

## **Betooni ja mördi valmistamise seadmed ja jaamad. Ohutusnõuded**

Machinery and plant for the preparation of concrete  
and mortar - Safety requirements

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12151:2007 sisaldab Euroopa standardi EN 12151:2007 ingliskeelset teksti.	This Estonian standard EVS-EN 12151:2007 consists of the English text of the European standard EN 12151:2007.
Käesolev dokument on jõustatud 18.12.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 18.12.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

<b>Käsitlusala:</b> This document applies for machinery and plant for the preparation of concrete and mortar as defined in 3.1. This document specifies the requirements for the design of: a) batching and mixing installations for concrete and mortar; b) powered mixers for concrete and mortar; c) waste concrete reprocessing plant. It does not include requirements relevant to truck mixers. The machinery may be static or it may be capable of being moved to an alternative position.	<b>Scope:</b> This document applies for machinery and plant for the preparation of concrete and mortar as defined in 3.1. This document specifies the requirements for the design of: a) batching and mixing installations for concrete and mortar; b) powered mixers for concrete and mortar; c) waste concrete reprocessing plant. It does not include requirements relevant to truck mixers. The machinery may be static or it may be capable of being moved to an alternative position.
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ICS 91.220

English Version

**Machinery and plants for the preparation of concrete and mortar  
- Safety requirements**

Machines et centrales pour la préparation du béton et du  
mortier - Prescriptions de sécurité

Maschinen und Anlagen zur Bereitung von Beton und  
Mörtel - Sicherheitsanforderungen

This European Standard was approved by CEN on 13 October 2007.

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## Foreword

This document (EN 12151:2007) 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 May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

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 and Annex ZB, which are 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, 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

This document is a type C standard as stated in EN ISO 12100-1:2003.

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.

The road traffic law for each country remains unaffected by this standard.



## 1 Scope

1.1 This document applies for machinery and plants for the preparation of concrete and mortar as defined in 3.1.

This document specifies the requirements for the design of:

- a) batching and mixing installations for concrete and mortar;
- b) powered mixers for concrete and mortar, including for storage and handling;
- c) waste fresh concrete reprocessing plant.

It does not include requirements relevant to truck mixers.

The machinery may be static or it may be capable of being moved to an alternative position.

1.2 This document deals with all significant hazards, hazardous situations and events relevant to machinery and plant for the preparation of concrete and mortar, when they are used as intended and under the conditions foreseen by the manufacturer (see Clause 4). The exceptions are explosion hazards when using flammable or explosive materials that are significant but not dealt with. This document specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards. Maintenance is dealt with but not noise during maintenance.

1.3 This document is not applicable to machinery and plants which are manufactured before the date of publication of this document by CEN.

## 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.

EN 294:1992, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

EN 349:1993, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 360:2002, *Personal protective equipment against falls from a height — Retractable type fall arresters*

EN 361:2002, *Personal protective equipment against falls from a height — Full body harnesses*

EN 363:2002, *Personal protective equipment against falls from a height — Fall arrest systems*

EN 547-1:1996, *Safety of machinery — Human body measurements — Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*

EN 547-2:1996, *Safety of machinery — Human body measurements — Part 2: Principles for determining the dimensions required for access openings*

EN 547-3:1996, *Safety of machinery — Human body measurements — Part 3: Anthropometric data*

EN 574:1996, *Safety of machinery — Two-hand control devices — Functional aspects — Principles for design*

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

EN 617:2001, *Continuous handling equipment and systems — Safety and EMC requirements for the equipment for the storage of bulk materials in silos, bunkers, bins and hoppers*

EN 618:2002, *Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors*

EN 620:2002, *Continuous handling equipment and systems — Safety and EMC requirements for fixed belt conveyors for bulk materials*

EN 795:1996, *Protection against falls from a height — Anchor devices — Requirements and testing*

EN 811:1996, *Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs*

EN 894-1:1997, *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, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 2: Displays*

EN 953:1997, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 954-1:1996, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

EN 982:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 999:1998, *Safety of machinery — The positioning of protective equipment in respect of approach speeds of parts of the human body*

EN 1050:1996, *Safety of machinery — Principles for risk assessment*

EN 1088:1995, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 12198-1:2000, *Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 1: General principles*

EN 13309:2000, *Construction machinery — Electromagnetic compatibility of machines with internal electrical power supply*

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

EN 60204-32:1998, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32:1998)*

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

EN 60335-2-69:2003, *Household and similar electrical appliances — Safety — Part 2-69: Particular requirements for wet and dry vacuum cleaners, including power brush, for industrial and commercial use (IEC 60335-2-69:2002, modified)*

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

EN 62262:1995, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK Code)*

EN ISO 3744:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane* (ISO 3744:1994)

EN ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment* (ISO 4871:1996)

EN ISO 11201:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane* (ISO 11201:1995)

EN ISO 11688-1:1998, *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 13732-1:2006, *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 13850:2006, *Safety of machinery — Emergency stop — Principles for design* (ISO 13850:2006)

EN ISO 14122-1:2001, *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 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways* (ISO 14122-2:2001)

EN ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails* (ISO 14122-3:2001)

ISO 3795:1989, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*

ISO 7000:2004, *Graphical symbols for use on equipment — Index and synopsis*

IEC 60364-4-41:2005, *Low-voltage electrical installations — Part 4-41: Protection for safety — Protection against electric shock* (IEC 60364-4-41:2005, modified)

### 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 Schematic figures of the different types of machinery and plant are shown in Annex B.

#### 3.1

##### **machinery and plant for the preparation of concrete and mortar**

collection of equipment including those used for storage, conveying, batching, dosing, mixing and discharging

#### 3.2

##### **batching plant**

equipment which prepares all necessary raw materials using dosing equipment (see Figures B.3, B.9 and B.12)