

Betooni ja mördi vedamise, pritsimise ja laotamise masinad. Ohutusnõuded

Conveying, spraying and placing machines for concrete and mortar - Safety requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

Conveying, spraying and placing machines for concrete and mortar - Safety requirements

Machines pour le transport, la projection et la distribution
de béton et mortier - Prescriptions de sécurité

Förder-, Spritz- und Verteilmaschinen für Beton und Mörtel
- Sicherheitsanforderungen

This European Standard was approved by CEN on 6 July 2012.

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Foreword

This document (EN 12001:2012) has been prepared by Technical Committee CEN/TC 151 "Construction equipment and building material machines – Safety", 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of an identical text or by endorsement, at the latest by February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

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 12001:2003+A1:2009.

The following standard has been substantially restructured and revised compared to its preceding version EN 12001:2003+A1:2009 including a thorough revision of the incorporation of the requirements of EN ISO 13849-1:2008.

Attention is drawn to the fact that the following list of technical changes is non-exhaustive and shall not replace a thorough reading of the complete text.

- The scope and the definitions have been refined.
- Clause 5 - Safety Requirements and/or protective measures - has been totally revised and restructured by updating and amending all requirements where necessary.
- The texts on verification in Clause 6 have been edited and put into a table for better reading. The requirements for the Information for Use (Clause 7) have been rearranged and completed where appropriate.
- Annex B has been edited and completed where necessary. Annex C (Noise test code) underwent a complete revision to incorporate requirements of additional normative references. The function allocation for the remote control has been moved from informative Annex A to a new normative Annex D.

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.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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 12100:2010.

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

When provisions of this type-C standard are different from those that 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.

NOTE Some machines covered by this standard present risks that are very similar to mobile cranes.

1 Scope

1.1 This European Standard specifies the safety requirements for

- conveying machines,
- spraying machines,
- placing machines, and
- delivery line systems

for concrete and mortar as defined in the definitions in 3.3 to 3.6.

The machinery can be stationary or mobile.

This European Standard does not cover:

- machines that are mobile during conveying, spraying and placing;
- cabins for any machines covered by this standard;
- additional functions beyond conveying, spraying and placing concrete and mortar, e.g. separate mixing function or crane function;
- requirements for operation in tunnels;
- support structures (i.e. tower systems) not exclusively designed for the use with concrete distribution booms.

This European Standard does not establish the additional requirements for operations subject to special rules (e.g. potentially explosive atmospheres, supply by electrical networks where voltage, frequency and tolerance differ from those of the public supply, earthquake, lightning, using on public roads).

1.2 This European Standard deals with all significant hazards, hazardous situations and events relevant to conveying, spraying and placing machines when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). This European Standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards during transportation, assembly, dismantling, disabling, scrapping, operation and maintenance.

1.3 This European Standard is not applicable to machines which are manufactured before the date of publication of this document by CEN.

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 614-1:2006+A1:2009, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 894-1:1997+A1:2008, *Safety of machinery — Ergonomic requirements for the design of displays and control actuators — Part 1: General principles for human interactions with displays and control actuators*

- EN 894-2:1997+A1:2008, *Safety of machinery — Ergonomic requirements for the design of displays and control actuators — Part 2: Displays*
- EN 894-3:2000+A1:2008, *Safety of machinery — Ergonomic requirements for the design of displays and control actuators — Part 3: Control actuators*
- EN 953:1997+A1:2009, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*
- EN 13309:2010, *Construction machinery — Electromagnetic compatibility of machines with internal power supply*
- EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*
- EN ISO 2867:2011, *Earth-moving machinery — Access systems (ISO 2867:2011)*
- EN ISO 3744:2010, *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 3744:2010)*
- EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*
- EN ISO 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*
- 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 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections (ISO 11204:2010)*
- EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*
- 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 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*
- EN ISO 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*
- EN ISO 13855:2010, *Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)*
- EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and the following apply.