails shall be clipped and kept clean;
- b) uniform or clothes shall be clean;
- c) hair shall be entirely covered with cap as well as mouth and nose shall be covered with a mask during operations;
- d) apron shall be waterproof and clean;
- e) wear clean boots or shoes for use in a specific area;
- f) do not wear any accessories during the operations;
- g) record the results of personal hygiene inspection and dressing every week;
- h) establish hygienic rules for operators who have any symptom of gastrointestinal diseases, respiratory diseases or wound that may cause risk of raw milk contamination;
- i) report annual health examination including tuberculosis, dermatitis, parasite and hepatitis.

13.2.2 Clearly assign duty for each personnel involving in all stages of production process and raw milk transportation, including promotion and service personnel.

13.2.3 Train and check the operators whose works are involving raw milk in order to acquire basic knowledge according to standard of good practices as follows:

13.2.3.1 Acquire basic knowledge on relevant operations, such as basic knowledge on milk production and its components, on milk-borne zoonoses and have experience on the work assigned.

13.2.3.2 Train operators before beginning work in order to assure their ability to practice the assignment.

13.2.3.3 Train the operators on the specific areas of their responsibility, i.e, repairing and maintenance of machines and equipment, calibration of the scale and temperature measurement device as well as laboratory analysis.

13.2.3.4 Train the driver on good hygienic practices for raw milk transportation.

13.2.3.5 Provide training to review and refresh their knowledge for at least once a year.

13.2.3.6 Trainers and inspectors shall be officers from the competent authority.

14 Safety measures and environmental management

Safety measures concerning operating areas, equipment, management of chemicals and their containers including environmental management in waste water treatment system shall be established according to relevant regulations

14.1 Safety measures shall be as follows:

- a) the security shall be guaranteed by either security guards or CCTVs;
- b) alarm device or system for operating areas shall be in place in order to remind operators to be more careful and to warn in the risky area in which the danger may occur;
- c) First-Aid kit and training course thereof shall be provided;
- d) fire extinguishers shall be installed;
- e) personal Protective Equipment (PPE) shall be provided to protect personnel from injury during chemical preparation. The PPE shall be indicated by sign, easily reached and properly used.

14.2 Hygienic and effective control systems and preventive measures against disease carrier animals shall be in place.

14.3 Hygienic waste disposal system shall be in place.

14.4 Management system for chemicals and their containers shall be in place.

14.4.1 Chemicals shall be labeled and stored in a proper shelf or locker with indication.

14.4.2 Chemicals that are no longer used and empty containers shall be eliminated by using proper methods not causing contamination.

14.5 Drains inside the building of milk collection center shall be as follows:

- a) closed drains shall be equipped with sieves in order to prevent clogging or gradual accumulation of debris;
- b) open drains shall be U-shaped in order to be cleaned easily and unable to accumulate debris;
- c) in case of waste water drainage without using drain inside the building, the floor shall be slope and able to rapidly drain out in order to ensure that there is no water logging causing contamination;

- d) drains shall be clean, undamaged and good conditions with sufficient slope for well drainage;
- e) drains shall have sieve for filtering prior to releasing outside the building, and for preventing the entry of insects and disease carrier animals;
- f) waste water treatment system shall not generate disturbing odour, pollution and contamination to the center.
- g) effectiveness of waste water treatment shall be monitored, recorded and kept the document for traceability purpose for at least 2 years.

14.6 The entry of pets into the center is prohibited.

PUBLIC REVIEW

Bibliography

- [1] RS 293: 2016, *Milk collection centre—Basic requirements, First edition*

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