Masinaohutus. Metallivaluseadmete ohutusnõuded

Safety of machinery - Safety requirements for pressure metal diecasting units

EESTI STANDARDI EESSÕNA

Käesolev Eesti standard EVS-EN 869:2006 sisaldab Euroopa standardi EN 869:2006 ingliskeelset teksti. Käesolev dokument on jõustatud 27.10.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 869:2006 consists of the English text of the European standard EN 869:2006. This document is endorsed on 27.10.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

NATIONAL FOREWORD

Käsitlusala: This European Standard specifies the safety requirements for pressure metal diecasting units. It applies to pressure diecasting machines and to the interfaces with the following ancillary equipment: - die, - melting, holding and dosing furnaces (see EN 746-1), - metal feeding equipment, - inserting and removal devices, - spraying appliances, - heat exchanger for the die.	**Scope:** This European Standard specifies the safety requirements for pressure metal diecasting units. It applies to pressure diecasting machines and to the interfaces with the following ancillary equipment: - die, - melting, holding and dosing furnaces (see EN 746-1), - metal feeding equipment, - inserting and removal devices, - spraying appliances, - heat exchanger for the die.

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Võtmesõnad: inimteguriga arvestav masinaehitus, kaitse mehaaniliste ohtude eest, masinate ohutus, ohtlik piirkond, ohtlikud masinad, ohud, ohutusmeetmed, ohutusnõuded, ohutusseadmed, survevalu, tehnilised andmed, tööpingid, vormimismasinad, õnnetuste vältimine

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English Version

Safety of machinery - Safety requirements for pressure metal diecasting units

Sécurité des machines - Prescriptions de sécurité pour les chantiers de moulage des métaux sous pression

Sicherheit von Maschinen - Sicherheitsanforderungen an Metall-Druckgießanlagen

This European Standard was approved by CEN on 6 August 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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Foreword

This document (EN 869:2006) 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 March 2007, and conflicting national standards shall be withdrawn at the latest by March 2007.

This document supersedes EN 869:1997

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 standard.

An assessment of the foreseeable risks arising from the use of the machinery was carried out when this standard was drafted by CEN/TC 202/WG 1, comprising experts from the following countries: Germany, Italy, Spain, Sweden and Switzerland.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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.

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 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

This European Standard specifies the safety requirements for pressure metal diecasting units.

It applies to pressure diecasting machines and to the interfaces with the following ancillary equipment:

— die,

— melting, holding and dosing furnaces (see EN 746-1),

— metal feeding equipment,

— inserting and removal devices,

— spraying appliances,

— heat exchanger for the die.

This ancillary equipment itself is not covered.

Additional risks arising from the material being cast are not covered.

This standard does not apply to low pressure diecasting machines and/or gravity diecasting machines.

This standard deals with all significant hazards, hazardous situations and events relevant to pressure diecasting machines when used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). It provides the requirements to be met by the manufacturer to ensure the safety of persons and property during transport, commissioning, use, de-commissioning and maintenance periods, as well as in the event of foreseeable failures or malfunctions that can occur in the equipment.

This document is not applicable to pressure metal diecasting units/machinery which are manufactured before the date of its publication as EN.

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 distance to prevent danger zones being reached by the upper limbs*

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

EN 418, *Safety of machinery - Emergency stop equipment, functional aspects - Principles for design*

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

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

EN 614-2, *Safety of machinery — Ergonomic design principles — Part 2: Interactions between the design of machinery and work tasks*

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

EN 894-3, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 3: Control actuators*

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

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

EN 1265, *Noise test code for foundry machines and equipment*

EN 13861, *Safety of machinery — Guidance for the application of ergonomics standards in the design of machinery*

EN 1760-2, *Safety of machinery - Pressure sensitive protective devices - Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*

EN 60204-1:1997, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:1997).*

EN 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)*

EN 61310-2, *Safety of machinery - Indication, marking and actuation - Part 2: Requirements for marking (IEC 61310-2:1995)*

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 14122-1, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of a 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)*

ISO 7000*, Graphical symbols for use on equipment - Index and synopsis*

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 document are also valid for this document.

3.1
casting
to cast a component/product by the use of pressure diecasting

3.2
diecasting
a process in which molten metal is injected into a die and held under pressure until complete solidification

3.3
diecasting machine
a machine that injects molten metal under high pressure into a parted die which is connected to the platens of the machine

3.4
diecasting unit
a diecasting machine, together with ancillary equipment, which form a complete production unit

3.5
ancillary equipment
devices which automatically carry out process functions additional to those of the diecasting machine itself, e. g., feeding the metal, removing the castings, spraying the die

3.6
metal
the material being cast

3.7
hot-chamber diecasting machine
diecasting machine having the shot sleeve and plunger submerged in the molten metal of the furnace (see Figure A.1)