

**Valukoja seadmed. Ohutusnõuded kulpidele,
valamisseadmetele, tsentrifugaal valumasinatele,
pideva- ja poolpideva töötsükliga valumasinatele
KONSOLIDEERITUD TEKST**

Foundry machinery - Safety requirements for ladles, pouring equipment, centrifugal casting machines, continuous and semi continuous casting machines CONSOLIDATED TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1247:2004+A1:2010 sisaldab Euroopa standardi EN 1247:2004+A1:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 30.09.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

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English Version

Foundry machinery - Safety requirements for ladles, pouring equipment, centrifugal casting machines, continuous and semi continuous casting machines

Machines de fonderie - Prescriptions de sécurité concernant les poches, les matériels de coulée, les machines à couler par centrifugation, les machines à couler en continu ou en semi-continu

Gießereimaschinen - Sicherheitsanforderungen für Pfannen, Gießeinrichtungen, Schleudergießmaschinen kontinuierliche und halbkontinuierliche Stranggießmaschinen

This European Standard was approved by CEN on 17 December 2003 and includes Amendment 1 approved by CEN on 20 May 2010.

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Foreword

This document (EN 1247:2004+A1:2010) has been prepared by Technical Committee CEN/TC 202 “Foundry machinery”, 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of an identical text or by endorsement, at the latest by January 2011, and conflicting national standards shall be withdrawn at the latest by January 2011.

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 includes Amendment 1, approved by CEN on 2010-05-20.

This document supersedes EN 1247:2004.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** and **A1**.

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 Directives, see informative Annex ZA, which is an integral part of this document.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

A1 This European Standard 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 European Standard.

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.

Where for clarity an example of a preventative measure is given in the text, this should not be considered as the only possible solution. Other solutions can be used as far as they fulfil correctly the criteria expressed in the requirement.

This European Standard assumes, that the equipment is operated and maintained by trained personnel. **A1**

1 Scope

This document specifies requirements to be met by the manufacturer for the foreseeable significant hazards due to design, construction and installation, during commissioning, operation, maintenance, and decommissioning of the following machines and equipment which are used directly and indirectly for the manufacture of castings:

- Ladles;
- Pouring equipment;
- Centrifugal casting machines for production of tubes (only machines with horizontal or oblique axis of rotation);
- Continuous and semi continuous casting machines for non-ferrous metals.

This document specifies the safety requirements in addressing the following items:

- controls;
- protection against:
 - mechanical hazards, movement of machines and material, ejection of parts, material, liquids and gases, implosion, structural instability;
 - electric hazards;
 - explosion, fire, scalds, contact with hot parts (burns), gases and flames;
 - noise and vibration;
 - thermal radiation;
 - harmful by-products, poisoning, pollution of operators air;
 - impact;
 - deterioration of worker's health;
 - shearing;

- crushing;
- maintenance, provision for warning systems.

It is assumed that

- normal operation of equipment falling within this scope may involve the intervention of personnel;
- machines are operated by skilled and adequately trained persons;
- machines are used with adequate workplace lighting conforming to local regulations, or to EN 12464-1.

This document does not specify the safety requirements for machines in combination and for ancillary plant, melting, holding, drying and/or heating equipment, crane installations, winches, conveyors or handling systems which could be an integral part of the above equipment, or ladles which are specific to steelworks or ladles forming part of a crane or ladles for pouring by a casting machine or vessels used for molten metal transport on public highway, or continuous or semi continuous casting equipment which is specific to steelworks, or ladles which are carried by hand.

A1 This document is not applicable to ladles, pouring equipment, centrifugal casting machines and continuous and semi-continuous casting machines which are manufactured before the date of its publication as EN. **A1**

2 Normative references

The following referenced documents are indispensable for the application 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.

A1 EN 349, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 626-1, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 1: Principles and specifications for machinery manufacturers*

EN 626-2, *Safety of machinery — Reduction of risk to health from hazardous substances emitted by machinery — Part 2: Methodology leading to verification procedures*

EN 746-2:2010, *Industrial thermoprocessing equipment — Part 2: Safety requirements for combustion and fuel handling systems*

EN 842, *Safety of machinery — Visual danger signals — General requirements, design and testing*

EN 953, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 981, *Safety of machinery — System of auditory and visual danger and information signals*

EN 982, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 1037, *Safety of machinery — Prevention of unexpected start-up*

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

EN 1265:1999+A1:2008, *Safety of machinery — Noise test code for foundry machines and equipment*

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

EN 60519-1:2003, *Safety in electroheat installations — Part 1: General requirements (IEC 60519-1:2003)*

- EN 60529, *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 61310-1:2007)*
- EN 61310-2, *Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking (IEC 61310-2:2007)*
- EN ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*
- EN ISO 7731, *Ergonomics — Danger signals for public and work areas — Auditory danger signals (ISO 7731:2003)*
- EN ISO 11688-1, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*
- EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*
- EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*
- EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*
- EN ISO 13850, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*
- EN ISO 13857, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*
- EN ISO 14122-1, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels (ISO 14122-1:2001)*
- EN ISO 14122-2, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2:2001)*
- EN ISO 14122-3, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2001)*
- EN ISO 14122-4, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2004)*
- ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas*
- ISO 7000, *Graphical symbols for use on equipment — Index and synopsis*
- ISO 7745, *Hydraulic fluid power — Fire-resistant (FR) fluids — Guidelines for use*
- CLC/TR 50404, *Electrostatics — Code of practice for the avoidance of hazards due to static electricity [Ⓐ]*

3 Terms and definitions

[Ⓐ] For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

NOTE Definitions used in EN and ISO standards referred to in this European Standard are also valid for this European Standard. [Ⓐ]