

**Toidutöötlemismasinad. Piimajahutid farmides.
Kasutus-, ohutus- ja hügieeninõuded**

**Food processing machinery - Bulk milk coolers on
farms - Requirements for performance, safety and
hygiene**

EESTI STANDARDI EESSÕNA

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English Version

**Food processing machinery - Bulk milk coolers on farms -
Requirements for performance, safety and hygiene**

Machines pour les produits alimentaires - Refroidisseurs de
lait en vrac à la ferme - Prescriptions pour les
performances, la sécurité et l'hygiène

Nahrungsmittelmaschinen - Behältermilchkühlanlagen für
Milcherzeugerbetriebe - Anforderungen an Leistung,
Sicherheit und Hygiene

This European Standard was approved by CEN on 7 June 2013.

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Foreword

This document (EN 13732:2013) has been prepared by Technical Committee CEN/TC 153 "Machinery intended for use with foodstuffs and feed", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13732:2002+A2:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The main changes compared to the previous edition are the following ones:

- a) specification of the scope:
 - 1) pre-cooled milk is taken into account;
 - 2) other energy than electrical energy as well as the pressure aspect of vacuum tanks are excluded;
- b) updating of normative references;
- c) specification of the electrical requirements (5.3 was revised and Annexes B and C were added);
- d) addition of subclause 7.2 "Warning signs";
- e) specification of the noise test code;
- f) editorial modifications.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document is a type C standard as stated in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

1 Scope

1.1 This European Standard specifies requirements for design, performance, safety and hygiene of refrigerated bulk milk coolers and the related methods of test.

This standard deals with all significant hazards, hazardous situations and events relevant to bulk milk coolers on farms, when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4).

It applies to refrigerated bulk milk tanks with air cooled condensing units and automatic control intended for installation on farms or at milk collecting points. It applies to tanks for two milkings (24 h), four milkings (48 h) and six milkings (72 h), in which the cooling takes place totally (non-pre-cooled milk) or partially (in case of pre-cooled milk) within the tank.

Performance requirements in 5.5.1.2.1 and 5.5.1.2.2 do not apply to tanks in combination with instant cooling or in association with a continuous system of milking (e.g. milking with robot).

1.2 This European Standard does not cover:

- mobile tanks;
- tanks intended to be tilted for drainage;
- equipment for delivering the milk to the tank;
- equipment for pre-cooling or instant cooling of the milk;
- the hazards due to the use of other energy than electrical energy;
- pressure aspect of vacuum tanks.

1.3 Noise is not considered to be a significant hazard, but a relevant one for bulk milk coolers. This standard therefore includes information in 7.1 and in Annex A concerning the manufacturer's declaration of the noise emission level of the cooler.

1.4 This standard does not cover the calibration requirements for the tank to be used as a system for payment purpose.

1.5 This standard is not applicable to bulk milk coolers on farms which are manufactured before the date of its publication as an EN.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 378-1:2008+A2:2012, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 1: Basic requirements, definitions, classification and selection criteria*

EN 378-2, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*

EN 378-3, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 3: Installation site and personal protection*

EN 378-4, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 4: Operation, maintenance, repair and recovery*

EN 1005-3, *Safety of machinery — Human physical performance — Part 3: Recommended force limits for machinery operation*

EN 1088, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 1672-2:2005+A1:2009, *Food processing machinery — Basic concepts — Part 2: Hygiene requirements*

EN 10088-2:2005, *Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60335-1:2002, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2001, modified)*

EN 60335-2-34, *Household and similar electrical appliances — Safety — Part 2-34: Particular requirements for motor-compressors (IEC 60335-2-34)*

EN 60529:1991,¹⁾ *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1)*

EN ISO 1211, *Milk — Determination of fat content — Gravimetric method (Reference method) (ISO 1211)*

EN ISO 3744, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744)*

EN ISO 4288, *Geometrical product specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture (ISO 4288)*

EN ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871)*

¹⁾ EN 60529:1991 is impacted by EN 60529:1991/A1:2000, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1991/A1:2000)*.

EN ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*

EN ISO 11202:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections (ISO 11202:2010)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13732-1:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1)*

EN ISO 14122-2, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2)*

EN ISO 14122-3, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3)*

ISO 2852, *Stainless steel clamp pipe couplings for the food industry*

ISO 2853, *Stainless steel threaded couplings for the food industry*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010, EN 1672-2:2005+A1:2009 and the following apply.

3.1

refrigerated bulk milk tank

equipment for refrigeration, and bulk storage of refrigerated raw milk freshly milked

Note 1 to entry: Referred to as “Tank” throughout this document.

3.2

open tank

refrigerated bulk milk tank equipped with a lid which allows in open position manual washing of the inner vessel

3.3

closed tank

refrigerated bulk milk tank equipped with automatic washing of the inner vessel

Note 1 to entry: A manhole is only used for maintenance.

3.4

freshly milked

milk less than 2 h after being milked

3.5

pre-cooled milk

milk partially cooled before entering the tank